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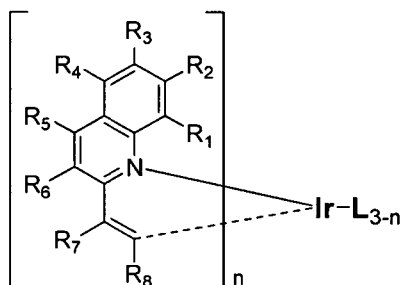
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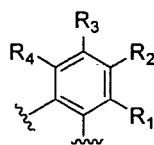
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(54) **Title:** NOVEL COMPOUNDS FOR ELECTRONIC MATERIAL AND ORGANIC ELECTRONIC DEVICE USING THE SAME

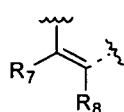


(1)

(57) **Abstract:** Provided are novel compounds for electronic material of high efficiency, and organic electronic devices and organic solar cells comprising the same. Specifically, the novel compounds for electronic material according to the invention are characterized in that they are represented by Chemical Formula (1) : wherein, R₁ and R₂, or R₃ and R₄ are linked via (C3- C12) alkylene or (C3-C12) alkenylene to form at least one fused ring(s); provided that, if the ring formed from R₃ and R₄ of Formula (II) by linkage via alkylene or alkenylene is benzene, the ring formed from R₇ and R₈ of Formula (III) by linkage via alkylene or alkenylene is not benzene.



(II)



(III)



DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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NOVEL COMPOUNDS FOR ELECTRONIC MATERIAL AND
ORGANIC ELECTRONIC DEVICE USING THE SAME

FIELD OF THE INVENTION

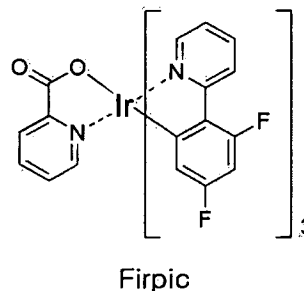
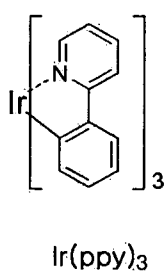
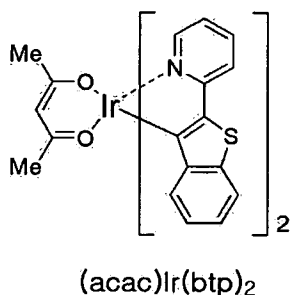
The present invention relates to novel compounds for electronic material, and organic electronic devices comprising the same. More specifically, the invention relates to novel compounds for electronic material having high efficiency, and organic electronic devices employing the compounds as phosphorescent dopant for forming an electroluminescent layer.

BACKGROUND OF THE INVENTION

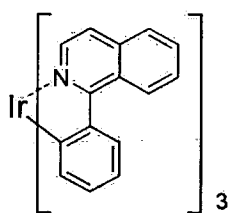
The most important factor to determine luminous efficiency in an organic light-emitting diode (OLED) is electroluminescent material. Though fluorescent materials have been widely used as electroluminescent material up to the present, development of phosphorescent materials is one of the best ways to improve the luminous efficiency theoretically up to four (4) times, in view of electroluminescent mechanism.

Up to now, iridium (III) complexes have been widely known as phosphorescent material, including (acac)Ir(btp)₂, Ir(ppy)₃ and Firpic, as the red, green and blue one, respectively. In

particular, a lot of phosphorescent materials have been recently investigated in Japan, Europe and America.



Among conventional red phosphorescent materials, several materials have been reported to have good EL (electroluminescent) properties. However, very rare materials among them have reached the level of commercialization. As the most preferable material, an iridium complex of 1-phenyl isoquinoline may be mentioned, which is known to have excellent EL property and to exhibit color purity of dark red with high luminous efficiency. [See A. Tsuboyama et al., *J. Am. Chem. Soc.* **2003**, 125(42), 12971-12979.]



1-phenyl isoquinoline

Moreover, the red materials, having no significant problem of lifetime, have tendency of easy commercialization if they have good color purity or luminous efficiency. Thus, the above-

mentioned iridium complexes are those having noticeable viability of commercialization due to their excellent color purity and luminous efficiency.

However, the iridium complex is still construed as a material which is merely applicable to small displays (thereby having limitation to be applied to medium to large sized OLED panels) because they cannot provide pure red color and high luminous efficiency at the same time, while higher levels of EL properties than those of known materials are practically required for an OLED panel of medium to large size.

SUMMARY OF THE INVENTION

With intensive efforts to overcome the problems of conventional techniques as described above, the present inventors have researched for developing novel compounds for electronic material to realize an organic EL device having excellent quantum efficiency and noticeably improved lifetime. Eventually, the inventors found that excellent luminous efficiency and life property with pure red color could be obtained when using an iridium complex, which was synthesized by introducing fused benzo[f]quinoline or benzo[h]quinoline, in which [f] or [h] of quinoline ring has been fused, as a primary ligand of iridium

complex, instead of pyridine (as was for conventional iridium complex), and completed the present invention.

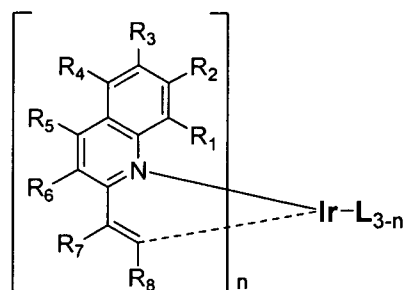
Thus, the object of the invention is to provide novel compounds for electronic material having the backbone to give more excellent electroluminescent properties as compared to those of conventional phosphorescent materials, with overcoming disadvantages of them.

Another object of the invention is to provide novel compounds for electronic material which are applicable to OLED panels of medium to large size, and organic electronic devices comprising the same.

Still another object of the invention is to provide organic solar cells comprising the novel compounds for electronic material.

Thus, the present invention relates to novel compounds for electronic material, and organic electronic devices comprising the same. Specifically, the novel compounds for electronic material according to the invention are represented by Chemical Formula (1):

Chemical Formula 1



wherein, L represents an organic ligand;

R₁ and R₂, or R₃ and R₄ are independently linked via (C3-C12)alkylene or (C3-C12)alkenylene to form at least one fused ring(s), and the substituents which do not form a fused ring are independently substituted by hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

the fused ring formed by linkage from R₁ and R₂, or R₃ and R₄ via (C3-C12)alkylene or (C3-C12)alkenylene, or the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl,

arylsilyl, alkylsilyl, alkylamino or arylamino of other substituents which do not form a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

R₅ and R₆ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-

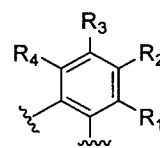
C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

R₇ and R₈ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or R₇ and R₈ may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R₅, R₆, R₇ and R₈, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, halo(C1-C60)alkyl, (C6-

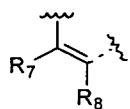
C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl; and

n is an integer from 1 to 3;



provided that, if the ring formed from R₃ and R₄ of

by linkage via alkylene or alkenylene is benzene, the ring formed



from R₇ and R₈ of by linkage via alkylene or alkenylene is not benzene.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a cross-sectional view of an OLED.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the Drawings, Fig. 1 illustrates a cross-sectional view of an OLED of the present invention comprising a Glass 1, Transparent electrode 2, Hole injecting layer 3, Hole transport layer 4, Electroluminescent layer 5, Electron transport layer 6, Electron injecting layer 7 and Al cathode 8.

The term "alkyl" and other substituents containing "alkyl" moiety includes linear and branched species.

The term "aryl" described herein means an organic radical derived from aromatic hydrocarbon via elimination of one hydrogen atom. Each ring suitably comprises a monocyclic or fused ring system containing from 4 to 7, preferably from 5 to 6 cyclic atoms. Specific examples include phenyl, naphthyl, biphenyl, anthryl, indenyl, fluorenyl, phenanthryl, triphenylenyl, pyrenyl, perylenyl, chrysenyl, naphthacenyl and fluoranthenyl, but they are not restricted thereto.

The term "heteroaryl" described herein means an aryl group containing from 1 to 4 heteroatom(s) selected from N, O and S for the aromatic cyclic backbone atoms, and carbon atom(s) for remaining aromatic cyclic backbone atoms. The heteroaryl may be 5- or 6-membered monocyclic heteroaryl or a polycyclic heteroaryl which is fused with one or more benzene ring(s), and may be partially saturated. The heteroaryl groups may include divalent

aryl groups of which the heteroatoms are oxidized or quarternized to form N-oxides, quaternary salts, or the like. Specific examples include monocyclic heteroaryl groups such as furyl, thiophenyl, pyrrolyl, imidazolyl, pyrazolyl, thiazolyl, thiadiazolyl, isothiazolyl, isoxazolyl, oxazolyl, oxadiazolyl, triazinyl, tetrazinyl, triazolyl, tetrazolyl, furazanyl, pyridyl, pyrazinyl, pyrimidinyl, pyridazinyl; polycyclic heteroaryl groups such as benzofuranyl, benzothiophenyl, isobenzofuranyl, benzimidazolyl, benzothiazolyl, benzoisothiazolyl, benzoisoxazolyl, benzoxazolyl, isoindolyl, indolyl, indazolyl, benzothiadiazolyl, quinolyl, isoquinolyl, cinnolinyl, quinazolinyl, quinoxalinyl, carbazolyl, phenanthridinyl and benzodioxolyl; and corresponding N-oxides (for example, pyridyl N-oxide, quinolyl N-oxide) and quaternary salts thereof; but they are not restricted thereto.

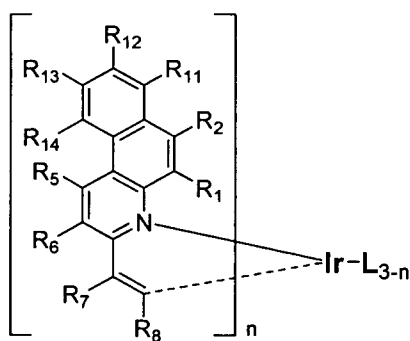
The naphthyl mentioned herein may be 1-naphthyl or 2-naphthyl; the anthryl may be 1-anthryl, 2-anthryl or 9-anthryl; and the fluorenyl may be 1-fluorenyl, 2-fluorenyl, 3-fluorenyl, 4-fluorenyl or 9-fluorenyl.

The substituents comprising "(C1-C60)alkyl" moiety described herein may contain 1 to 60 carbon atoms, 1 to 20 carbon atoms, or 1 to 10 carbon atoms. The substituents comprising

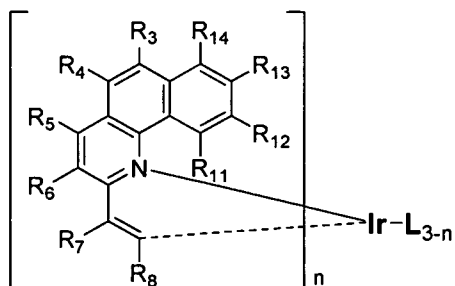
"(C6-C60)aryl" moiety may contain 6 to 60 carbon atoms, 6 to 20 carbon atoms, or 6 to 12 carbon atoms. The substituents comprising "(C3-C60)heteroaryl" moiety may contain 3 to 60 carbon atoms, 4 to 20 carbon atoms, or 4 to 12 carbon atoms. The substituents comprising "(C3-C60)cycloalkyl" moiety may contain 3 to 60 carbon atoms, 3 to 20 carbon atoms, or 3 to 7 carbon atoms. The substituents comprising "(C2-C60)alkenyl or alkynyl" moiety may contain 2 to 60 carbon atoms, 2 to 20 carbon atoms, or 2 to 10 carbon atoms.

The novel compounds for electronic material according to the invention are represented by Chemical Formula (2) or (3):

Chemical Formula 2



Chemical Formula 3



wherein, L, R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈ and n are defined as in Chemical Formula (1);

R₁₁ through R₁₄ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl; and

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₁₁ through R₁₄ may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano,

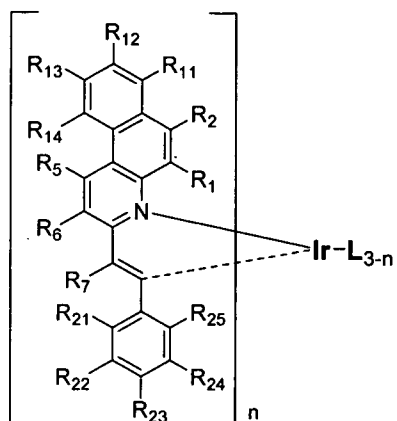
(C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

In the compounds represented by Chemical Formula (1) according to the present invention, the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed from R_7 and R_8 by linkage via (C3-C12)alkylene or (C3-C12)alkenylene with or without a fused ring may be naphthalene, anthracene, fluorene, indene or phenanthrene, without restriction.

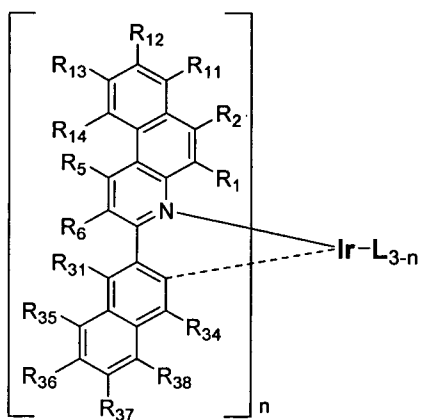
The compound within the square bracket ([]) in Chemical Formula (1) according to the present invention serves as a primary ligand of iridium, and L serves as a subsidiary ligand. The organic compounds for electronic material according to the present invention also include the complex with the ratio of primary ligand: subsidiary ligand = 2:1 ($n=2$) and the complex with the ratio of primary ligand: subsidiary ligand = 1:2 ($n=1$), as well as tris-chelated complexes without subsidiary ligand (L) ($n=3$).

The organic compounds for electronic material according to the present invention can be exemplified by compounds represented by one of Chemical Formulas (4) to (13):

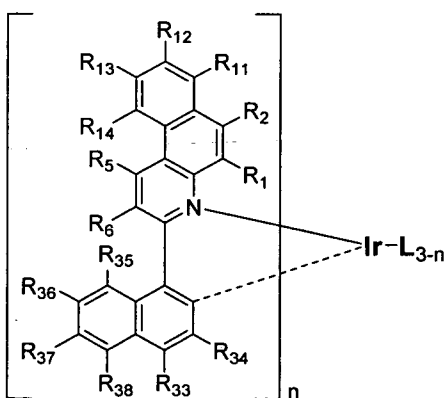
Chemical Formula 4



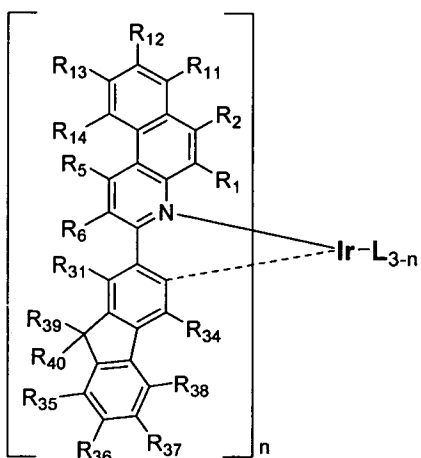
Chemical Formula 5



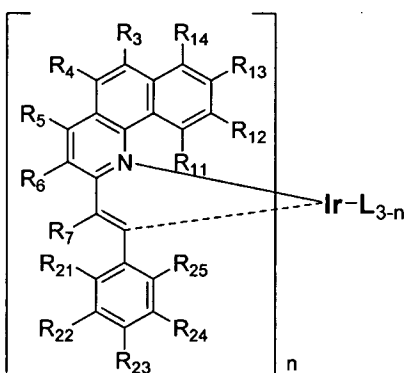
Chemical Formula 6



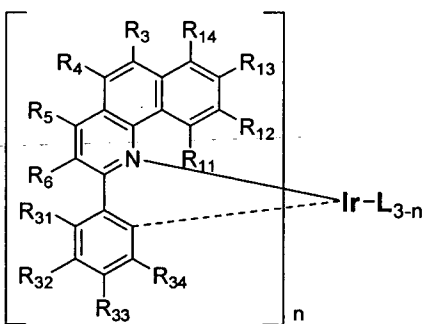
Chemical Formula 7



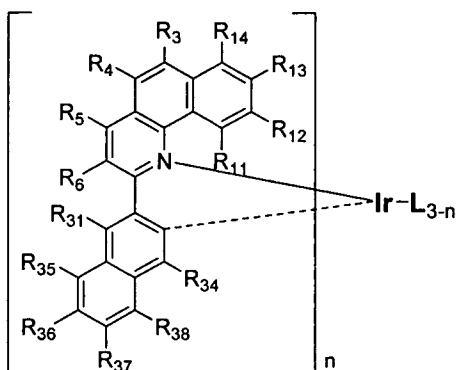
Chemical Formula 8



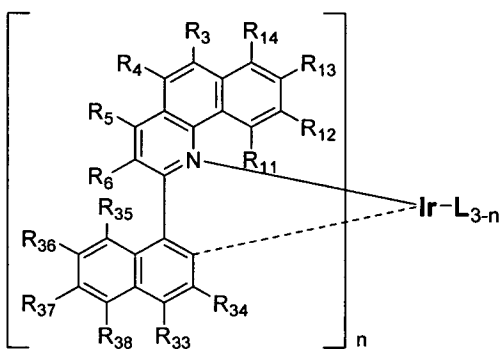
Chemical Formula 9



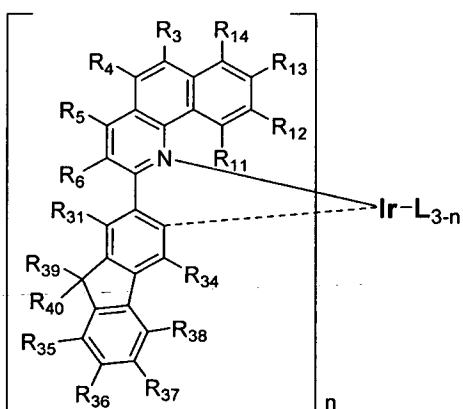
Chemical Formula 10



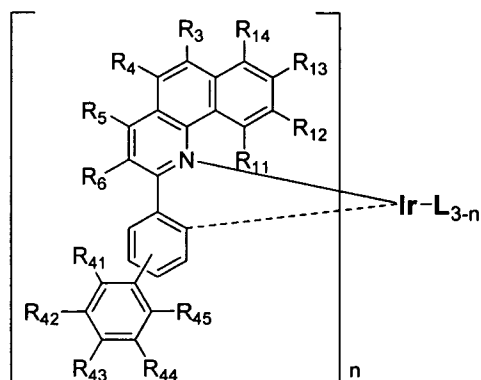
Chemical Formula 11



Chemical Formula 12



Chemical Formula 13



wherein, L, R₁, R₂, R₃, R₄, R₅, R₆, R₇ and n are defined as in Chemical Formula (1);

R₁₁, R₁₂, R₁₃ and R₁₄ are defined as in Chemical Formula (2) or (3);

R₂₁ through R₂₅, R₃₁ through R₃₈, and R₄₁ through R₄₅ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of them may be linked to an adjacent substituent via (C3-C60)alkylene or

(C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

R₃₉ and R₄₀ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or R₃₉ and R₄₀ may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R₂₁ through R₂₅, and R₃₁ through R₄₅, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium,

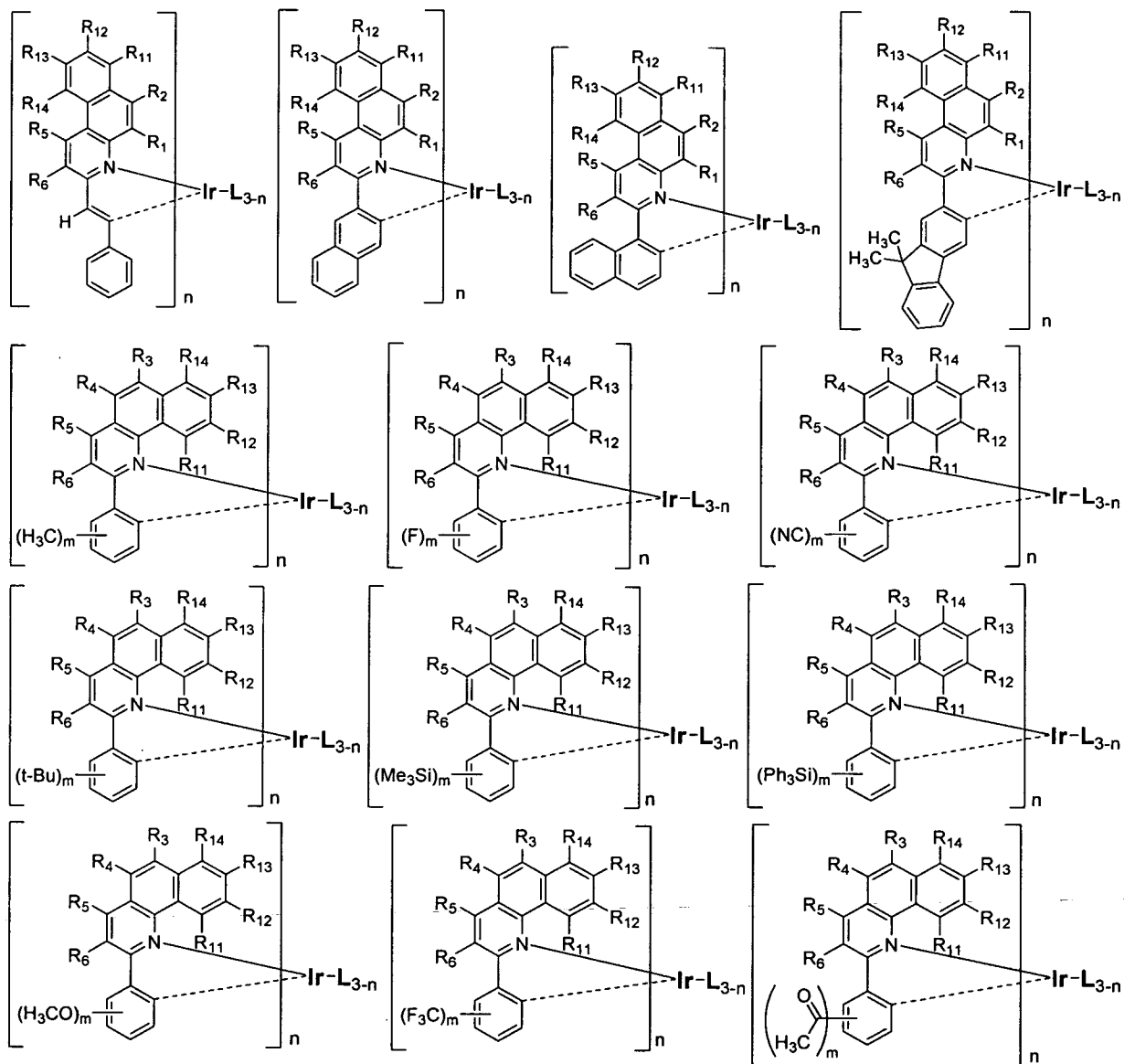
halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

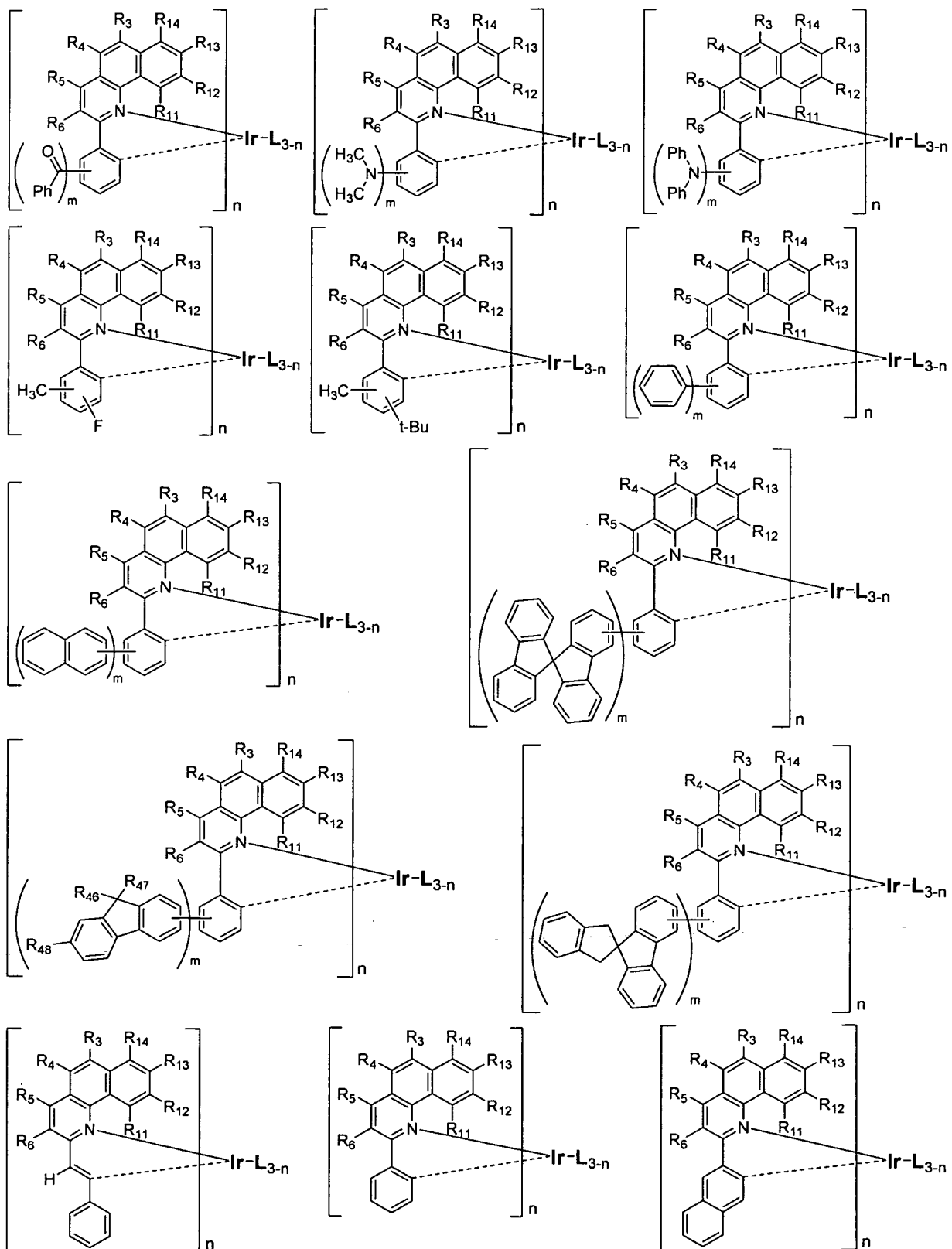
In Chemical Formula (1), R_1 through R_8 independently represent hydrogen, deuterium, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, t-butyl, n-pentyl, i-pentyl, n-hexyl, n-heptyl, n-octyl, 2-ethylhexyl, n-nonyl, decyl, dodecyl, hexadecyl, fluoro, cyano, methoxy, ethoxy, n-propoxy, i-propoxy, n-butoxy, i-butoxy, t-butoxy, n-pentoxo, n-hexyloxy, n-heptoxo, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, cyclononyl, cyclodecyl, trifluoromethyl, perfluorethyl, trifluoroethyl, perfluoropropyl, perfluorobutyl, phenyl, naphthyl, biphenyl, fluorenyl, phenanthryl, anthryl, fluoranthenyl, triphenylenyl, pyrenyl, chrysenyl, naphthacenyl, perylenyl, pyridyl, pyrrolyl, furanyl, thiophenyl, imidazolyl,

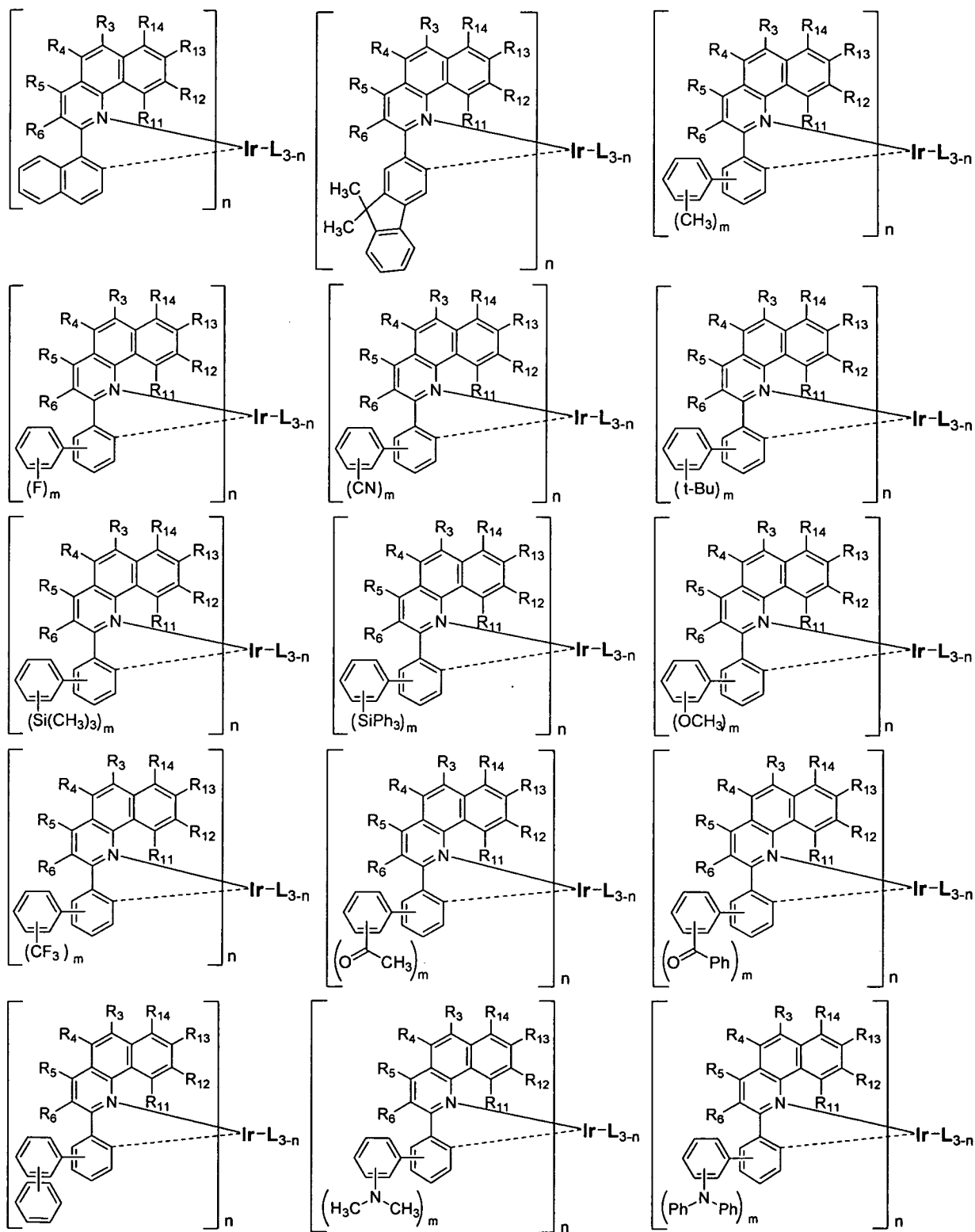
benzimidazolyl, pyrazinyl, pyrimidinyl, pyridazinyl, quinolyl, triazinyl, benzofuranyl, benzothiophenyl, pyrazolyl, indolyl, carbazolyl, thiazolyl, oxazolyl, benzothiazolyl, benzoxazolyl, trimethylsilyl, triethylsilyl, tripropylsilyl, tri(t-butyl)silyl, t-butyldimethylsilyl, dimethylphenylsilyl, triphenylsilyl or benzyl; and

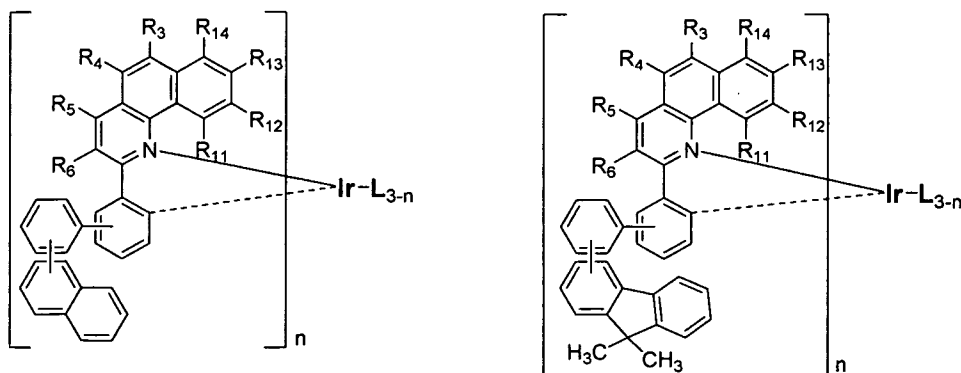
the phenyl, naphthyl, biphenyl, fluorenyl, phenanthryl, anthryl, fluoranthenyl, triphenylenyl, pyrenyl, chrysenyl, naphthacenyl, perylenyl, pyridyl, pyrrolyl, furanyl, thiophenyl, imidazolyl, benzimidazolyl, pyrazinyl, pyrimidinyl, pyridazinyl, quinolyl, triazinyl, benzofuranyl, benzothiophenyl, pyrazolyl, indolyl, carbazolyl, thiazolyl, oxazolyl, benzothiazolyl or benzoxazolyl of R₁ through R₈ may be further substituted by one or more substituent(s) selected from deuterium, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, t-butyl, n-pentyl, i-pentyl, n-hexyl, n-heptyl, n-octyl, 2-ethylhexyl, n-nonyl, decyl, dodecyl, hexadecyl, trifluoromethyl, perfluorethyl, trifluoroethyl, perfluoropropyl, perfluorobutyl, methoxy, ethoxy, butoxy, hexyloxy, cyclopropyl, cyclopentyl, cyclohexyl, fluoro, cyano, phenyl, naphthyl, anthryl, trimethylsilyl, triethylsilyl, tripropylsilyl, tri(t-butyl)silyl, t-butyldimethylsilyl, dimethylphenylsilyl and triphenylsilyl.

The organic compounds for electronic material according to the present invention can be specifically exemplified by the following compounds, but they are not restricted thereto:









wherein, L, R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₁₁, R₁₂, R₁₃, R₁₄ and n are defined as in Chemical Formula (2) or (3);

R₄₆ and R₄₇ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl; or R₄₆ and R₄₇ may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

R₄₈ independently represents hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered

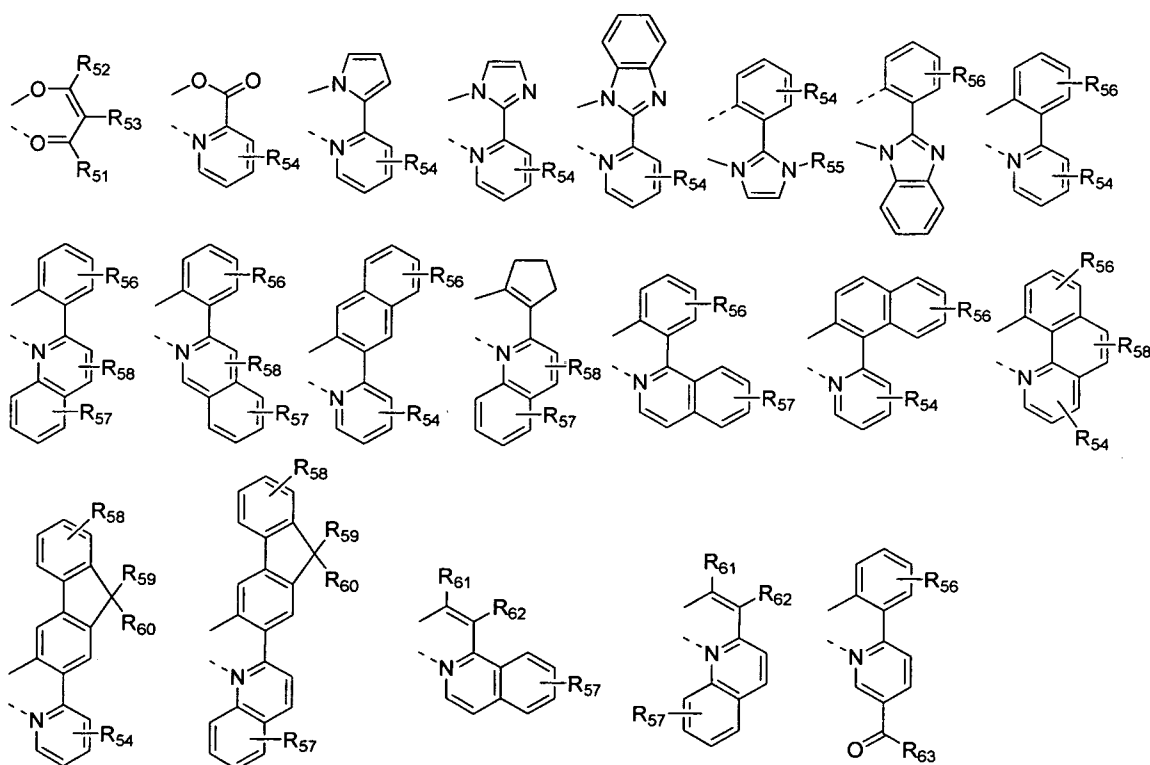
heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R₄₆ through R₄₈, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-

(C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl; and

m is an integer from 1 to 5.

The subsidiary ligands (L) of the organic compounds for electronic material according to the present invention include the following structures:

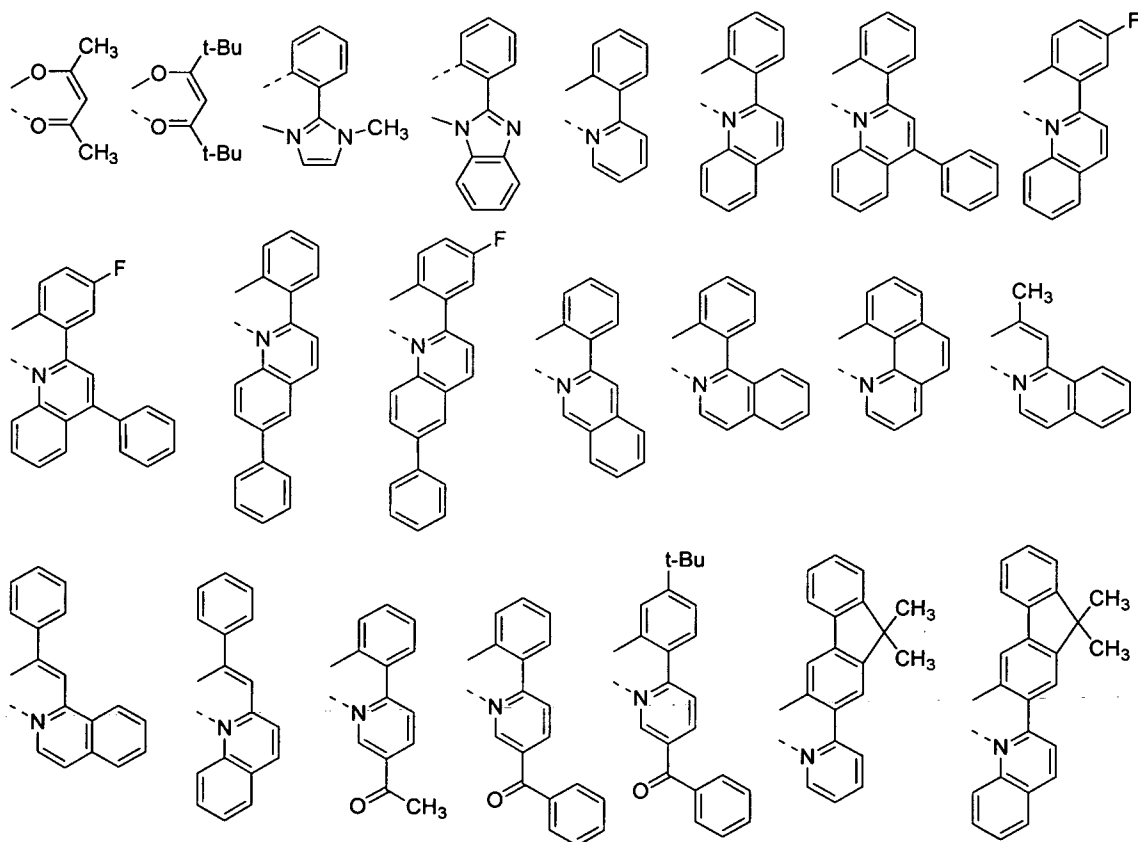


wherein, R₅₁ through R₆₃ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-

C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of R₅₁ through R₆₃ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₅₁ through R₆₃, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl silyl, tri(C6-C60)aryl silyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio,

(C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

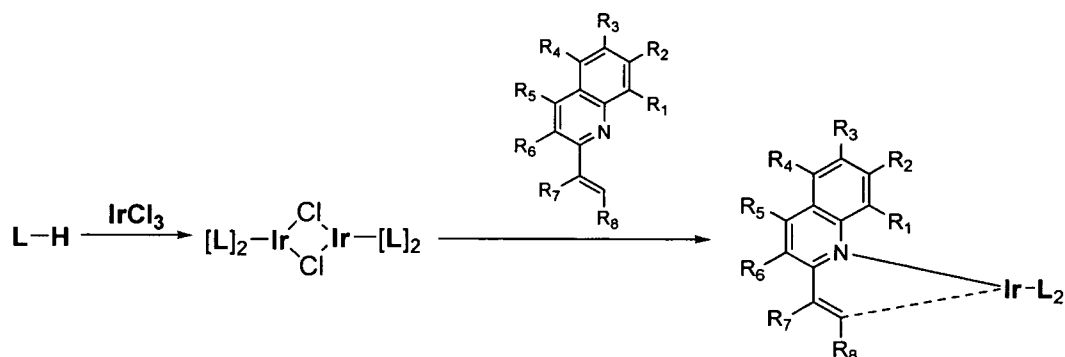
The subsidiary ligands (L) of the organic compounds for electronic material according to the present invention can be exemplified by the following structures, but they are not restricted thereto:



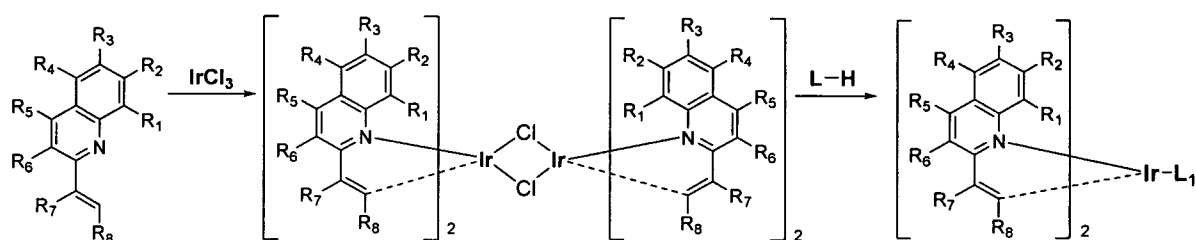
The processes for preparing the organic compounds for electronic material according to the present invention are illustrated on the basis of Reaction Schemes (1) to (3) shown

below:

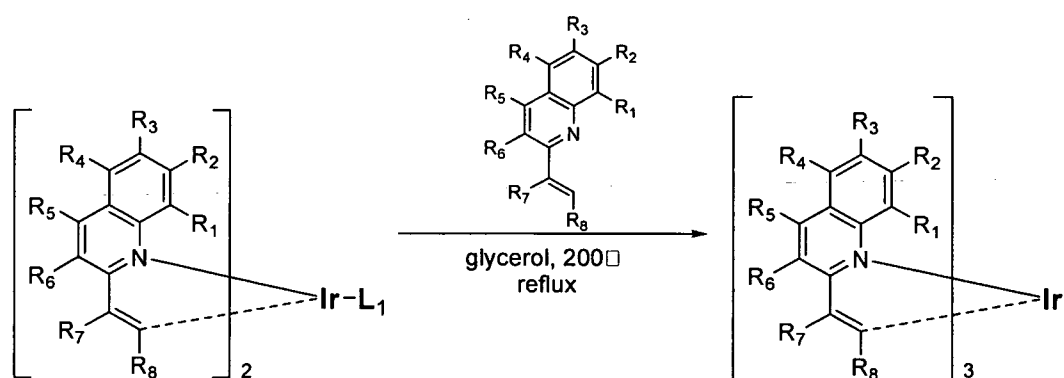
Reaction Scheme 1



Reaction Scheme 2



Reaction Scheme 3



wherein, R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 and L are defined as in Chemical Formula (1).

Reaction Scheme (1) provides a compound of Chemical Formula (1) with $n=1$, in which iridium trichloride (IrCl_3) and subsidiary ligand compound (L-H) are mixed in a solvent at a molar ratio of 1:2~3, and the mixture is heated under reflux before isolating diiridium dimer. In the reaction stage, preferable solvent is alcohol or a mixed solvent of alcohol/water, such as 2-ethoxyethanol, and 2-ethoxyethanol/water mixtures. The isolated diiridium dimer is then heated with a primary ligand compound in organic solvent to provide an organic phosphorescent iridium compound having the ratio of primary ligand: subsidiary ligand of 1:2 as the final product. The reaction is carried out with AgCF_3SO_3 , Na_2CO_3 or NaOH being admixed with organic solvent such as 2-ethoxyethanol and 2-methoxyethylether.

Reaction Scheme (2) provides a compound of Chemical Formula (1) with $n=2$, in which iridium trichloride (IrCl_3) and a primary ligand compound are mixed in a solvent at a molar ratio of 1:2~3, and the mixture is heated under reflux before isolating diiridium dimer. In the reaction stage, preferable solvent is alcohol or a mixed solvent of alcohol/water, such as 2-ethoxyethanol, and 2-ethoxyethanol/water mixtures. The isolated diiridium dimer is then heated with the subsidiary ligand compound (L-H) in organic solvent to provide an organic phosphorescent iridium compound

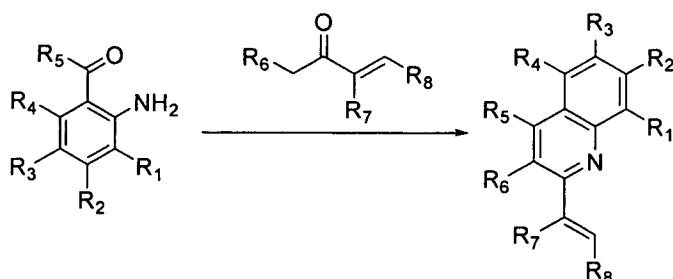
having the ratio of primary ligand: subsidiary ligand of 2:1 as the final product.

The molar ratio of the primary ligand compound to the subsidiary ligand (L) in the final product is determined by appropriate molar ratio of the reactant depending on the composition. The reaction may be carried out with AgCF_3SO_3 , Na_2CO_3 or NaOH being admixed with organic solvent such as 2-ethoxyethanol, 2-methoxyethylether and 1,2-dichloroethane.

Reaction Scheme (3) provides a compound of Chemical Formula (1) with $n=3$, in which iridium complex prepared according to Reaction Scheme (1) or (2) and the primary ligand compound are mixed in glycerol at a molar ratio of 1:2~3, and the mixture is heated under reflux to obtain organic phosphorescent iridium complex coordinated with three primary ligands.

The compounds employed as a primary ligand in the present invention can be prepared, without limitation, according to the process illustrated by Reaction Scheme (4), on the basis of conventional processes.

Reaction Scheme 4



wherein, R_1 through R_8 are defined as in Chemical Formula (1).

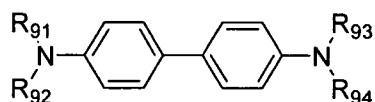
The present invention also provides organic solar cells, which comprises one or more organic compound(s) for electronic material represented by Chemical Formula (1).

The present invention also provides an organic electronic device which is comprised of a first electrode; a second electrode; and at least one organic layer(s) interposed between the first electrode and the second electrode; wherein the organic layer comprises one or more organic compound(s) for electronic material represented by Chemical Formula (1).

The organic electronic device according to the present invention is characterized in that the organic layer comprises an electroluminescent region, which comprises one or more organic compound(s) for electronic material represented by Chemical Formula (1) as electroluminescent dopant in an amount of 0.01 to 10% by weight, and one or more host(s). The host to be applied to the organic electronic device according to the invention is

not particularly restricted, but may be exemplified by 1,3,5-tricarbazolylbenzene, polyvinylcarbazole, m-biscarbazolylphenyl, 4,4'4''-tri(N-carbazolyl)triphenylamine, 1,3,5-tri(2-carbazolylphenyl)benzene, 1,3,5-tris(2-carbazolyl-5-methoxyphenyl)benzene, bis(4-carbazolylphenyl)silane or the compounds represented by one of Chemical Formulas (14) to (17).

Chemical Formula 14

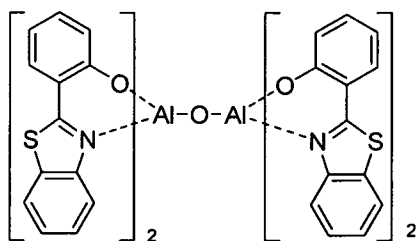


In Chemical Formula (14), R_{91} through R_{94} independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of R_{91} through R_{94} may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring

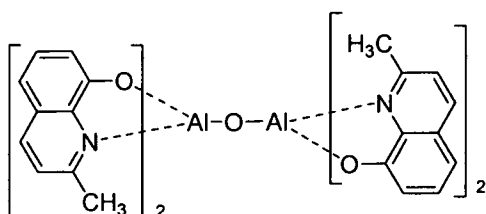
to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, or arylamino of R₉₁ through R₉₄, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)aryl, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkoxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

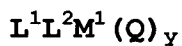
Chemical Formula 15



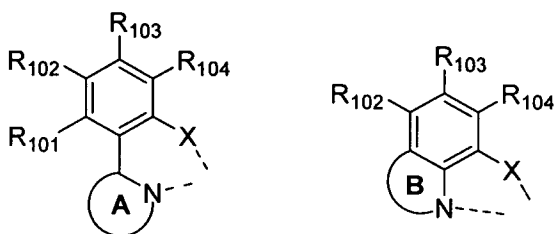
Chemical Formula 16



Chemical Formula 17



In Chemical Formula (17), the ligands L^1 and L^2 are independently selected from the following structures;



wherein, M^1 represents a bivalent or trivalent metal;

y is 0 when M^1 is a bivalent metal, while y is 1 when M^1 is a trivalent metal;

Q is (C6-C60)aryloxy or tri(C6-C60)arylsilyl, and the aryloxy or triarylsilyl of Q may be further substituted by (C1-

C60)alkyl or (C6-C60)aryl;

X is O, S or Se;

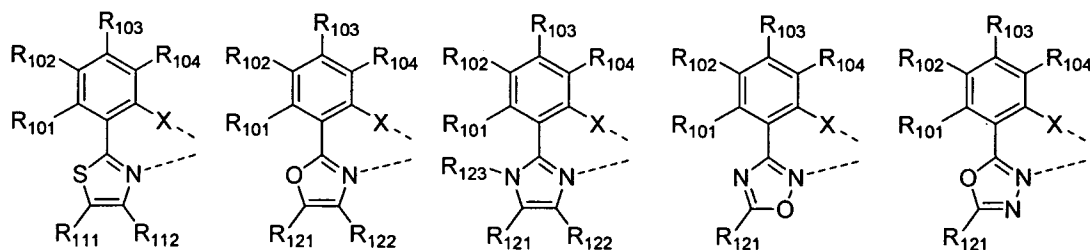
ring A represents oxazole, thiazole, imidazole, oxadiazole, thiadiazole, benzoxazole, benzothiazole, benzimidazole, pyridine or quinoline;

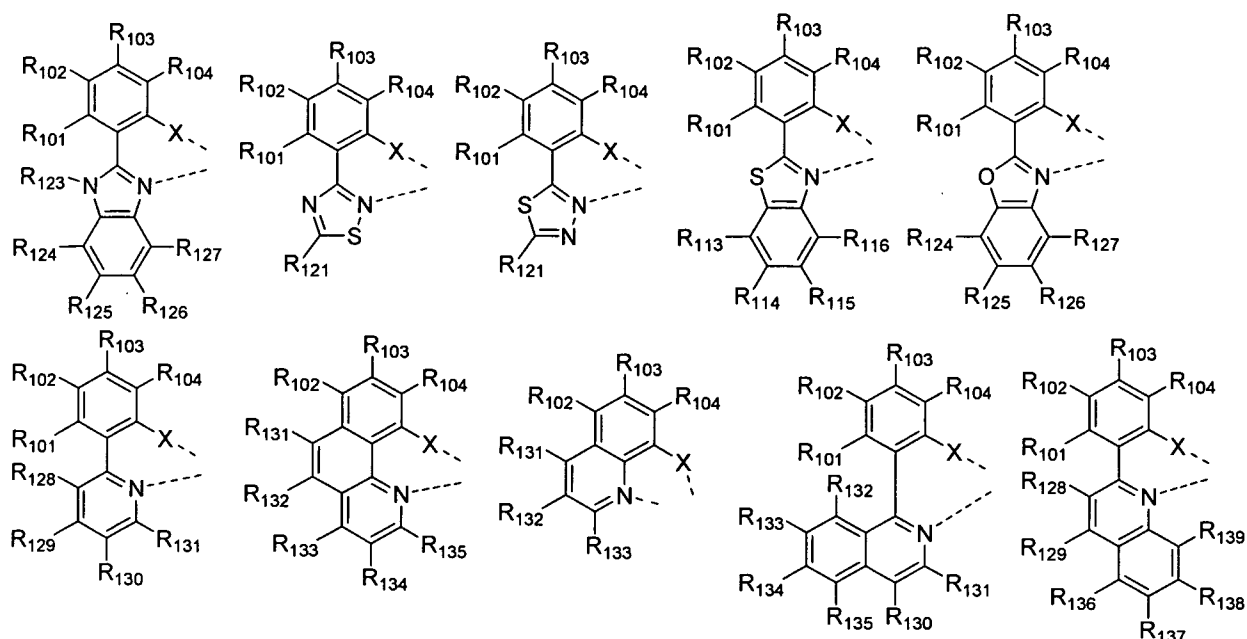
ring B represents pyridine or quinoline which may be further substituted by (C1-C60)alkyl, or phenyl or naphthyl with or without (C1-C60)alkyl substituent(s);

R₁₀₁ through R₁₀₄ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl; or each of R₁₀₁ through R₁₀₄ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

ring A, or the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₁₀₁ through R₁₀₄, and the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)aryl, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkoxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

The ligands, L¹ and L² are independently selected from the following structures:





wherein, X represents O, S or Se;

R₁₀₁ through R₁₀₄ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of R₁₀₁ through R₁₀₄ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic

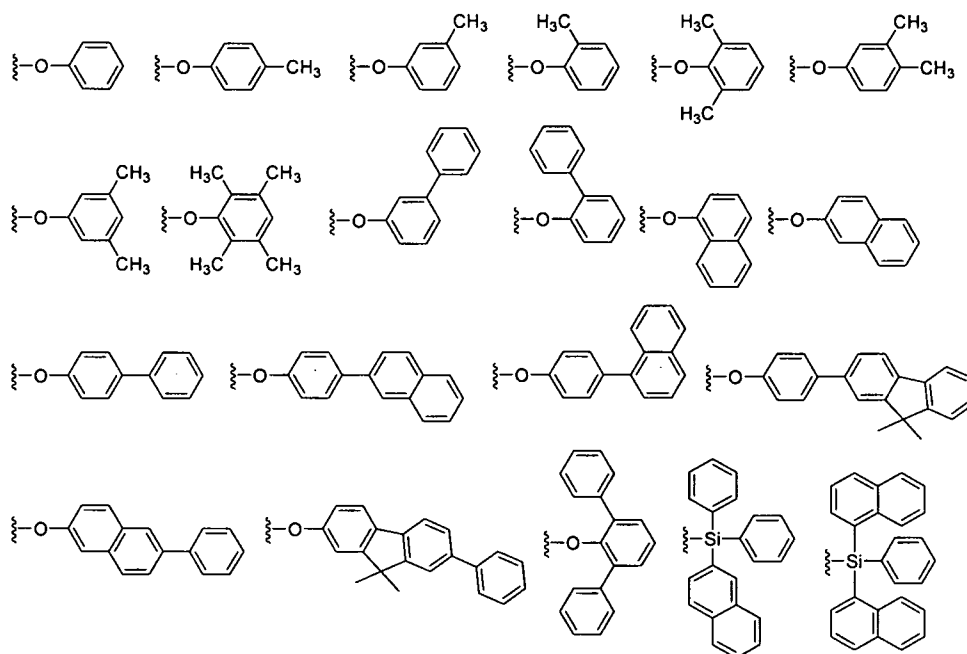
or polycyclic aromatic ring;

R₁₁₁ through R₁₁₆ and R₁₂₁ through R₁₃₉ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of R₁₁₁ through R₁₁₆ and R₁₂₁ through R₁₃₉ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

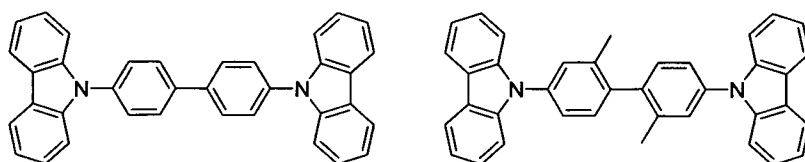
the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, or arylamino of R₁₀₁ through R₁₀₄, R₁₁₁ through R₁₁₆ and R₁₂₁ through R₁₃₉, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring

may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

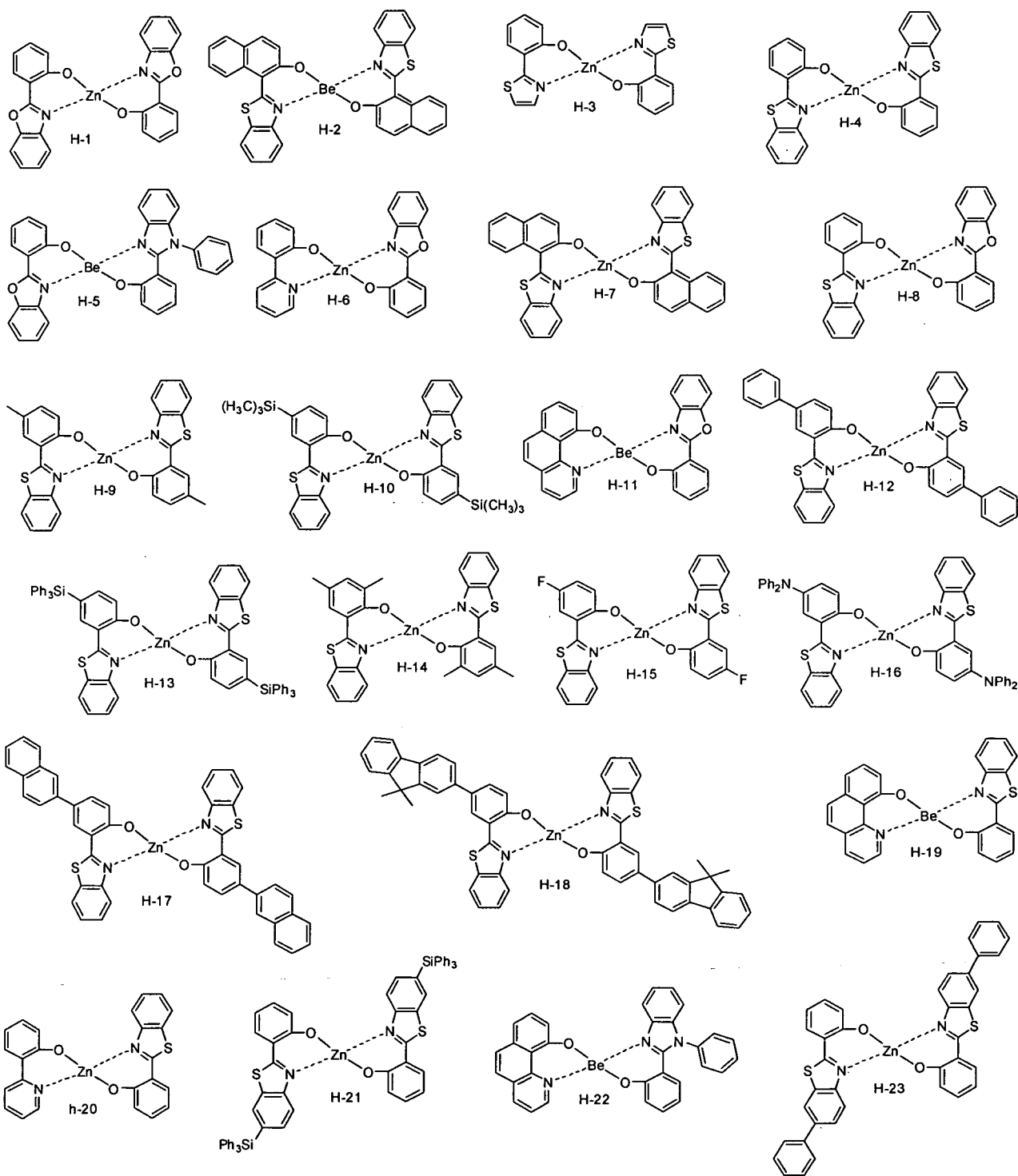
In Chemical Formula (17), M^1 is a bivalent metal selected from Be, Zn, Mg, Cu and Ni, or a trivalent metal selected from Al, Ga, In and B, and Q is selected from the following structures.

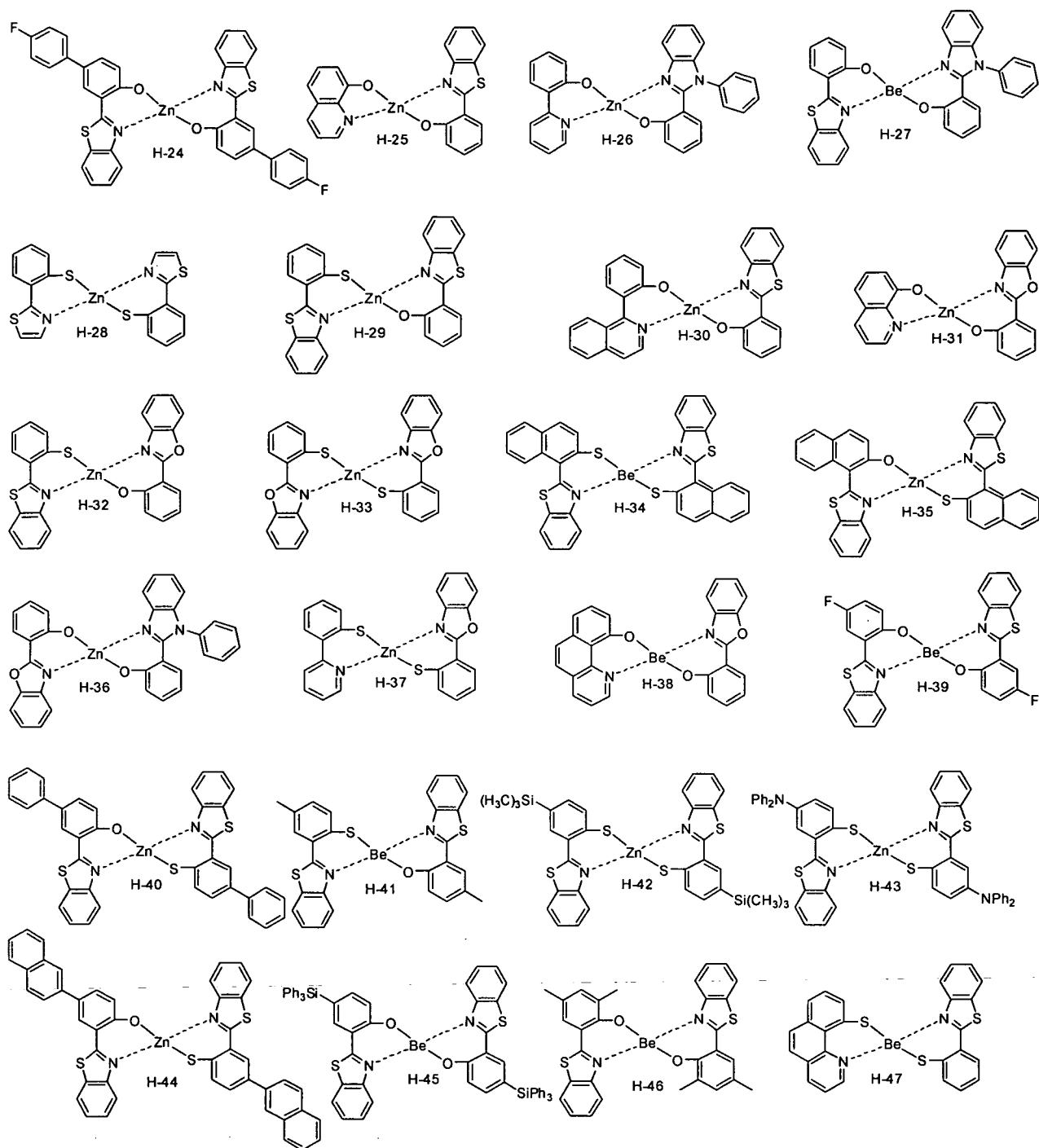


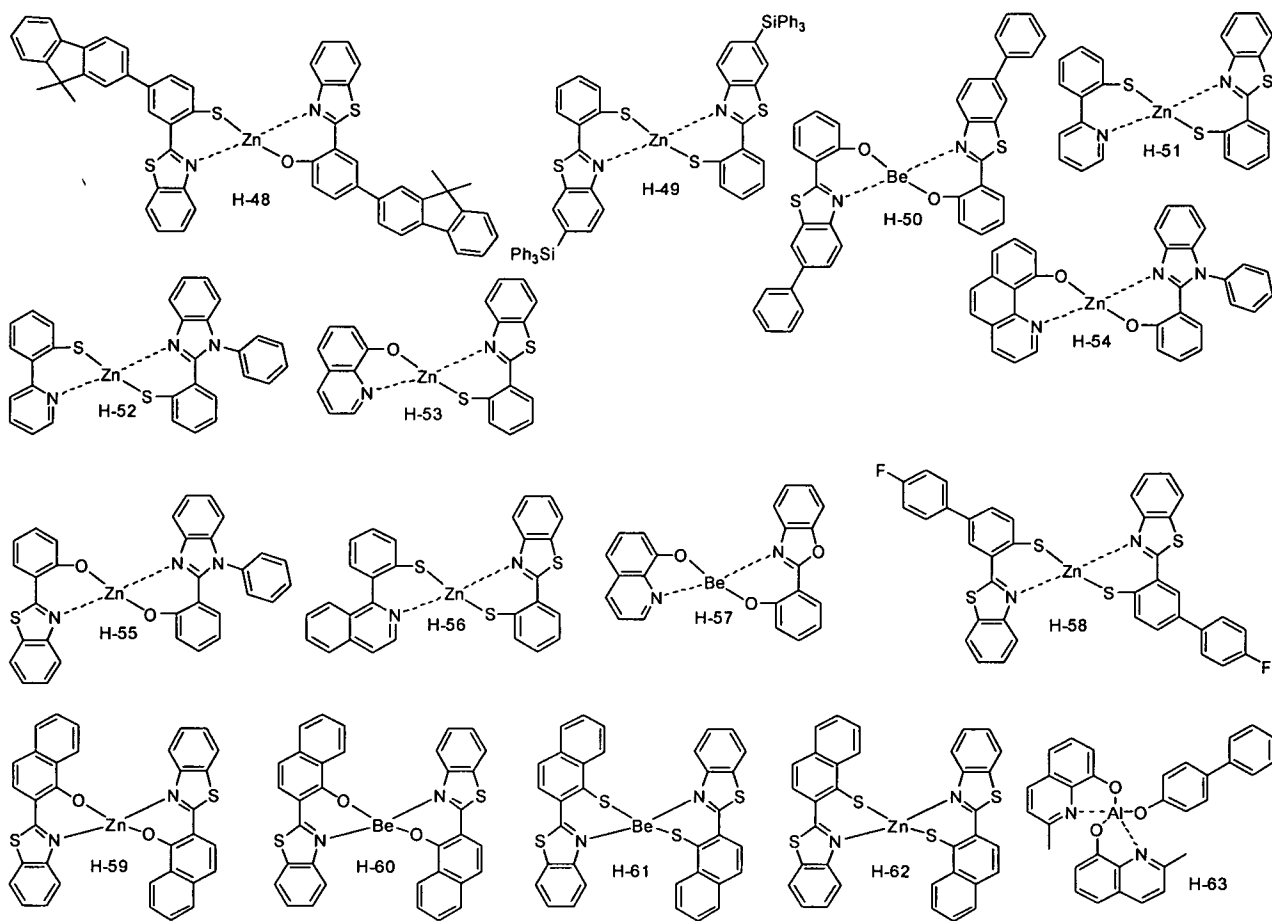
The compounds of Chemical Formula (14) may be specifically exemplified by the compounds represented by the following structures, but they are not restricted thereto.

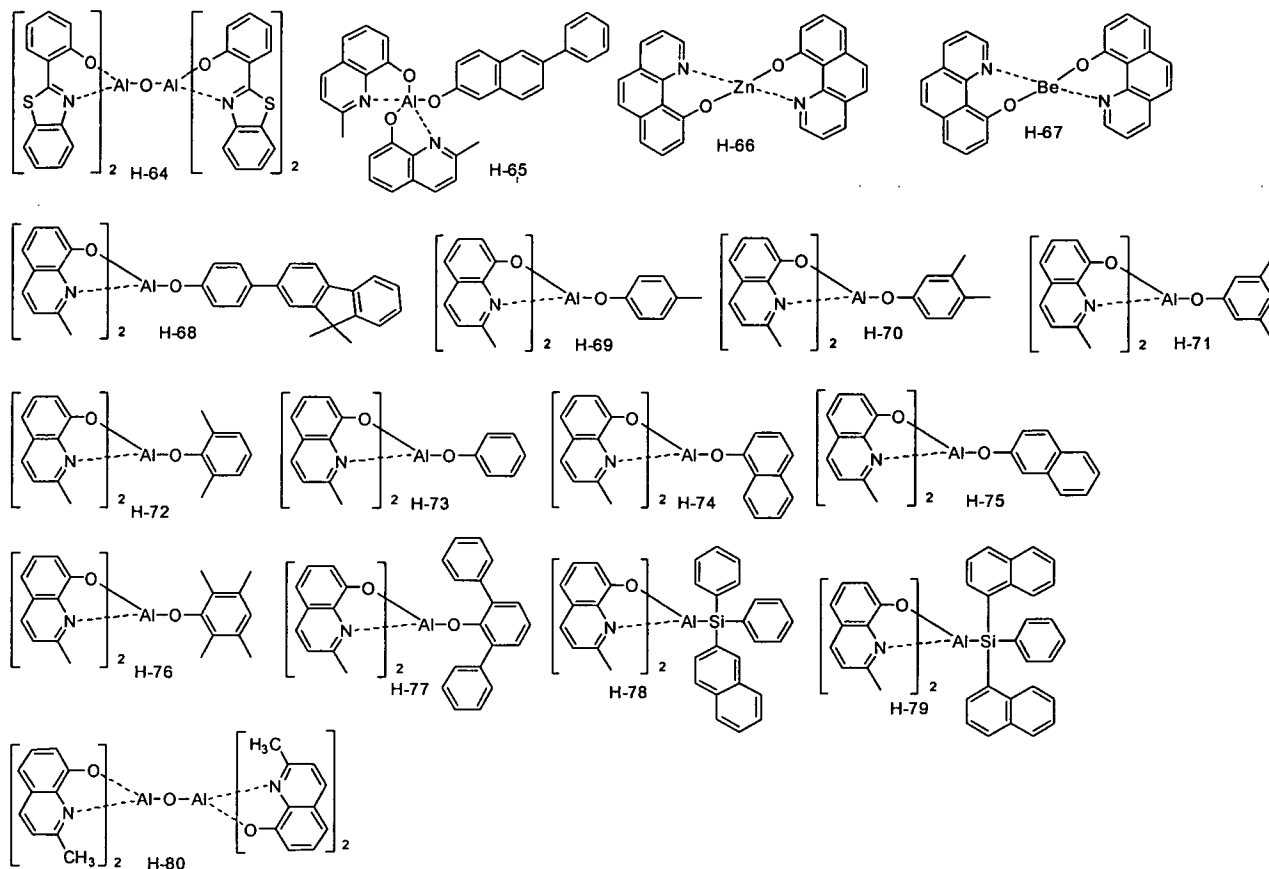


The compounds represented by one of Chemical Formulas (15) to (17) may be specifically exemplified by the compounds having one of the following structures, but they are not restricted thereto.







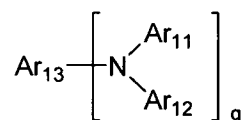


The electroluminescent layer means the layer where electroluminescence occurs, and it may be a single layer or a multi-layer consisting of two or more layers laminated. When a mixture of host-dopant is used according to the constitution of the present invention, noticeable improvement in device life as well as in luminous efficiency may be confirmed.

The organic electronic device according to the invention may further comprise one or more compound(s) selected from a group consisting of arylamine compounds and styrylarylamine

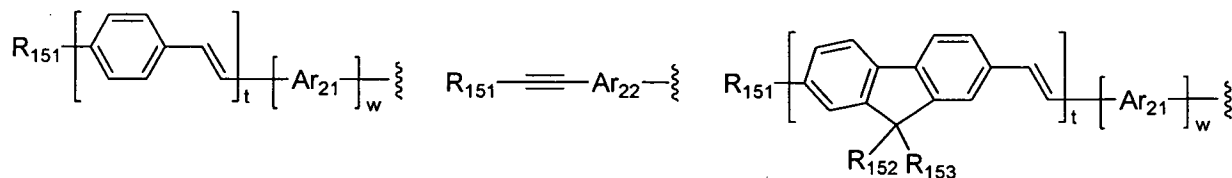
compounds, as well as the organic compound for electronic material represented by Chemical Formula (1). Examples of the arylamine or styrylarylamine compounds include the compounds represented by Chemical Formula (18), but they are not restricted thereto:

Chemical Formula 18

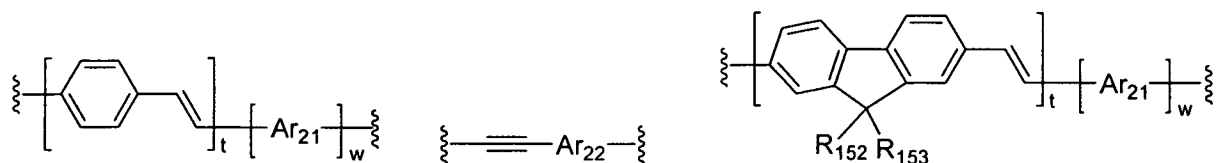


wherein, Ar_{11} and Ar_{12} independently represent (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, (C6-C60)arylamino, (C1-C60)alkylamino, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, or (C3-C60)cycloalkyl, or Ar_{11} and Ar_{12} may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

when g is 1, Ar_{13} represents (C6-C60)aryl, (C4-C60)heteroaryl, or aryl represented by one of the following structural formulas:



when g is 2, Ar_{13} represents (C6-C60)arylene, (C4-C60)heteroarylene, or arylene represented by one of the following structural formulas:



wherein Ar_{21} and Ar_{22} independently represent (C6-C60)arylene or (C4-C60)heteroarylene;

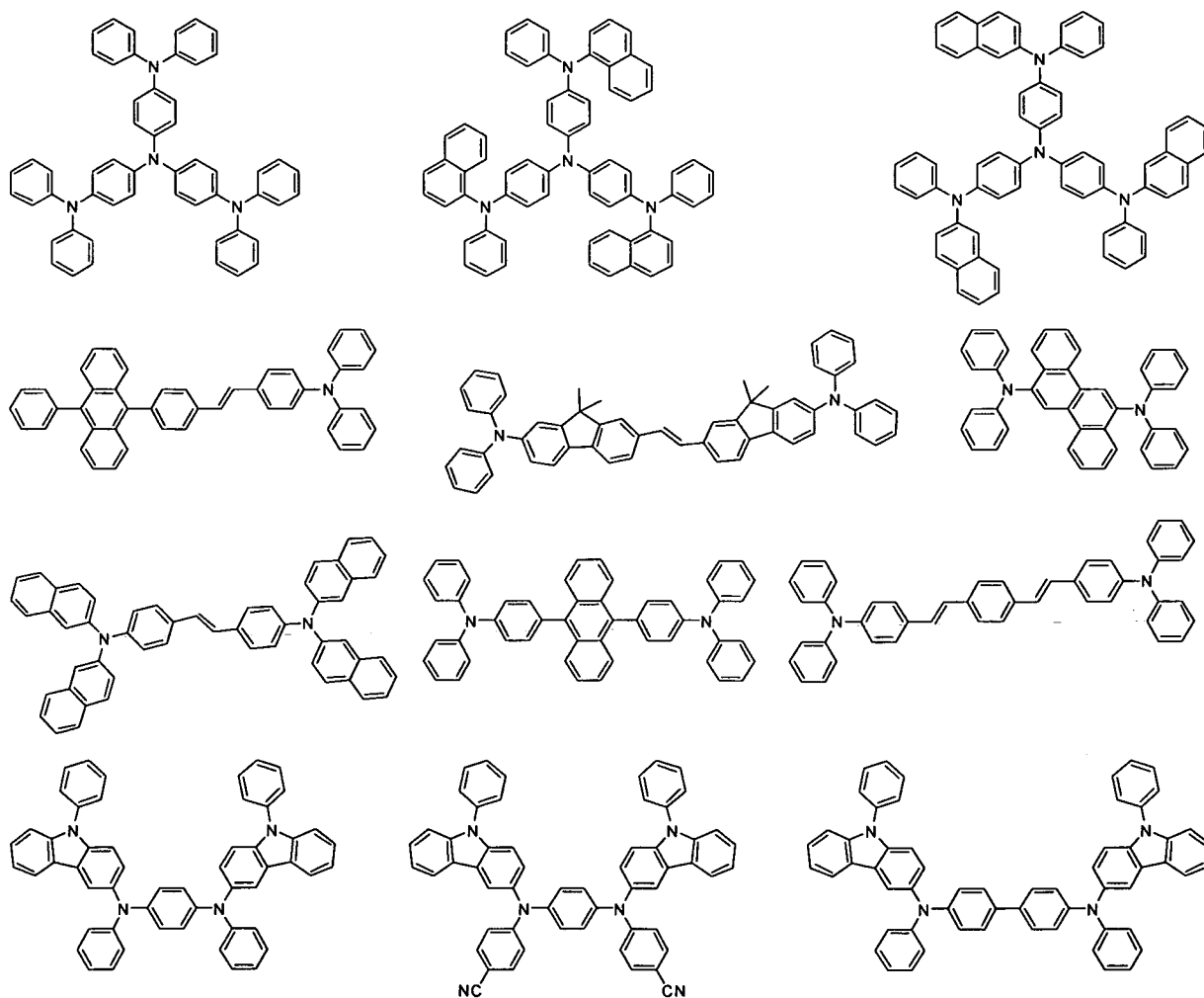
R_{151} , R_{152} and R_{153} independently represent hydrogen, deuterium, (C1-C60)alkyl or (C6-C60)aryl;

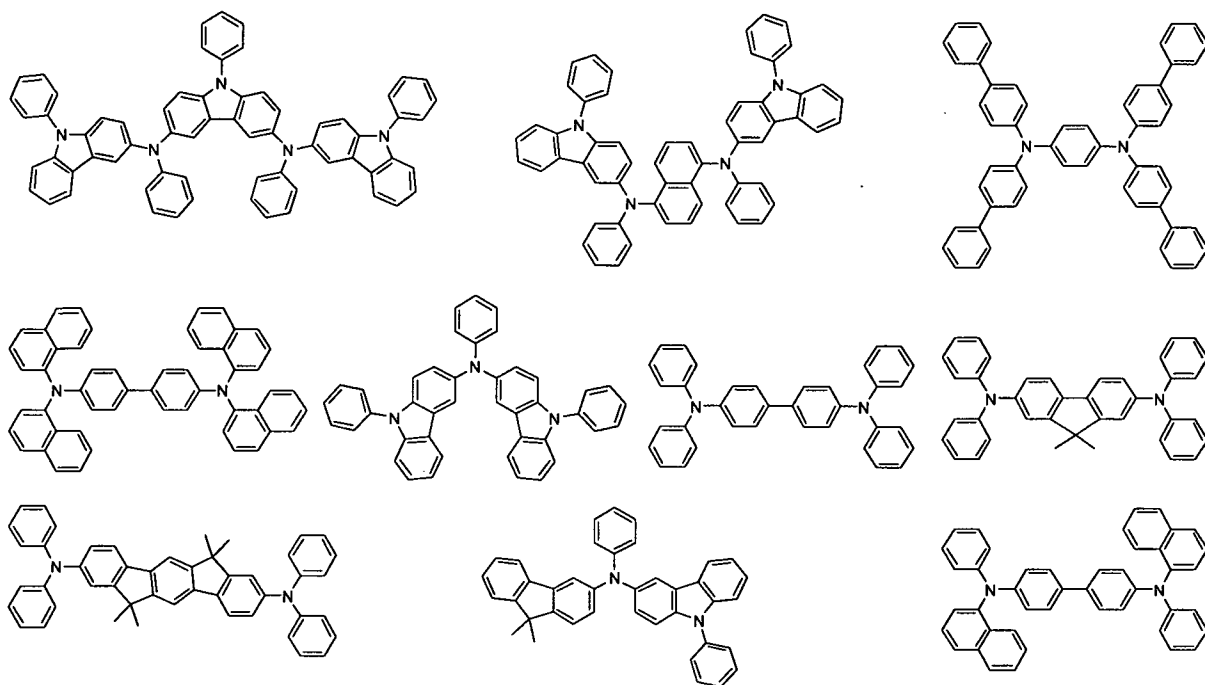
t is an integer from 1 to 4, w is an integer of 0 or 1; and

the alkyl, aryl, heteroaryl, arylamino, alkylamino, cycloalkyl or heterocycloalkyl of Ar_{11} and Ar_{12} ; the aryl, heteroaryl, arylene or heteroarylene of Ar_{13} ; the arylene or heteroarylene of Ar_{21} and Ar_{22} ; or the alkyl or aryl of R_{151} through R_{153} may be further substituted by one or more substituent(s) selected from a group consisting of deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl,

(C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C6-C60)aryloxy, (C1-C60)alkyloxy, (C6-C60)arylthio, (C1-C60)alkylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

The arylamine compounds and styrylarylamine compounds may be more specifically exemplified by the following compounds, but are not restricted thereto.





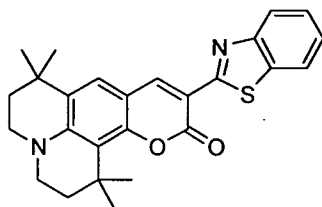
In an organic electronic device according to the present invention, the organic layer may further comprise one or more metal(s) selected from a group consisting of organometals of Group 1, Group 2, 4th period and 5th period transition metals, lanthanide metals and d-transition elements in the Periodic Table of Elements, as well as the organic compounds for electronic material represented by Chemical Formula (1). The organic layer may comprise a charge generating layer in addition to the electroluminescent layer.

The present invention can realize an organic electronic device having a pixel structure of independent light-emitting mode, which comprises an organic electronic device containing the

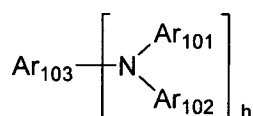
compound of Chemical Formula (1) as a sub-pixel and one or more sub-pixel(s) comprising one or more compound(s) selected from a group consisting of arylamine compounds and styrylarylamine compounds, patterned in parallel at the same time.

Further, the organic electronic device may comprise, in addition to the organic compound for electronic material, organic or organometallic compound(s) with green or blue electroluminescence, which can be exemplified the compounds represented by one of Chemical Formulas (19) to (23).

Chemical Formula 19



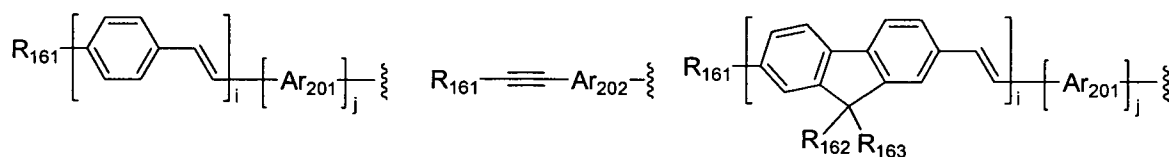
Chemical Formula 20



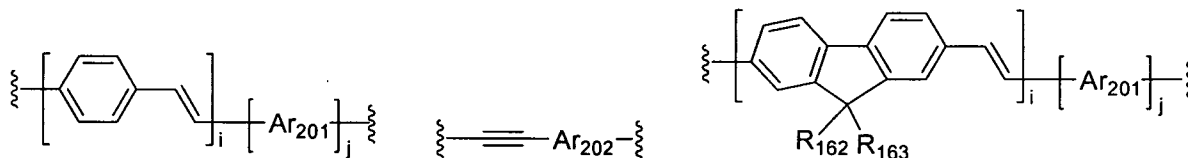
In Chemical Formula (20), Ar_{101} and Ar_{102} independently represent (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, (C6-C60)arylamino, (C1-C60)alkylamino, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, or (C3-C60)cycloalkyl, or Ar_{101} and Ar_{102} may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without

a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

when h is 1, Ar₁₀₃ represents (C6-C60)aryl, (C4-C60)heteroaryl, or a substituent represented by one of the following structural formulas:



when h is 2, Ar₁₀₃ represents (C6-C60)arylene, (C4-C60)heteroarylene, or a substituent represented by one of the following structural formulas:



wherein Ar₂₀₁ and Ar₂₀₂ independently represent (C6-C60)arylene or (C4-C60)heteroarylene;

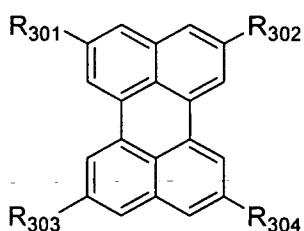
R₁₆₁ through R₁₆₃ independently represent hydrogen, deuterium, (C1-C60)alkyl or (C6-C60)aryl;

i is an integer from 1 to 4, j is an integer of 0 or 1; and

the alkyl, aryl, heteroaryl, arylamino, alkylamino, cycloalkyl or heterocycloalkyl of Ar₁₀₁ and Ar₁₀₂; the aryl, heteroaryl, arylene or heteroarylene of Ar₁₀₃; the arylene or

heteroarylene of Ar₂₀₁ and Ar₂₀₂; or the alkyl or aryl of R₁₆₁ through R₁₆₃ may be further substituted by one or more substituent(s) selected from a group consisting of deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C6-C60)aryloxy, (C1-C60)alkyloxy, (C6-C60)arylthio, (C1-C60)alkylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

Chemical Formula 21



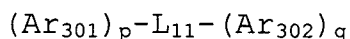
In Chemical Formula (21), R₃₀₁ through R₃₀₄ independently represents hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S,

(C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of R₃₀₁ through R₃₀₄ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

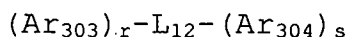
the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₃₀₁ through R₃₀₄, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl,

(C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

Chemical Formula 22



Chemical Formula 23



In Chemical Formulas (22) and (23),

L_{11} represents (C6-C60)arylene or (C4-C60)heteroarylene;

L_{12} represents anthracenylene;

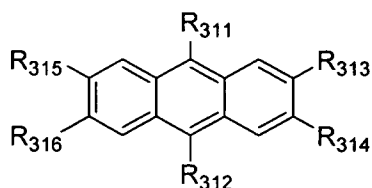
Ar_{301} through Ar_{304} are independently selected from hydrogen, deuterium, (C1-C60)alkyl, (C1-C60)alkoxy, halogen, (C4-C60)heteroaryl, (C5-C60)cycloalkyl and (C6-C60)aryl; the cycloalkyl, aryl or heteroaryl of Ar_{301} through Ar_{304} may be further substituted by one or more substituent(s) selected from a group consisting of (C6-C60)aryl or (C4-C60)heteroaryl with or without one or more substituent(s) selected from a group consisting of (C1-C60)alkyl with or without halogen substituent(s), (C1-C60)alkoxy, (C3-C60)cycloalkyl, halogen, cyano, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl

and tri(C6-C60)arylsilyl; deuterium, (C1-C60)alkyl with or without halogen substituent(s), (C1-C60)alkoxy, (C3-C60)cycloalkyl, halogen, cyano, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl and tri(C6-C60)arylsilyl; and

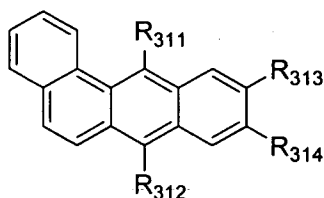
p, q, r and s independently represent an integer from 0 to 4.

The compounds represented by Chemical Formula (22) or (23) can be exemplified by anthracene derivatives or benz[a]anthracene derivatives represented by one of Chemical Formulas (24) to (26):

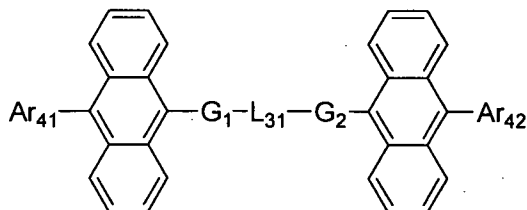
Chemical Formula 24



Chemical Formula 25



Chemical Formula 26



In Chemical Formulas (24) through (26),

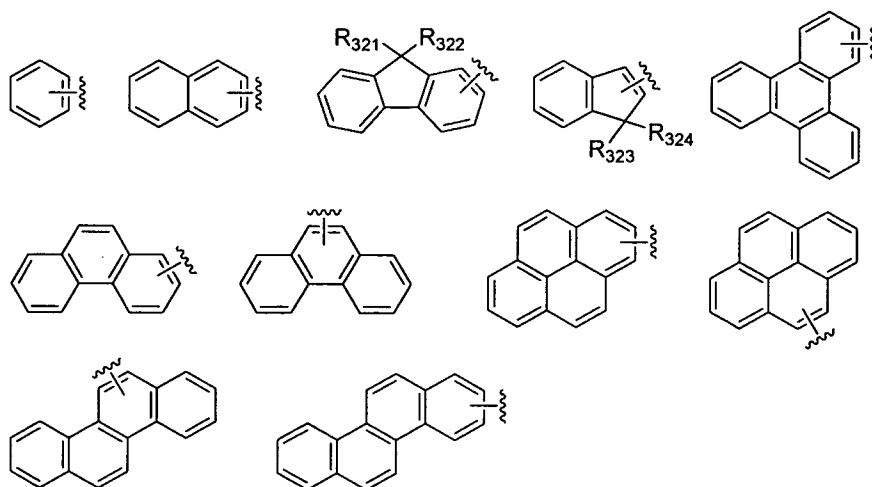
R₃₁₁ and R₃₁₂ independently represent (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, or (C3-C60)cycloalkyl; the aryl or heteroaryl of R₃₁₁ and R₃₁₂ may be further substituted by one or more substituent(s) selected from a group consisting of deuterium, (C1-C60)alkyl, halo(C1-C60)alkyl, (C1-C60)alkoxy, (C3-C60)cycloalkyl, (C6-C60)aryl, (C4-C60)heteroaryl, halogen, cyano, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl and tri(C6-C60)arylsilyl;

R₃₁₃ through R₃₁₆ independently represent hydrogen, deuterium, (C1-C60)alkyl, (C1-C60)alkoxy, halogen, (C4-C60)heteroaryl, (C5-C60)cycloalkyl or (C6-C60)aryl, and the heteroaryl, cycloalkyl or aryl of R₃₁₃ through R₃₁₆ may be further substituted by one or more substituent(s) selected from a group consisting of deuterium, (C1-C60)alkyl with or without halogen substituent(s), (C1-C60)alkoxy, (C3-C60)cycloalkyl, halogen, cyano, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl and tri(C6-C60)arylsilyl;

G₁ and G₂ independently represent a chemical bond, or (C6-C60)arylene with or without one or more substituent(s) selected from (C1-C60)alkyl, (C1-C60)alkoxy, (C6-C60)aryl, (C4-

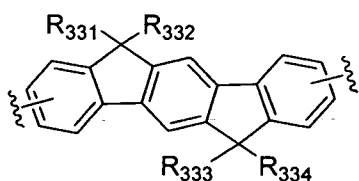
C60)heteroaryl and halogen;

Ar₄₁ and Ar₄₂ represent (C4-C60)heteroaryl or aryl selected from the following structures:



the aryl or heteroaryl of Ar₄₁ and Ar₄₂ may be substituted by one or more substituent(s) selected from deuterium, (C1-C60)alkyl, (C1-C60)alkoxy, (C6-C60)aryl and (C4-C60)heteroaryl;

L₃₁ represents (C6-C60)arylene, (C4-C60)heteroarylene or a compound represented by the following structural formula:



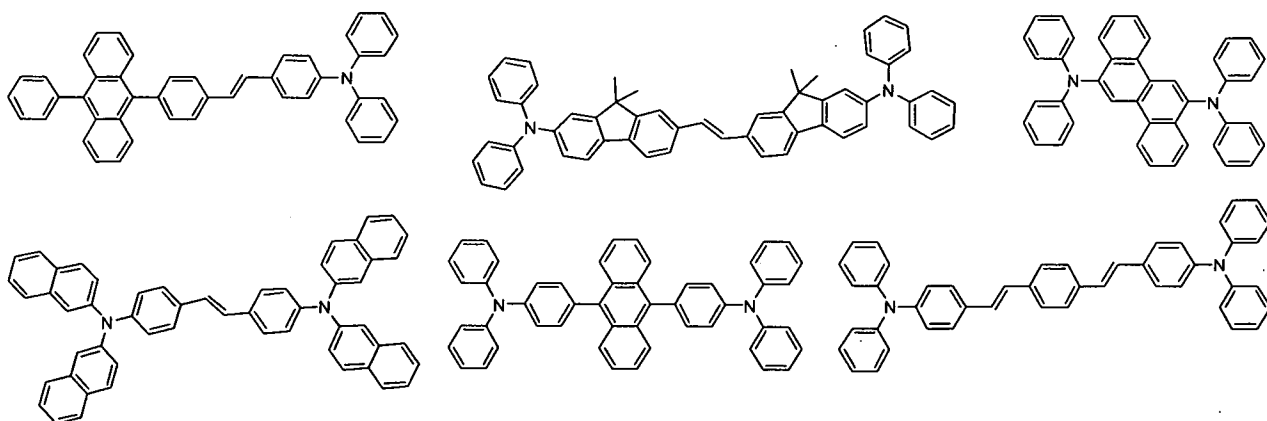
the arylenes or heteroarylenes of L₃₁ may be substituted by one or more substituent(s) selected from deuterium, (C1-C60)alkyl, (C1-C60)alkoxy, (C6-C60)aryl, (C4-C60)heteroaryl and halogen;

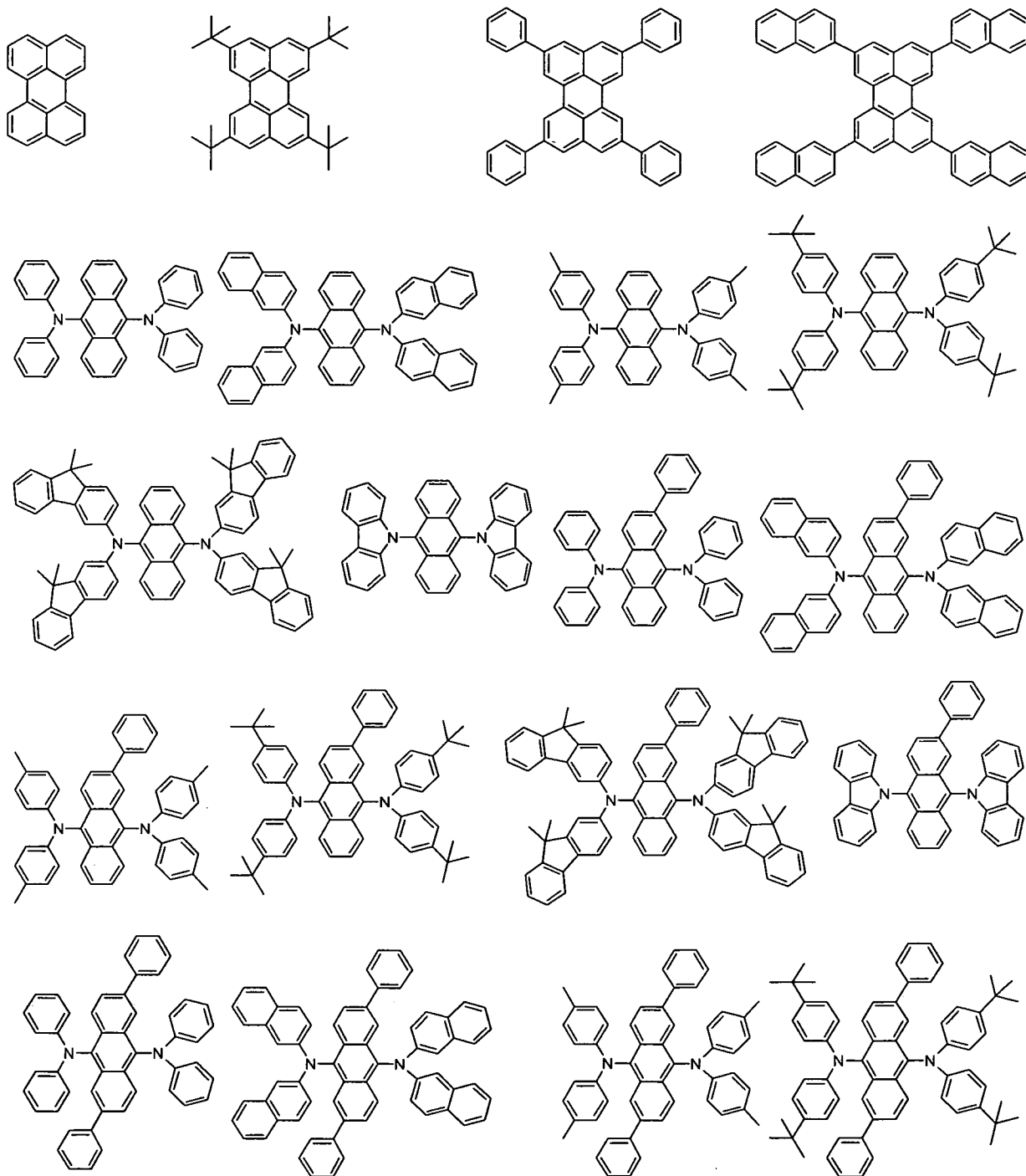
R₃₂₁ through R₃₂₄ independently represent hydrogen, deuterium,

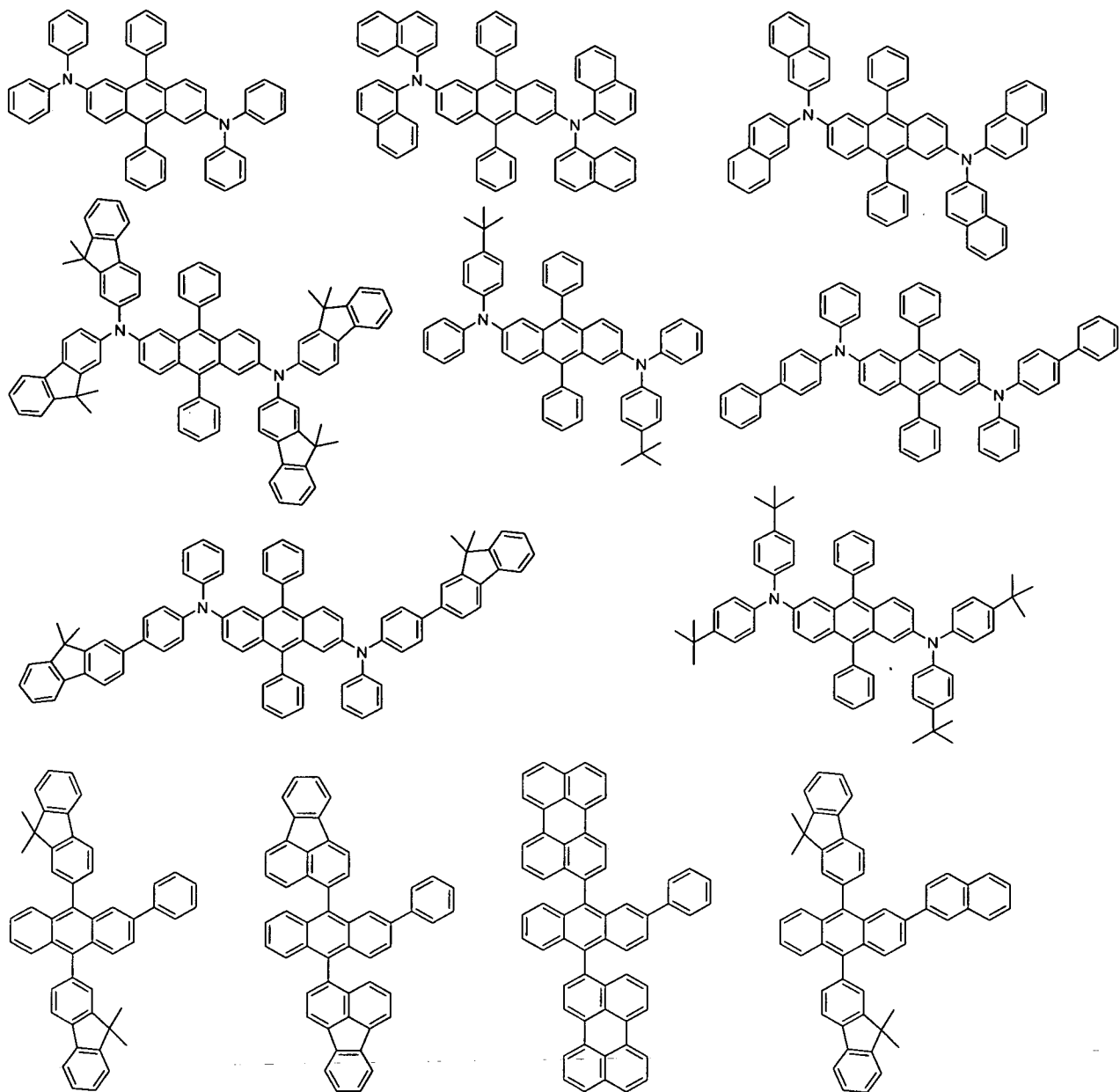
(C1-C60)alkyl or (C6-C60)aryl, or each of them may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

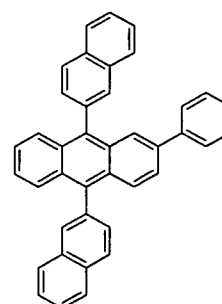
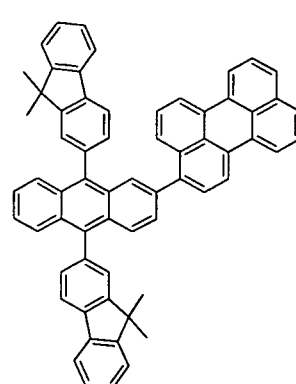
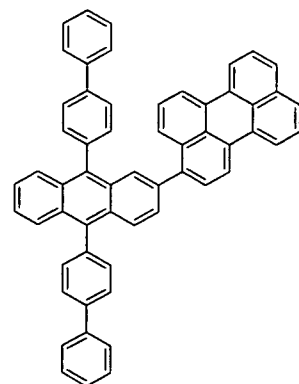
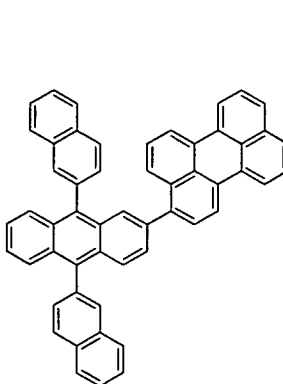
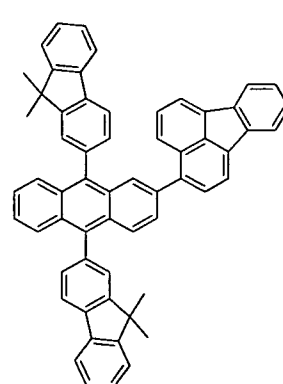
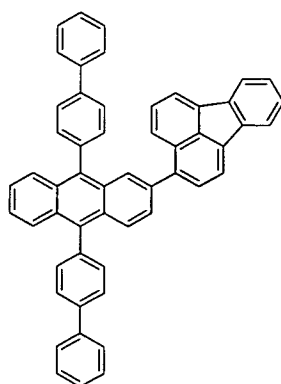
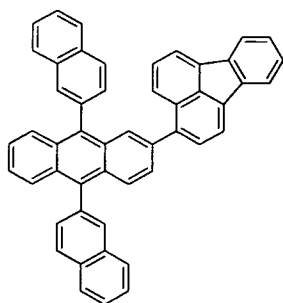
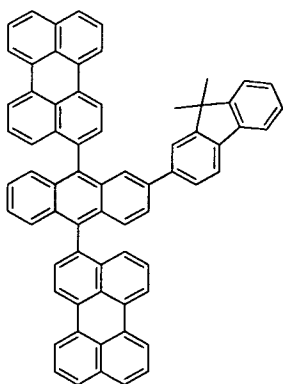
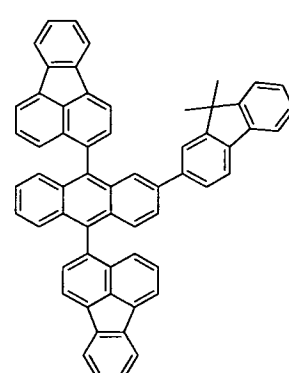
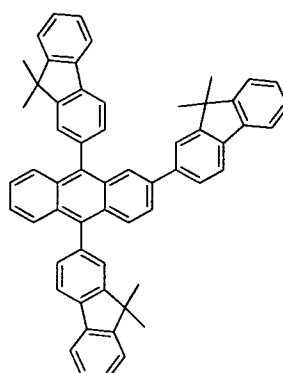
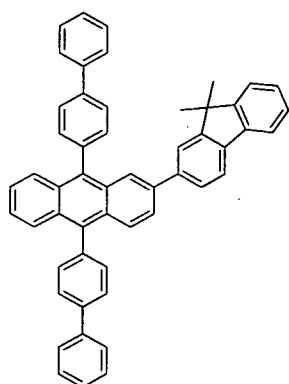
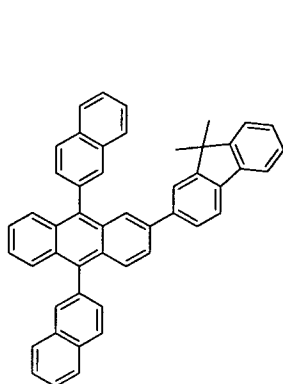
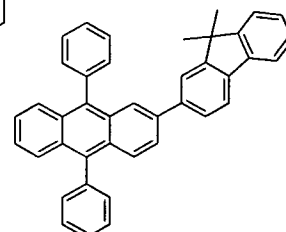
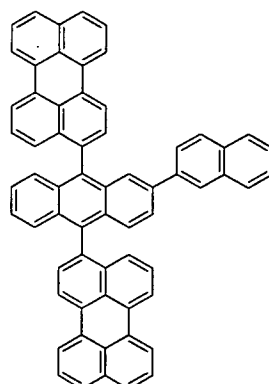
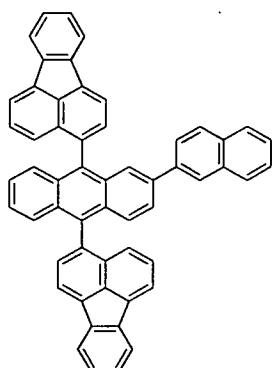
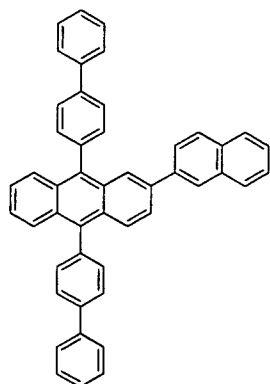
R₃₃₁ through R₃₃₄ independently represent hydrogen, deuterium, (C1-C60)alkyl, (C1-C60)alkoxy, (C6-C60)aryl, (C4-C60)heteroaryl or halogen, or each of them may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring.

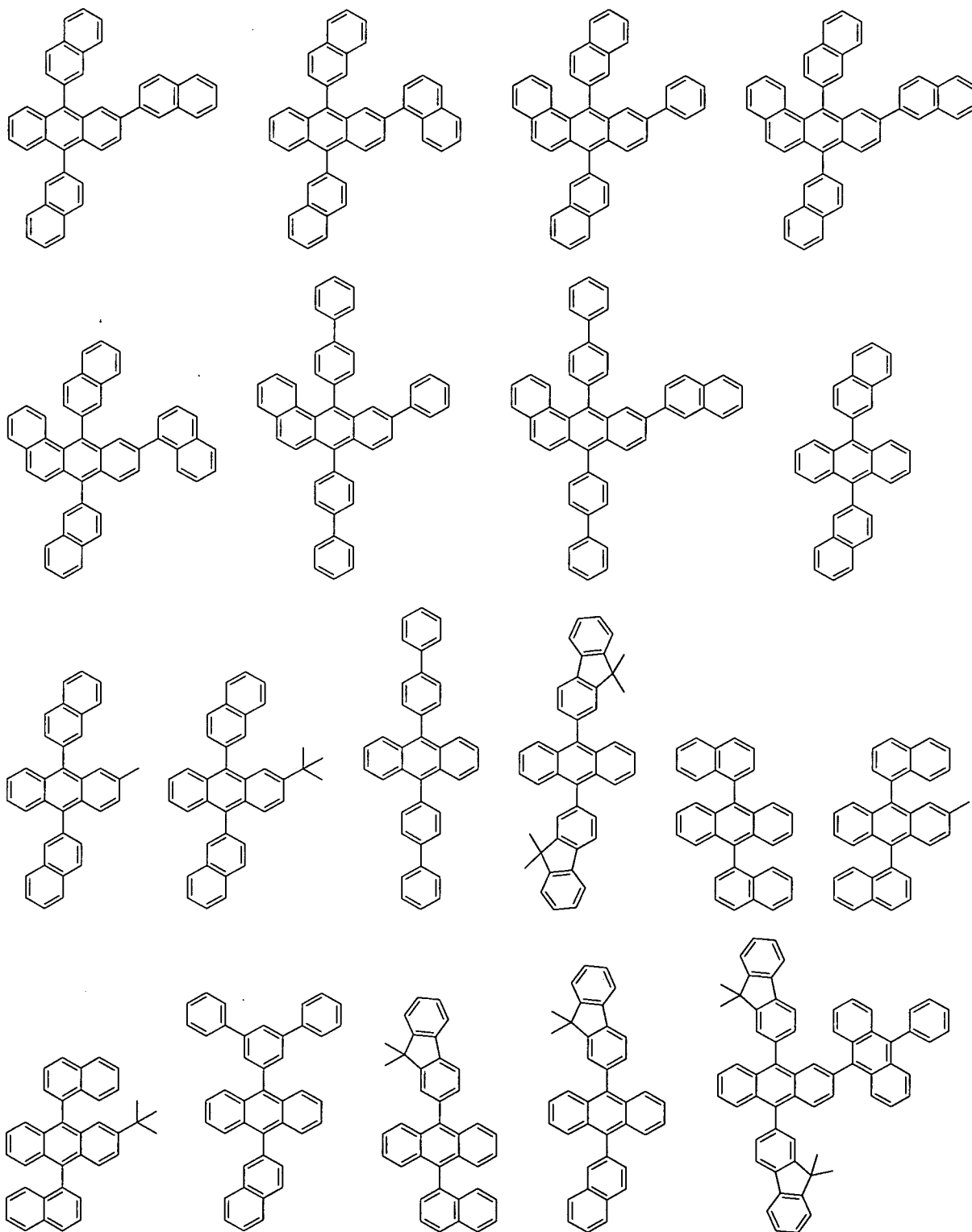
The organic compounds and organometallic compounds with green or blue electroluminescence can be more specifically exemplified by the following compounds, but they are not restricted thereto.

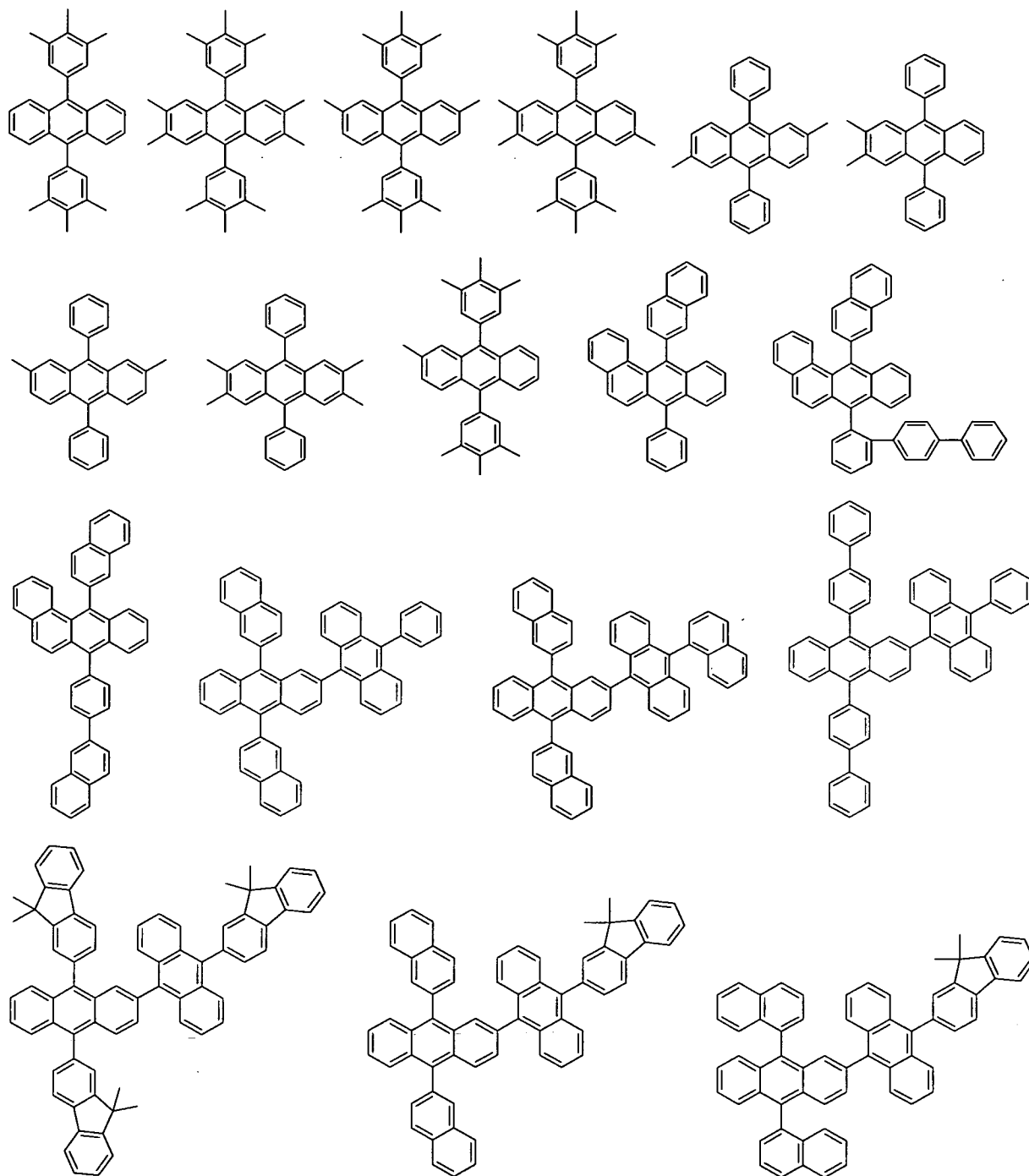


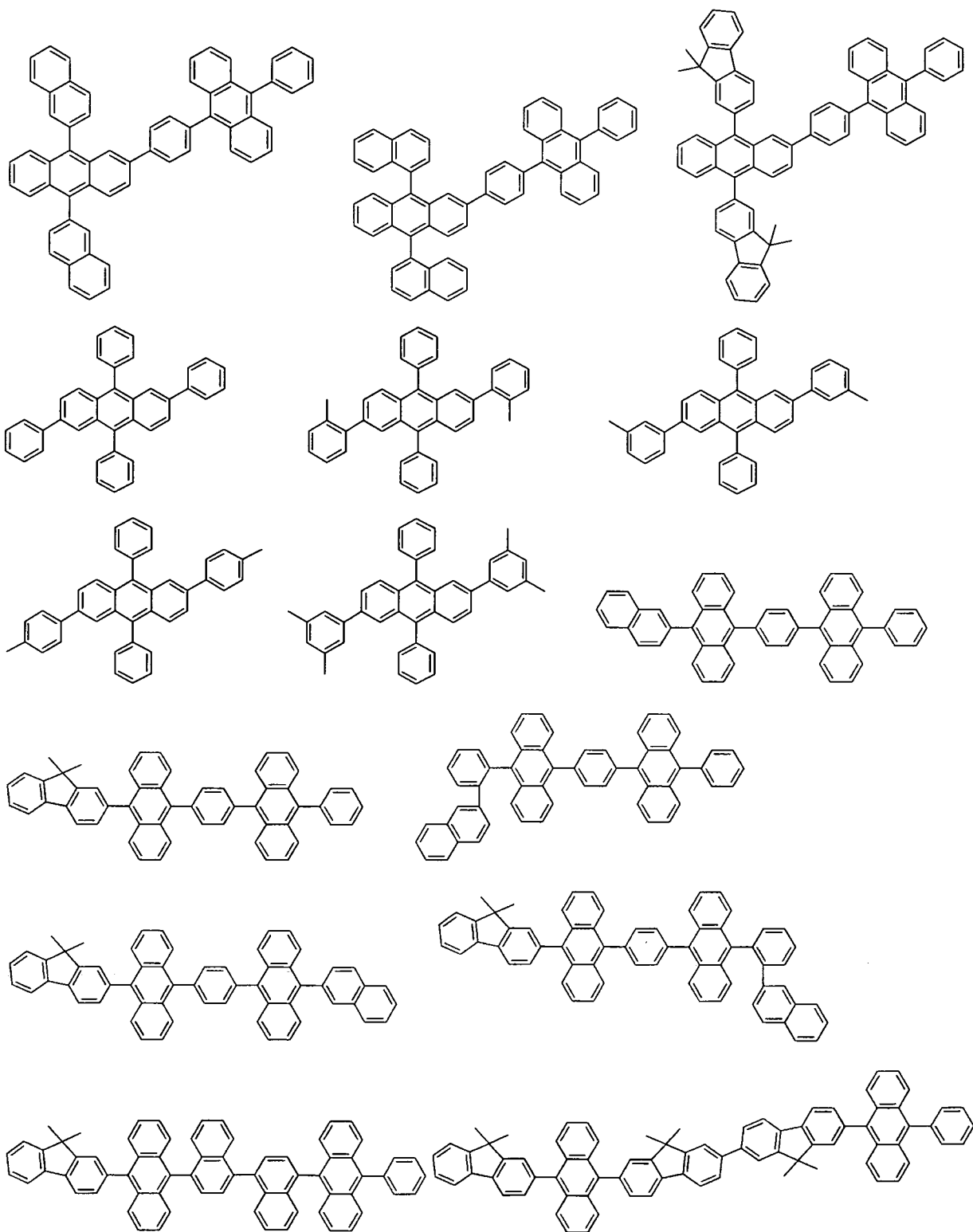


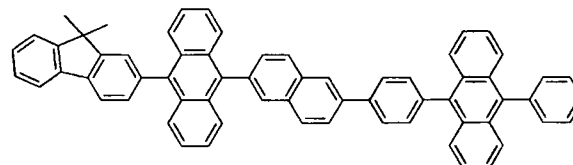
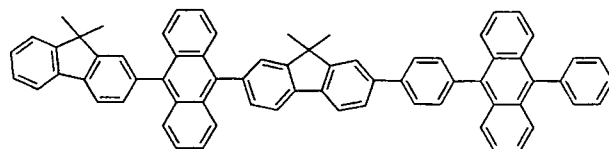
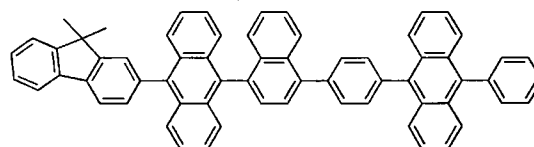
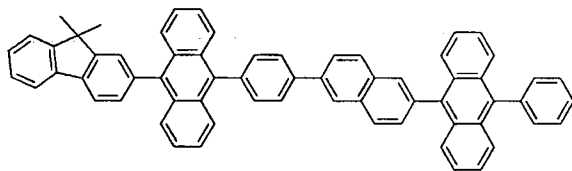
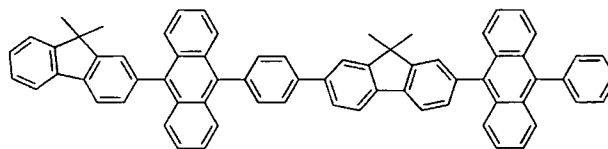
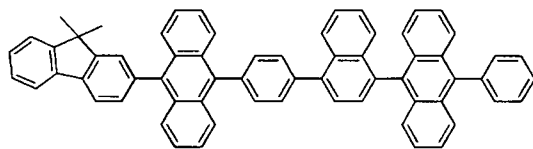
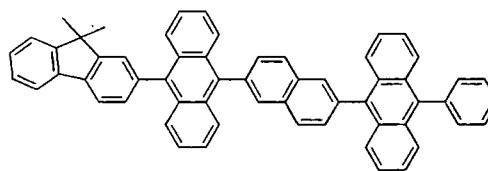
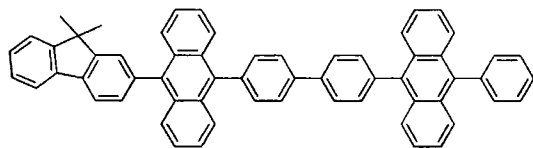
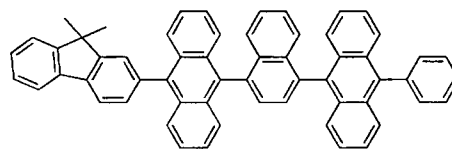
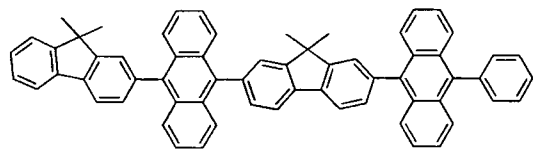
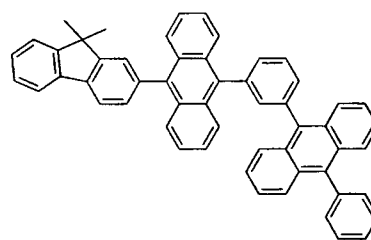
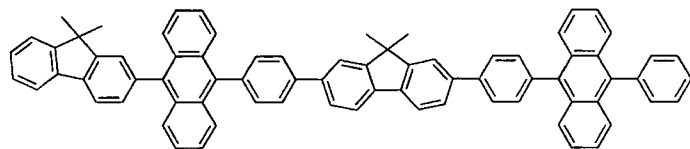
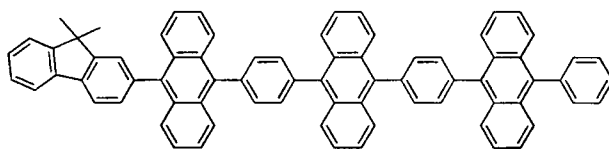
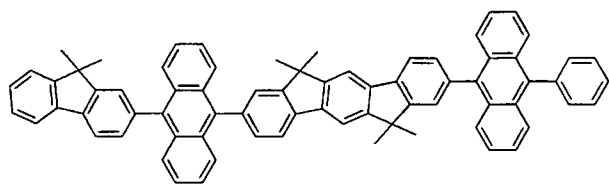


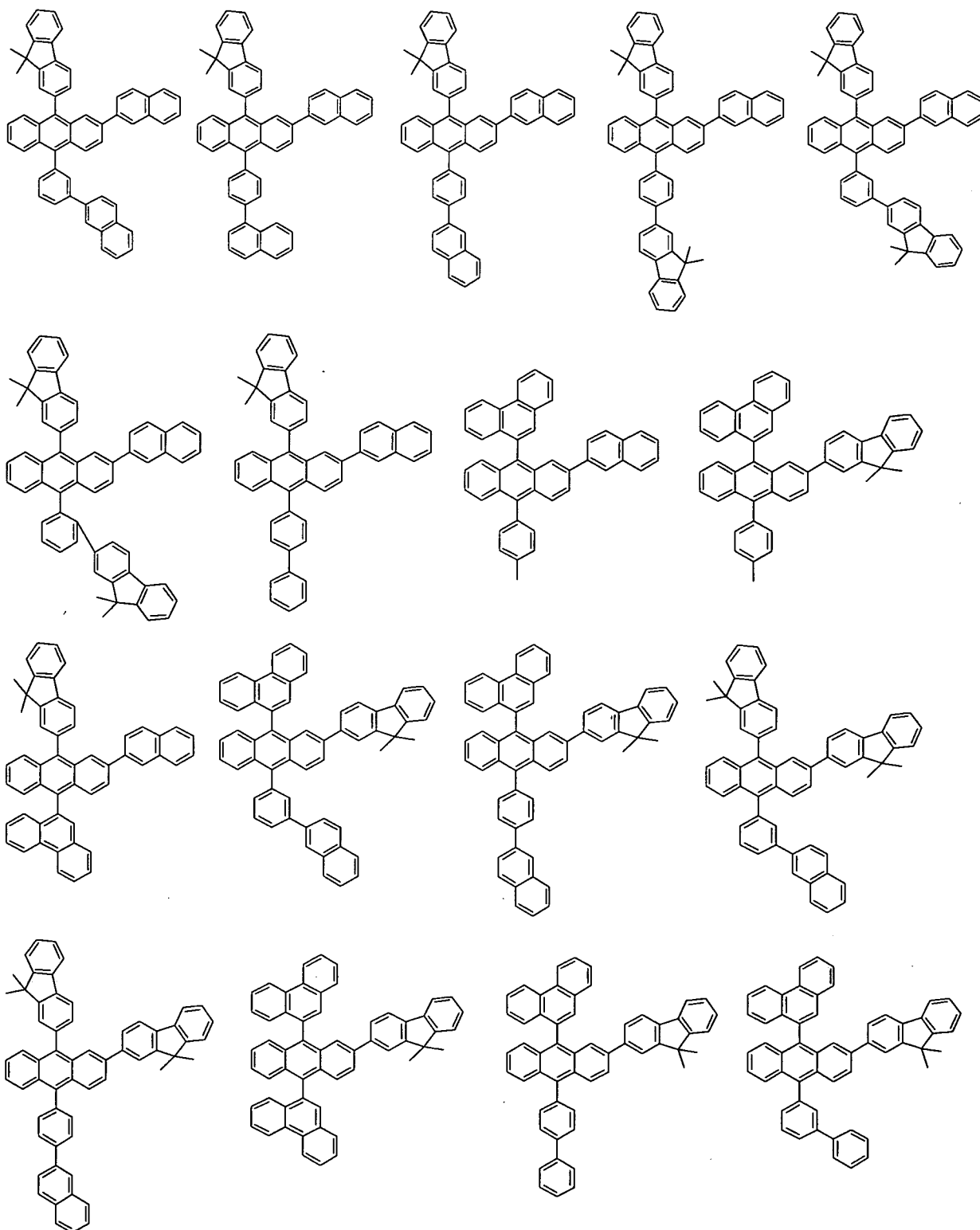




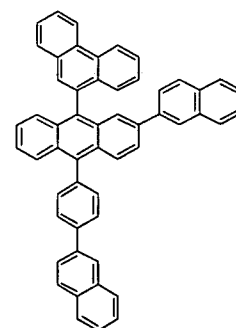
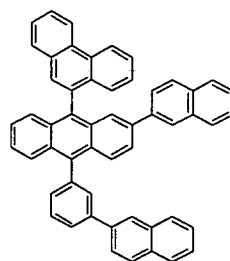
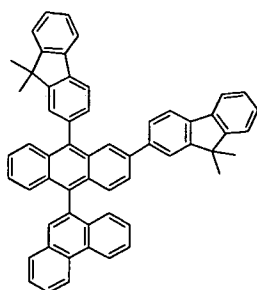
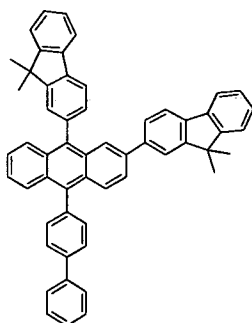
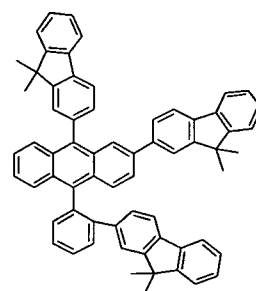
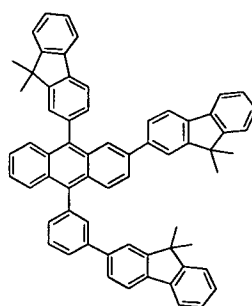
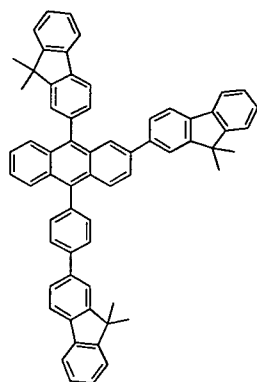
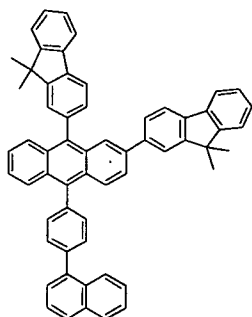
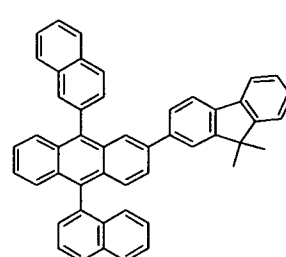
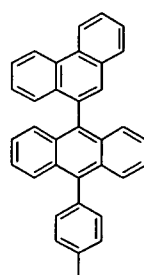
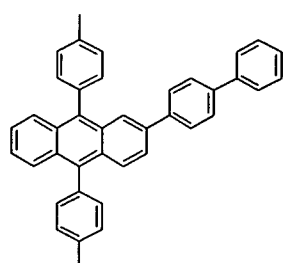
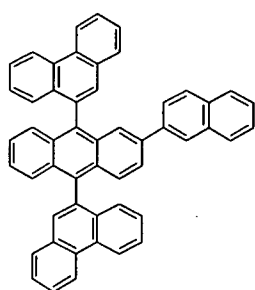
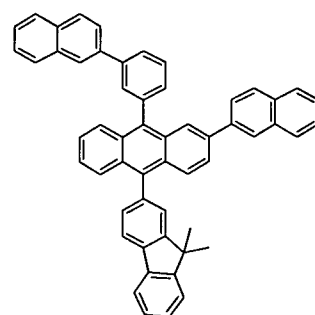
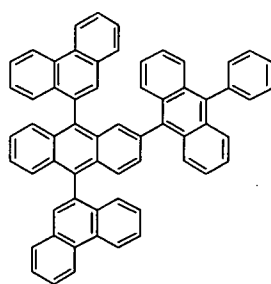
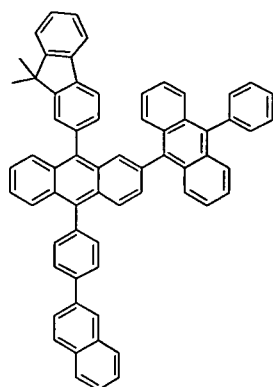
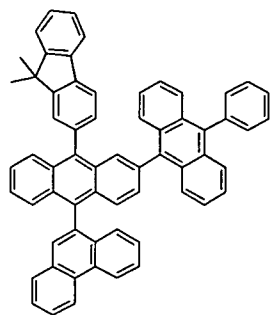


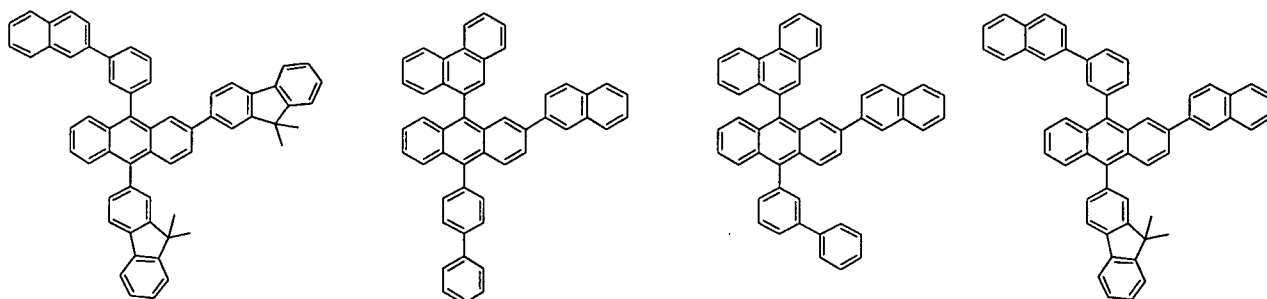






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In an organic electronic device according to the present invention, it is preferable to place one or more layer(s) (herein-below, referred to as the "surface layer") selected from chalcogenide layers, metal halide layers and metal oxide layers, on the inner surface of at least one side of the pair of electrodes. Specifically, it is preferable to arrange a chalcogenide layer of silicon and aluminum metal (including oxides) on the anode surface of the EL medium layer, and a metal halide layer or a metal oxide layer on the cathode surface of the EL medium layer. As the result, stability in operation can be obtained.

Examples of chalcogenides preferably include SiO_x ($1 \leq x \leq 2$), AlO_x ($1 \leq x \leq 1.5$), SiON , SiAlON , or the like. Examples of metal halides preferably include LiF , MgF_2 , CaF_2 , fluorides of rare earth metal, or the like. Examples of metal oxides preferably include Cs_2O , Li_2O , MgO , SrO , BaO , CaO , or the like.

In an organic electronic device according to the present

invention, it is also preferable to arrange, on at least one surface of the pair of electrodes thus manufactured, a mixed region of electron transport compound and a reductive dopant, or a mixed region of a hole transport compound with an oxidative dopant. Accordingly, the electron transport compound is reduced to an anion, so that injection and transportation of electrons from the mixed region to an EL medium are facilitated. In addition, since the hole transport compound is oxidized to form a cation, injection and transportation of holes from the mixed region to an EL medium are facilitated. Preferable oxidative dopants include various Lewis acids and acceptor compounds. Preferable reductive dopants include alkali metals, alkali metal compounds, alkaline earth metals, rare-earth metals, and mixtures thereof.

The compounds for electronic material according to the invention have the backbone to provide higher electroluminescent properties and better thermal stability with higher quantum efficiency and lowered operation voltage than those of conventional phosphorescent material. Thus, it is expected that applying the compounds for electronic material according to the invention to OLED panels would provide one step forward development of medium or large sized OLED's. Further, it is

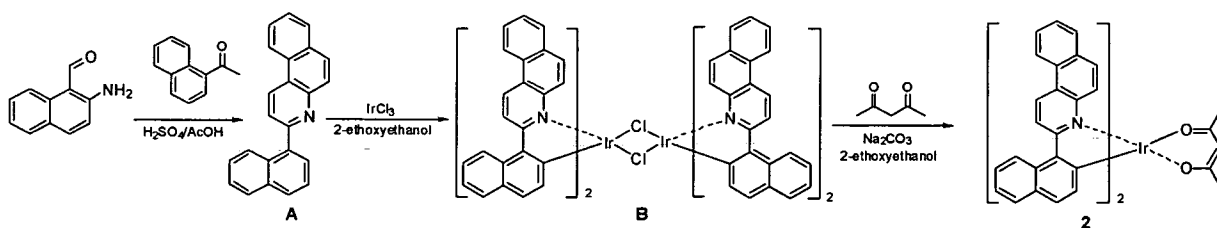
anticipated that organic solar cells employing those compounds as a material of high efficiency would exhibit far better properties as compared to those employing conventional materials.

Best Mode

The present invention is further described with respect to the representative compounds of the invention, by describing the organic compounds for electronic material, the processes for preparing the same, and luminescent properties of the device manufactured therefrom in the Examples below, which are provided for illustration of the embodiments only but are not intended to limit the scope of the invention by any means.

Preparation Examples

[Preparation Example 1] Preparation of Compound (2)



Preparation of Compound (A)

A reaction vessel was charged with 2-aminonaphthalen-1-aldehyde (5.0 g, 29.2 mmol), 1-acetonaphthalene (4.1 mL, 35.1 mmol), potassium hydroxide (3.3 g, 58.4 mmol) and ethanol (100

mL), and the mixture was stirred under reflux in the presence of argon atmosphere. When the reaction was completed, the reaction mixture was cooled to room temperature, and an excess amount of aqueous ammonium hydroxide solution was added thereto. The mixture was extracted with chloromethane, and the extract was filtered under reduced pressure. Purification via column chromatography gave Compound (A) (4.8 g, 64%).

Preparation of Compound (B)

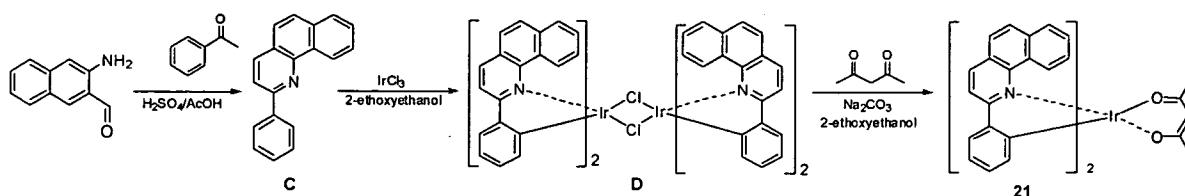
Compound (A) (4.0 g, 15.7 mmol) and iridium chloride (2.1 g, 7.1 mmol) were dissolved in 2-ethoxyethanol (38 mL) and distilled water (13 mL), and the solution was stirred under reflux in the presence of argon atmosphere for 24 hours. When the reaction was completed, the reaction mixture was cooled to room temperature. Solid precipitate thus produced was filtered and dried to obtain Compound (B) (8.9 g, 85%).

Preparation of Compound (2)

Compound (B) (8.0 g, 5.4 mmol), 2,4-pentanedione (1.7 mL, 16.3 mmol) and sodium carbonate (3.5 g, 32.6 mmol) were dissolved in 2-ethoxyethanol (100 mL), and the solution was heated for 4 hours. When the reaction was completed, the reaction mixture was

cooled to room temperature, and the solid precipitate thus produced was filtered. Purification via silica gel column chromatography and recrystallization gave Compound (2) (1.5 g, 35%) as red crystal.

[Preparation Example 2] Preparation of Compound (21)



Preparation of Compound (C)

A reaction vessel was charged with 2-aminonaphthalen-3-aldehyde (5.0 g, 29.2 mmol), acetophenone (4.1 mL, 35.1 mmol), potassium hydroxide (3.3 g, 58.4 mmol) and ethanol (100 mL), and the mixture was stirred under reflux in the presence of argon atmosphere. When the reaction was completed, the reaction mixture was cooled to room temperature, and an excess amount of aqueous ammonium hydroxide solution was added thereto. The mixture was extracted with chloromethane, and the extract was filtered under reduced pressure. Purification via column chromatography gave Compound (C) (4.8 g, 64%).

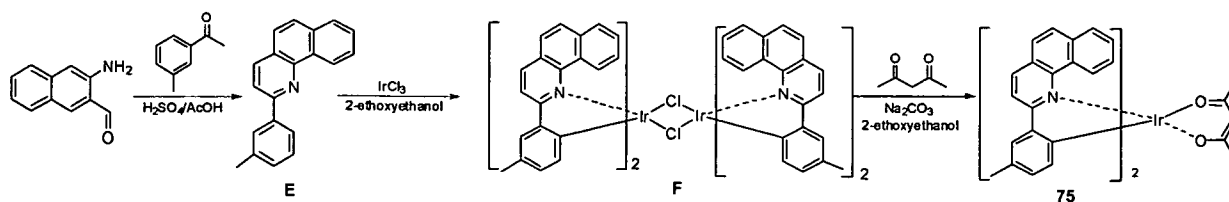
Preparation of Compound (D)

Compound (C) (4.0 g, 15.7 mmol) and iridium chloride (2.1 g, 7.1 mmol) were dissolved in 2-ethoxyethanol (38 mL) and distilled water (13 mL), and the solution was stirred under reflux in the presence of argon atmosphere for 24 hours. When the reaction was completed, the reaction mixture was cooled to room temperature. Solid precipitate thus produced was filtered and dried to obtain Compound (D) (8.9 g, 85%).

Preparation of Compound (21)

Compound (D) (8.0 g, 5.4 mmol), 2,4-pentanedione (1.7 mL, 16.3 mmol) and sodium carbonate (3.5 g, 32.6 mmol) were dissolved in 2-ethoxyethanol (100 mL), and the solution was heated for 4 hours. When the reaction was completed, the reaction mixture was cooled to room temperature, and the solid precipitate thus produced was filtered. Purification via silica gel column chromatography and recrystallization gave Compound (21) (1.5 g, 35%) as red crystal.

[Preparation Example 3] Preparation of Compound (75)



Preparation of Compound (E)

A reaction vessel was charged with 2-aminonaphthalen-3-aldehyde (5.0 g, 29.2 mmol), 3-methylacetophenone (4.1 mL, 35.1 mmol), potassium hydroxide (3.3 g, 58.4 mmol) and ethanol (100 mL), and the mixture was stirred under reflux in the presence of argon atmosphere. When the reaction was completed, the reaction mixture was cooled to room temperature, and an excess amount of aqueous ammonium hydroxide solution was added thereto. The mixture was extracted with chloromethane, and the extract was filtered under reduced pressure. Purification via column chromatography gave Compound (E) (4.8 g, 64%).

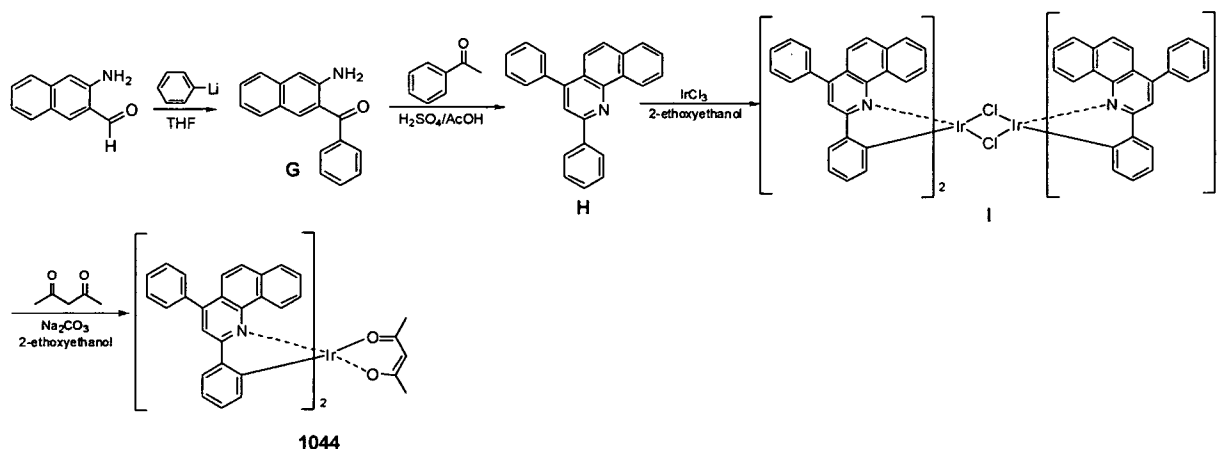
Preparation of Compound (F)

Compound (E) (4.0 g, 15.7 mmol) and iridium chloride (2.1 g, 7.1 mmol) were dissolved in 2-ethoxyethanol (38 mL) and distilled water (13 mL), and the solution was stirred under reflux in the presence of argon atmosphere for 24 hours. When the reaction was completed, the reaction mixture was cooled to room temperature. Solid precipitate thus produced was filtered and dried to obtain Compound (F) (8.9 g, 85%).

Preparation of Compound (75)

Compound (F) (8.0 g, 5.4 mmol), 2,4-pentanedione (1.7 mL, 16.3 mmol) and sodium carbonate (3.5 g, 32.6 mmol) were dissolved in 2-ethoxyethanol (100 mL), and the solution was heated for 4 hours. When the reaction was completed, the reaction mixture was cooled to room temperature, and the solid precipitate thus produced was filtered. Purification via silica gel column chromatography and recrystallization gave Compound (75) (1.5 g, 35%) as red crystal.

[Preparation Example 4] Preparation of Compound (1044)



Preparation of Compound (G)

In THF (50 mL), dissolved was 2-aminonaphthalene-3-carbaldehyde (1.0 g, 5.4 mmol), and the solution was chilled to 0°C. After slowly adding phenyl lithium (11.9 mL, 21.4 mmol) thereto, the mixture was stirred for 2 hours. The reaction was quenched by adding aqueous ammonium chloride solution. The

mixture was then extracted with diethyl ether, and the extract was filtered under reduced pressure. Purification via column chromatography gave Compound (G) (0.79 g, 60%).

Preparation of Compound (H)

A reaction vessel was charged with Compound (G) (1.29 g, 5.24 mmol), 1-methylacetophenone (0.55 mL, 4.76 mmol), glacial acetic acid (7.13 mL) and sulfuric acid (0.04 mL), and the mixture was stirred under reflux in the presence of argon atmosphere. When the reaction was completed, the reaction mixture was cooled to room temperature, and an excess amount of aqueous ammonium hydroxide solution was added thereto. Solid thus produced was filtered, washed with distilled water. Purification via column chromatography gave Compound (H) (1.27 g, 80%).

Preparation of Compound (I)

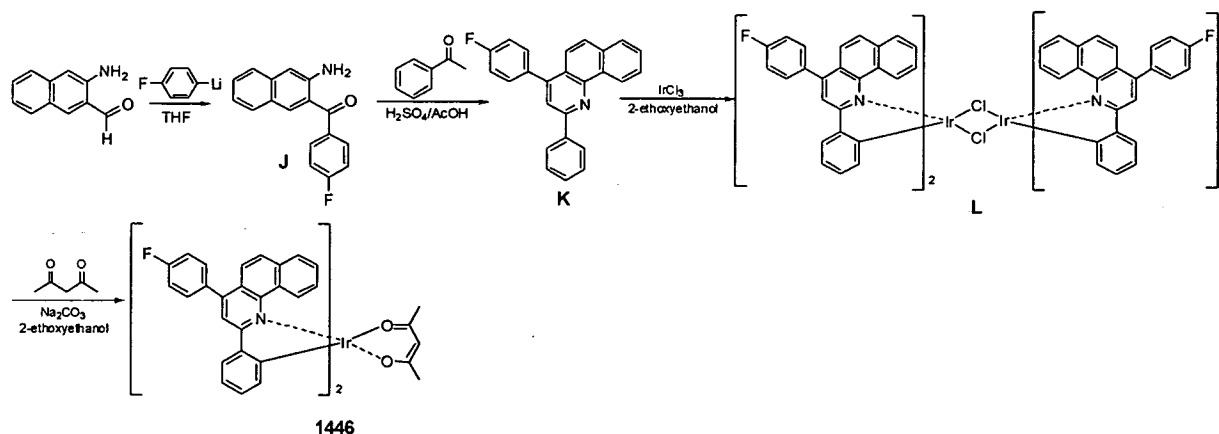
Compound (H) (0.6 g, 1.81 mmol) and iridium chloride (0.25 g, 0.82 mmol) were dissolved in 2-ethoxyethanol (9 mL) and distilled water (3 mL), and the solution was stirred under reflux in the presence of argon atmosphere for 24 hours. When the reaction was completed, the reaction mixture was cooled to room

temperature. Solid precipitate thus produced was filtered and dried to obtain Compound (I) (0.37 g, 11%).

Preparation of Compound (1044)

Compound (I) (0.37 g, 0.21 mmol), 2,4-pentanedione (0.06 mL, 0.62 mmol) and sodium carbonate (0.13 g, 1.25 mmol) were dissolved in 2-ethoxyethanol (10 mL), and the solution was heated for 4 hours. When the reaction was completed, the reaction mixture was cooled to room temperature, and the solid precipitate thus produced was filtered. Purification via column chromatography and recrystallization gave Compound (1044) (0.14 g, 37%) as red crystal.

[Preparation Example 5] Preparation of Compound (1446)



Preparation of Compound (J)

In THF (50 mL), dissolved was 2-aminonaphthalene-3-carbaldehyde (1.0 g, 5.4 mmol), and the solution was chilled to 0°C. After slowly adding 4-fluorophenyllithium (11.9 mL, 21.4 mmol) thereto, the mixture was stirred for 2 hours. The reaction was quenched by adding aqueous ammonium chloride solution. The mixture was then extracted with diethyl ether, and the extract was filtered under reduced pressure. Purification via column chromatography gave Compound (J) (0.79 g, 60%).

Preparation of Compound (K)

A reaction vessel was charged with Compound (J) (1.29 g, 5.24 mmol), 1-methylacetophenone (0.55 mL, 4.76 mmol), acetic acid (7.13 mL) and sulfuric acid (0.04 mL), and the mixture was stirred under reflux in the presence of argon atmosphere. When the reaction was completed, the reaction mixture was cooled to room temperature, and an excess amount of aqueous ammonium hydroxide solution was added thereto. Solid thus produced was filtered, washed with distilled water. Purification via column chromatography gave Compound (K) (1.27 g, 80%).

Preparation of Compound (L)

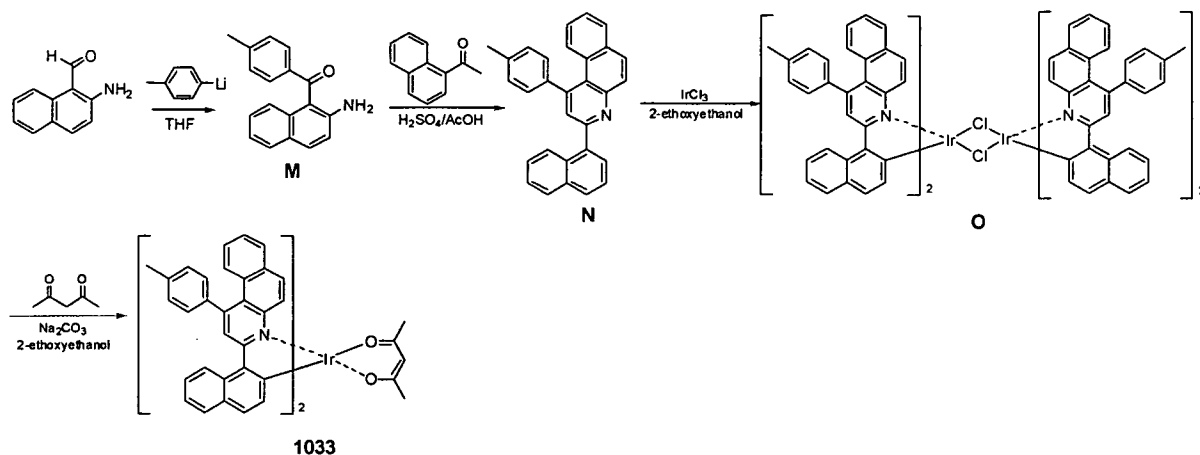
Compound (K) (0.6 g, 1.81 mmol) and iridium chloride (0.25 g, 0.82 mmol) were dissolved in 2-ethoxyethanol (9 mL) and distilled water (3 mL), and the solution was stirred under reflux in the presence of argon atmosphere for 24 hours. When the reaction was completed, the reaction mixture was cooled to room temperature. Solid precipitate thus produced was filtered and dried to obtain Compound (L) (0.37 g, 11%).

Preparation of Compound (1446)

Compound (L) (0.37 g, 0.21 mmol), 2,4-pentanedione (0.06 mL, 0.62 mmol) and sodium carbonate (0.13 g, 1.25 mmol) were dissolved in 2-ethoxyethanol (10 mL), and the solution was heated for 4 hours. When the reaction was completed, the reaction mixture was cooled to room temperature, and the solid precipitate thus produced was filtered. Purification via silica gel column chromatography and recrystallization gave Compound (1446) (0.14 g, 37%) as red crystal.

[Preparation Example 6] Preparation of Compound (1033)

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Preparation of Compound (M)

In THF (50 mL), dissolved was 2-aminonaphthalene-1-carbaldehyde (1.0 g, 5.4 mmol), and the solution was chilled to 0°C. After slowly adding 4-methylphenyllithium (11.9 mL, 21.4 mmol) thereto, the mixture was stirred for 2 hours. The reaction was quenched by adding aqueous ammonium chloride solution. The mixture was then extracted with diethyl ether, and the extract was filtered under reduced pressure. Purification via column chromatography gave Compound (M) (0.79 g, 60%).

Preparation of Compound (N)

A reaction vessel was charged with Compound (M) (1.29 g, 5.24 mmol), 1-methylacetophenone (0.55 mL, 4.76 mmol), glacial acetic acid (7.13 mL) and sulfuric acid (0.04 mL), and the mixture was stirred under reflux in the presence of argon

atmosphere. When the reaction was completed, the reaction mixture was cooled to room temperature, and an excess amount of aqueous ammonium hydroxide solution was added thereto. Solid thus produced was filtered, washed with distilled water. Purification via column chromatography gave Compound (N) (1.27 g, 80%).

Preparation of Compound (O)

Compound (N) (0.6 g, 1.81 mmol) and iridium chloride (0.25 g, 0.82 mmol) were dissolved in 2-ethoxyethanol (9 mL) and distilled water (3 mL), and the solution was stirred under reflux in the presence of argon atmosphere for 24 hours. When the reaction was completed, the reaction mixture was cooled to room temperature. Solid precipitate thus produced was filtered and dried to obtain Compound (O) (0.37 g, 11%).

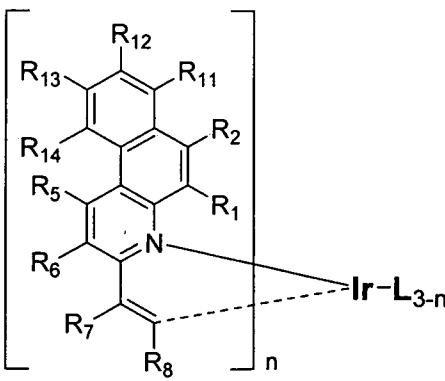
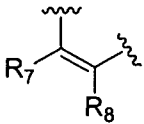
Preparation of Compound (1033)

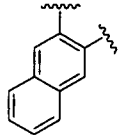
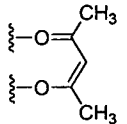
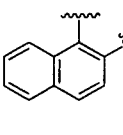
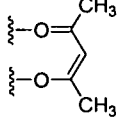
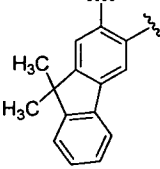
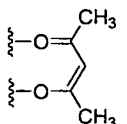
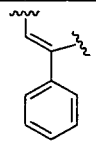
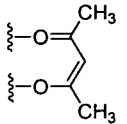
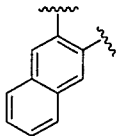
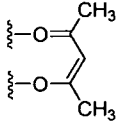
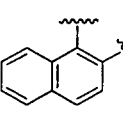
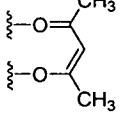
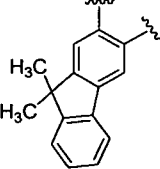
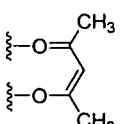
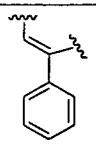
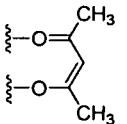
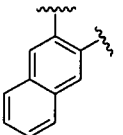
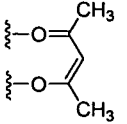
Compound (O) (0.37 g, 0.21 mmol), 2,4-pentanedione (0.06 mL, 0.62 mmol) and sodium carbonate (0.13 g, 1.25 mmol) were dissolved in 2-ethoxyethanol (10 mL), and the solution was heated for 4 hours. When the reaction was completed, the reaction mixture was cooled to room temperature, and the solid precipitate

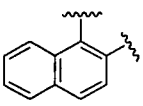
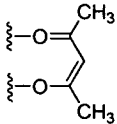
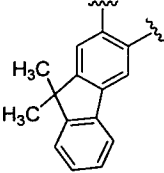
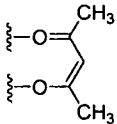
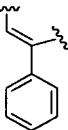
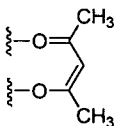
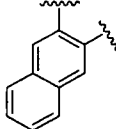
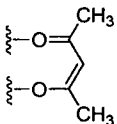
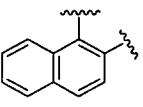
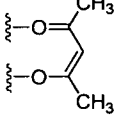
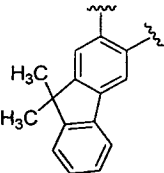
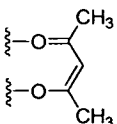
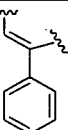
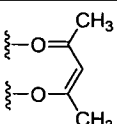
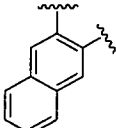
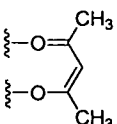
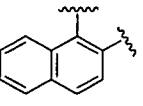
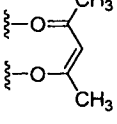
thus produced was filtered. Purification via silica gel column chromatography and recrystallization gave Compound (1033) (0.14 g, 37%) as red crystal.

Organic compounds for electronic material (Compounds 1 to 20) shown in Table 1 were prepared according to the same procedure as described in Preparation Example 1; those shown in Table 2 (Compounds 21 to 1028) according to the procedure of Preparation Example 2 or 3; those shown in Table 3 (Compounds 1029 to 1043) according to the procedure of Preparation Example 6; and those shown in Table 4 (Compounds 1044 to 2060) according to the procedure of Preparation Example 4 or 5; the ^1H NMR and MS/FAB data of those compounds are shown in Table 5.

Table 1

											
Compound No.	R ₁	R ₂	R ₁₁	R ₁₂	R ₁₃	R ₁₄	R ₅	R ₆		L	n

1	H	H	H	H	H	H	H	H			2
2	H	H	H	H	H	H	H	H			2
3	H	H	H	H	H	H	H	H			2
4	H	H	H	H	H	H	H	H			2
5	H	H	H	H	H	H	-CH ₃	H			2
6	H	H	H	H	H	H	-CH ₃	H			2
7	H	H	H	H	H	H	-CH ₃	H			2
8	H	H	H	H	H	H	-CH ₃	H			2
9	H	H	H	H	H	H	F	H			2

10	H	H	H	H	H	H	F	H			2
11	H	H	H	H	H	H	F	H			2
12	H	H	H	H	H	H	F	H			2
13	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
14	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
15	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
16	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
17	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
18	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

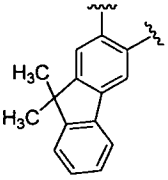
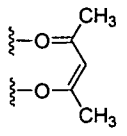
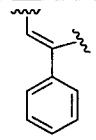
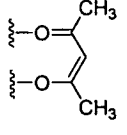
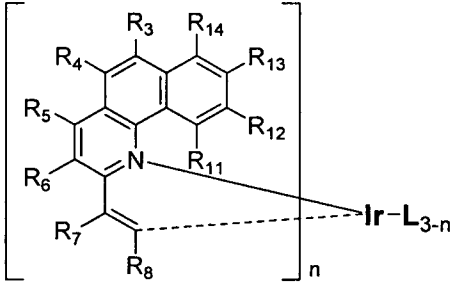
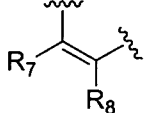
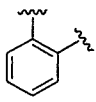
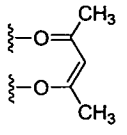
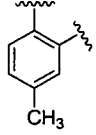
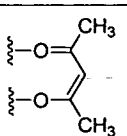
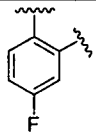
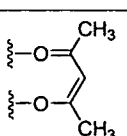
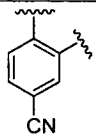
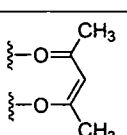
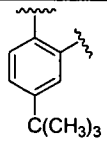
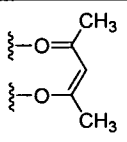
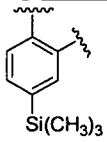
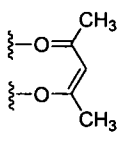
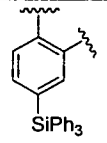
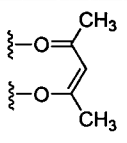
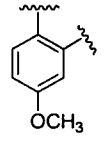
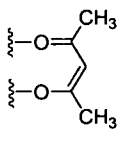
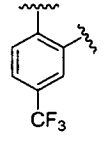
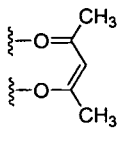
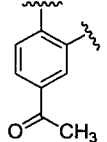
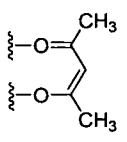
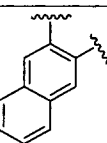
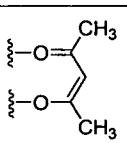
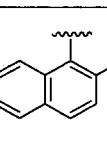
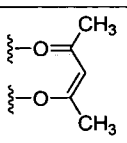
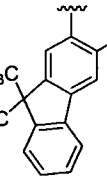
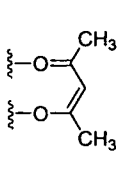
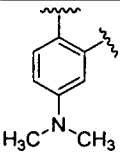
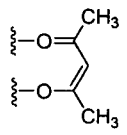
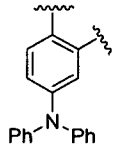
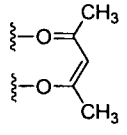
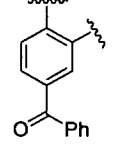
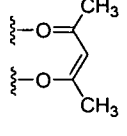
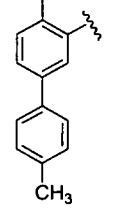
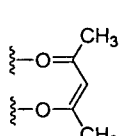
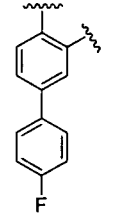
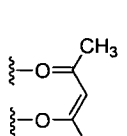
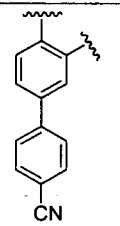
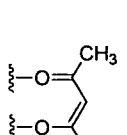
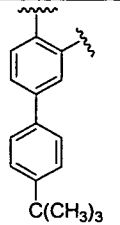
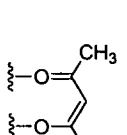
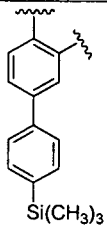
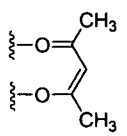
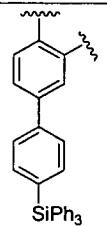
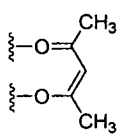
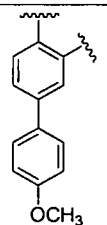
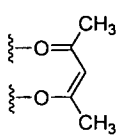
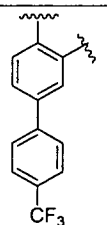
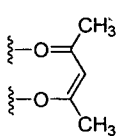
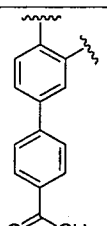
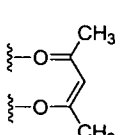
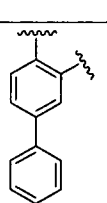
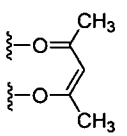
19	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
20	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

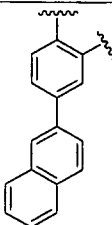
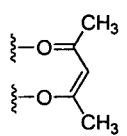
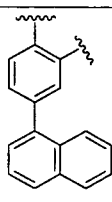
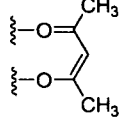
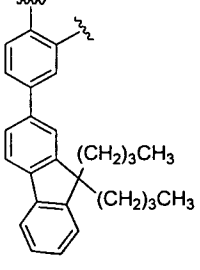
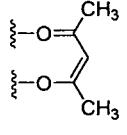
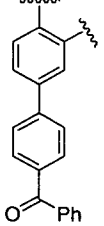
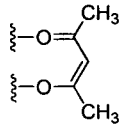
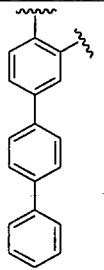
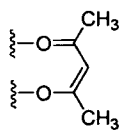
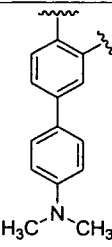
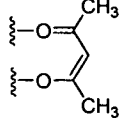
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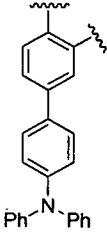
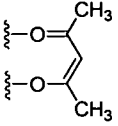
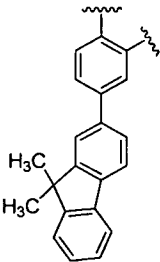
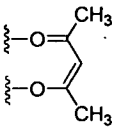
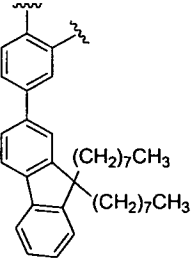
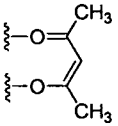
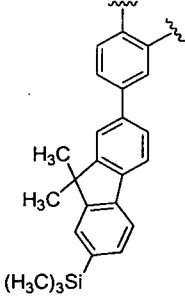
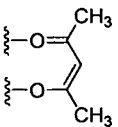
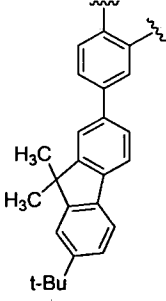
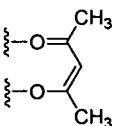
											
Compound No.	R ₁₁	R ₁₂	R ₁₃	R ₁₄	R ₃	R ₄	R ₅	R ₆		L	n
21	H	H	H	H	H	H	H	H			2
22	H	H	H	H	H	H	H	H			2
23	H	H	H	H	H	H	H	H			2
24	H	H	H	H	H	H	H	H			2

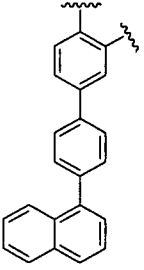
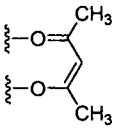
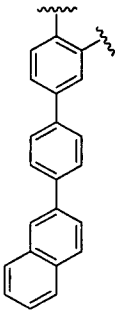
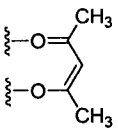
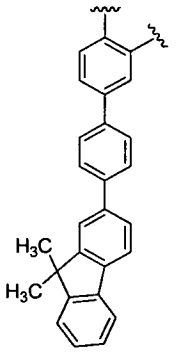
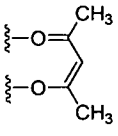
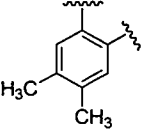
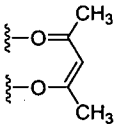
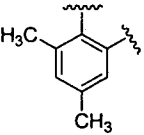
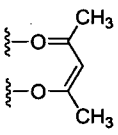
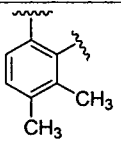
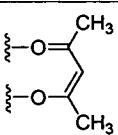
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28	H	H	H	H	H	H	H	H			2
29	H	H	H	H	H	H	H	H			2
30	H	H	H	H	H	H	H	H			2
31	H	H	H	H	H	H	H	H			2
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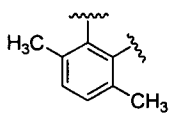
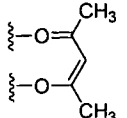
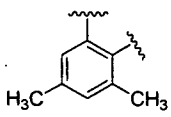
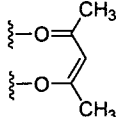
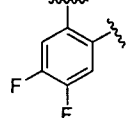
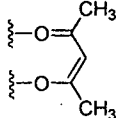
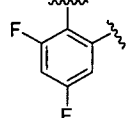
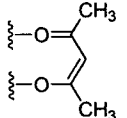
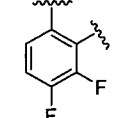
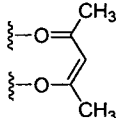
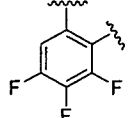
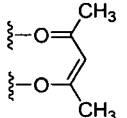
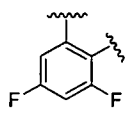
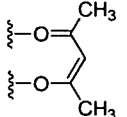
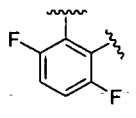
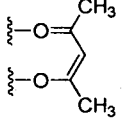
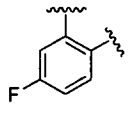
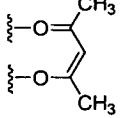
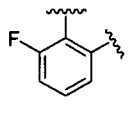
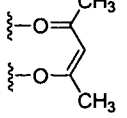
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37	H	H	H	H	H	H	H	H			2
38	H	H	H	H	H	H	H	H			2
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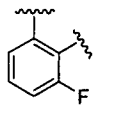
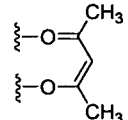
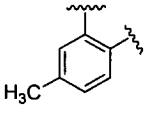
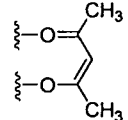
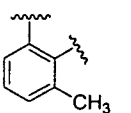
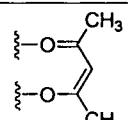
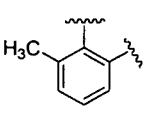
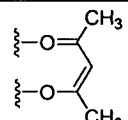
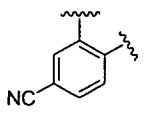
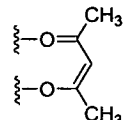
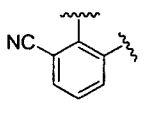
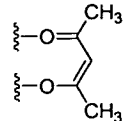
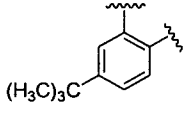
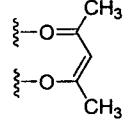
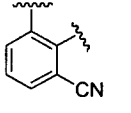
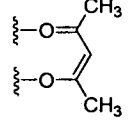
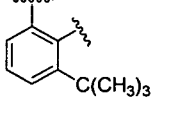
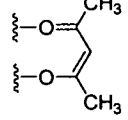
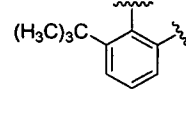
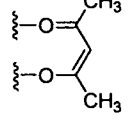
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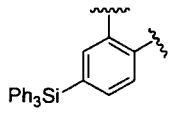
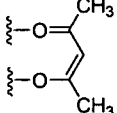
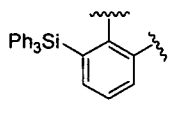
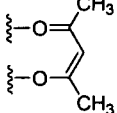
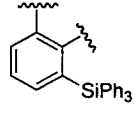
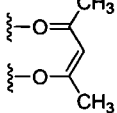
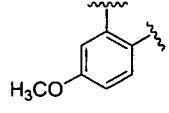
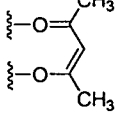
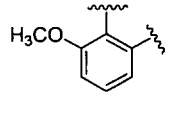
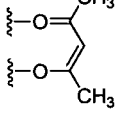
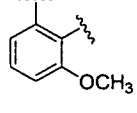
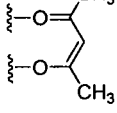
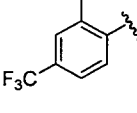
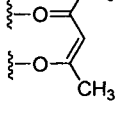
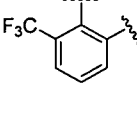
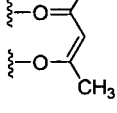
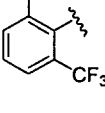
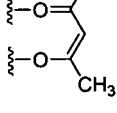
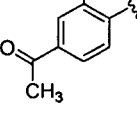
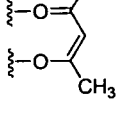
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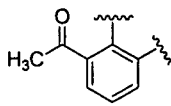
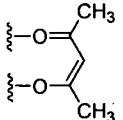
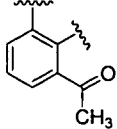
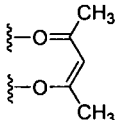
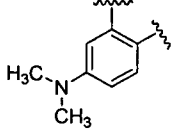
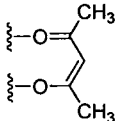
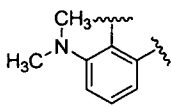
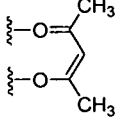
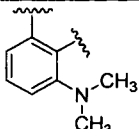
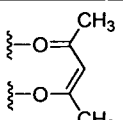
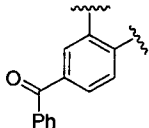
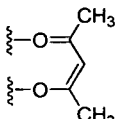
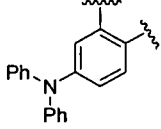
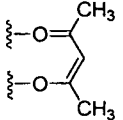
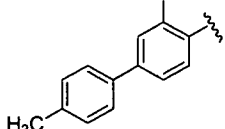
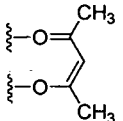
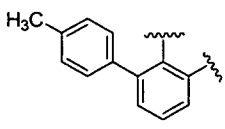
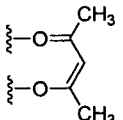
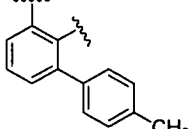
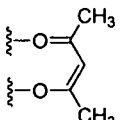
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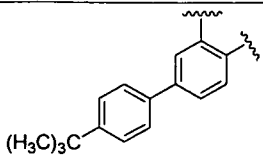
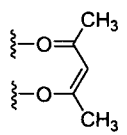
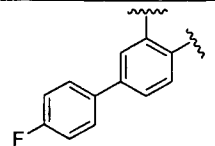
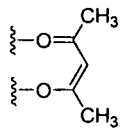
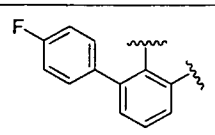
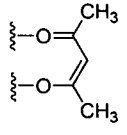
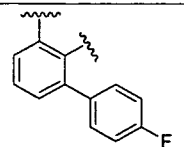
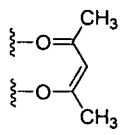
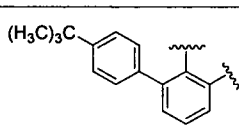
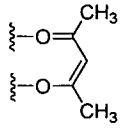
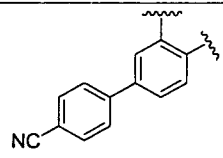
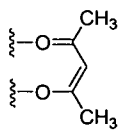
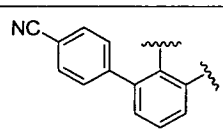
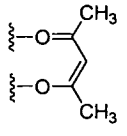
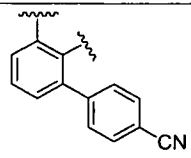
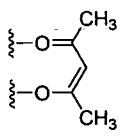
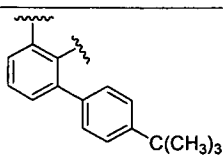
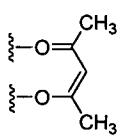
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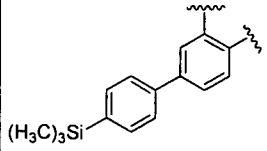
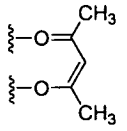
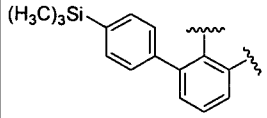
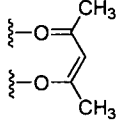
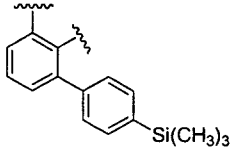
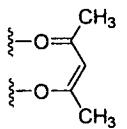
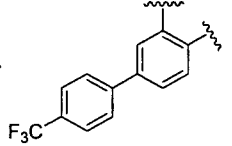
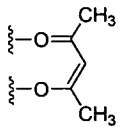
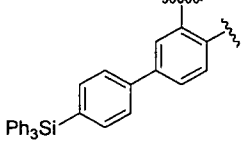
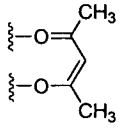
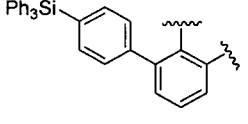
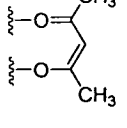
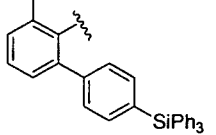
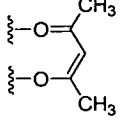
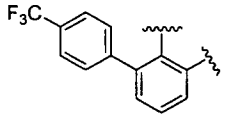
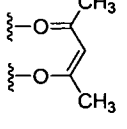
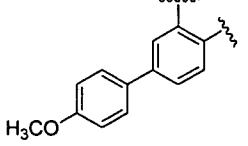
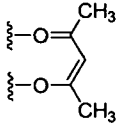
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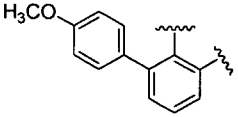
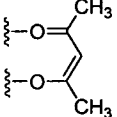
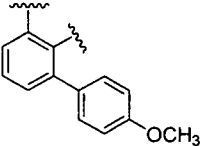
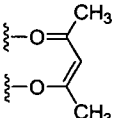
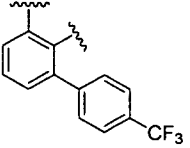
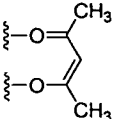
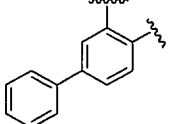
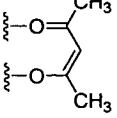
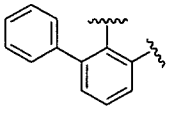
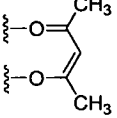
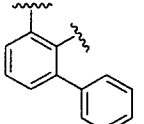
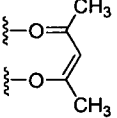
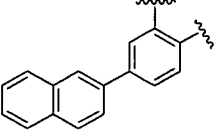
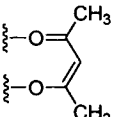
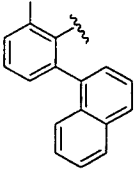
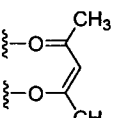
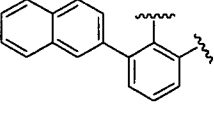
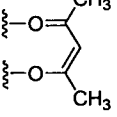
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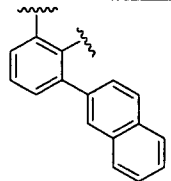
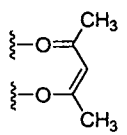
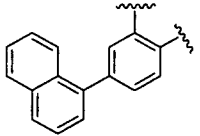
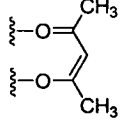
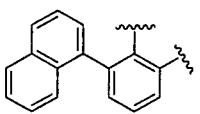
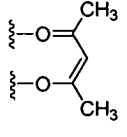
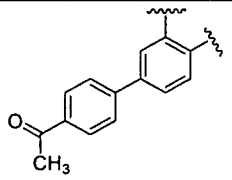
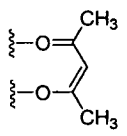
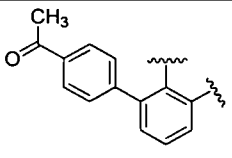
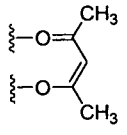
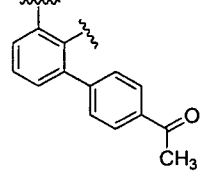
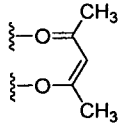
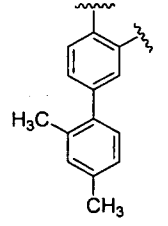
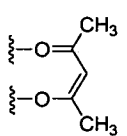
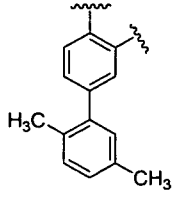
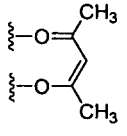
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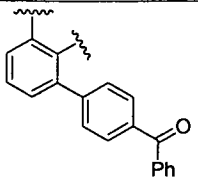
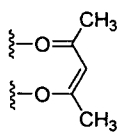
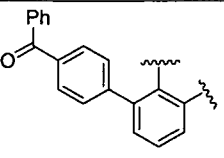
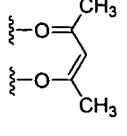
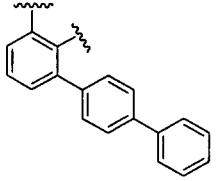
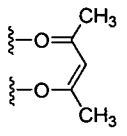
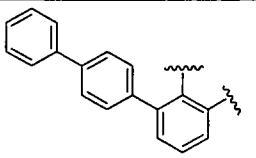
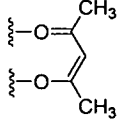
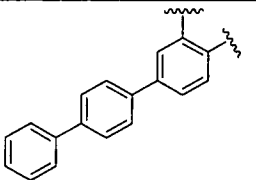
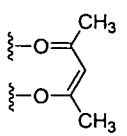
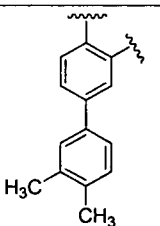
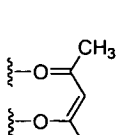
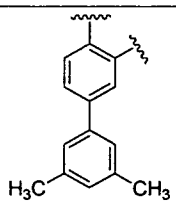
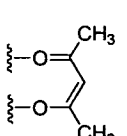
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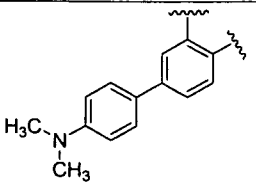
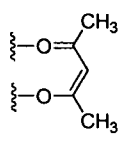
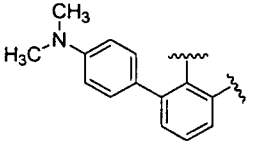
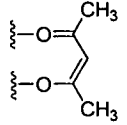
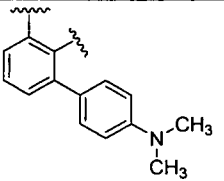
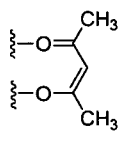
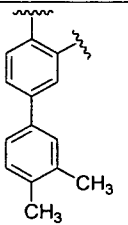
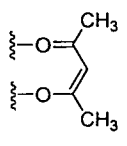
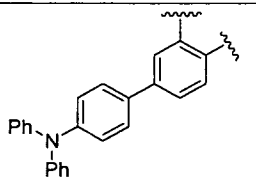
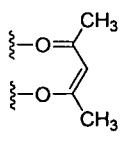
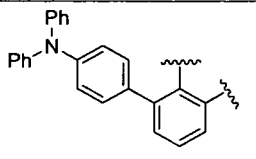
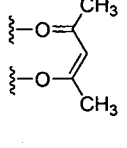
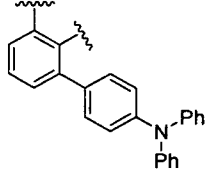
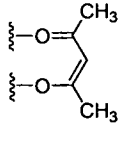
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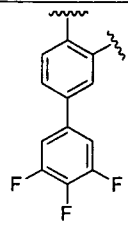
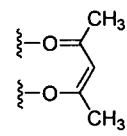
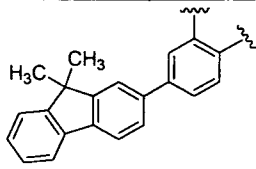
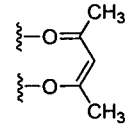
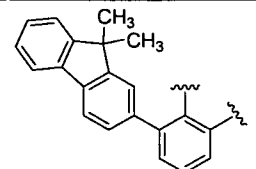
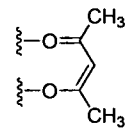
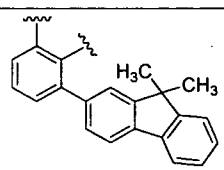
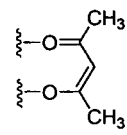
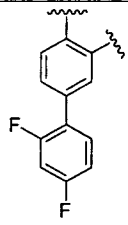
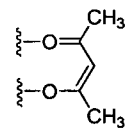
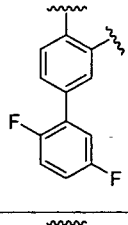
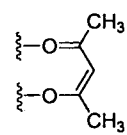
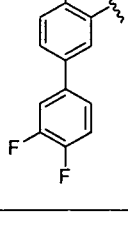
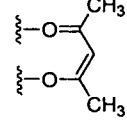
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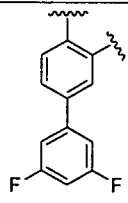
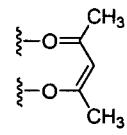
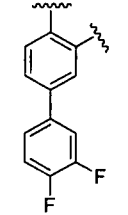
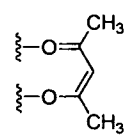
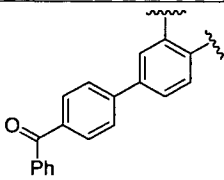
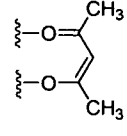
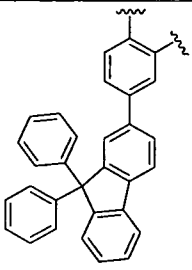
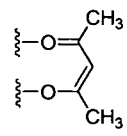
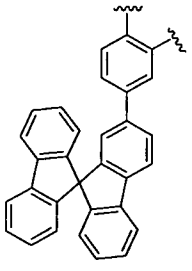
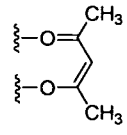
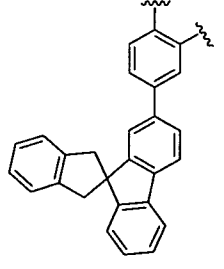
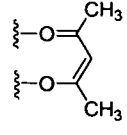
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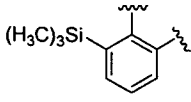
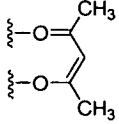
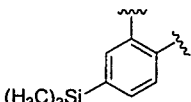
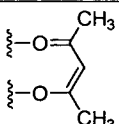
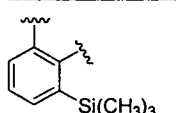
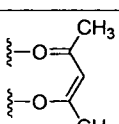
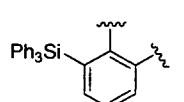
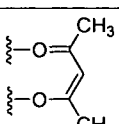
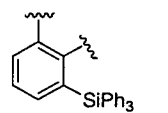
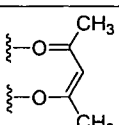
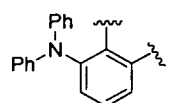
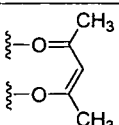
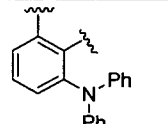
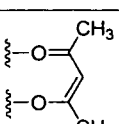
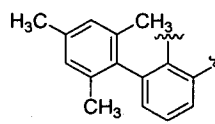
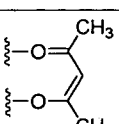
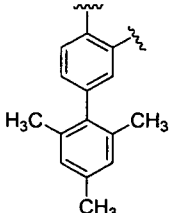
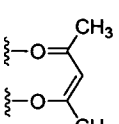
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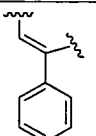
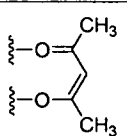
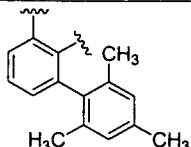
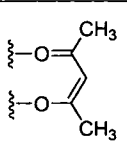
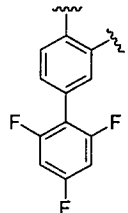
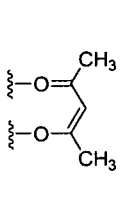
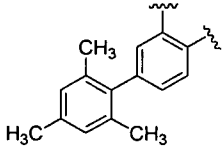
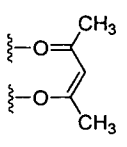
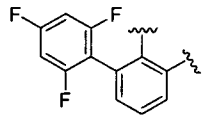
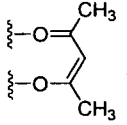
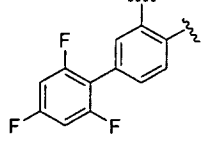
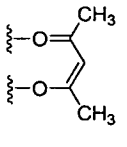
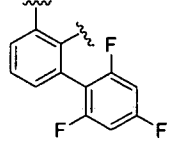
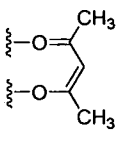
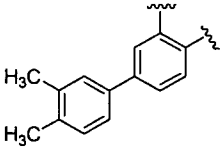
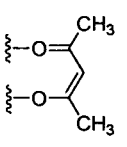
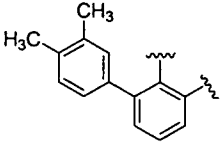
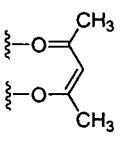
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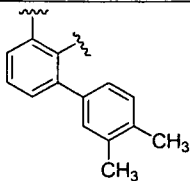
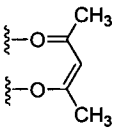
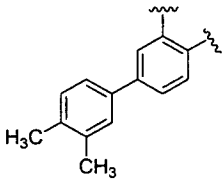
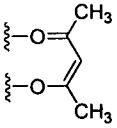
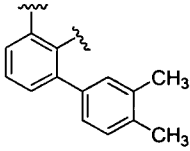
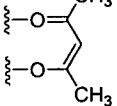
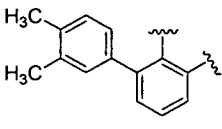
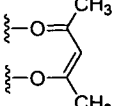
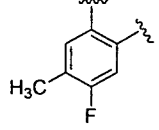
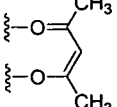
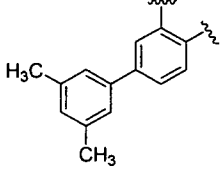
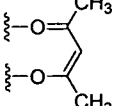
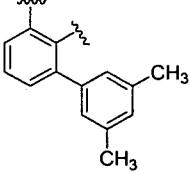
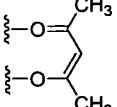
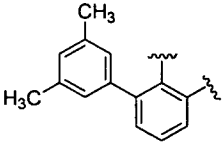
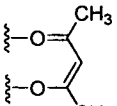
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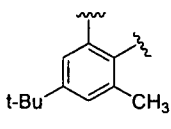
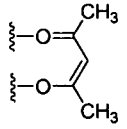
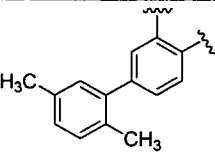
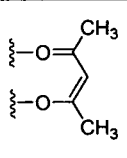
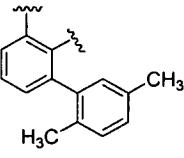
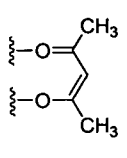
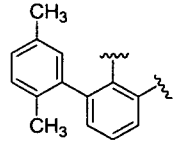
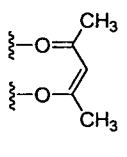
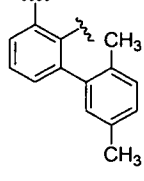
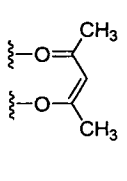
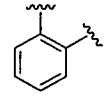
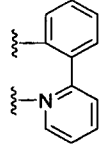
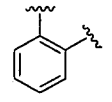
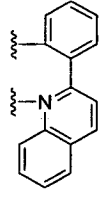
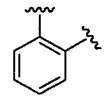
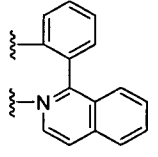
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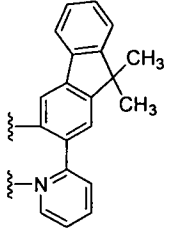
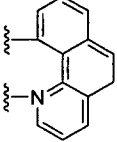
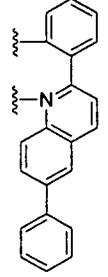
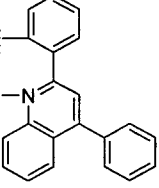
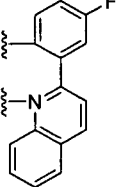
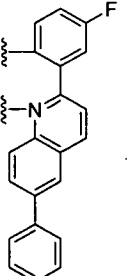
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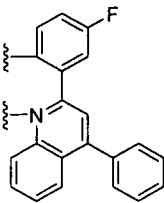
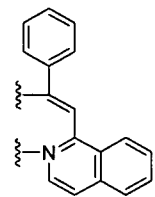
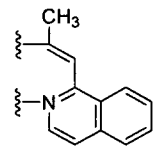
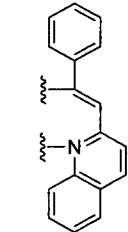
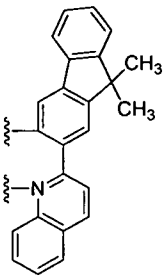
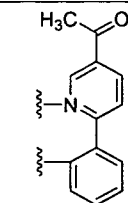
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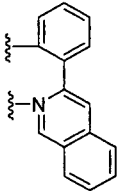
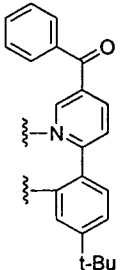
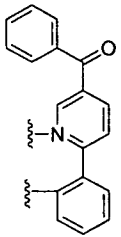
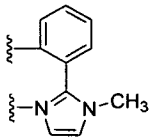
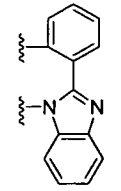
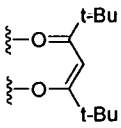
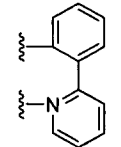
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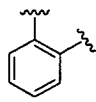
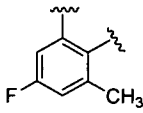
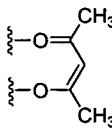
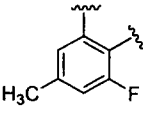
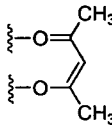
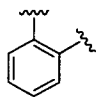
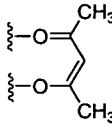
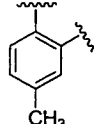
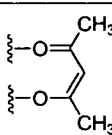
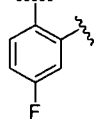
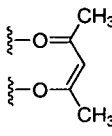
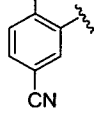
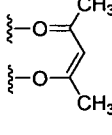
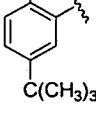
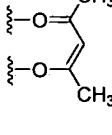
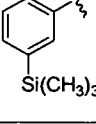
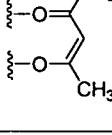
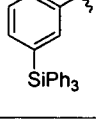
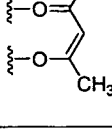
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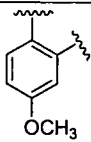
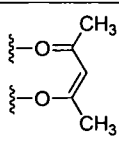
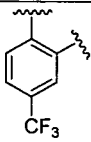
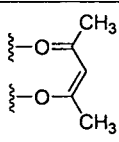
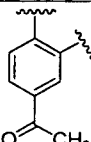
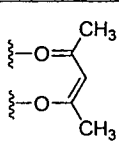
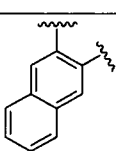
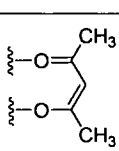
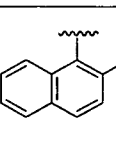
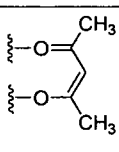
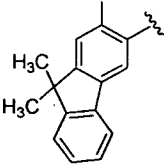
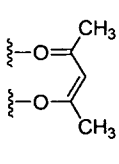
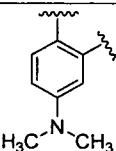
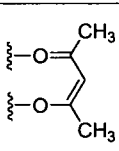
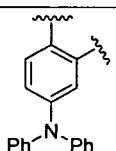
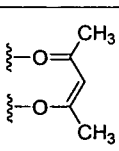
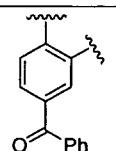
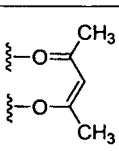
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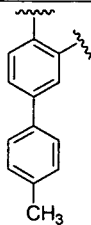
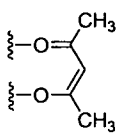
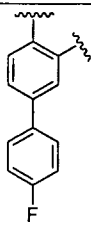
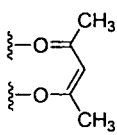
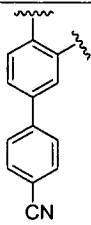
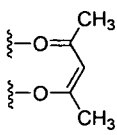
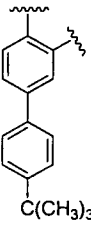
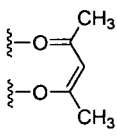
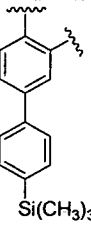
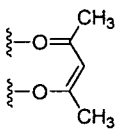
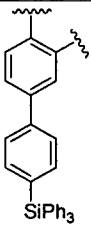
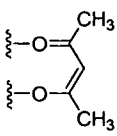
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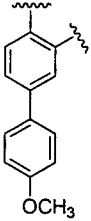
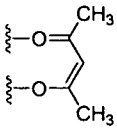
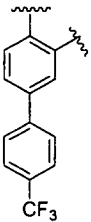
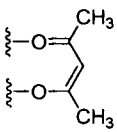
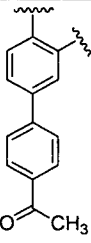
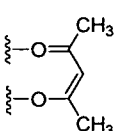
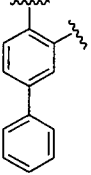
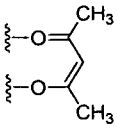
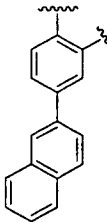
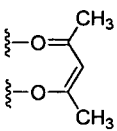
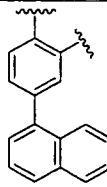
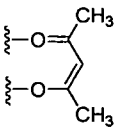
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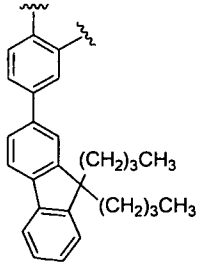
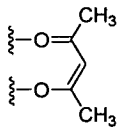
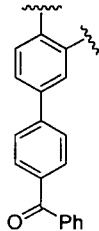
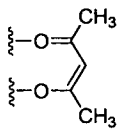
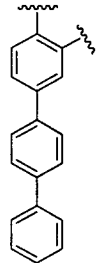
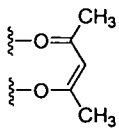
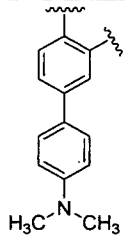
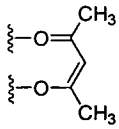
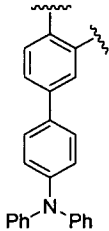
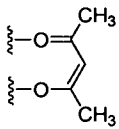
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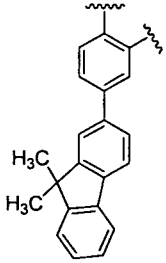
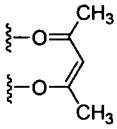
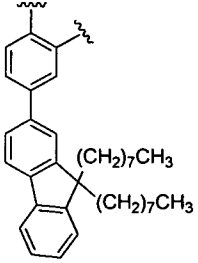
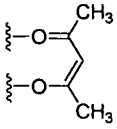
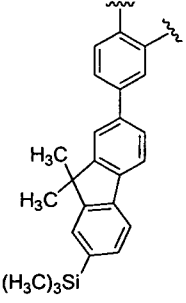
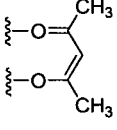
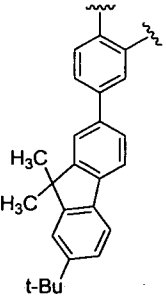
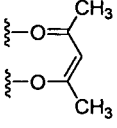
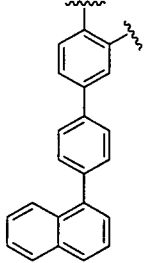
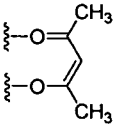
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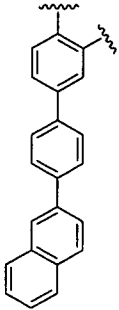
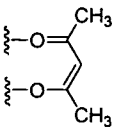
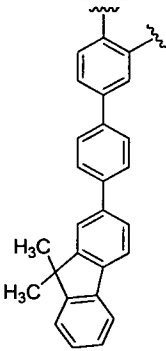
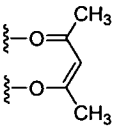
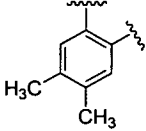
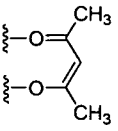
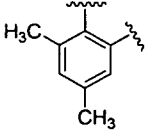
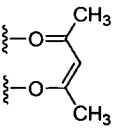
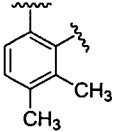
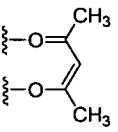
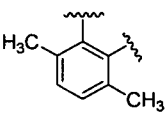
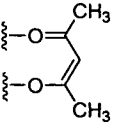
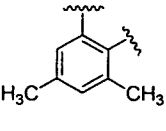
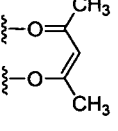
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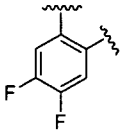
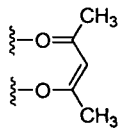
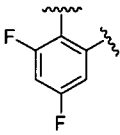
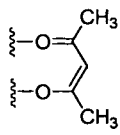
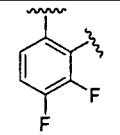
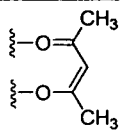
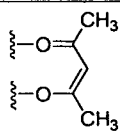
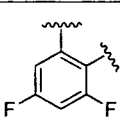
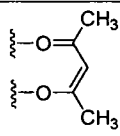
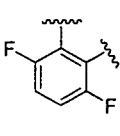
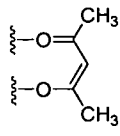
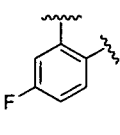
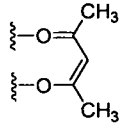
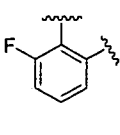
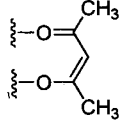
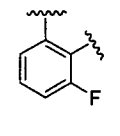
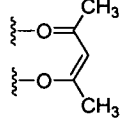
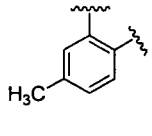
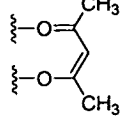
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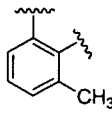
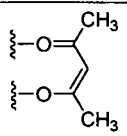
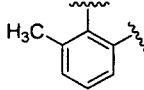
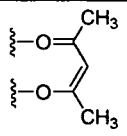
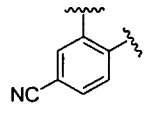
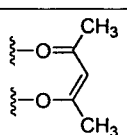
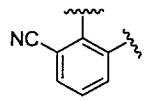
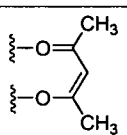
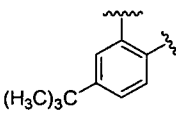
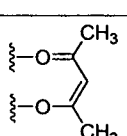
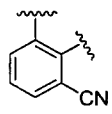
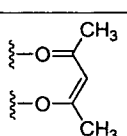
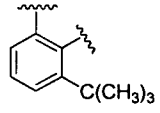
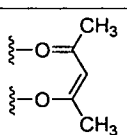
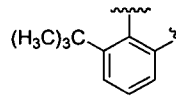
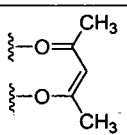
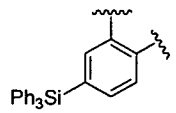
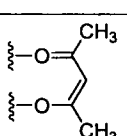
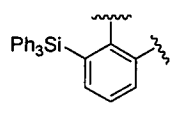
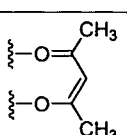
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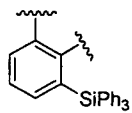
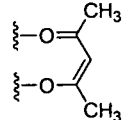
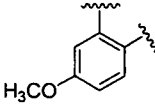
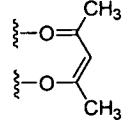
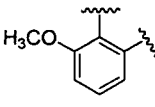
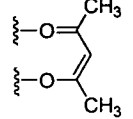
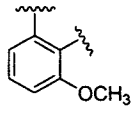
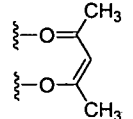
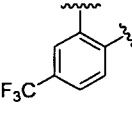
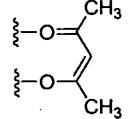
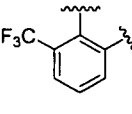
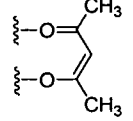
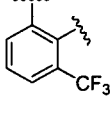
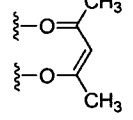
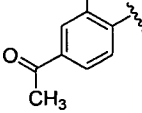
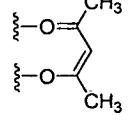
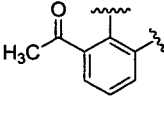
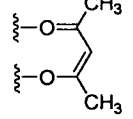
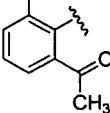
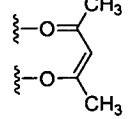
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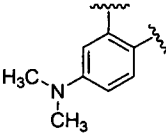
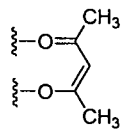
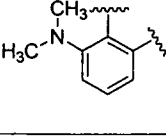
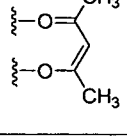
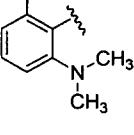
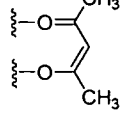
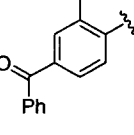
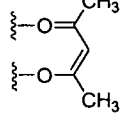
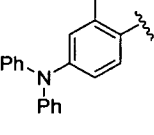
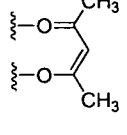
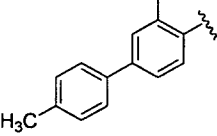
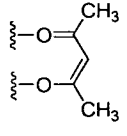
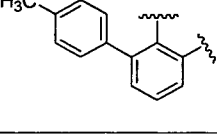
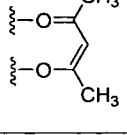
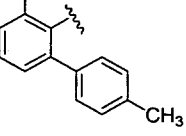
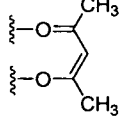
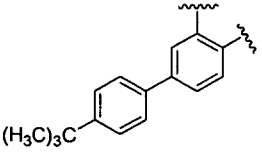
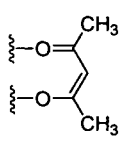
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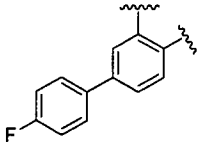
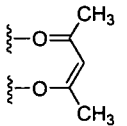
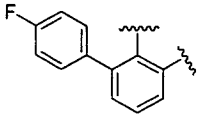
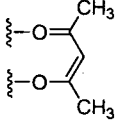
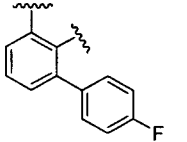
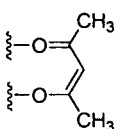
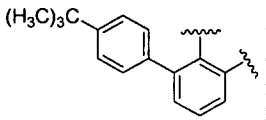
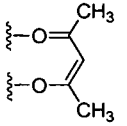
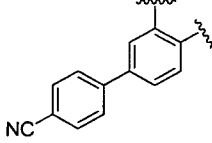
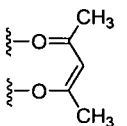
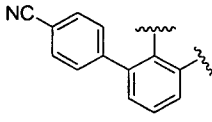
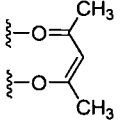
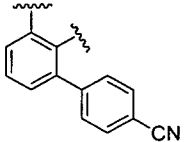
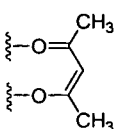
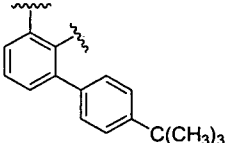
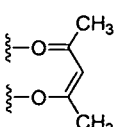
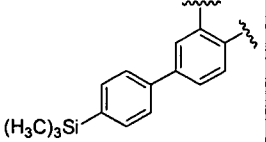
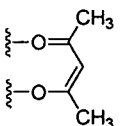
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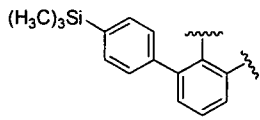
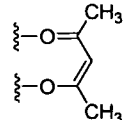
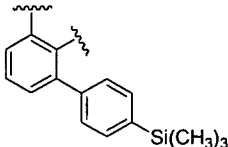
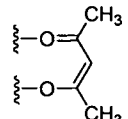
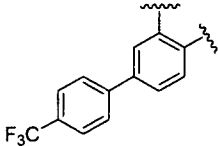
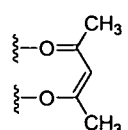
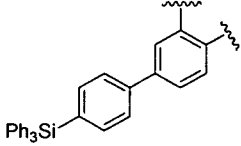
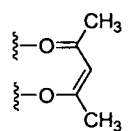
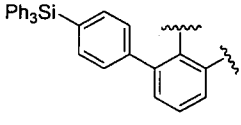
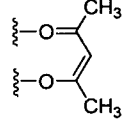
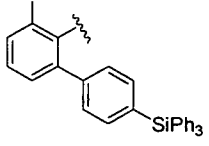
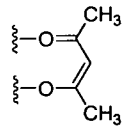
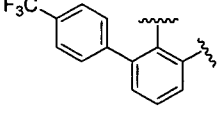
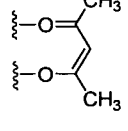
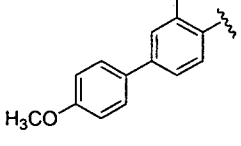
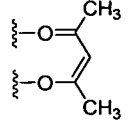
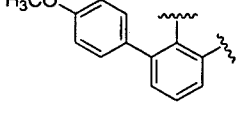
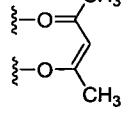
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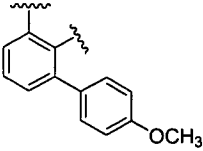
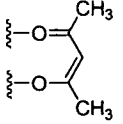
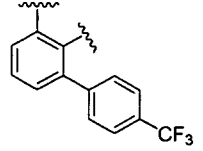
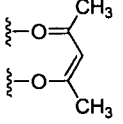
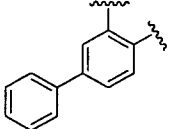
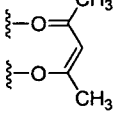
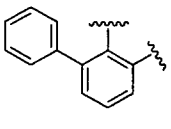
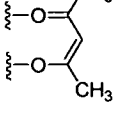
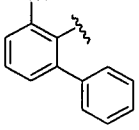
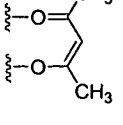
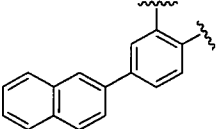
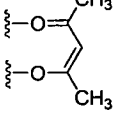
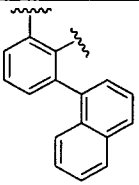
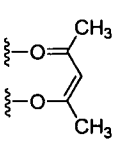
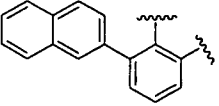
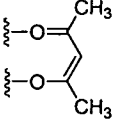
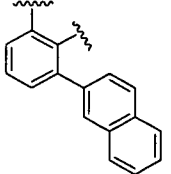
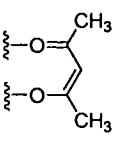
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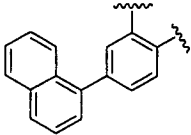
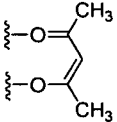
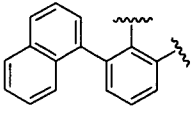
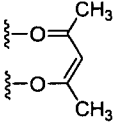
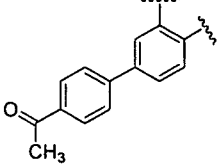
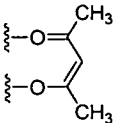
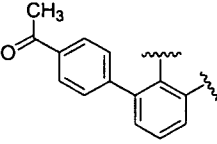
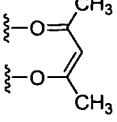
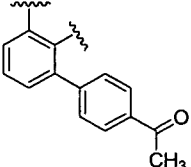
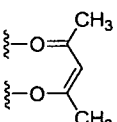
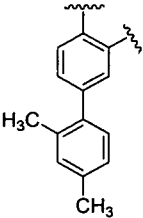
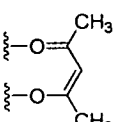
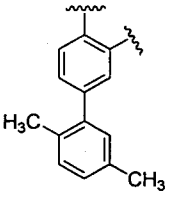
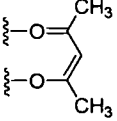
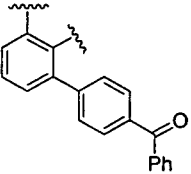
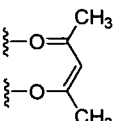
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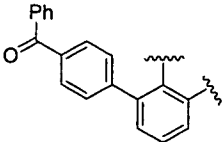
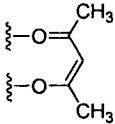
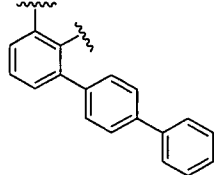
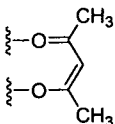
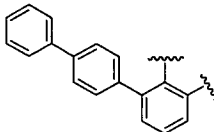
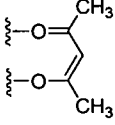
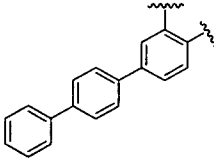
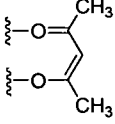
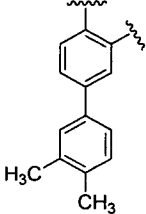
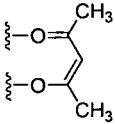
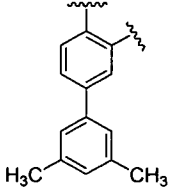
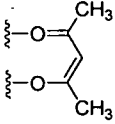
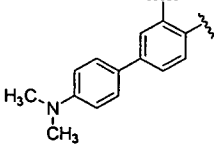
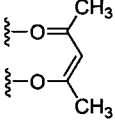
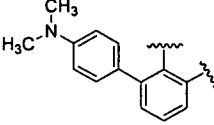
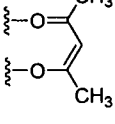
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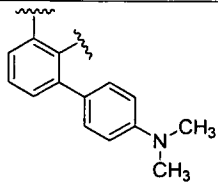
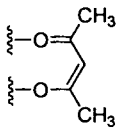
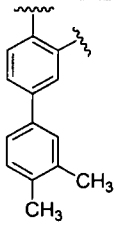
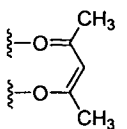
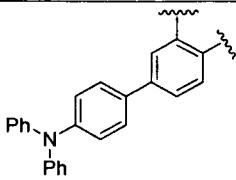
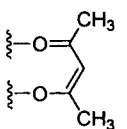
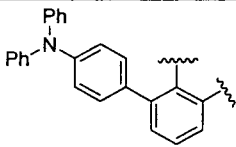
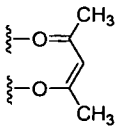
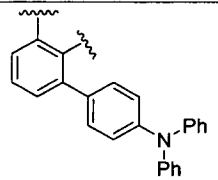
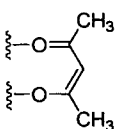
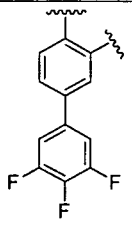
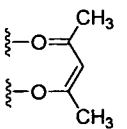
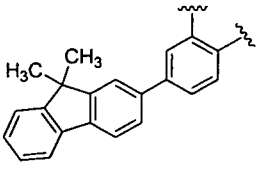
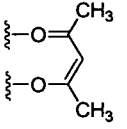
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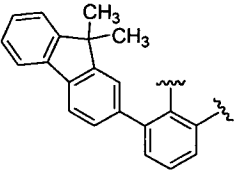
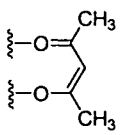
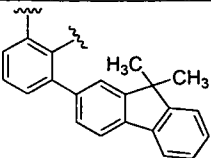
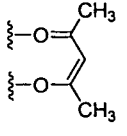
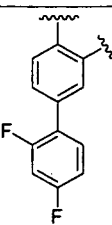
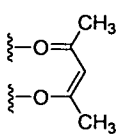
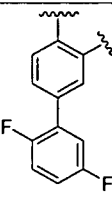
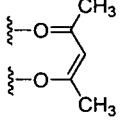
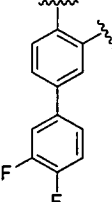
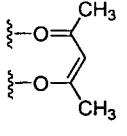
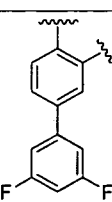
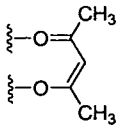
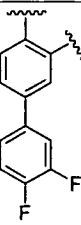
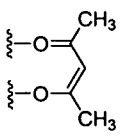
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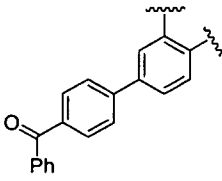
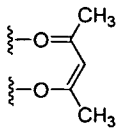
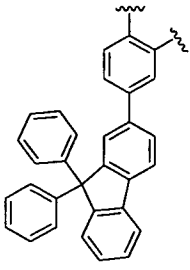
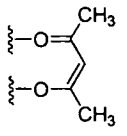
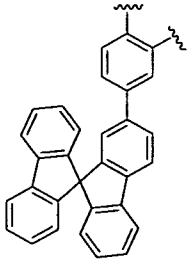
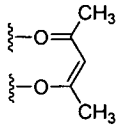
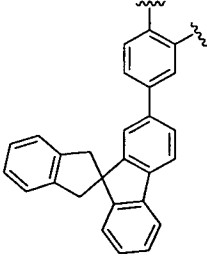
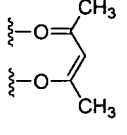
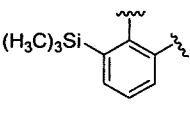
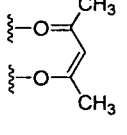
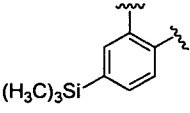
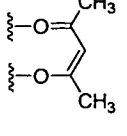
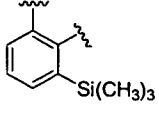
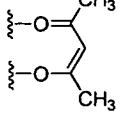
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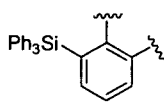
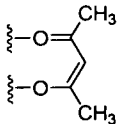
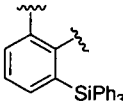
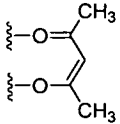
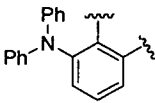
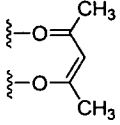
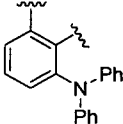
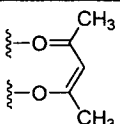
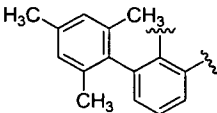
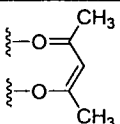
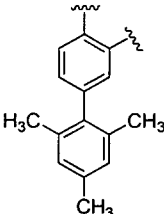
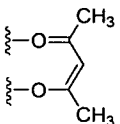
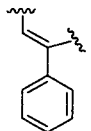
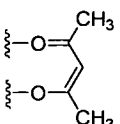
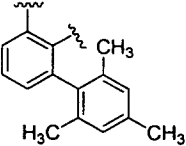
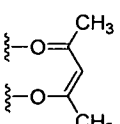
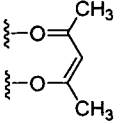
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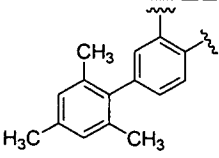
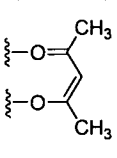
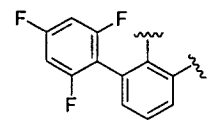
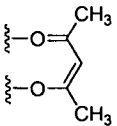
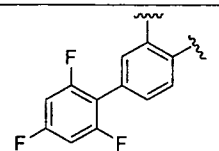
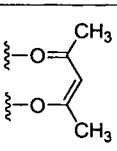
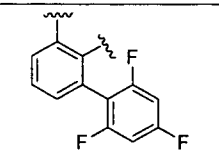
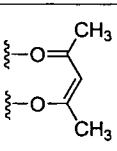
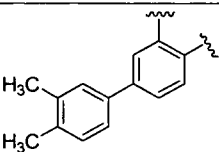
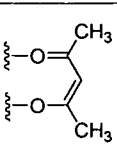
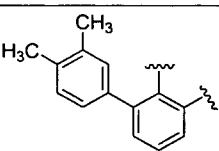
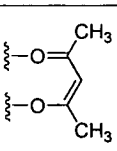
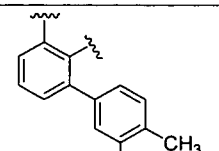
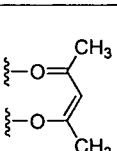
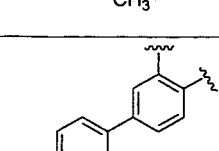
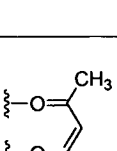
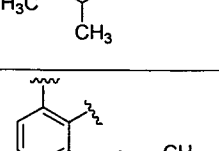
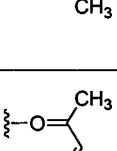
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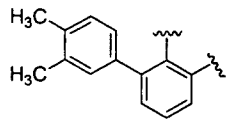
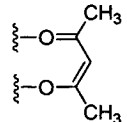
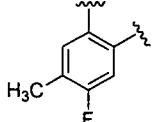
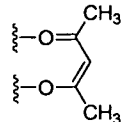
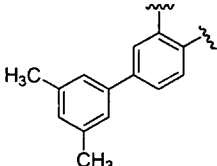
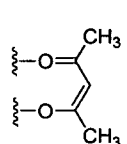
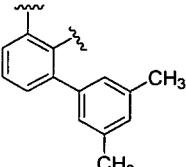
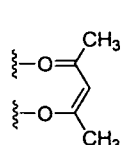
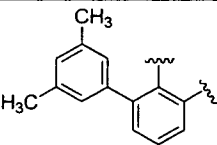
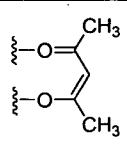
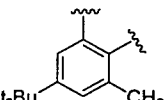
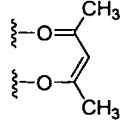
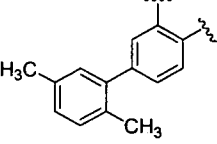
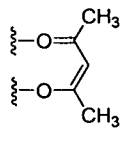
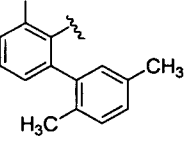
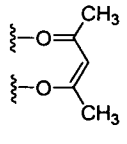
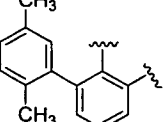
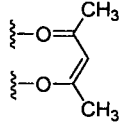
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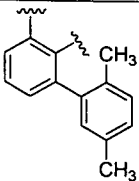
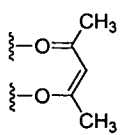
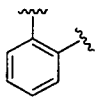
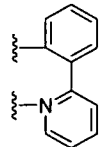
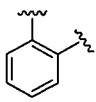
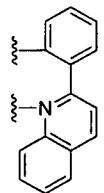
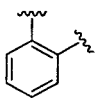
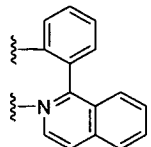
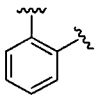
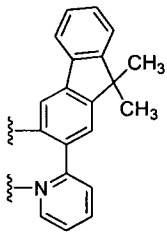
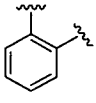
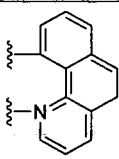
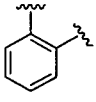
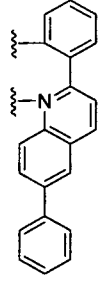
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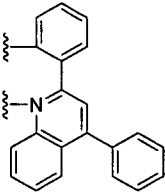
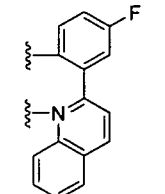
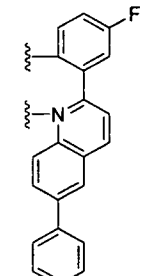
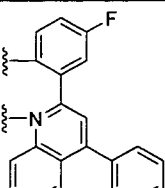
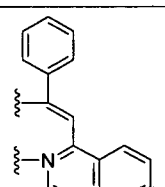
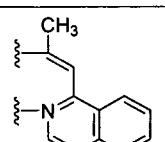
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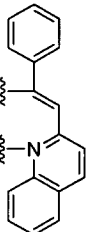
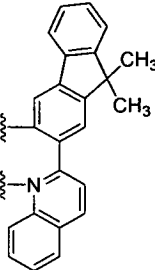
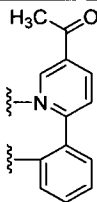
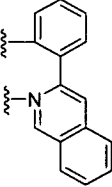
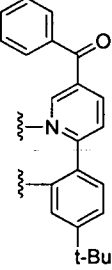
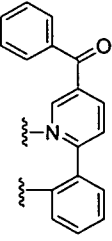
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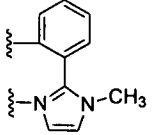
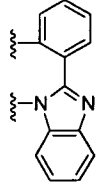
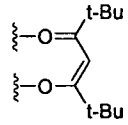
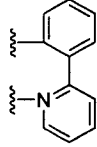
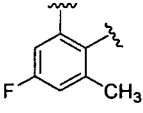
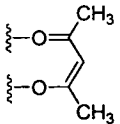
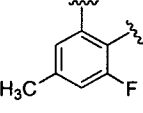
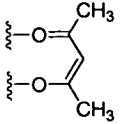
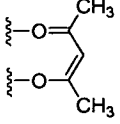
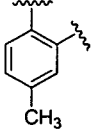
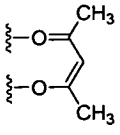
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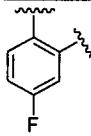
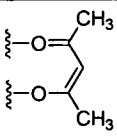
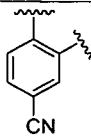
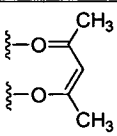
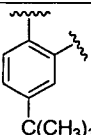
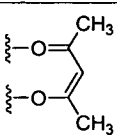
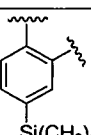
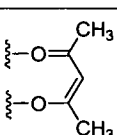
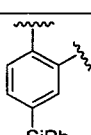
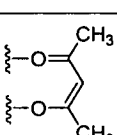
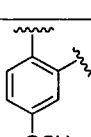
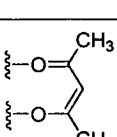
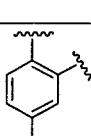
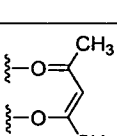
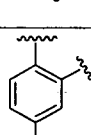
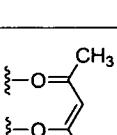
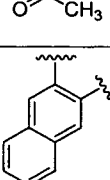
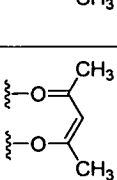
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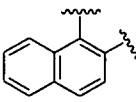
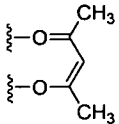
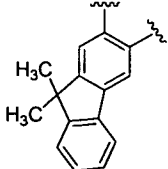
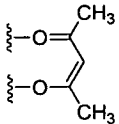
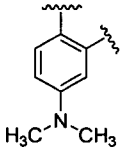
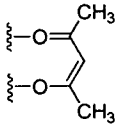
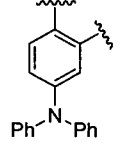
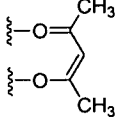
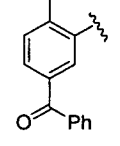
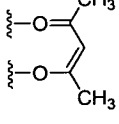
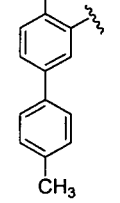
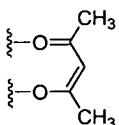
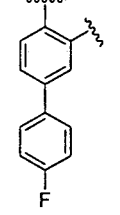
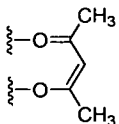
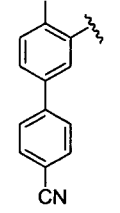
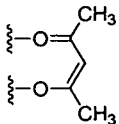
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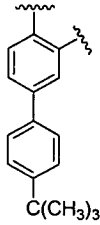
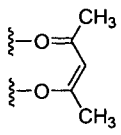
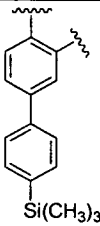
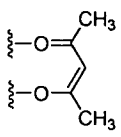
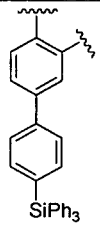
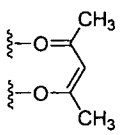
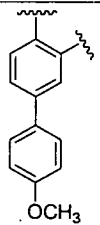
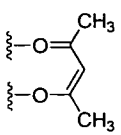
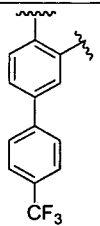
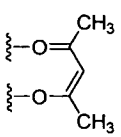
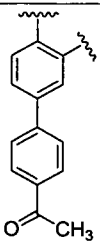
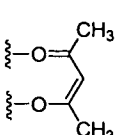
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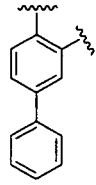
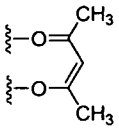
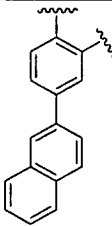
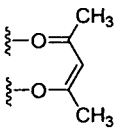
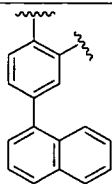
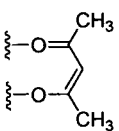
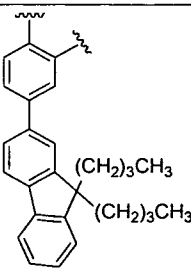
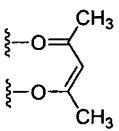
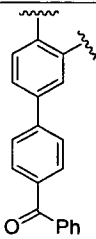
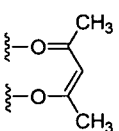
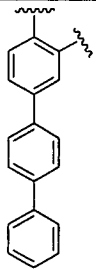
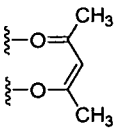
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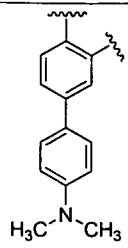
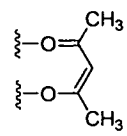
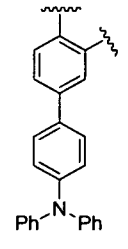
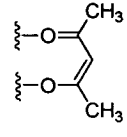
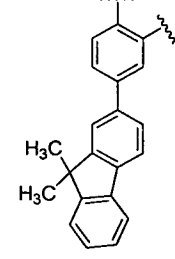
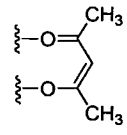
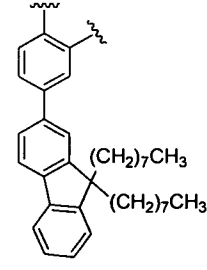
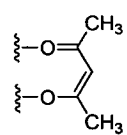
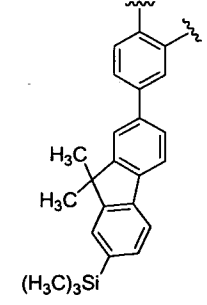
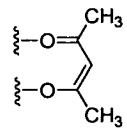
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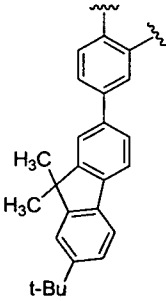
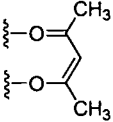
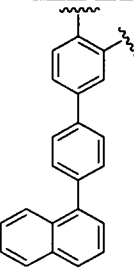
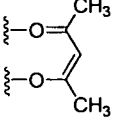
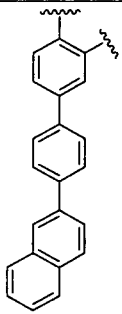
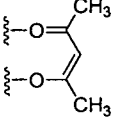
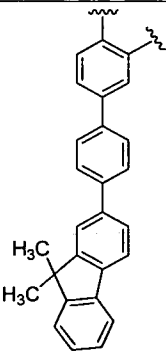
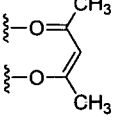
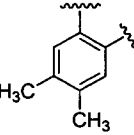
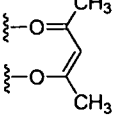
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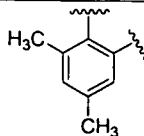
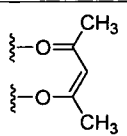
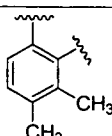
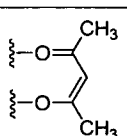
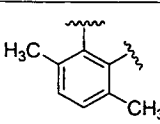
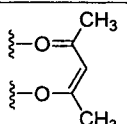
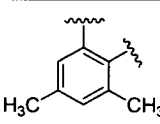
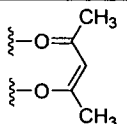
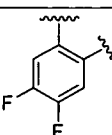
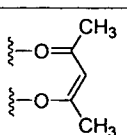
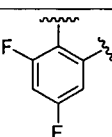
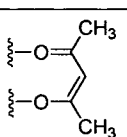
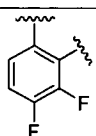
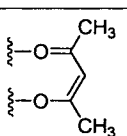
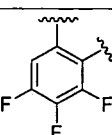
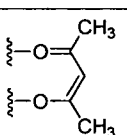
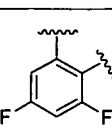
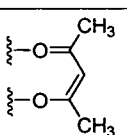
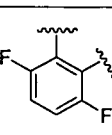
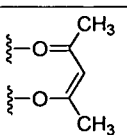
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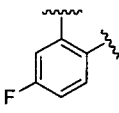
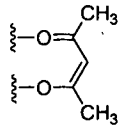
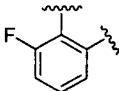
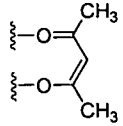
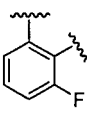
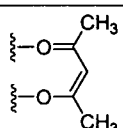
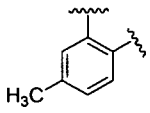
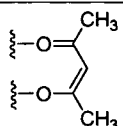
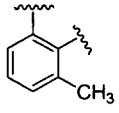
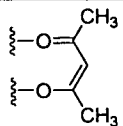
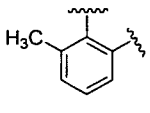
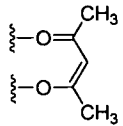
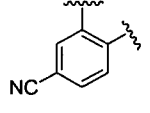
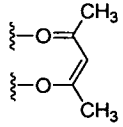
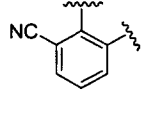
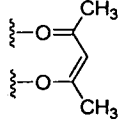
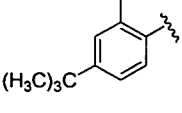
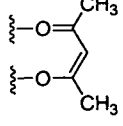
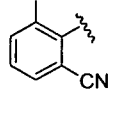
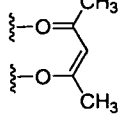
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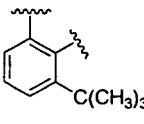
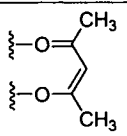
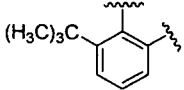
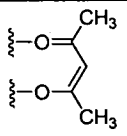
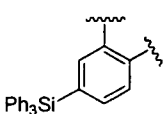
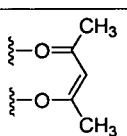
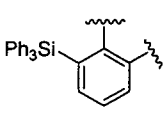
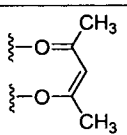
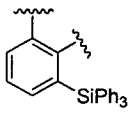
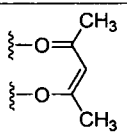
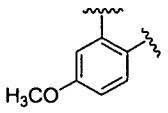
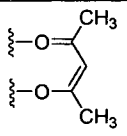
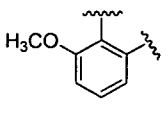
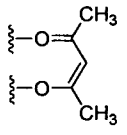
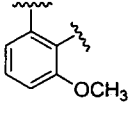
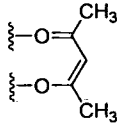
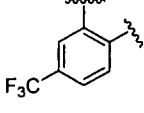
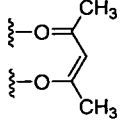
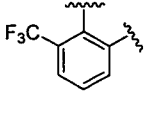
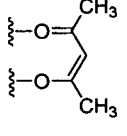
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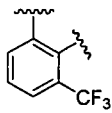
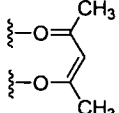
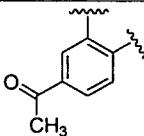
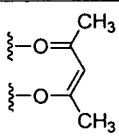
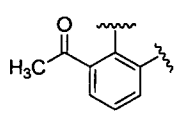
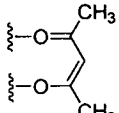
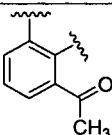
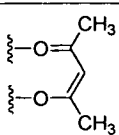
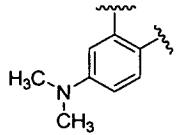
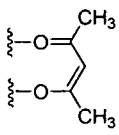
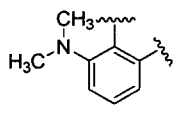
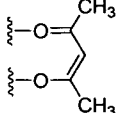
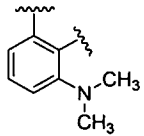
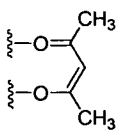
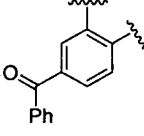
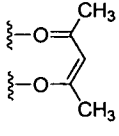
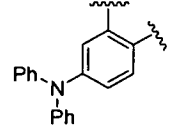
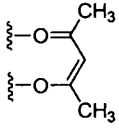
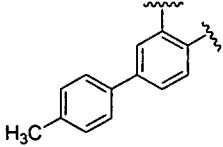
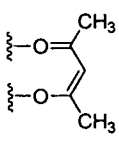
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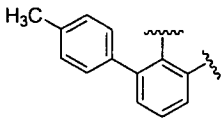
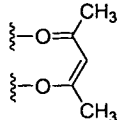
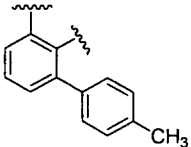
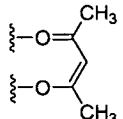
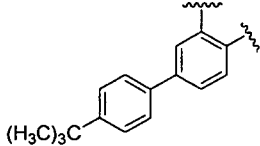
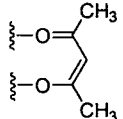
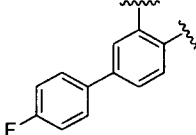
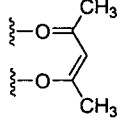
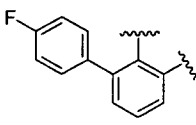
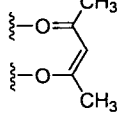
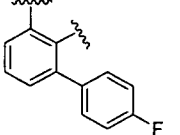
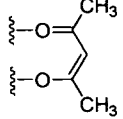
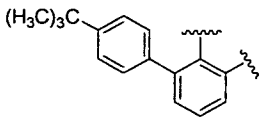
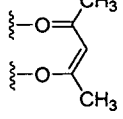
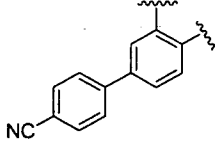
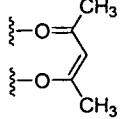
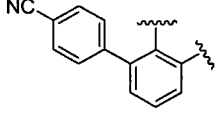
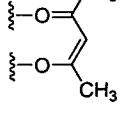
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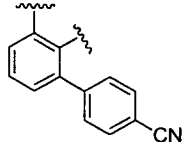
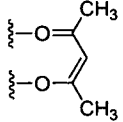
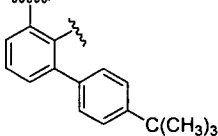
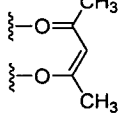
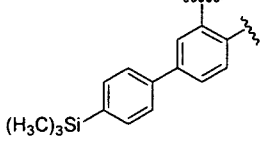
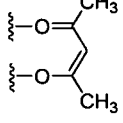
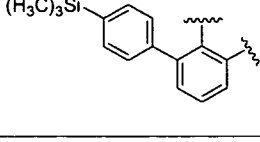
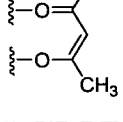
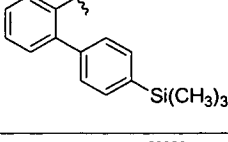
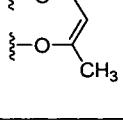
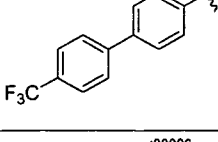
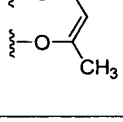
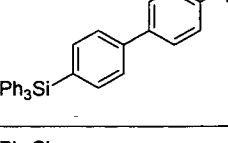
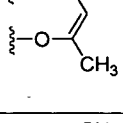
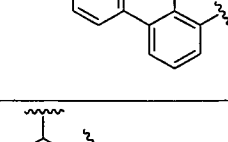
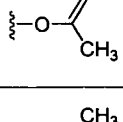
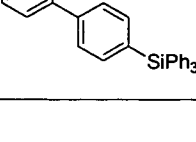
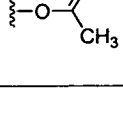
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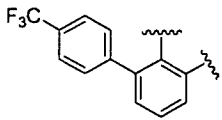
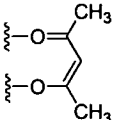
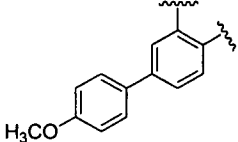
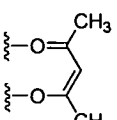
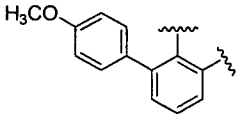
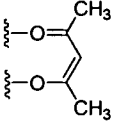
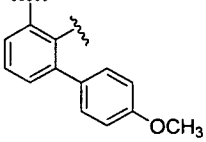
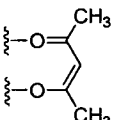
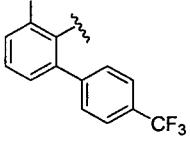
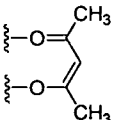
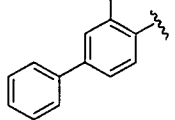
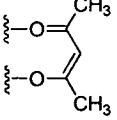
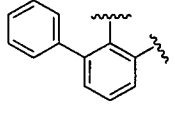
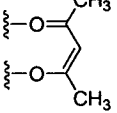
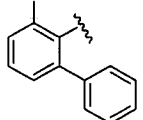
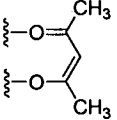
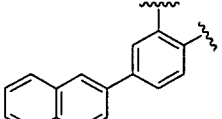
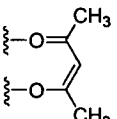
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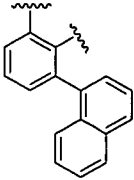
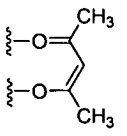
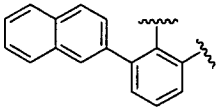
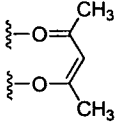
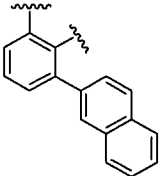
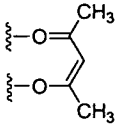
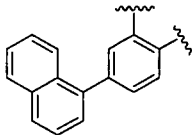
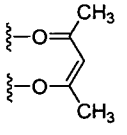
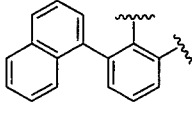
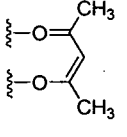
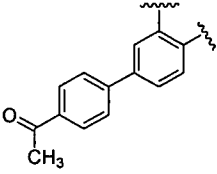
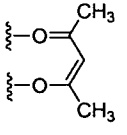
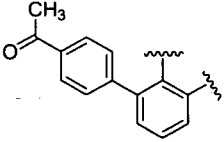
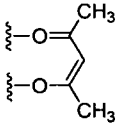
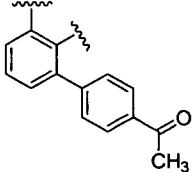
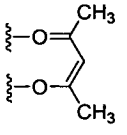
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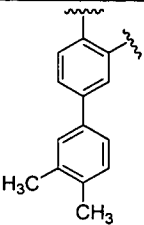
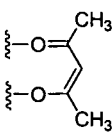
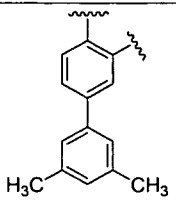
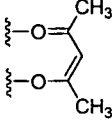
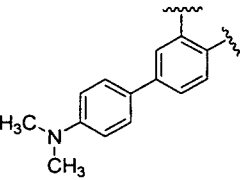
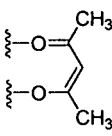
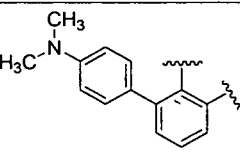
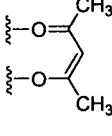
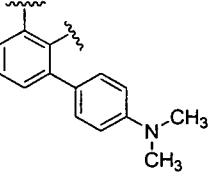
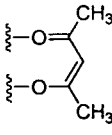
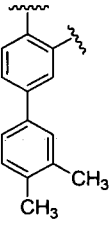
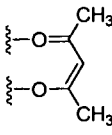
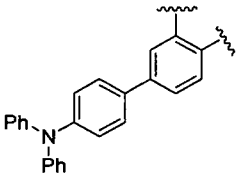
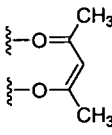
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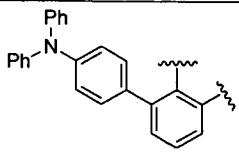
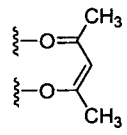
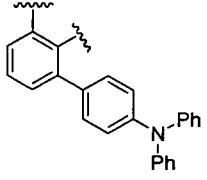
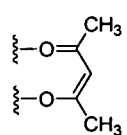
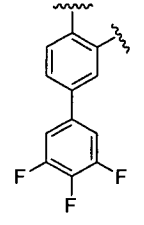
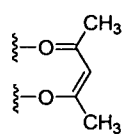
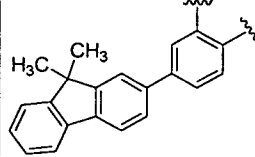
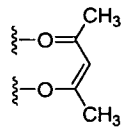
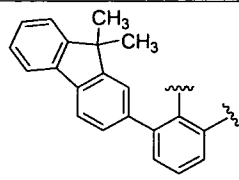
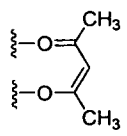
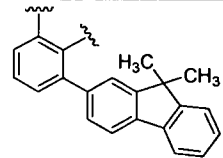
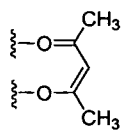
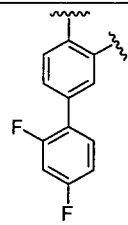
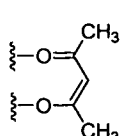
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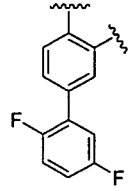
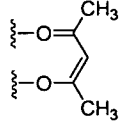
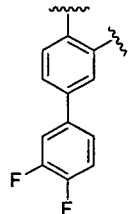
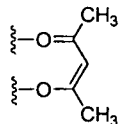
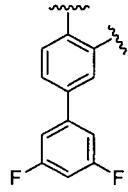
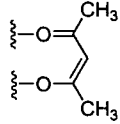
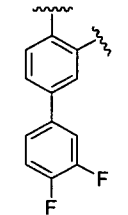
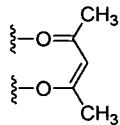
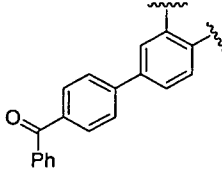
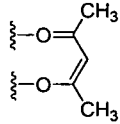
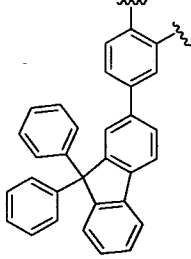
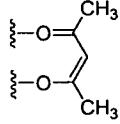
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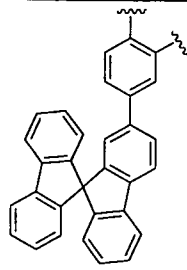
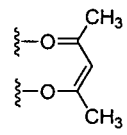
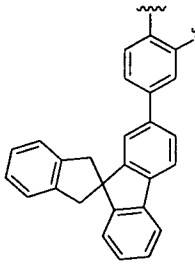
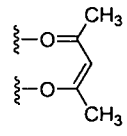
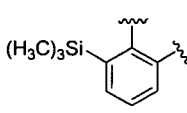
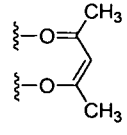
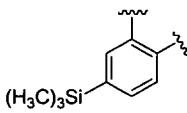
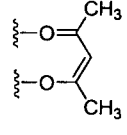
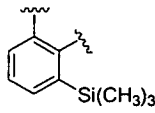
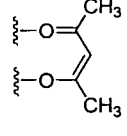
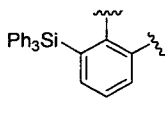
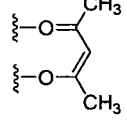
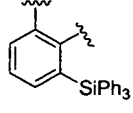
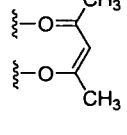
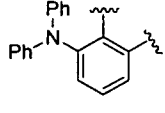
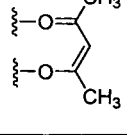
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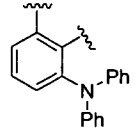
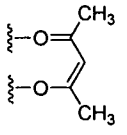
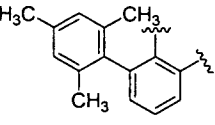
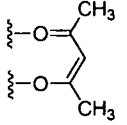
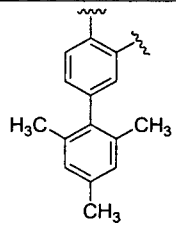
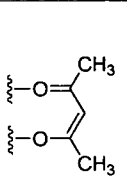
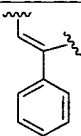
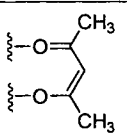
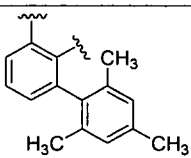
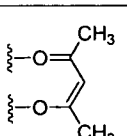
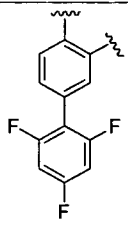
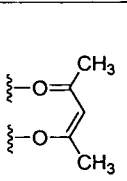
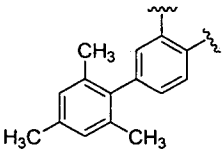
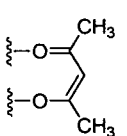
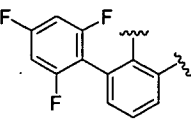
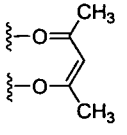
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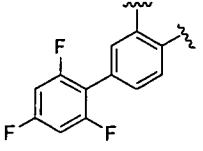
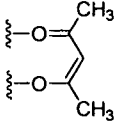
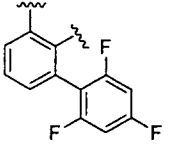
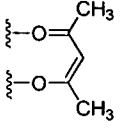
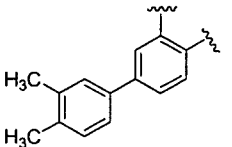
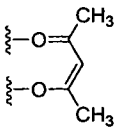
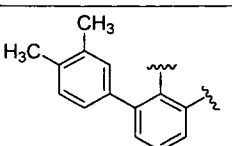
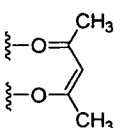
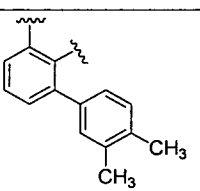
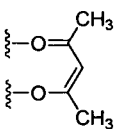
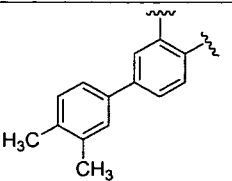
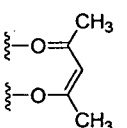
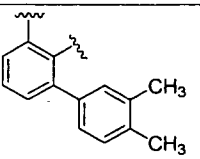
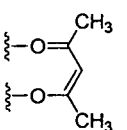
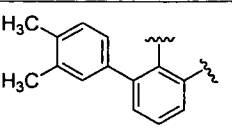
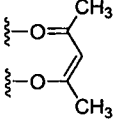
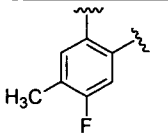
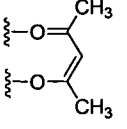
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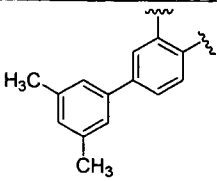
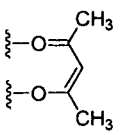
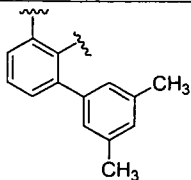
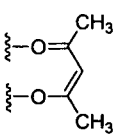
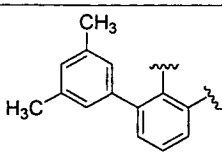
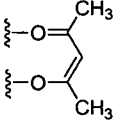
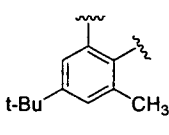
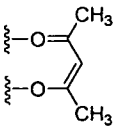
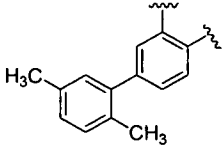
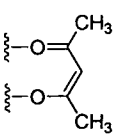
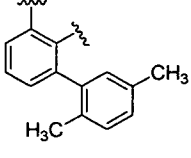
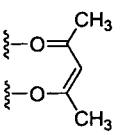
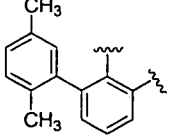
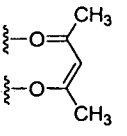
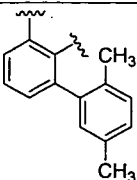
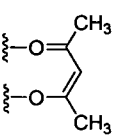
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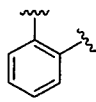
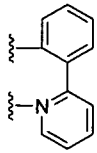
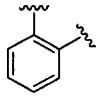
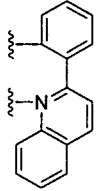
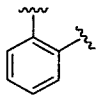
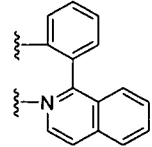
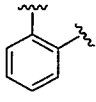
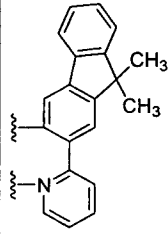
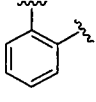
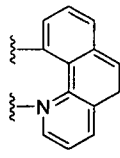
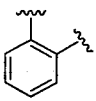
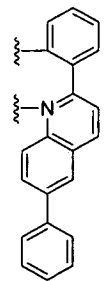
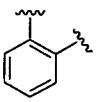
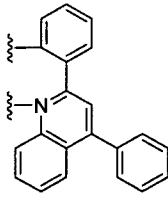
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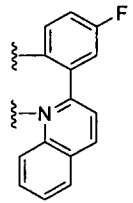
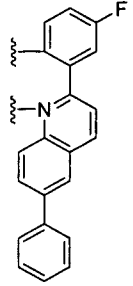
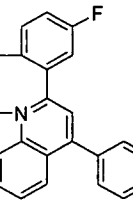
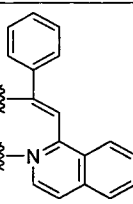
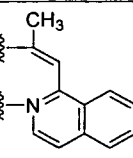
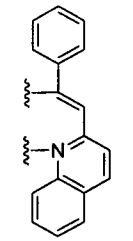
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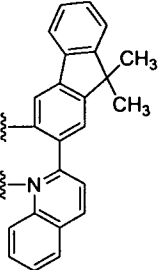
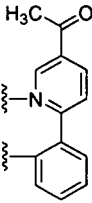
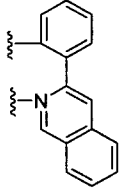
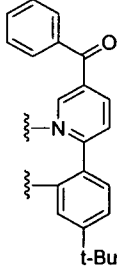
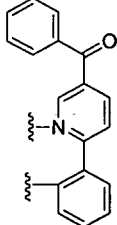
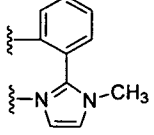
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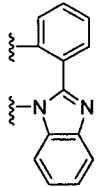
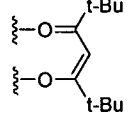
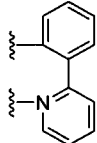
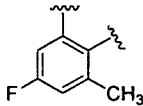
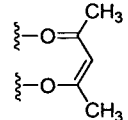
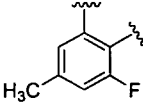
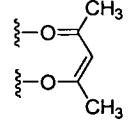
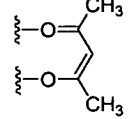
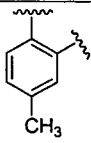
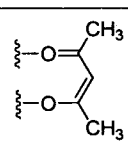
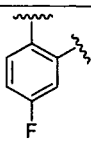
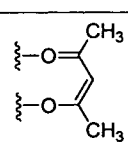
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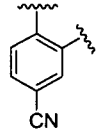
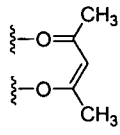
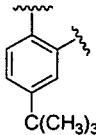
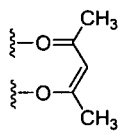
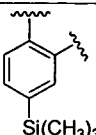
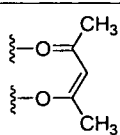
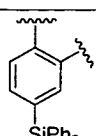
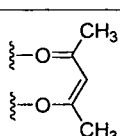
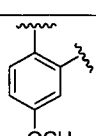
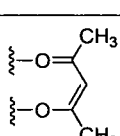
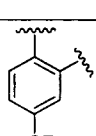
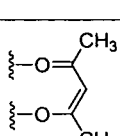
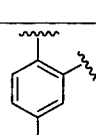
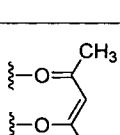
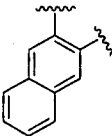
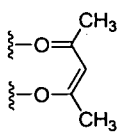
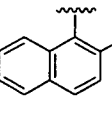
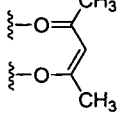
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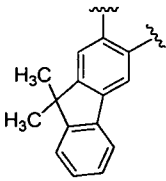
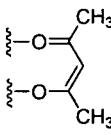
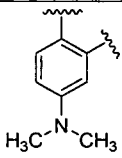
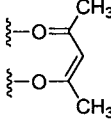
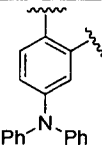
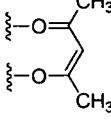
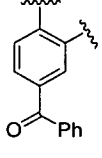
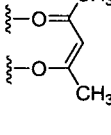
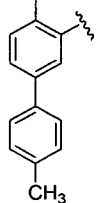
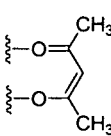
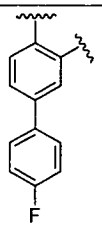
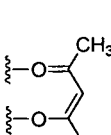
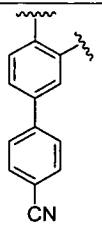
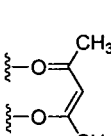
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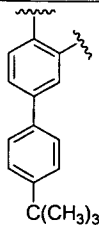
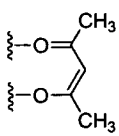
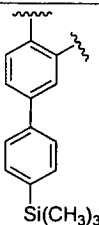
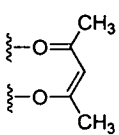
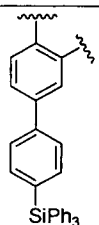
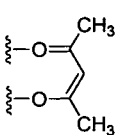
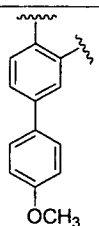
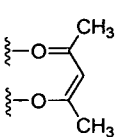
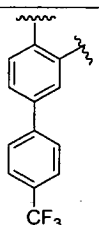
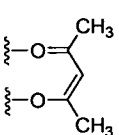
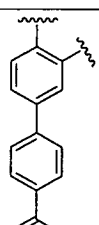
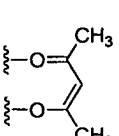
161

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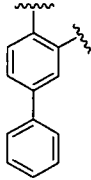
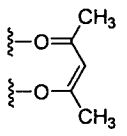
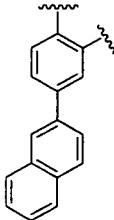
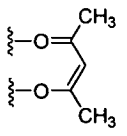
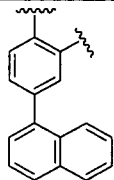
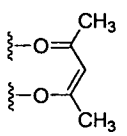
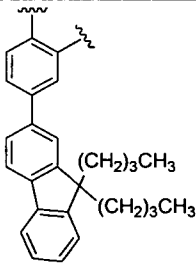
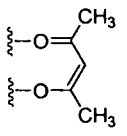
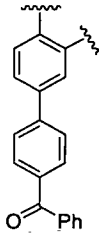
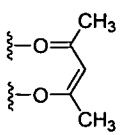
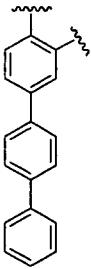
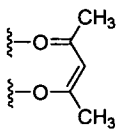
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623	H	H	H	H	H	H	F	H			2
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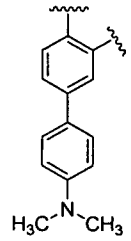
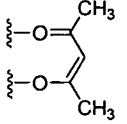
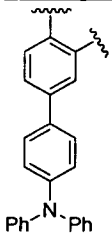
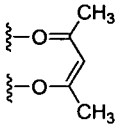
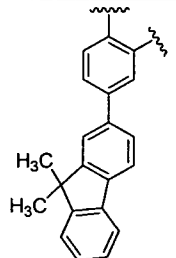
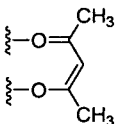
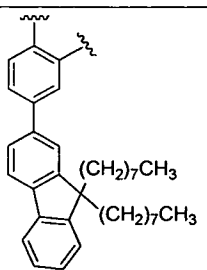
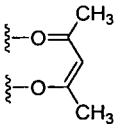
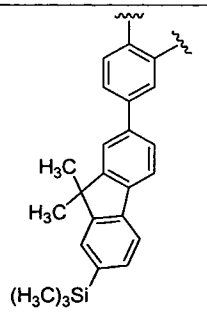
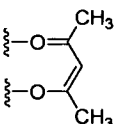
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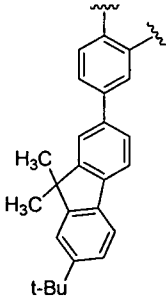
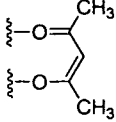
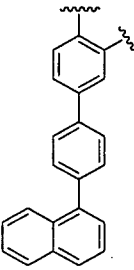
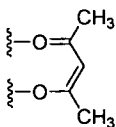
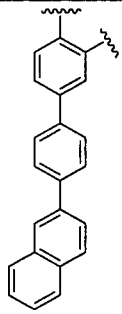
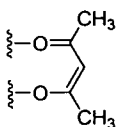
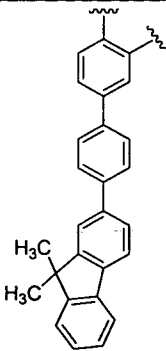
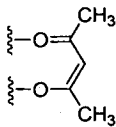
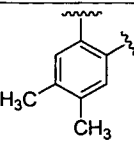
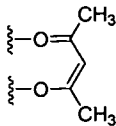
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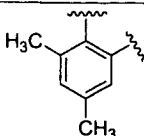
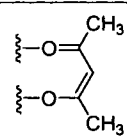
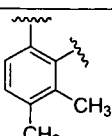
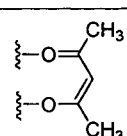
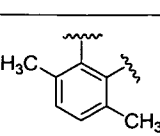
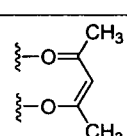
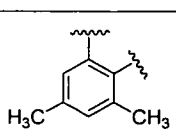
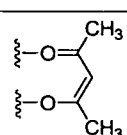
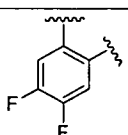
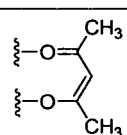
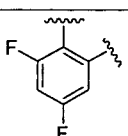
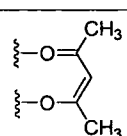
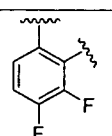
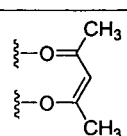
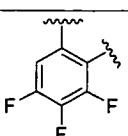
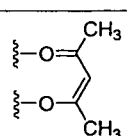
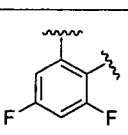
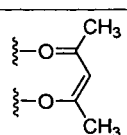
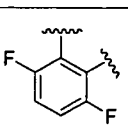
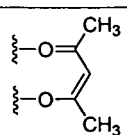
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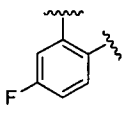
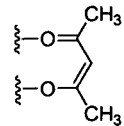
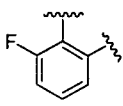
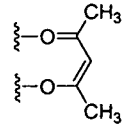
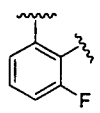
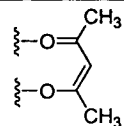
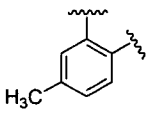
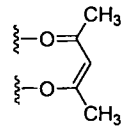
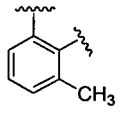
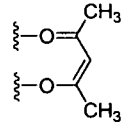
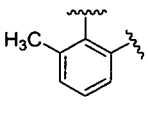
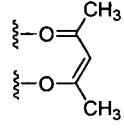
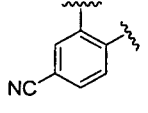
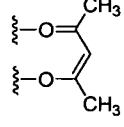
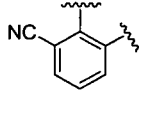
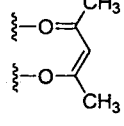
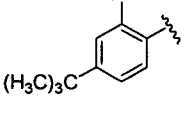
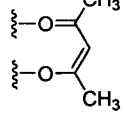
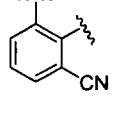
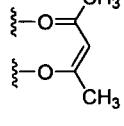
166

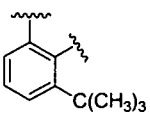
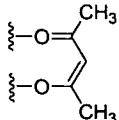
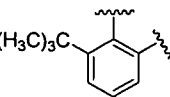
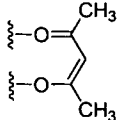
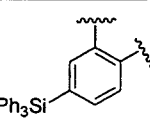
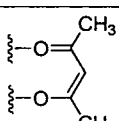
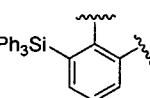
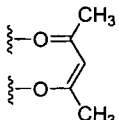
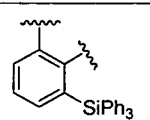
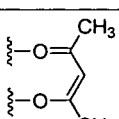
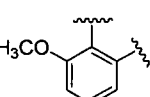
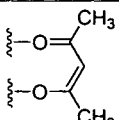
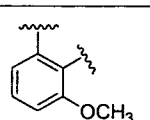
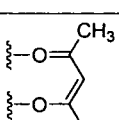
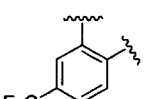
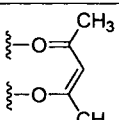
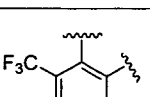
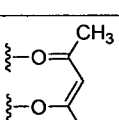
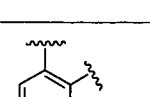
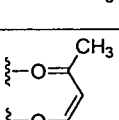
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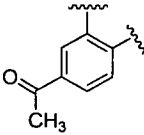
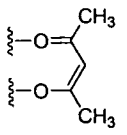
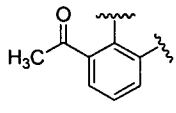
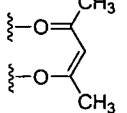
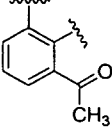
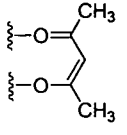
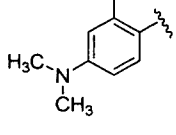
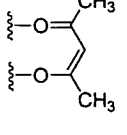
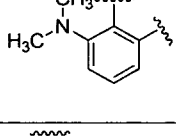
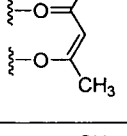
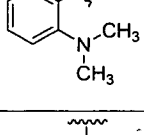
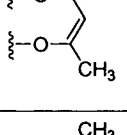
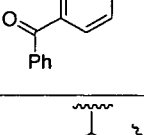
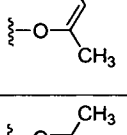
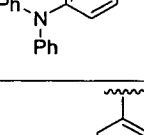
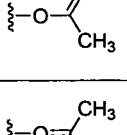
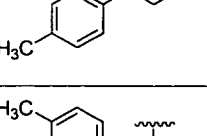
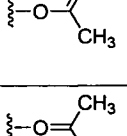
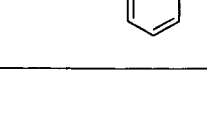
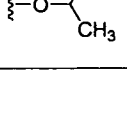
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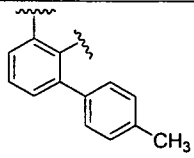
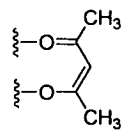
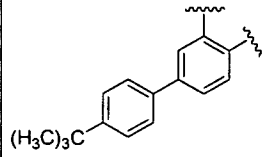
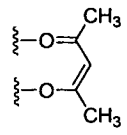
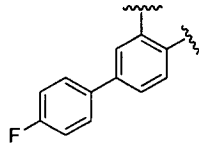
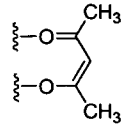
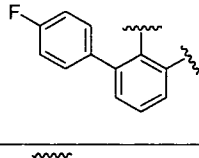
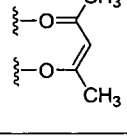
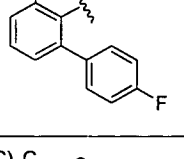
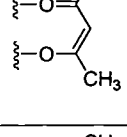
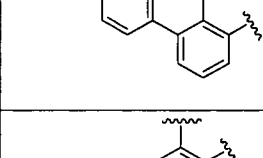
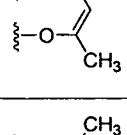
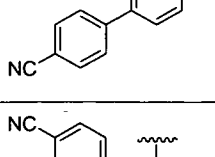
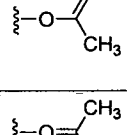
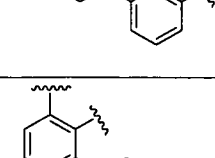
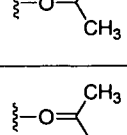
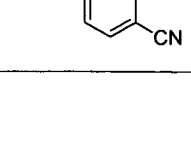
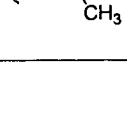
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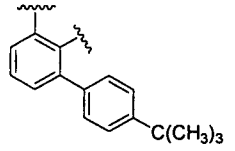
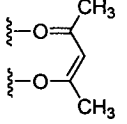
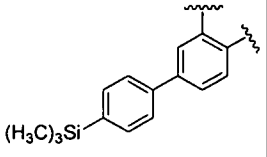
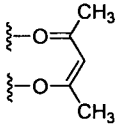
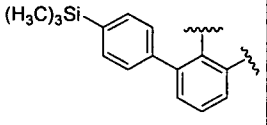
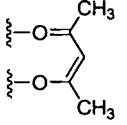
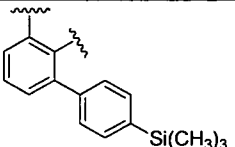
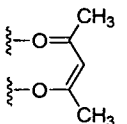
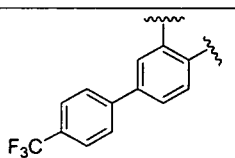
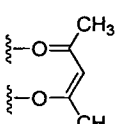
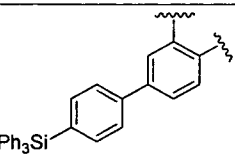
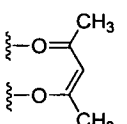
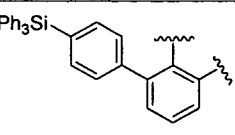
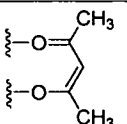
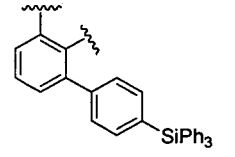
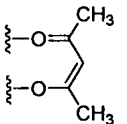
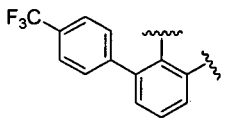
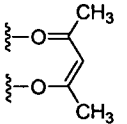
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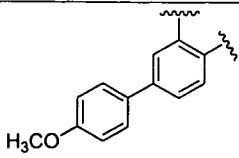
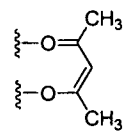
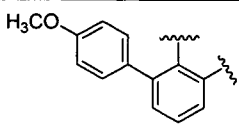
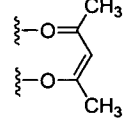
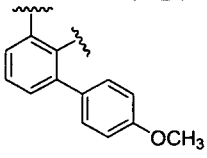
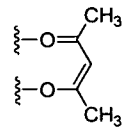
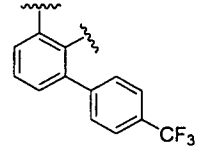
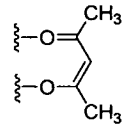
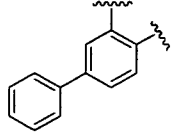
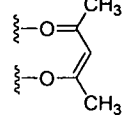
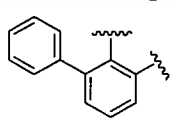
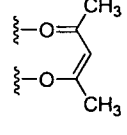
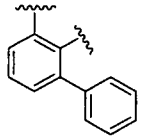
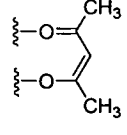
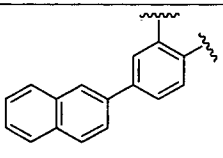
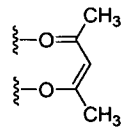
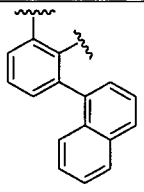
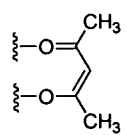
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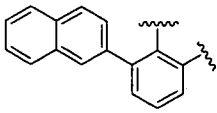
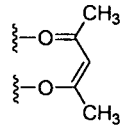
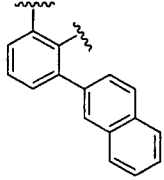
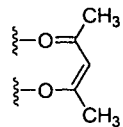
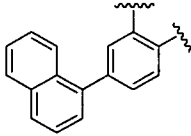
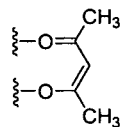
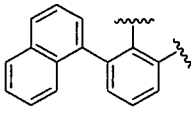
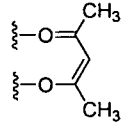
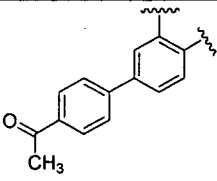
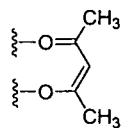
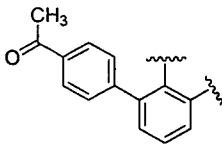
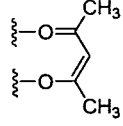
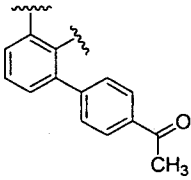
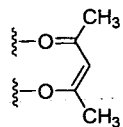
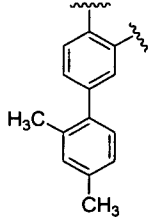
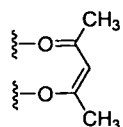
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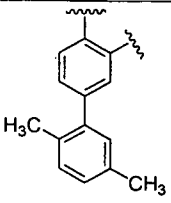
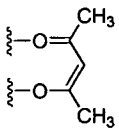
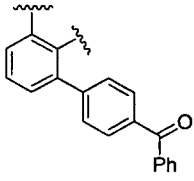
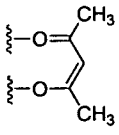
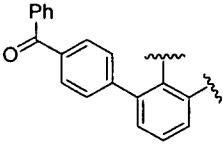
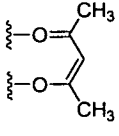
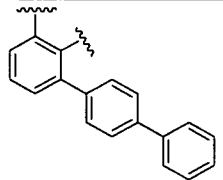
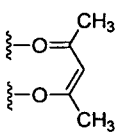
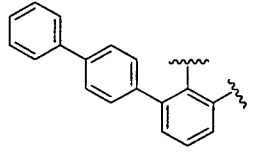
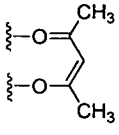
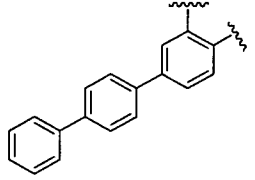
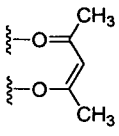
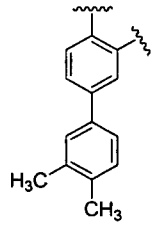
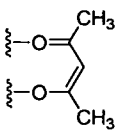
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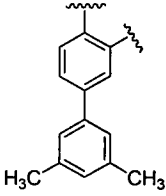
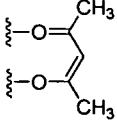
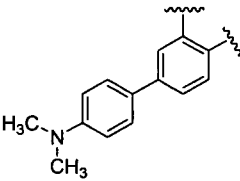
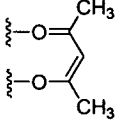
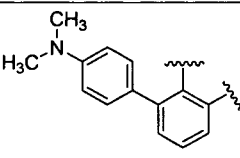
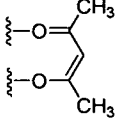
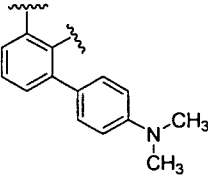
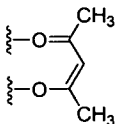
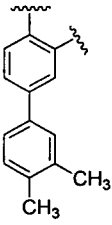
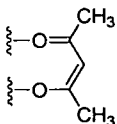
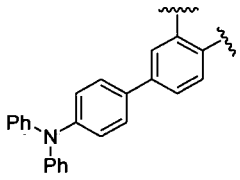
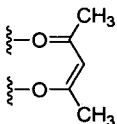
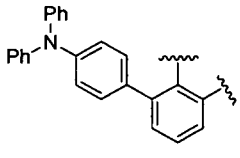
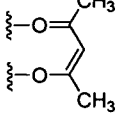
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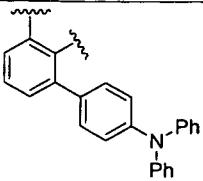
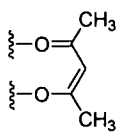
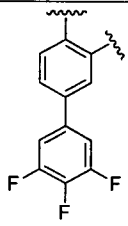
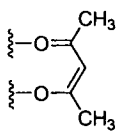
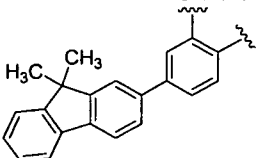
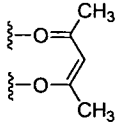
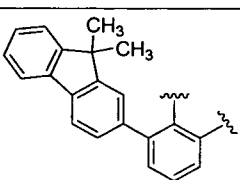
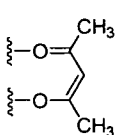
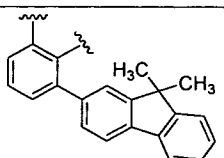
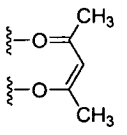
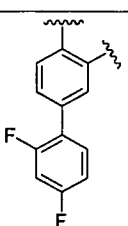
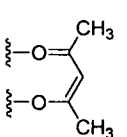
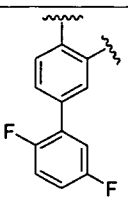
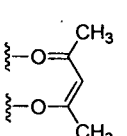
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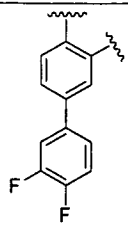
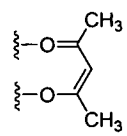
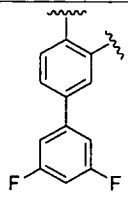
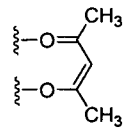
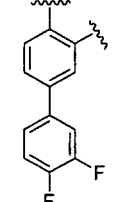
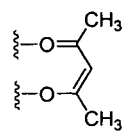
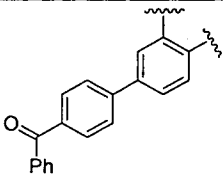
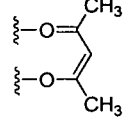
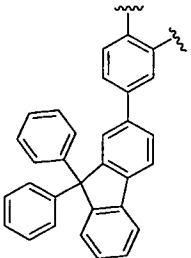
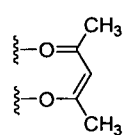
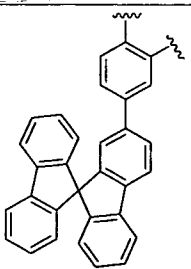
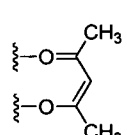
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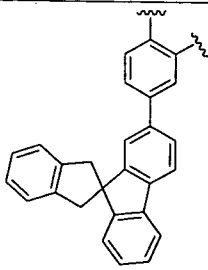
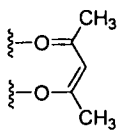
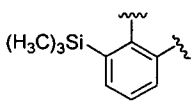
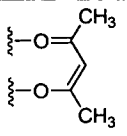
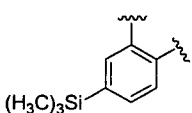
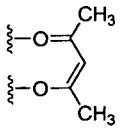
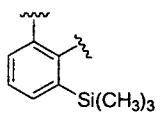
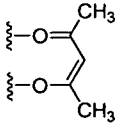
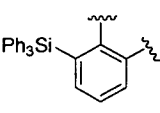
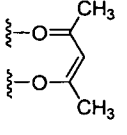
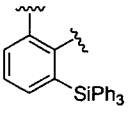
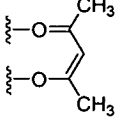
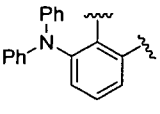
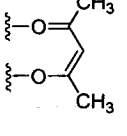
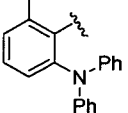
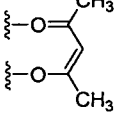
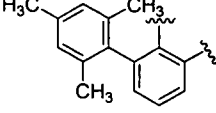
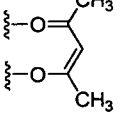
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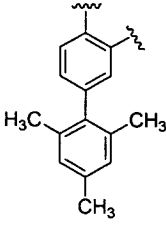
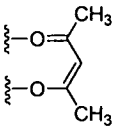
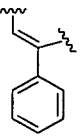
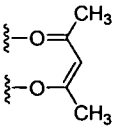
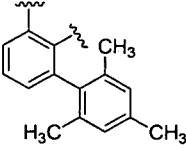
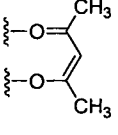
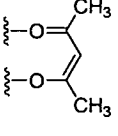
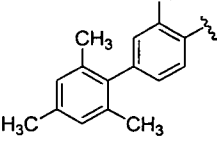
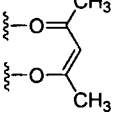
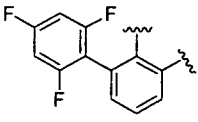
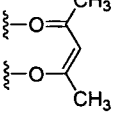
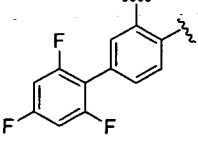
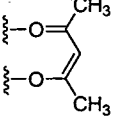
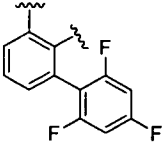
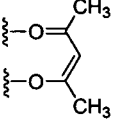
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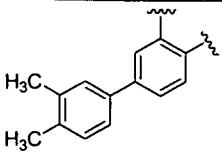
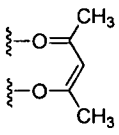
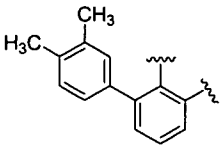
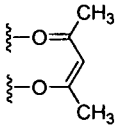
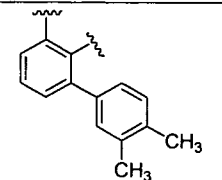
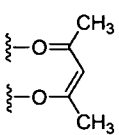
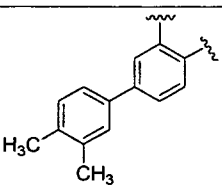
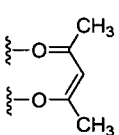
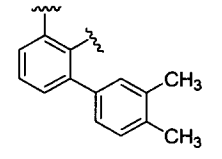
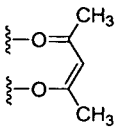
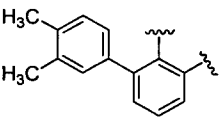
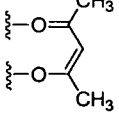
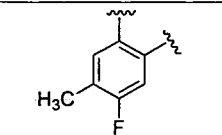
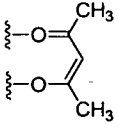
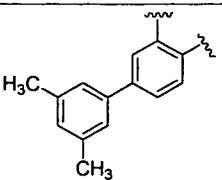
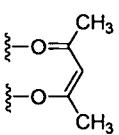
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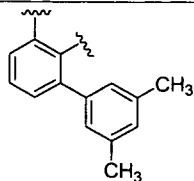
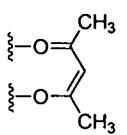
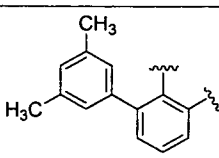
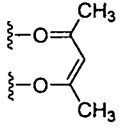
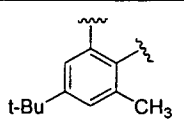
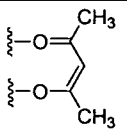
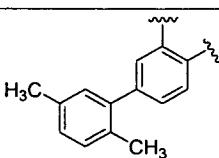
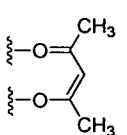
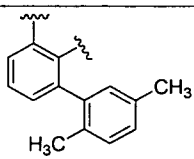
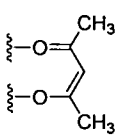
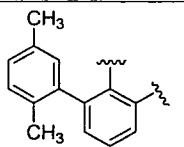
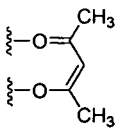
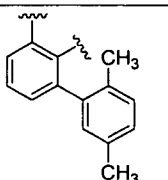
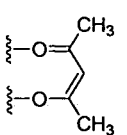
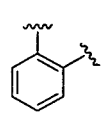
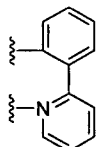
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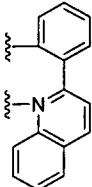
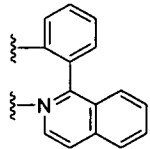
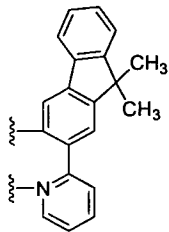
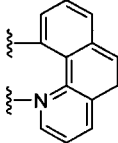
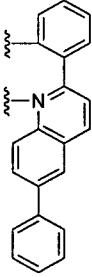
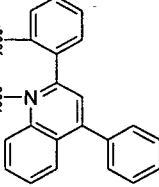
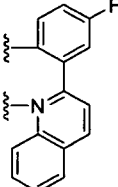
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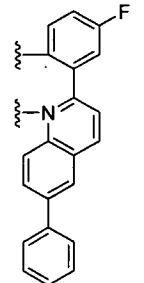
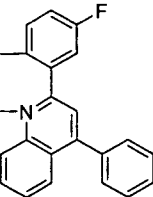
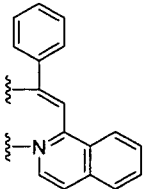
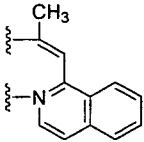
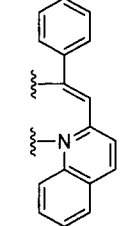
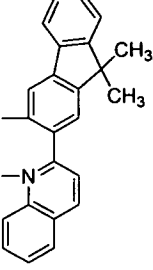
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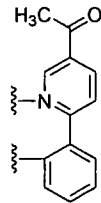
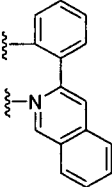
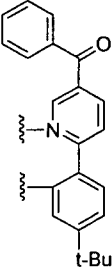
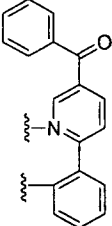
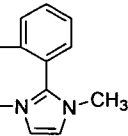
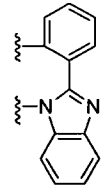
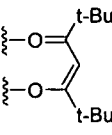
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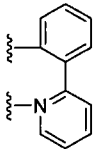
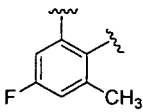
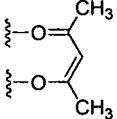
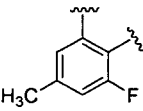
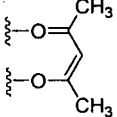
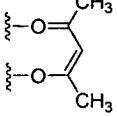
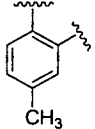
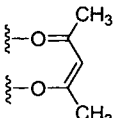
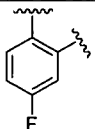
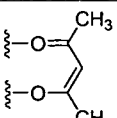
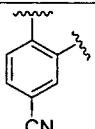
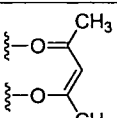
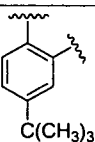
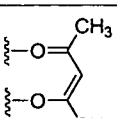
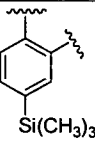
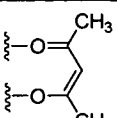
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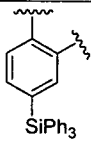
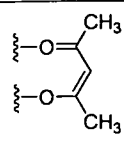
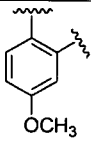
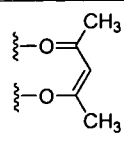
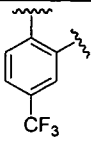
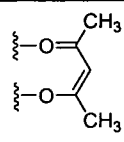
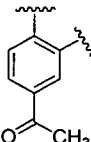
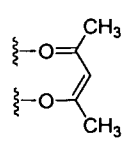
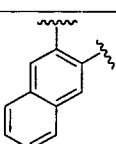
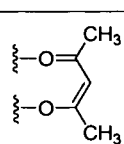
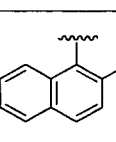
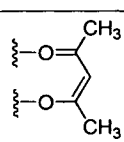
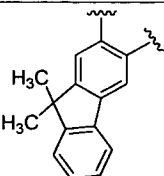
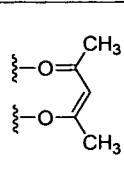
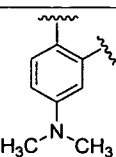
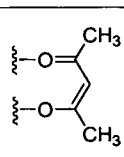
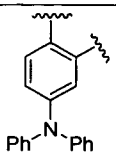
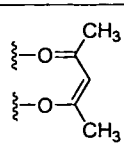
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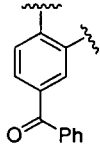
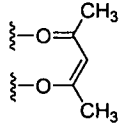
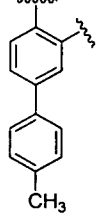
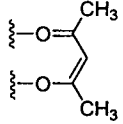
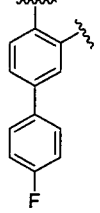
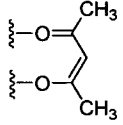
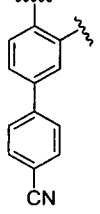
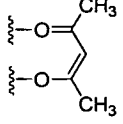
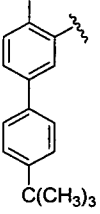
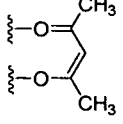
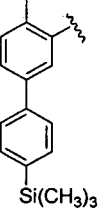
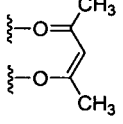
800	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
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802	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
803	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
804	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
805	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
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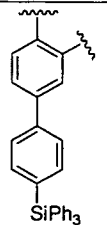
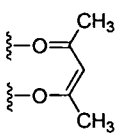
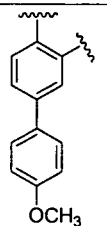
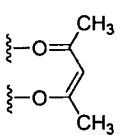
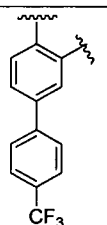
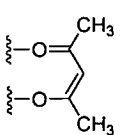
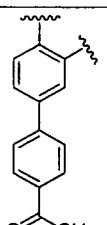
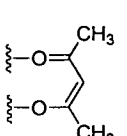
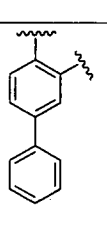
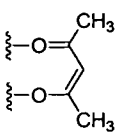
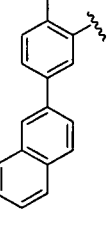
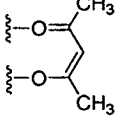
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808	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
809	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
810	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
811	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
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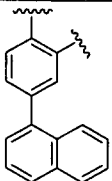
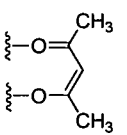
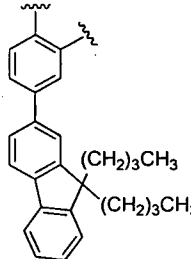
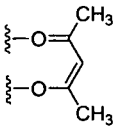
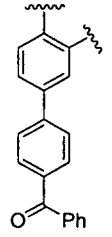
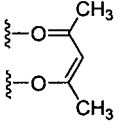
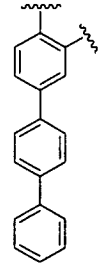
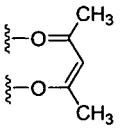
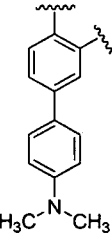
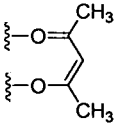
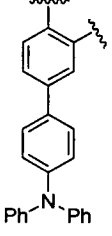
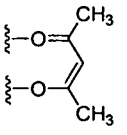
813	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
814	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
815	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
816	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
817	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
818	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
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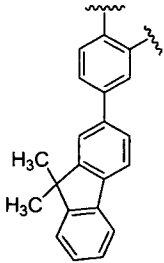
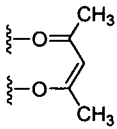
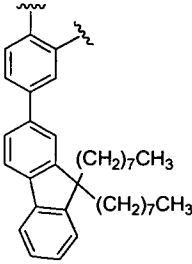
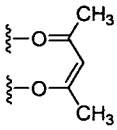
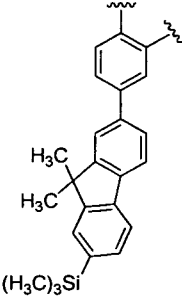
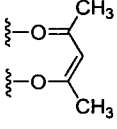
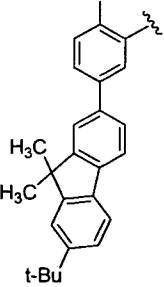
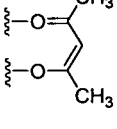
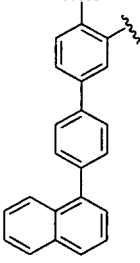
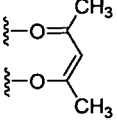
820	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			1
821	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H		-	3
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823	H	H	H	H	H	H	$-\text{C}(\text{CH}_3)_3$	H			2
824	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
825	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
826	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
827	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
828	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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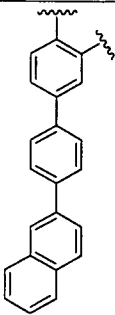
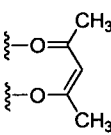
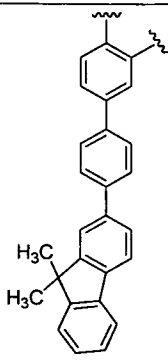
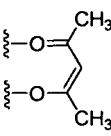
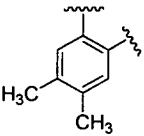
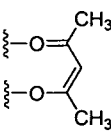
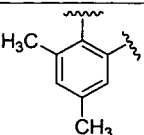
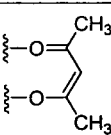
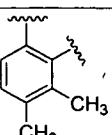
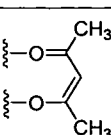
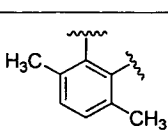
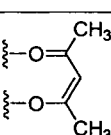
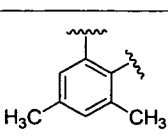
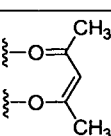
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831	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
832	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
833	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
834	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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836	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
837	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
838	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

839	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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841	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
842	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
843	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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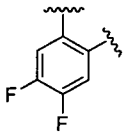
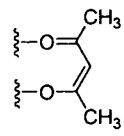
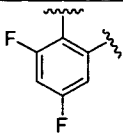
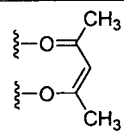
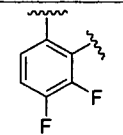
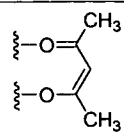
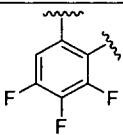
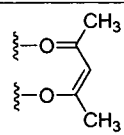
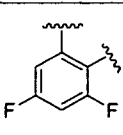
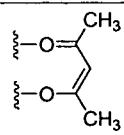
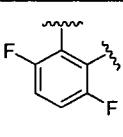
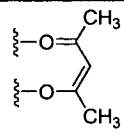
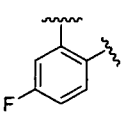
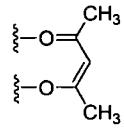
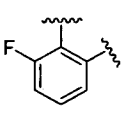
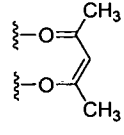
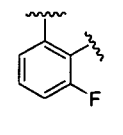
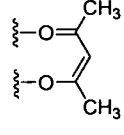
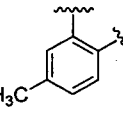
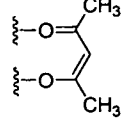
845	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
846	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
847	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
848	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
849	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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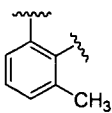
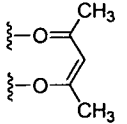
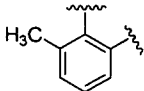
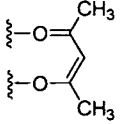
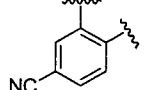
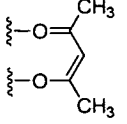
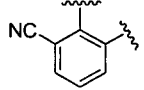
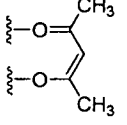
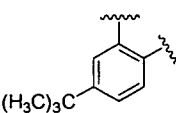
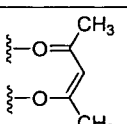
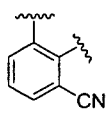
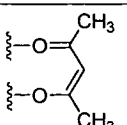
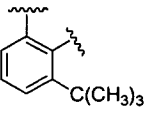
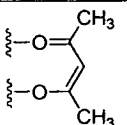
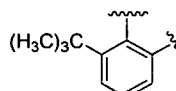
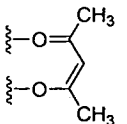
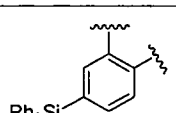
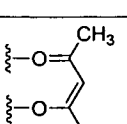
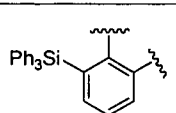
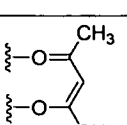
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854	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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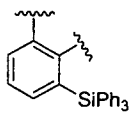
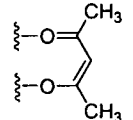
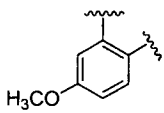
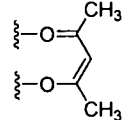
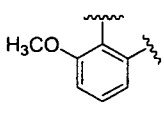
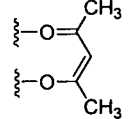
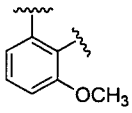
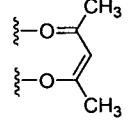
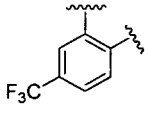
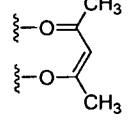
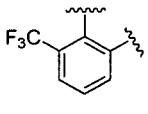
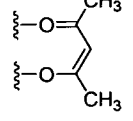
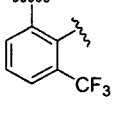
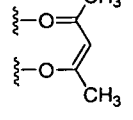
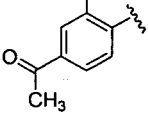
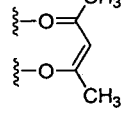
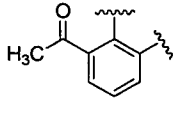
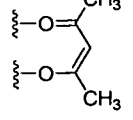
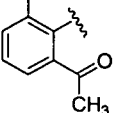
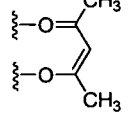
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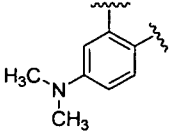
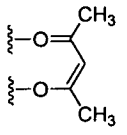
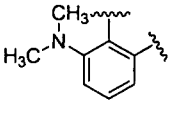
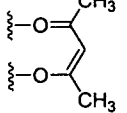
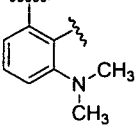
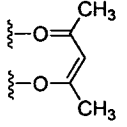
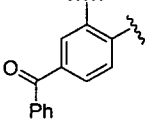
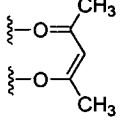
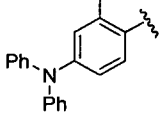
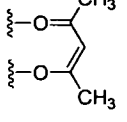
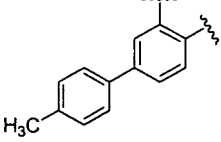
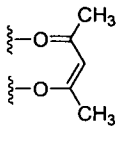
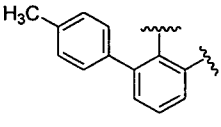
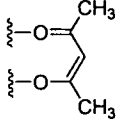
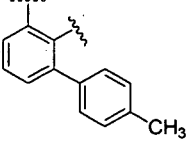
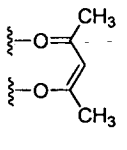
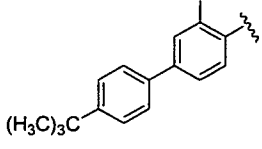
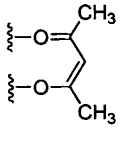
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865	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
866	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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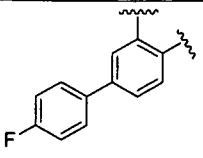
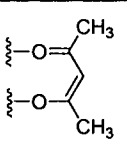
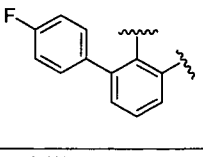
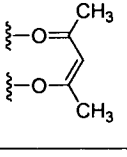
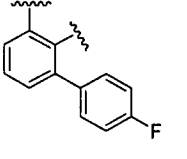
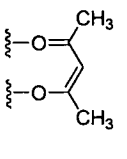
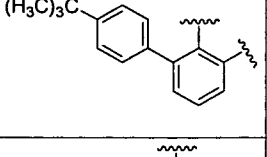
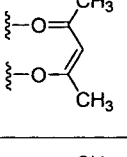
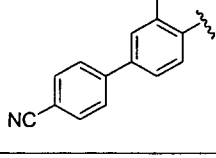
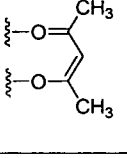
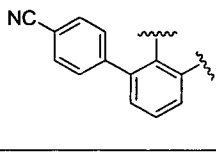
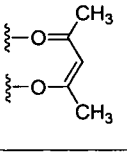
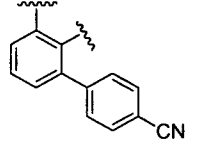
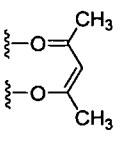
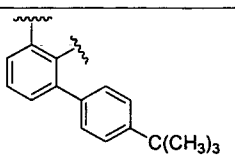
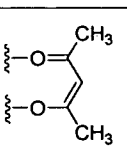
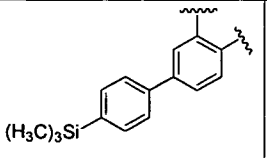
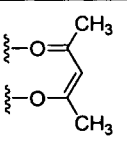
195

869	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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873	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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876	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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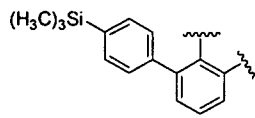
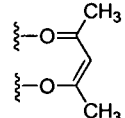
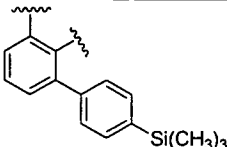
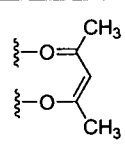
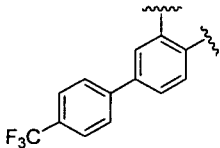
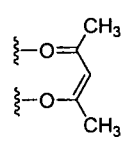
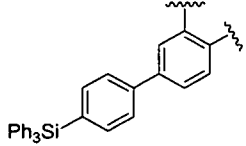
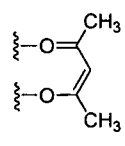
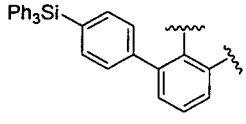
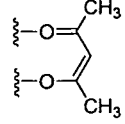
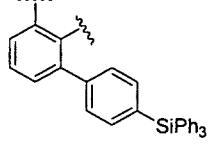
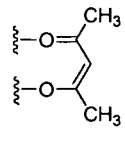
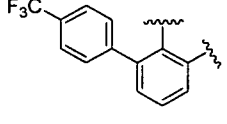
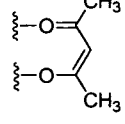
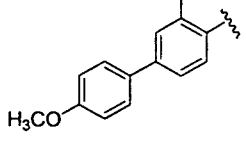
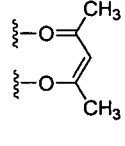
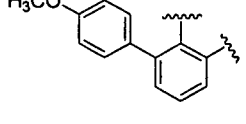
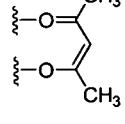
879	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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884	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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886	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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888	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

889	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
890	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
891	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
892	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
893	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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895	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
896	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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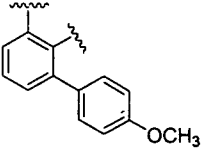
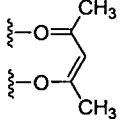
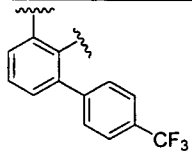
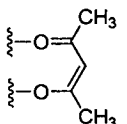
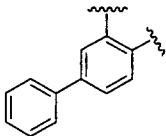
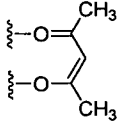
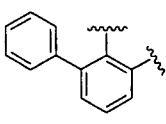
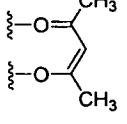
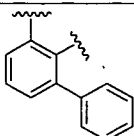
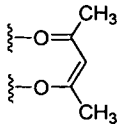
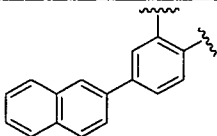
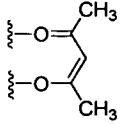
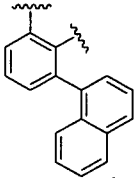
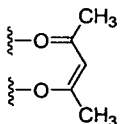
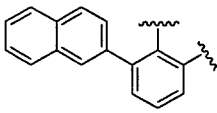
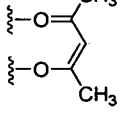
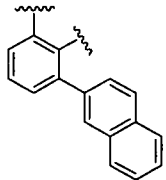
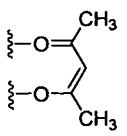
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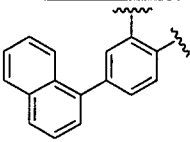
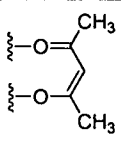
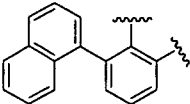
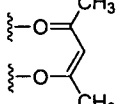
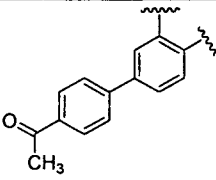
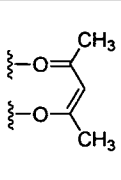
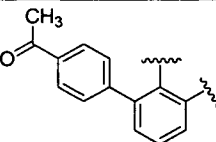
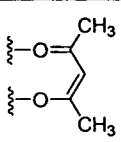
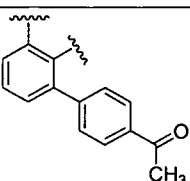
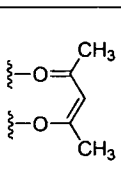
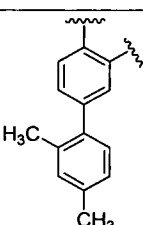
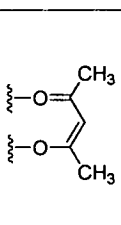
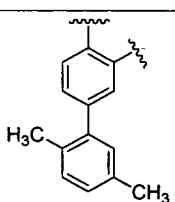
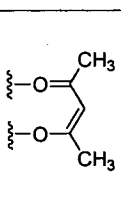
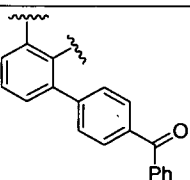
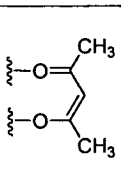
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913	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
914	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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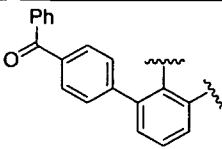
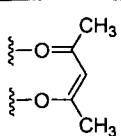
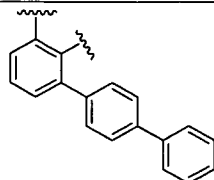
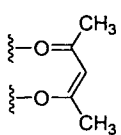
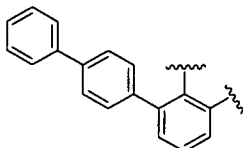
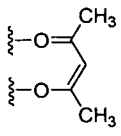
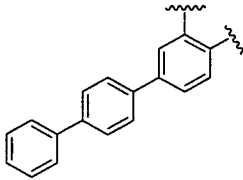
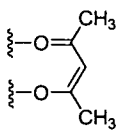
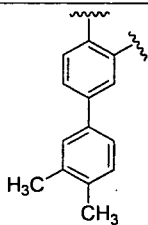
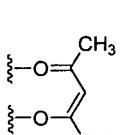
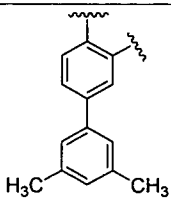
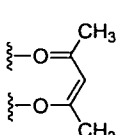
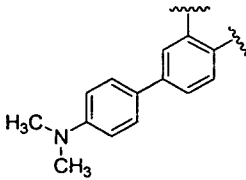
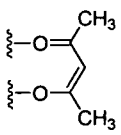
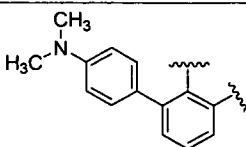
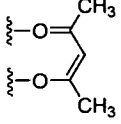
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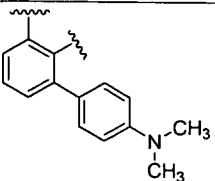
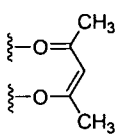
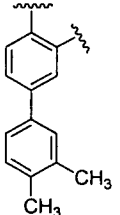
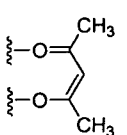
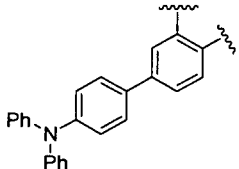
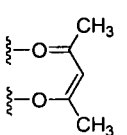
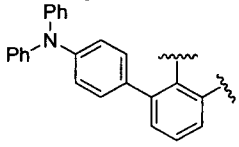
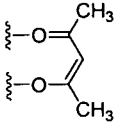
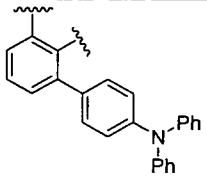
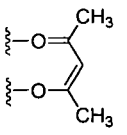
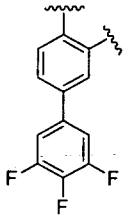
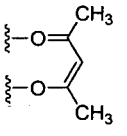
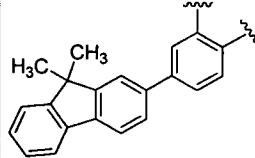
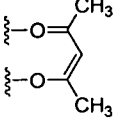
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201

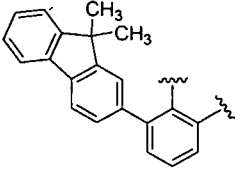
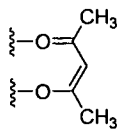
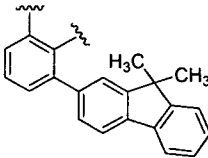
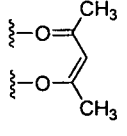
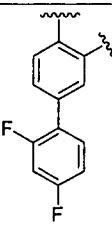
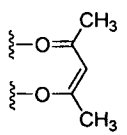
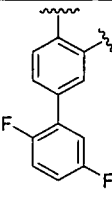
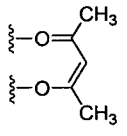
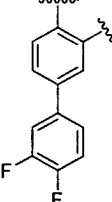
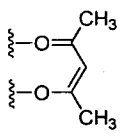
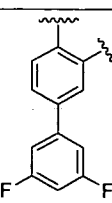
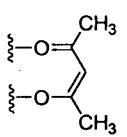
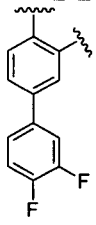
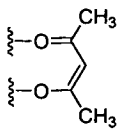
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931	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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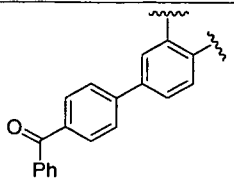
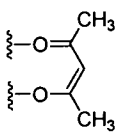
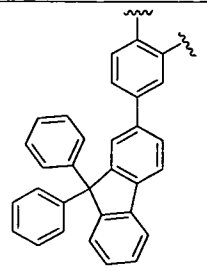
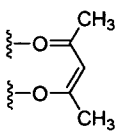
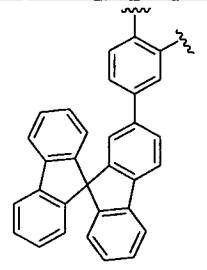
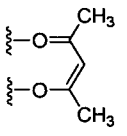
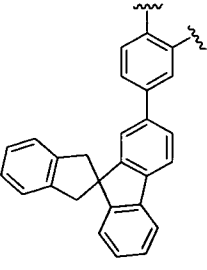
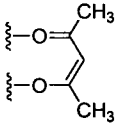
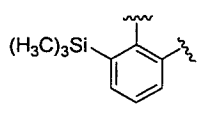
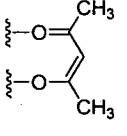
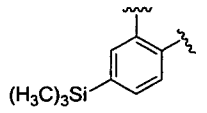
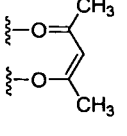
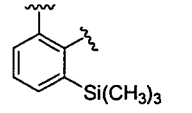
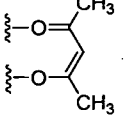
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941	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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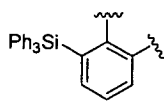
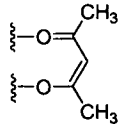
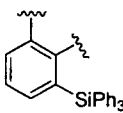
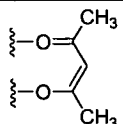
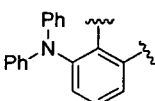
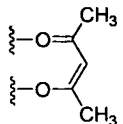
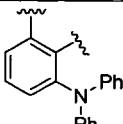
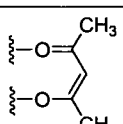
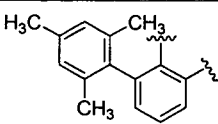
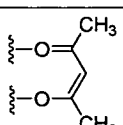
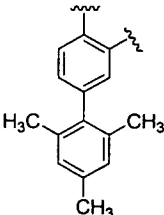
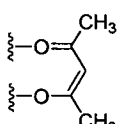
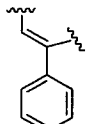
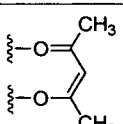
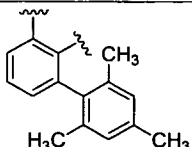
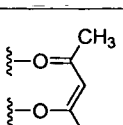
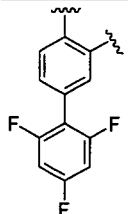
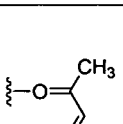
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947	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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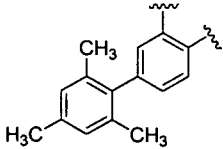
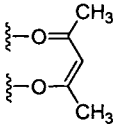
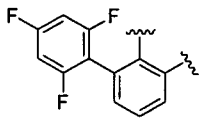
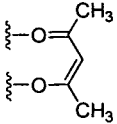
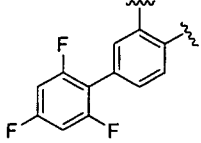
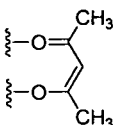
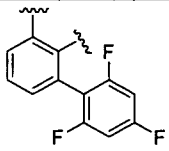
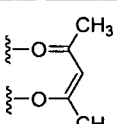
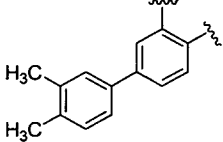
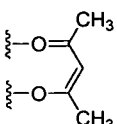
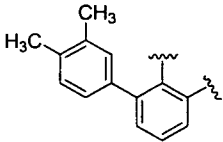
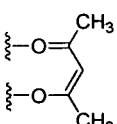
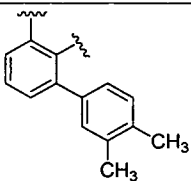
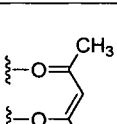
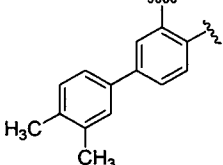
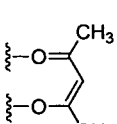
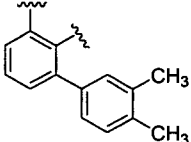
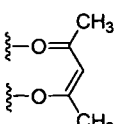
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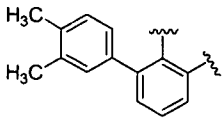
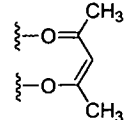
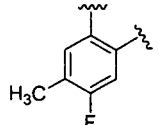
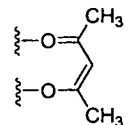
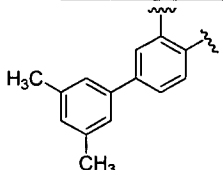
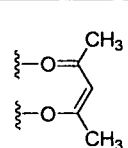
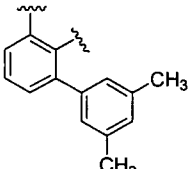
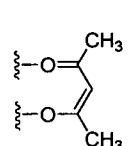
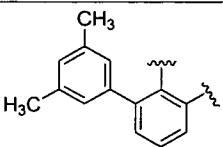
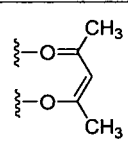
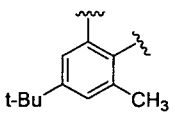
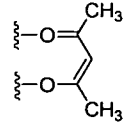
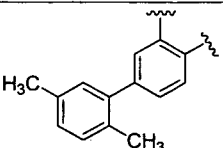
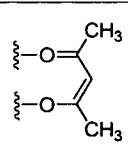
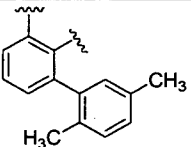
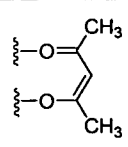
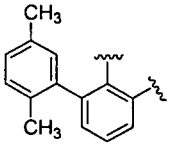
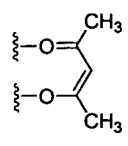
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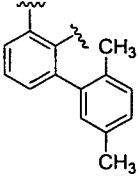
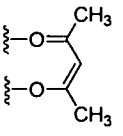
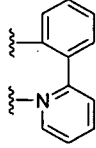
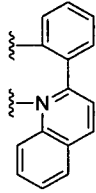
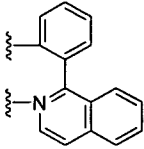
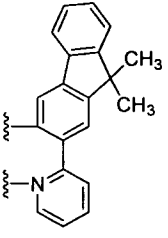
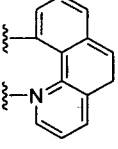
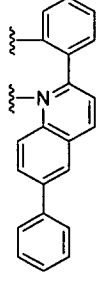
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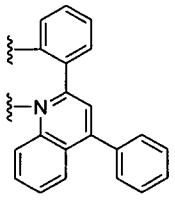
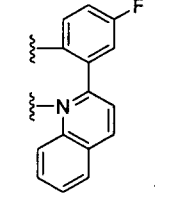
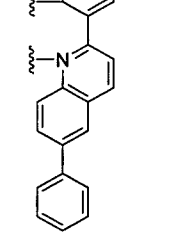
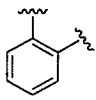
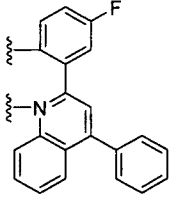
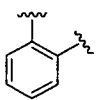
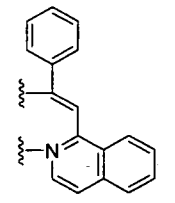
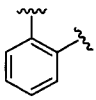
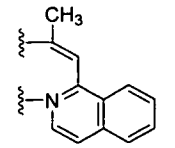
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967	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
968	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
969	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
970	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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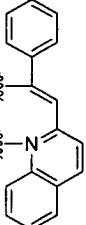
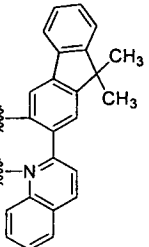
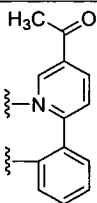
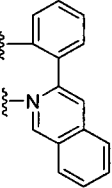
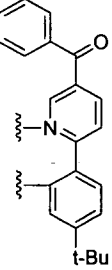
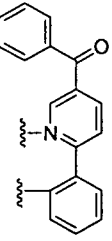
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974	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
975	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
976	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
977	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
978	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
979	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
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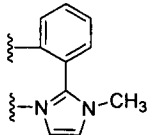
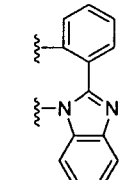
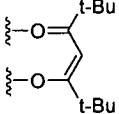
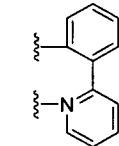
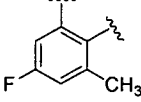
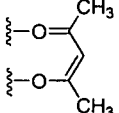
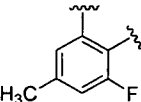
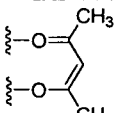
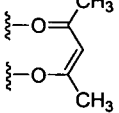
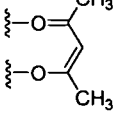
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983	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
984	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
985	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
986	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
987	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
988	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
989	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

990	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
991	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
992	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
993	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
994	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
995	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
996	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
997	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
998	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

999	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1000	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1001	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1002	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1003	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1004	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1005	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

1006	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1007	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1008	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1009	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1010	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1011	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

1012	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1013	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1014	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1015	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1016	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1017	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2

1018	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1019	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1020	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1021	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			1
1022	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H		-	3
1023	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1024	H	H	H	H	H	H	$-\text{Si}(\text{CH}_3)_3$	H			2
1025	H	H	H	H	H	H	$-\text{SiPh}_3$	H			2
1026	H	H	H	H	H	H	$-\text{OCH}_3$	H			2

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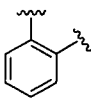
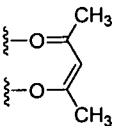
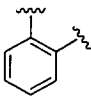
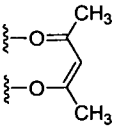
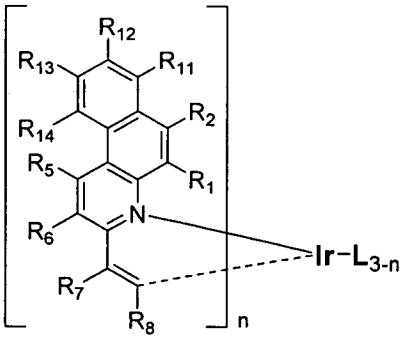
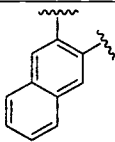
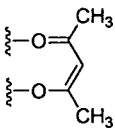
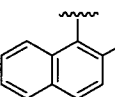
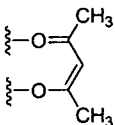
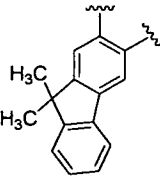
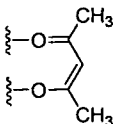
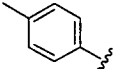
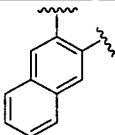
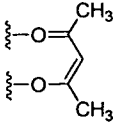
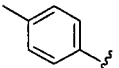
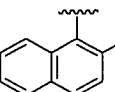
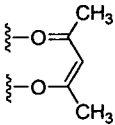
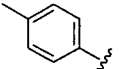
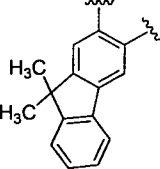
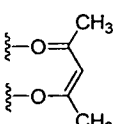
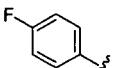
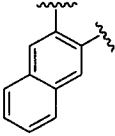
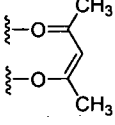
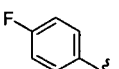
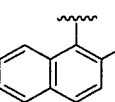
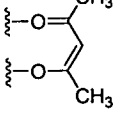
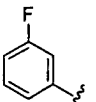
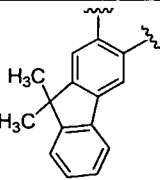
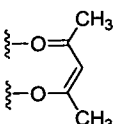
1027	H	H	H	H	H	H	-CF ₃	H			2
1028	H	H	H	H	H	H	-CN	H			2

Table 3

											
Compound No.	R ₁	R ₂	R ₁₁	R ₁₂	R ₁₃	R ₁₄	R ₅	R ₆		L	n

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1029	H	H	H	H	H	H		H			2
1030	H	H	H	H	H	H		H			2
1031	H	H	H	H	H	H		H			2
1032	H	H	H	H	H	H		H			2
1033	H	H	H	H	H	H		H			2
1034	H	H	H	H	H	H		H			2
1035	H	H	H	H	H	H		H			2
1036	H	H	H	H	H	H		H			2
1037	H	H	H	H	H	H		H			2

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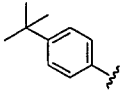
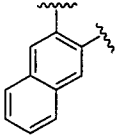
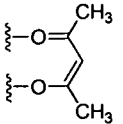
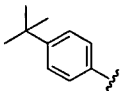
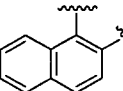
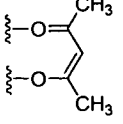
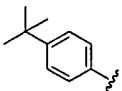
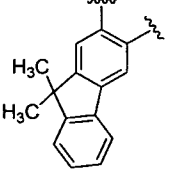
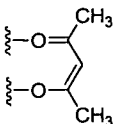
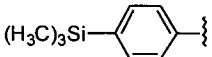
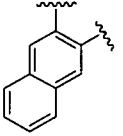
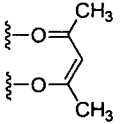
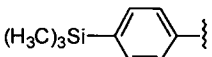
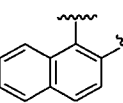
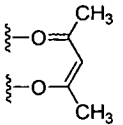
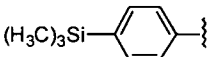
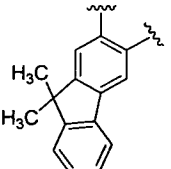
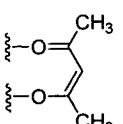
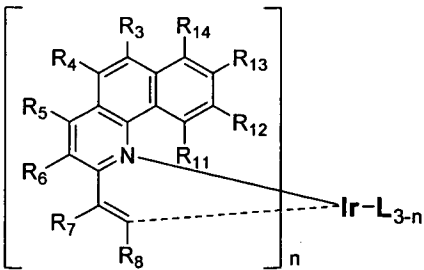
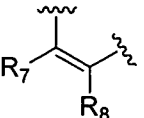
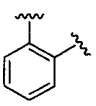
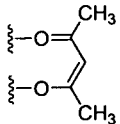
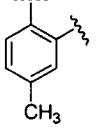
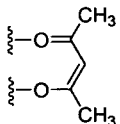
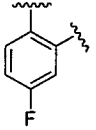
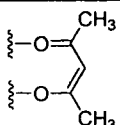
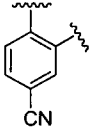
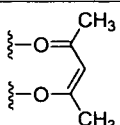
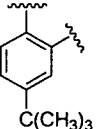
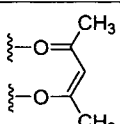
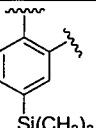
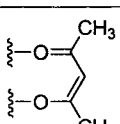
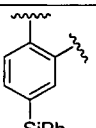
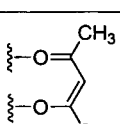
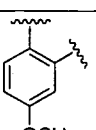
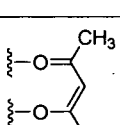
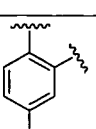
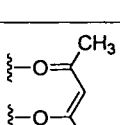
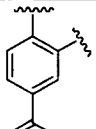
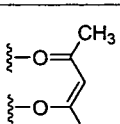
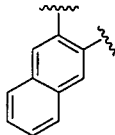
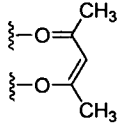
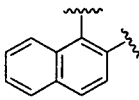
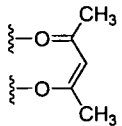
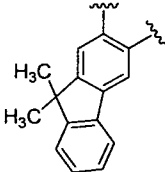
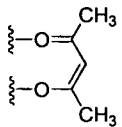
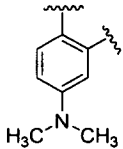
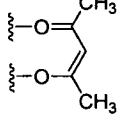
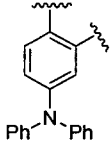
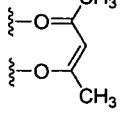
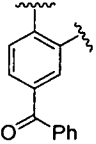
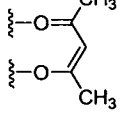
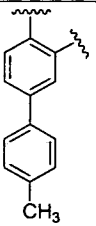
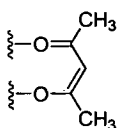
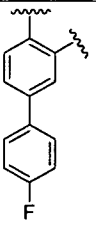
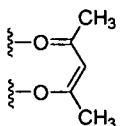
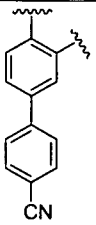
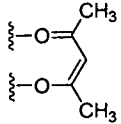
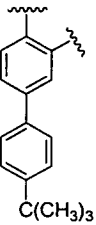
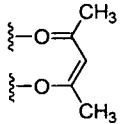
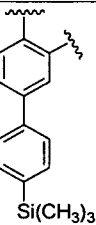
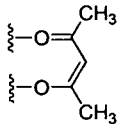
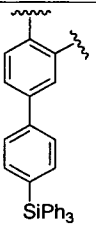
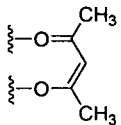
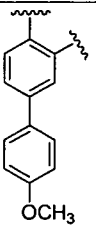
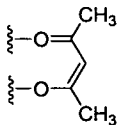
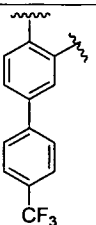
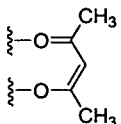
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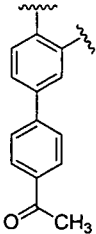
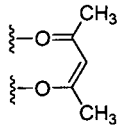
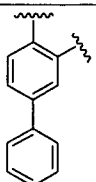
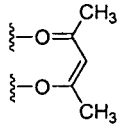
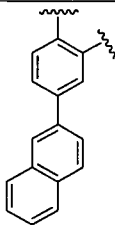
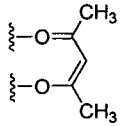
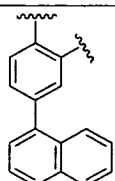
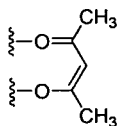
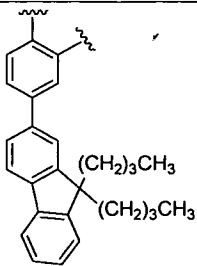
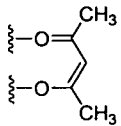
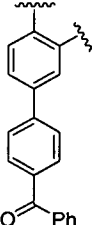
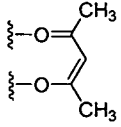
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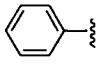
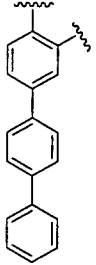
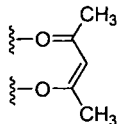
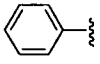
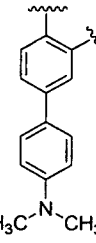
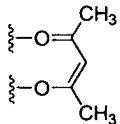
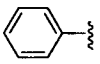
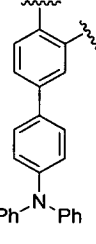
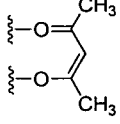
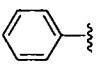
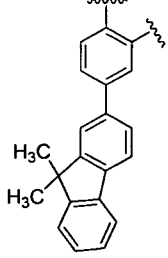
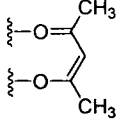
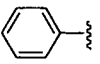
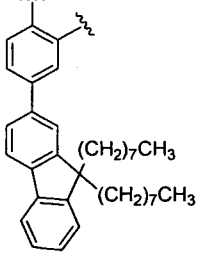
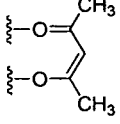
											
Compound No.	R ₁	R ₂	R ₁₁	R ₁₂	R ₁₃	R ₁₄	R ₅	R ₆		L	n

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1046	H	H	H	H	H	H		H			2
1047	H	H	H	H	H	H		H			2
1048	H	H	H	H	H	H		H			2
1049	H	H	H	H	H	H		H			2
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1051	H	H	H	H	H	H		H			2
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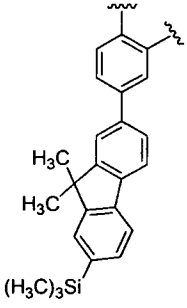
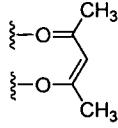
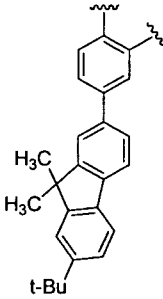
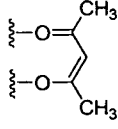
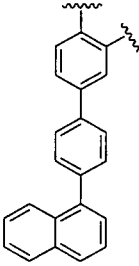
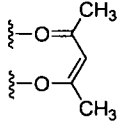
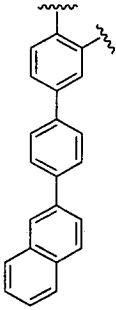
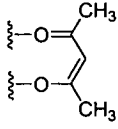
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1059	H	H	H	H	H	H		H			2
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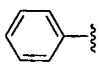
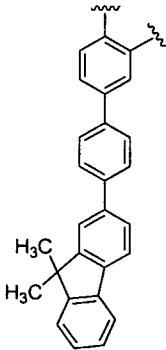
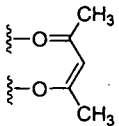
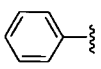
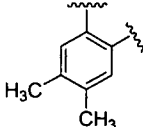
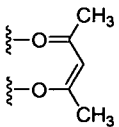
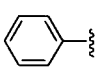
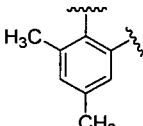
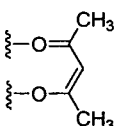
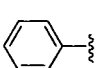
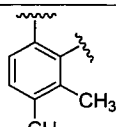
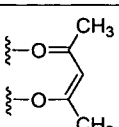
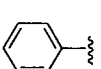
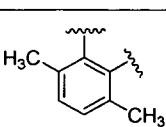
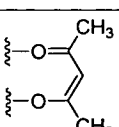
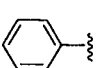
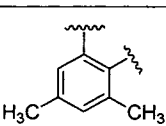
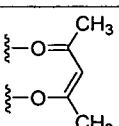
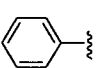
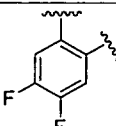
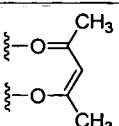
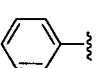
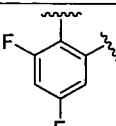
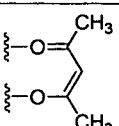
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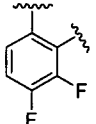
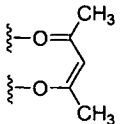
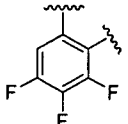
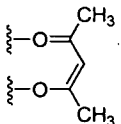
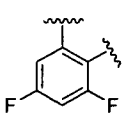
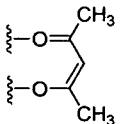
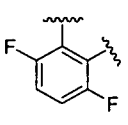
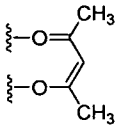
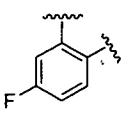
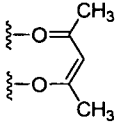
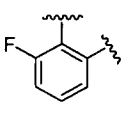
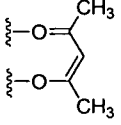
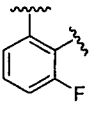
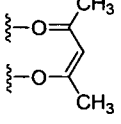
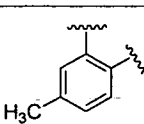
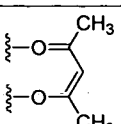
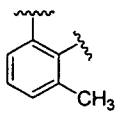
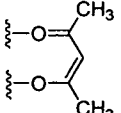
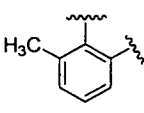
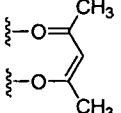
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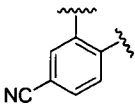
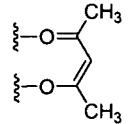
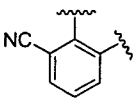
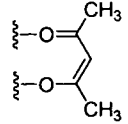
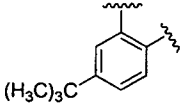
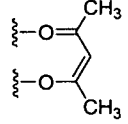
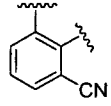
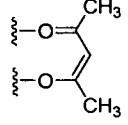
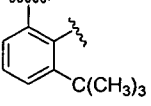
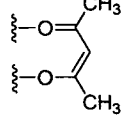
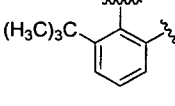
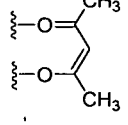
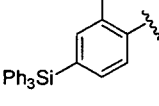
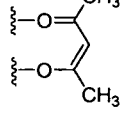
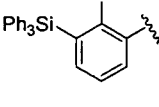
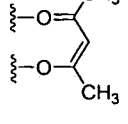
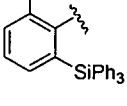
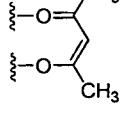
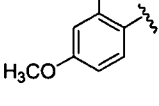
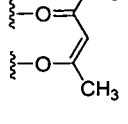
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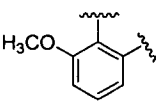
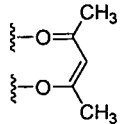
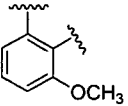
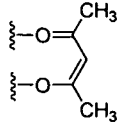
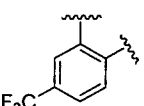
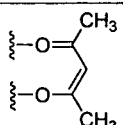
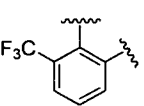
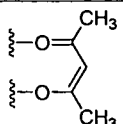
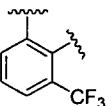
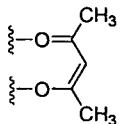
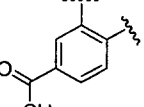
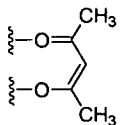
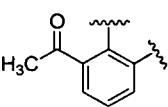
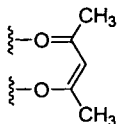
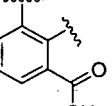
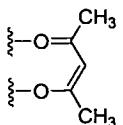
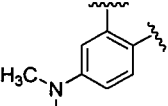
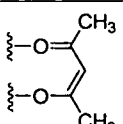
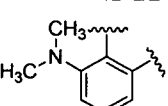
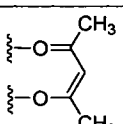
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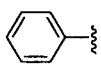
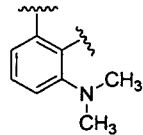
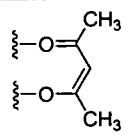
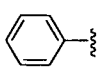
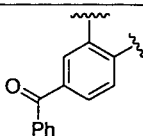
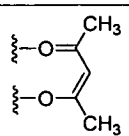
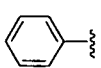
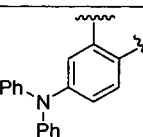
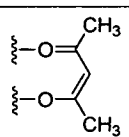
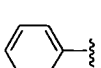
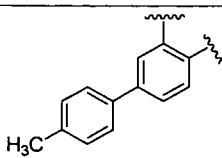
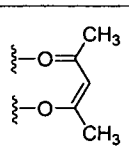
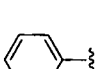
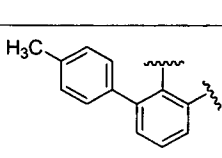
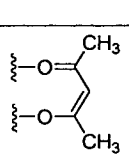
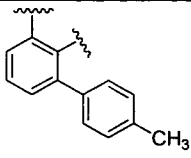
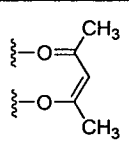
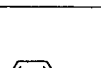
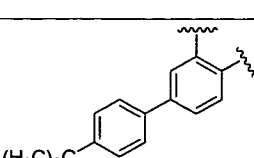
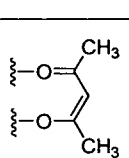
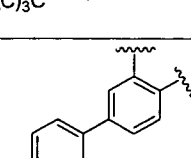
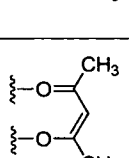
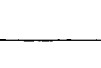
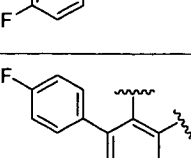
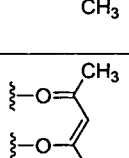
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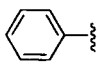
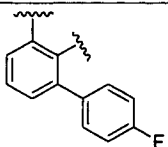
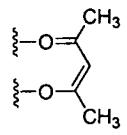
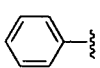
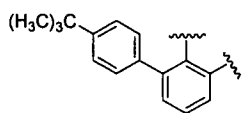
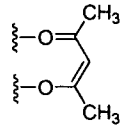
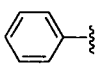
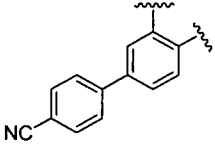
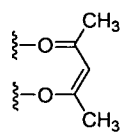
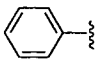
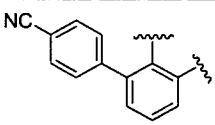
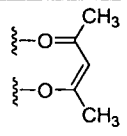
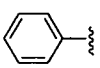
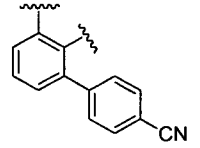
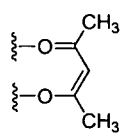
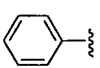
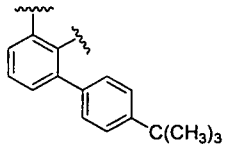
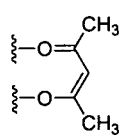
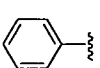
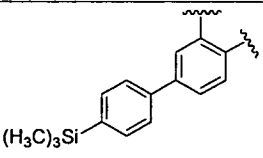
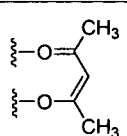
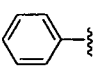
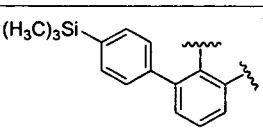
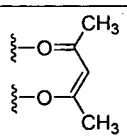
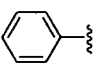
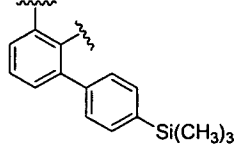
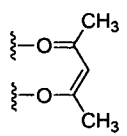
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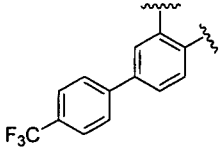
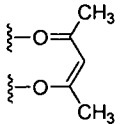
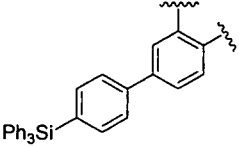
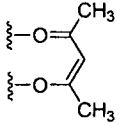
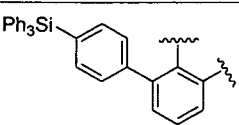
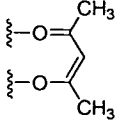
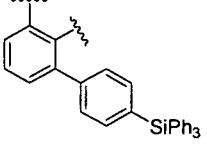
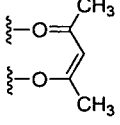
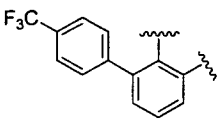
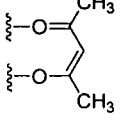
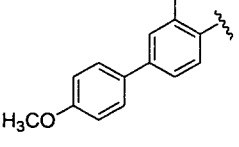
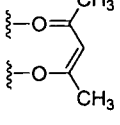
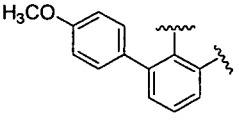
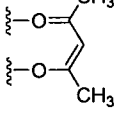
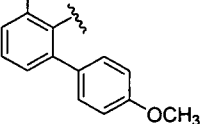
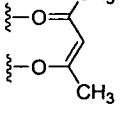
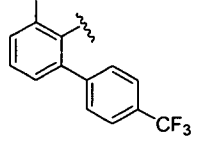
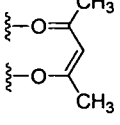
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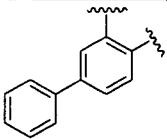
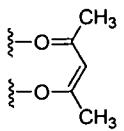
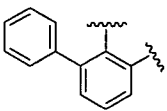
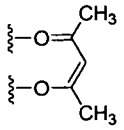
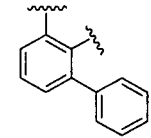
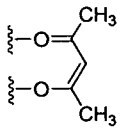
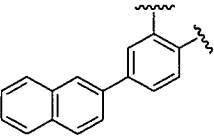
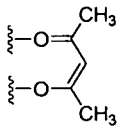
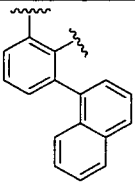
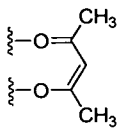
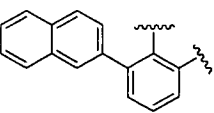
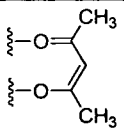
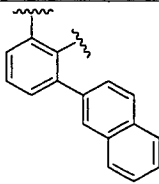
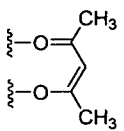
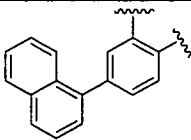
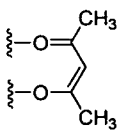
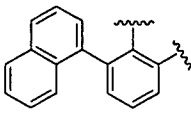
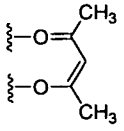
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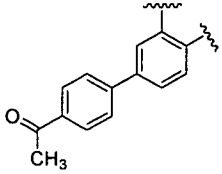
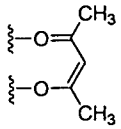
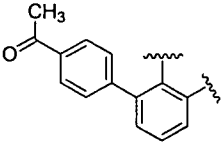
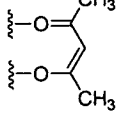
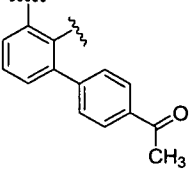
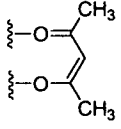
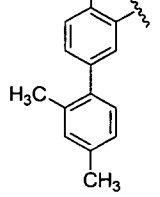
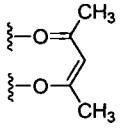
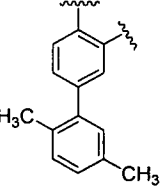
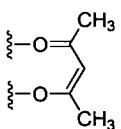
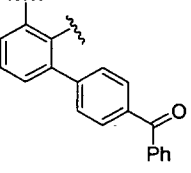
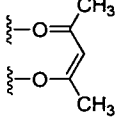
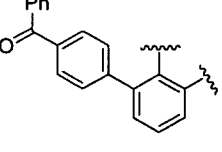
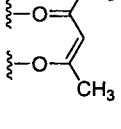
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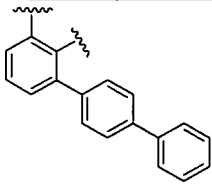
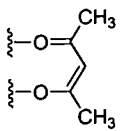
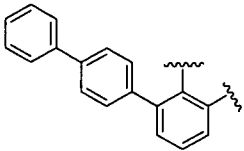
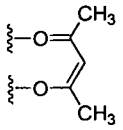
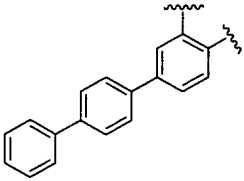
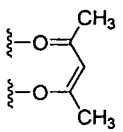
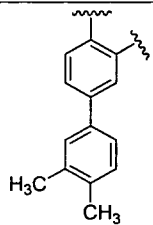
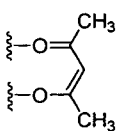
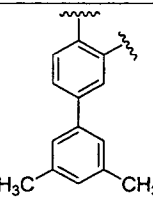
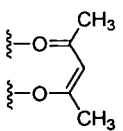
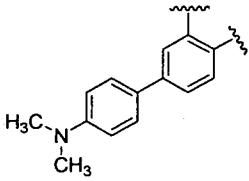
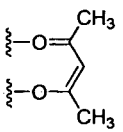
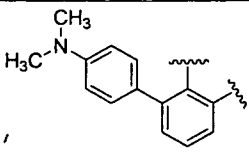
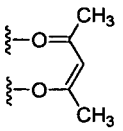
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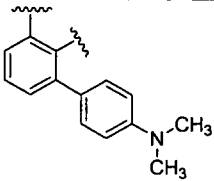
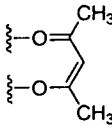
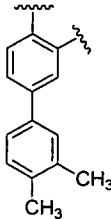
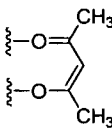
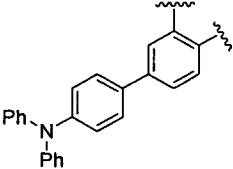
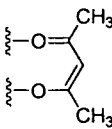
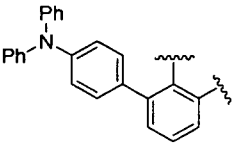
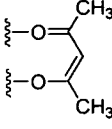
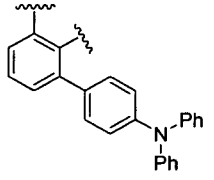
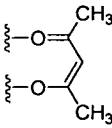
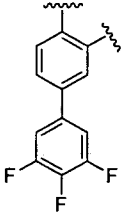
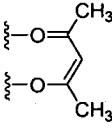
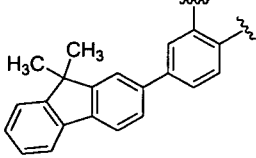
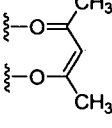
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1136	H	H	H	H	H	H		H			2
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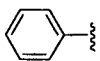
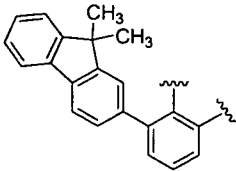
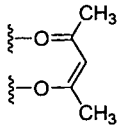
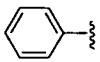
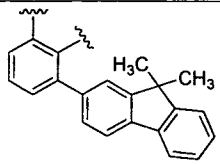
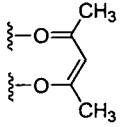
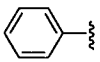
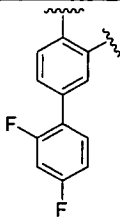
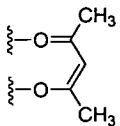
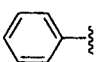
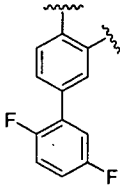
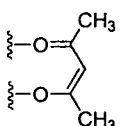
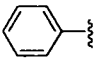
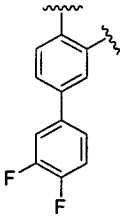
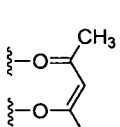
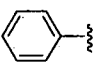
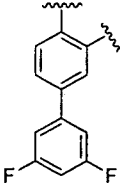
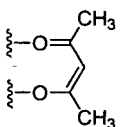
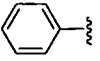
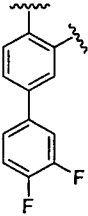
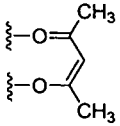
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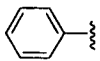
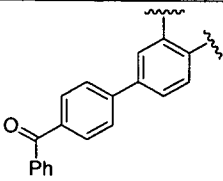
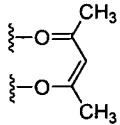
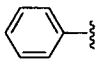
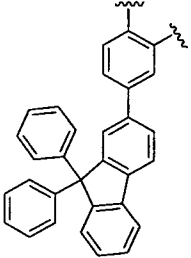
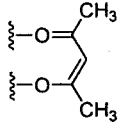
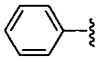
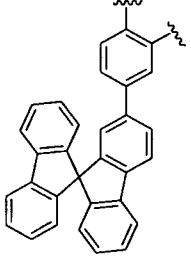
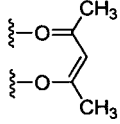
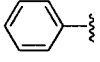
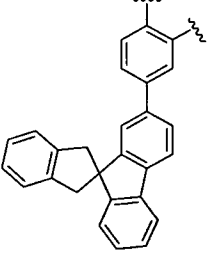
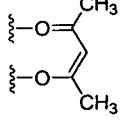
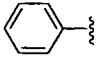
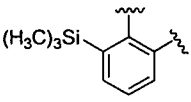
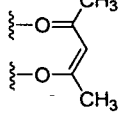
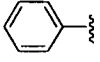
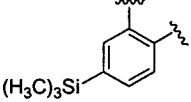
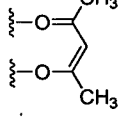
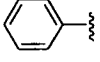
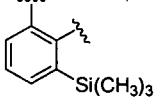
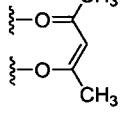
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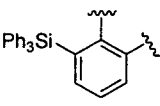
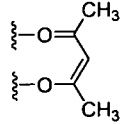
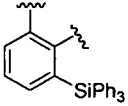
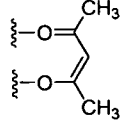
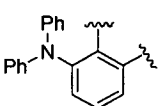
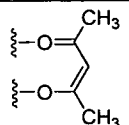
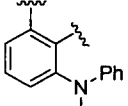
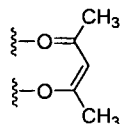
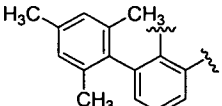
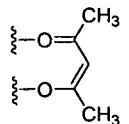
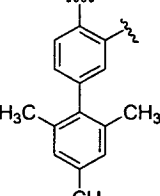
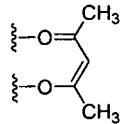
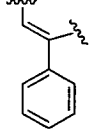
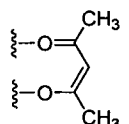
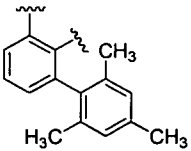
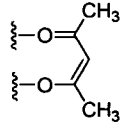
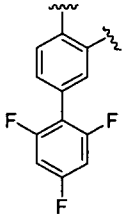
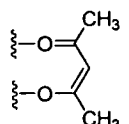
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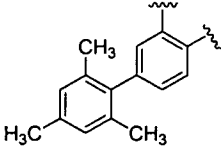
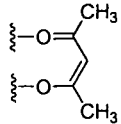
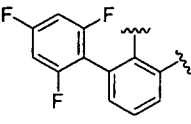
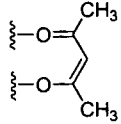
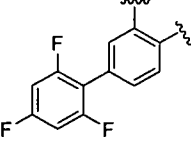
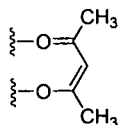
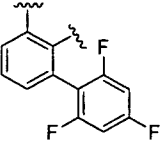
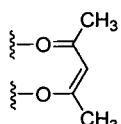
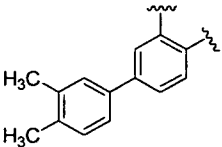
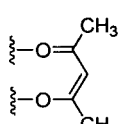
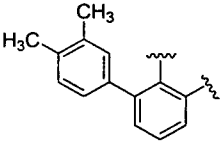
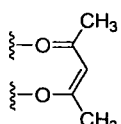
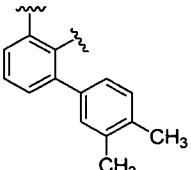
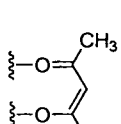
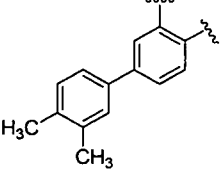
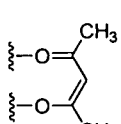
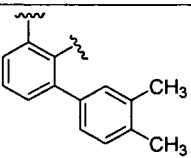
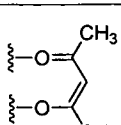
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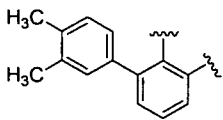
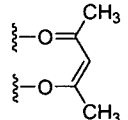
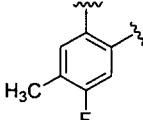
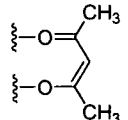
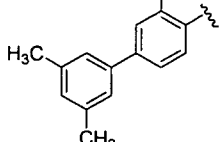
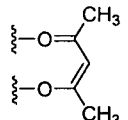
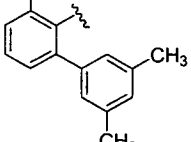
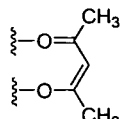
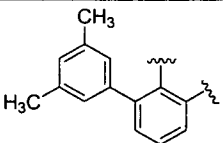
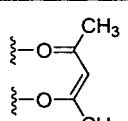
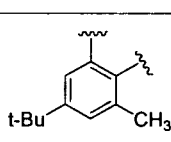
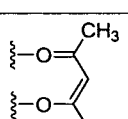
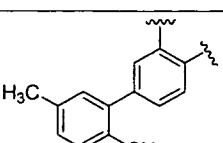
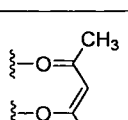
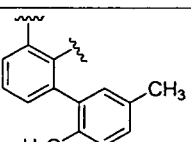
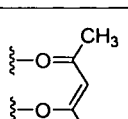
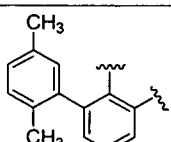
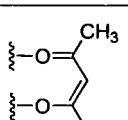
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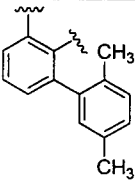
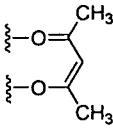
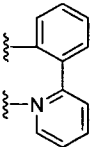
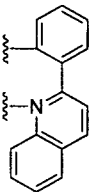
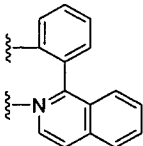
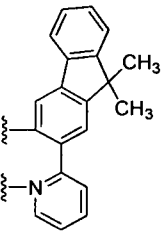
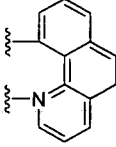
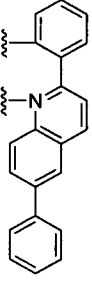
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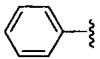
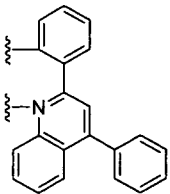
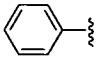
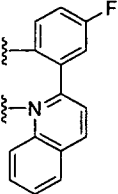
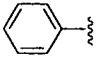
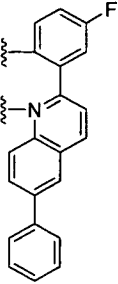
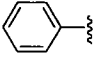
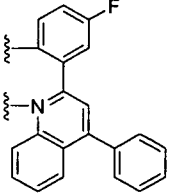
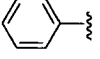
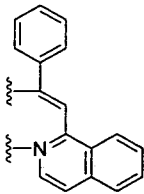
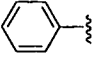
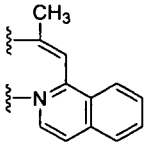
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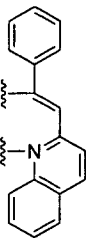
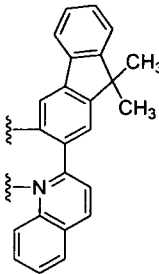
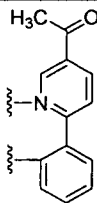
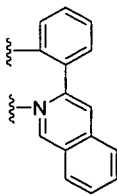
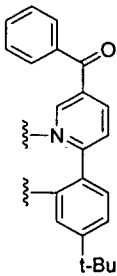
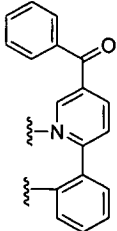
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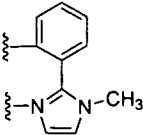
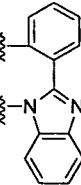
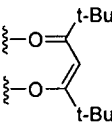
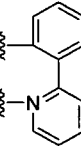
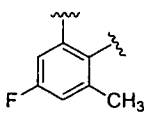
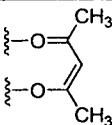
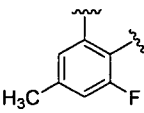
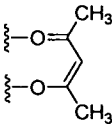
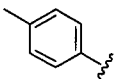
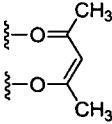
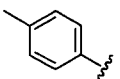
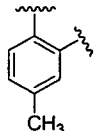
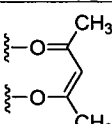
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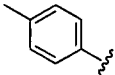
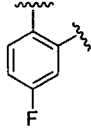
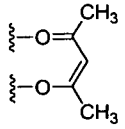
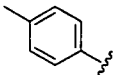
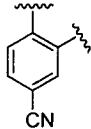
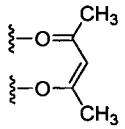
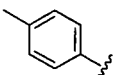
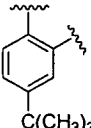
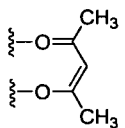
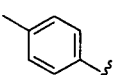
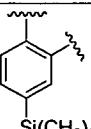
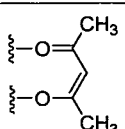
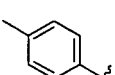
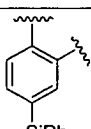
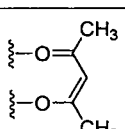
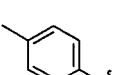
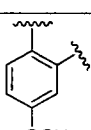
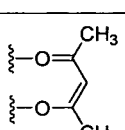
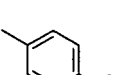
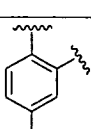
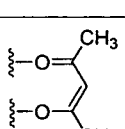
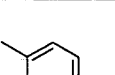
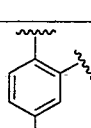
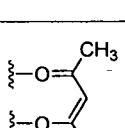
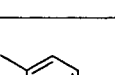
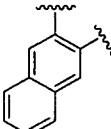
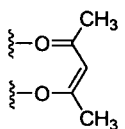
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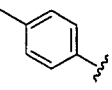
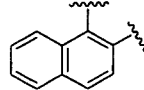
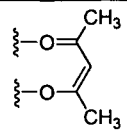
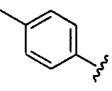
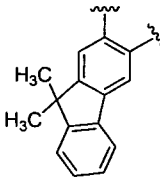
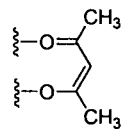
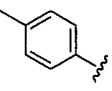
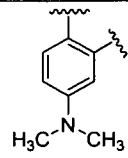
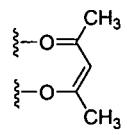
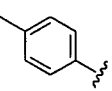
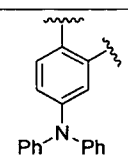
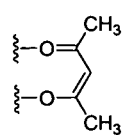
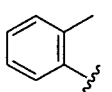
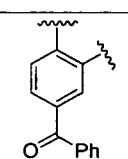
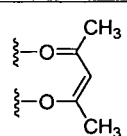
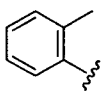
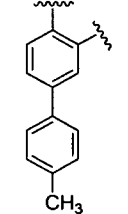
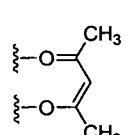
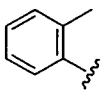
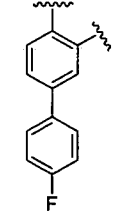
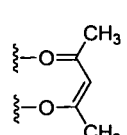
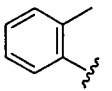
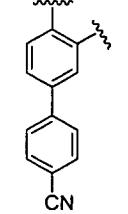
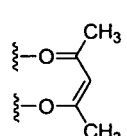
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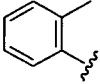
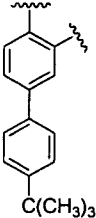
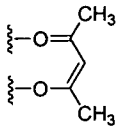
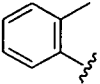
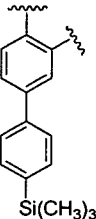
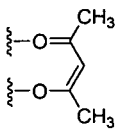
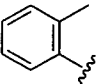
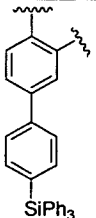
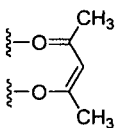
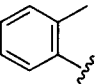
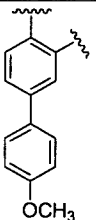
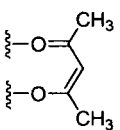
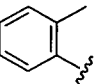
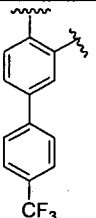
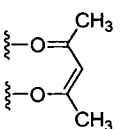
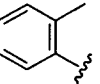
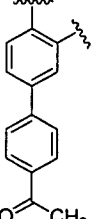
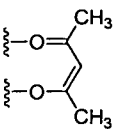
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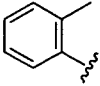
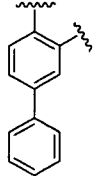
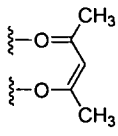
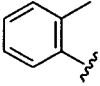
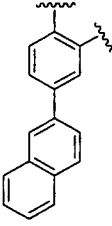
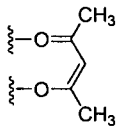
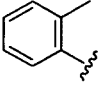
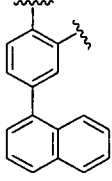
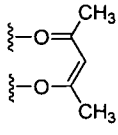
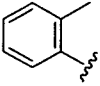
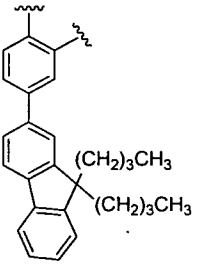
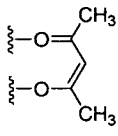
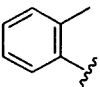
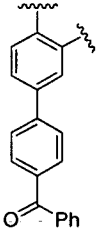
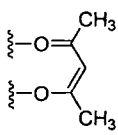
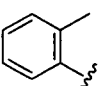
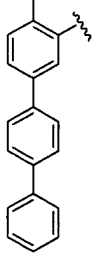
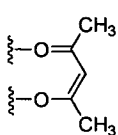
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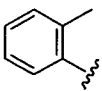
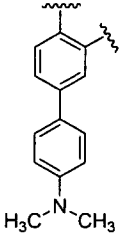
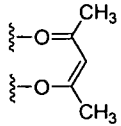
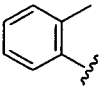
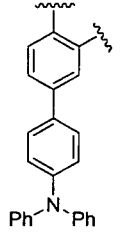
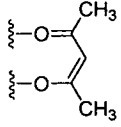
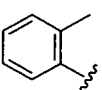
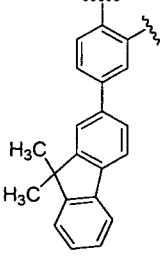
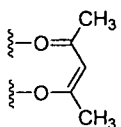
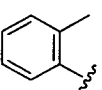
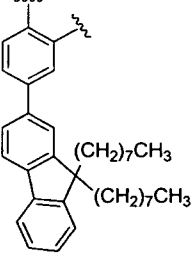
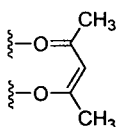
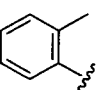
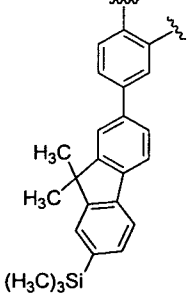
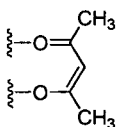
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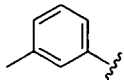
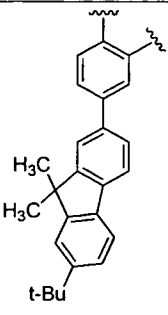
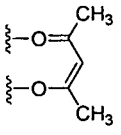
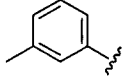
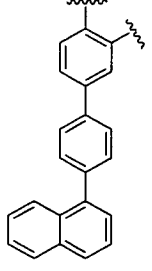
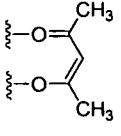
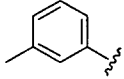
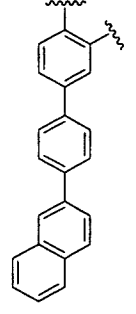
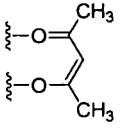
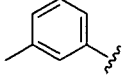
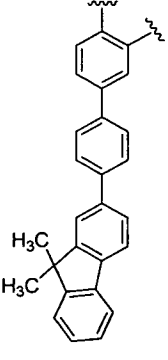
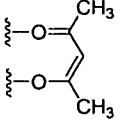
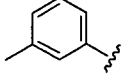
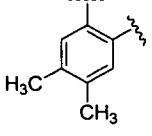
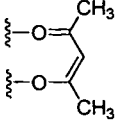
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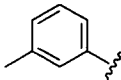
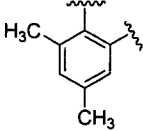
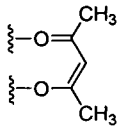
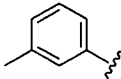
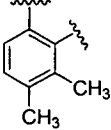
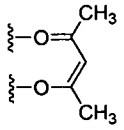
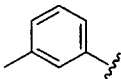
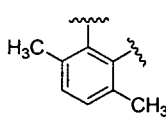
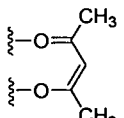
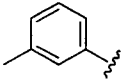
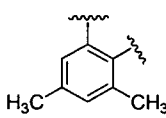
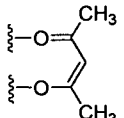
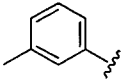
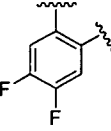
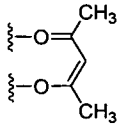
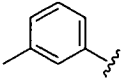
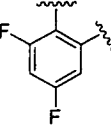
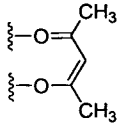
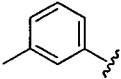
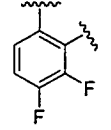
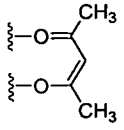
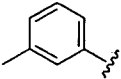
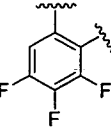
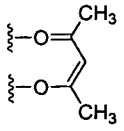
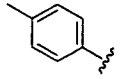
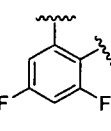
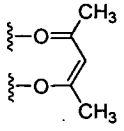
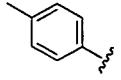
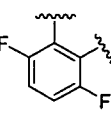
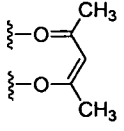
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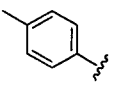
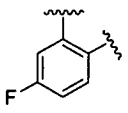
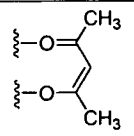
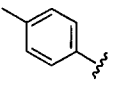
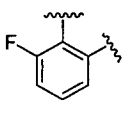
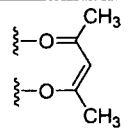
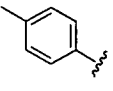
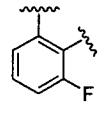
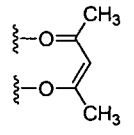
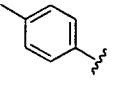
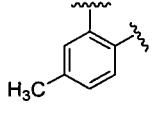
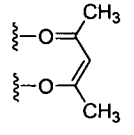
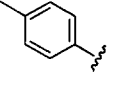
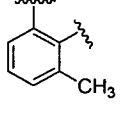
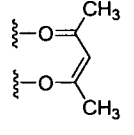
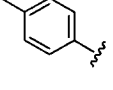
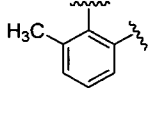
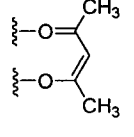
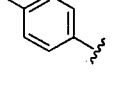
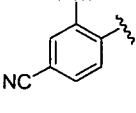
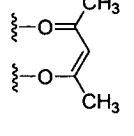
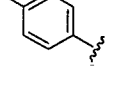
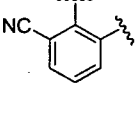
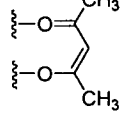
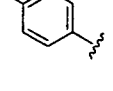
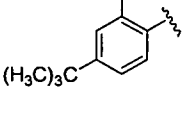
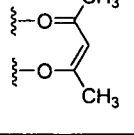
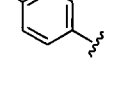
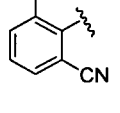
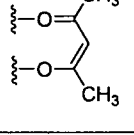
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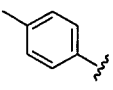
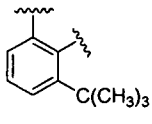
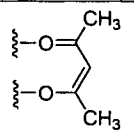
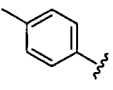
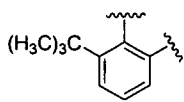
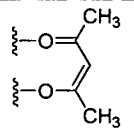
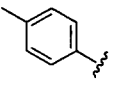
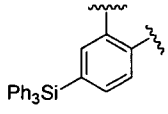
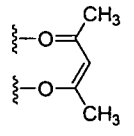
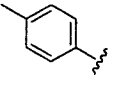
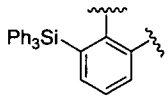
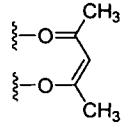
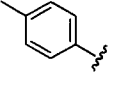
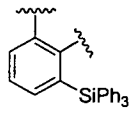
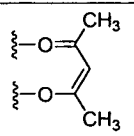
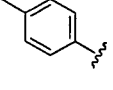
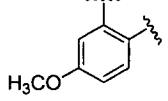
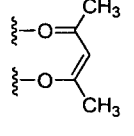
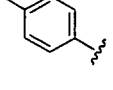
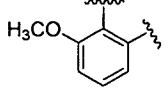
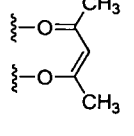
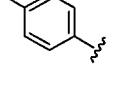
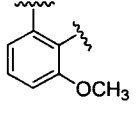
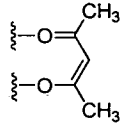
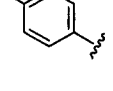
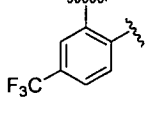
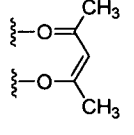
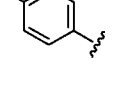
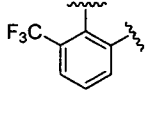
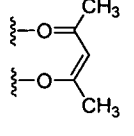
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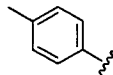
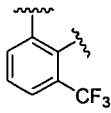
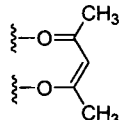
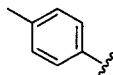
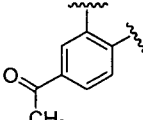
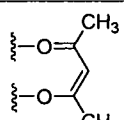
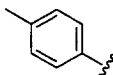
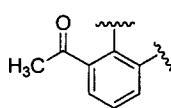
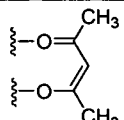
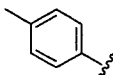
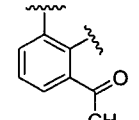
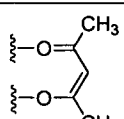
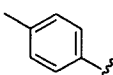
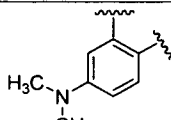
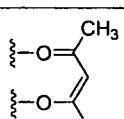
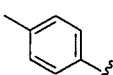
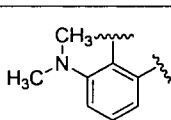
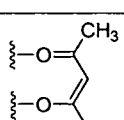
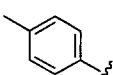
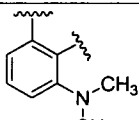
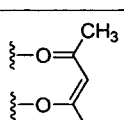
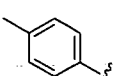
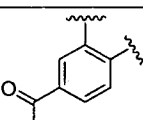
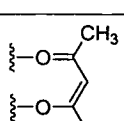
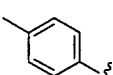
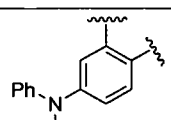
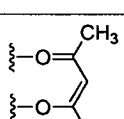
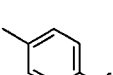
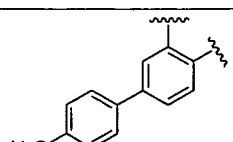
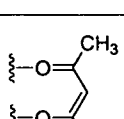
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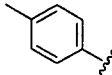
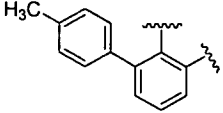
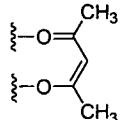
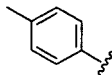
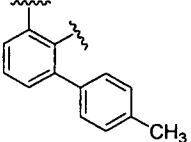
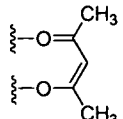
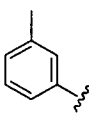
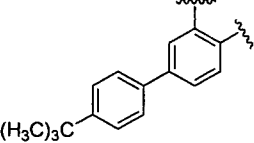
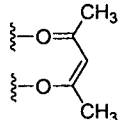
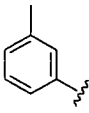
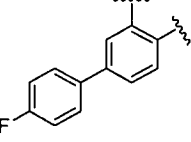
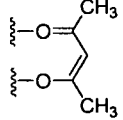
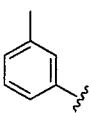
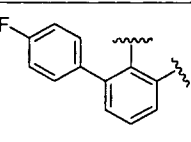
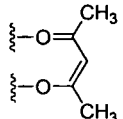
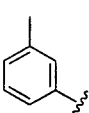
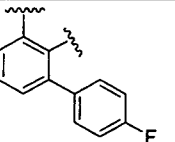
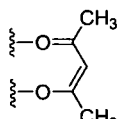
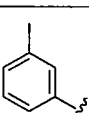
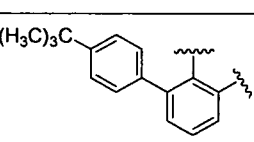
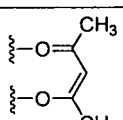
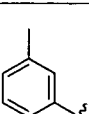
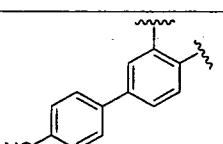
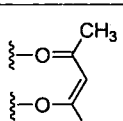
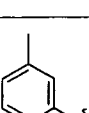
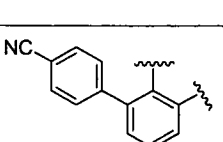
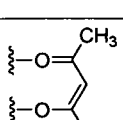
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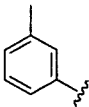
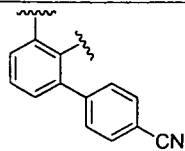
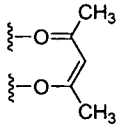
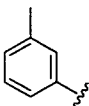
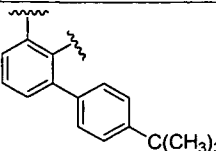
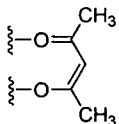
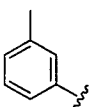
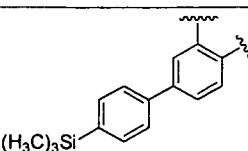
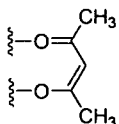
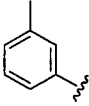
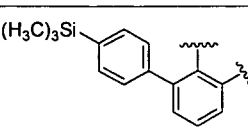
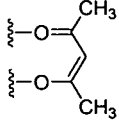
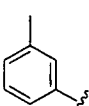
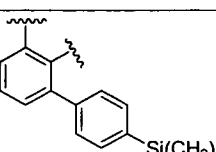
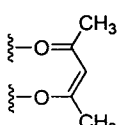
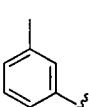
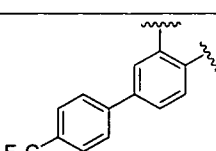
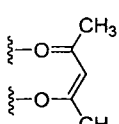
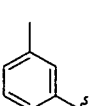
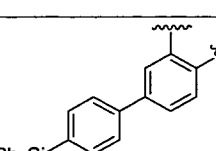
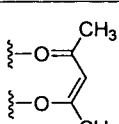
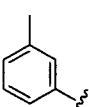
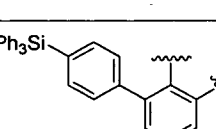
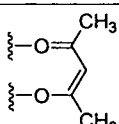
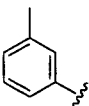
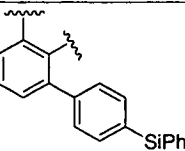
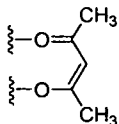
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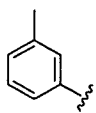
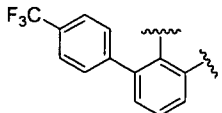
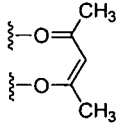
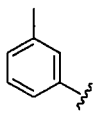
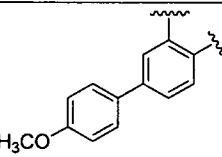
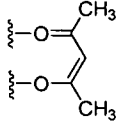
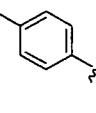
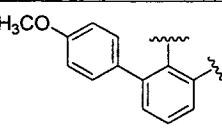
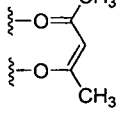
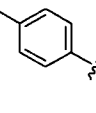
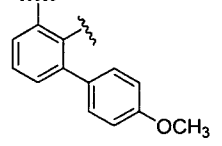
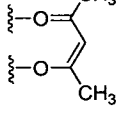
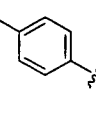
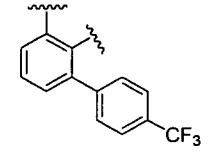
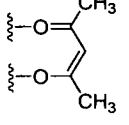
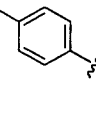
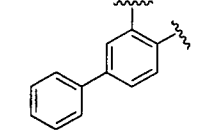
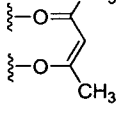
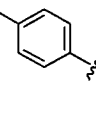
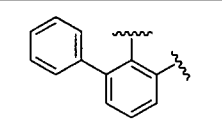
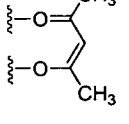
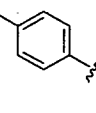
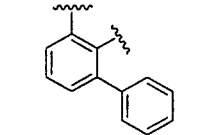
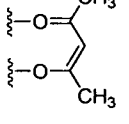
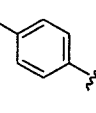
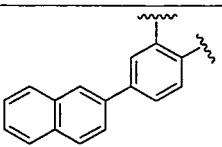
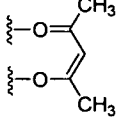
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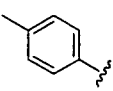
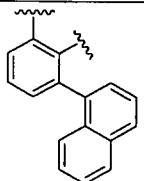
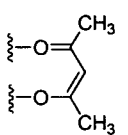
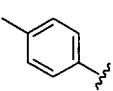
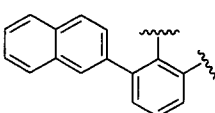
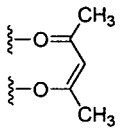
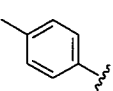
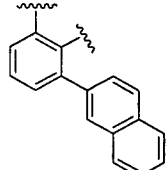
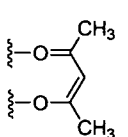
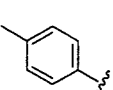
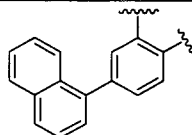
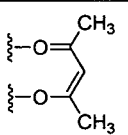
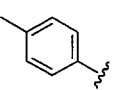
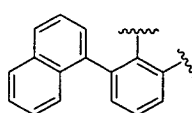
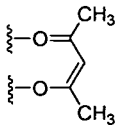
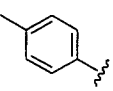
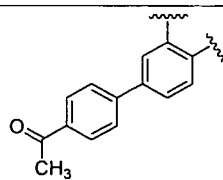
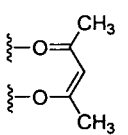
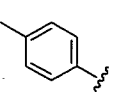
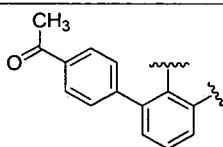
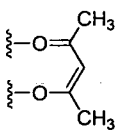
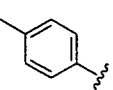
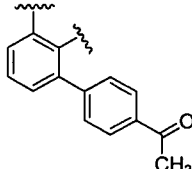
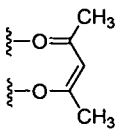
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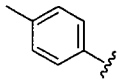
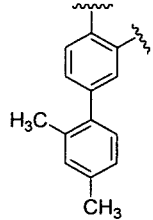
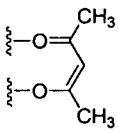
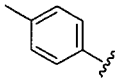
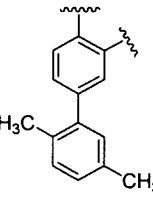
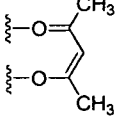
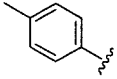
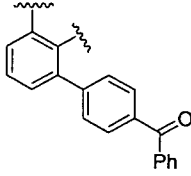
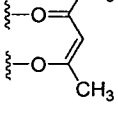
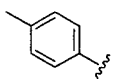
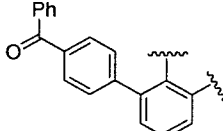
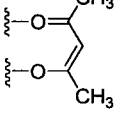
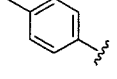
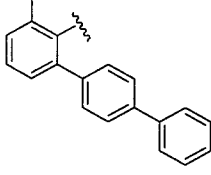
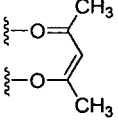
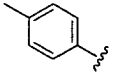
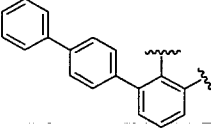
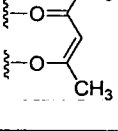
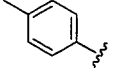
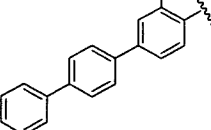
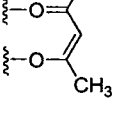
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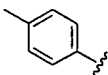
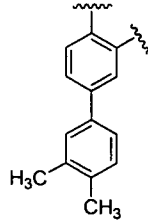
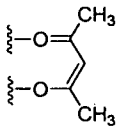
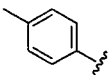
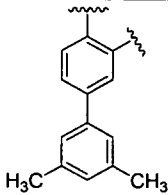
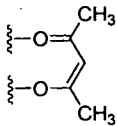
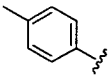
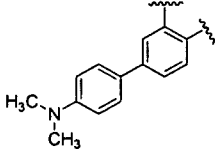
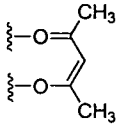
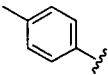
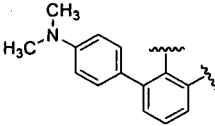
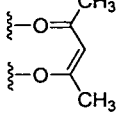
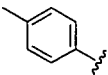
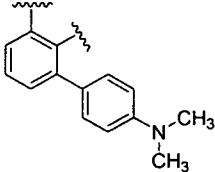
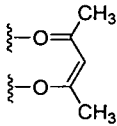
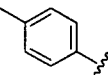
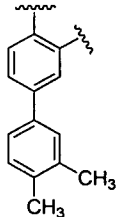
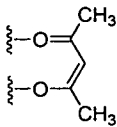
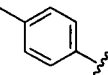
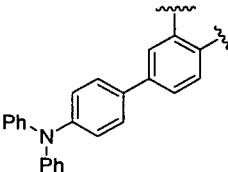
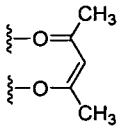
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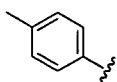
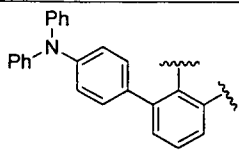
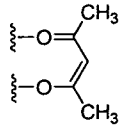
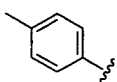
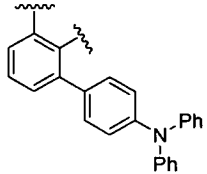
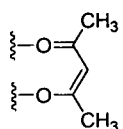
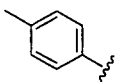
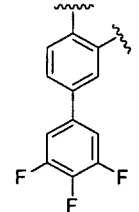
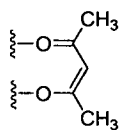
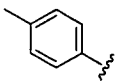
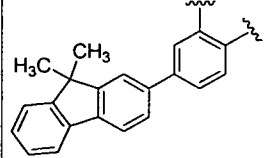
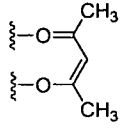
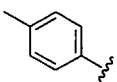
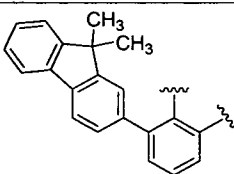
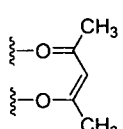
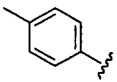
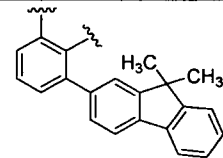
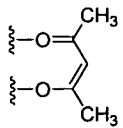
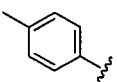
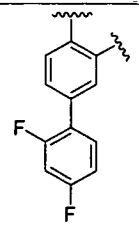
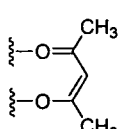
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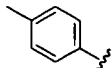
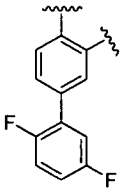
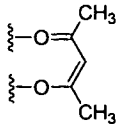
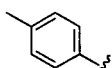
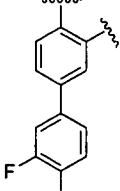
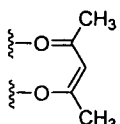
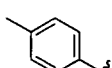
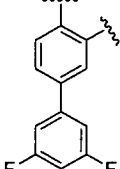
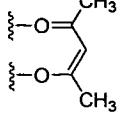
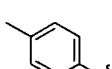
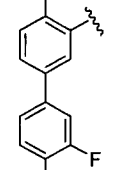
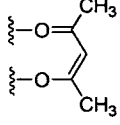
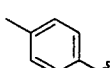
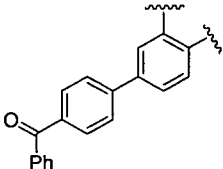
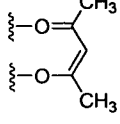
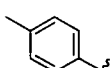
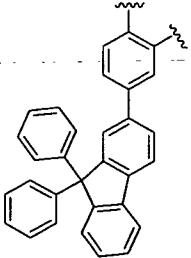
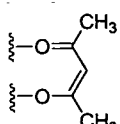
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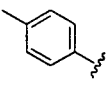
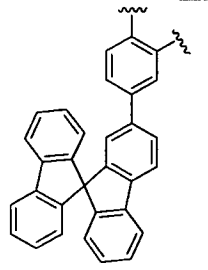
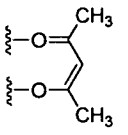
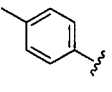
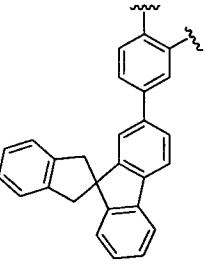
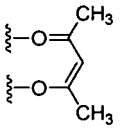
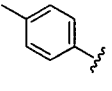
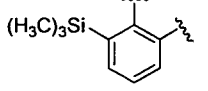
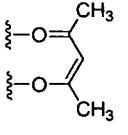
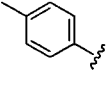
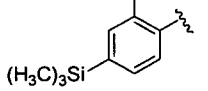
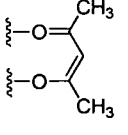
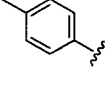
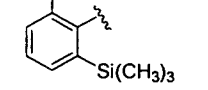
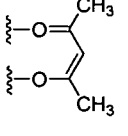
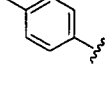
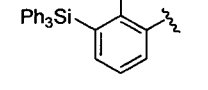
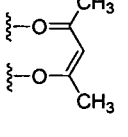
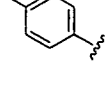
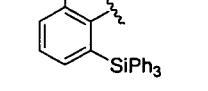
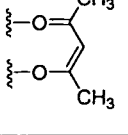
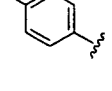
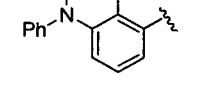
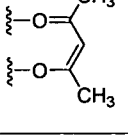
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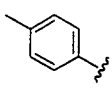
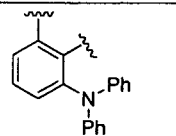
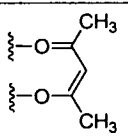
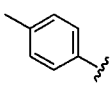
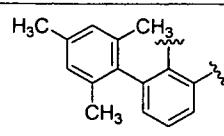
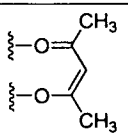
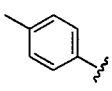
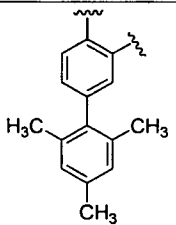
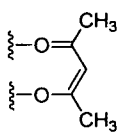
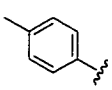
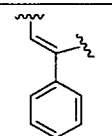
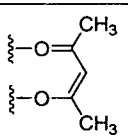
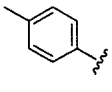
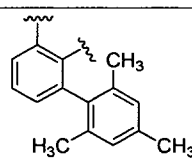
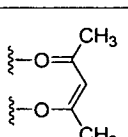
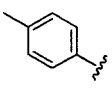
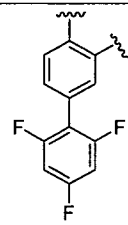
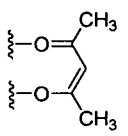
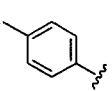
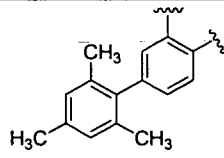
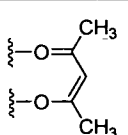
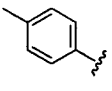
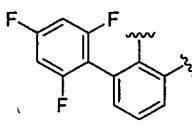
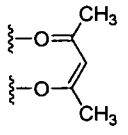
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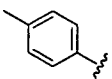
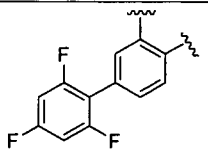
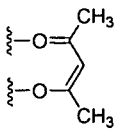
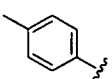
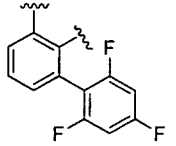
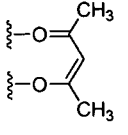
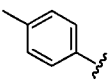
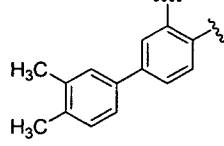
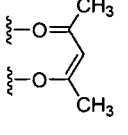
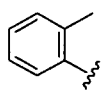
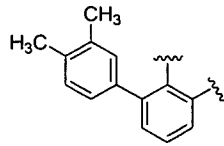
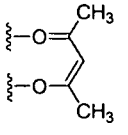
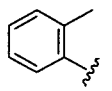
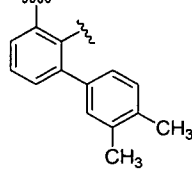
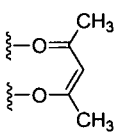
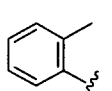
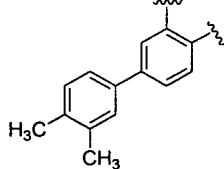
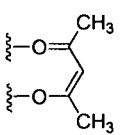
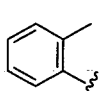
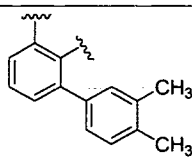
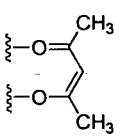
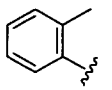
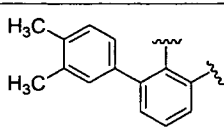
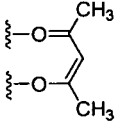
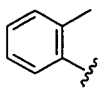
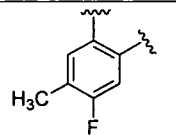
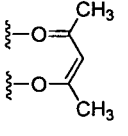
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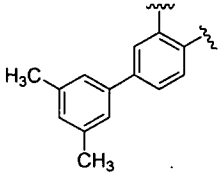
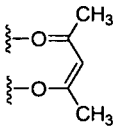
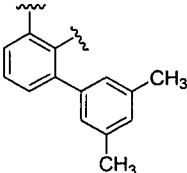
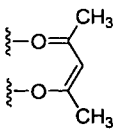
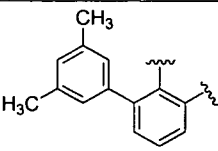
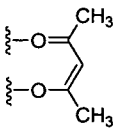
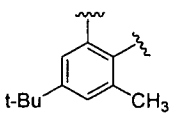
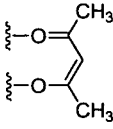
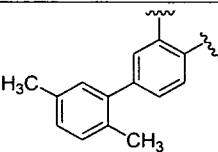
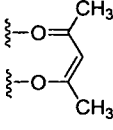
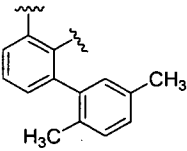
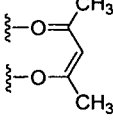
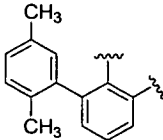
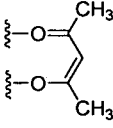
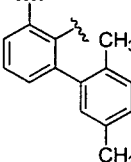
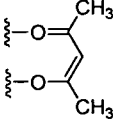
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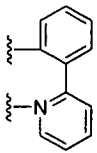
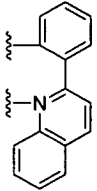
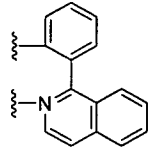
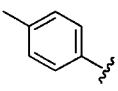
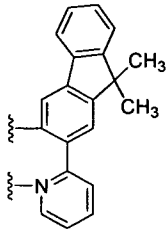
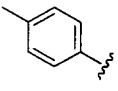
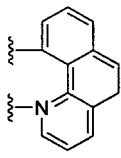
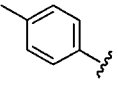
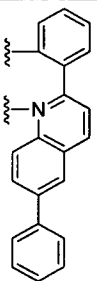
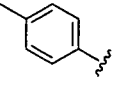
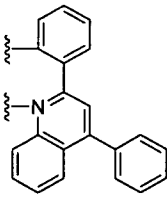
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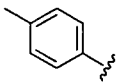
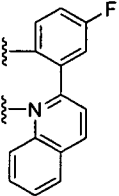
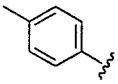
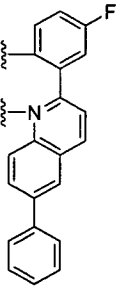
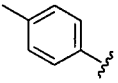
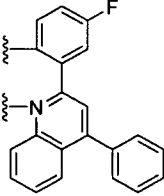
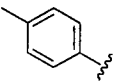
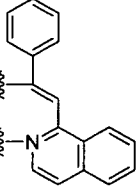
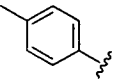
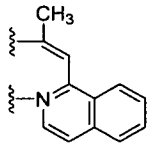
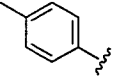
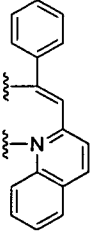
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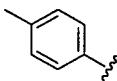
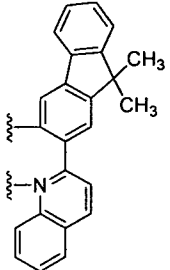
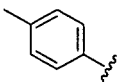
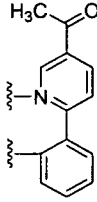
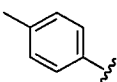
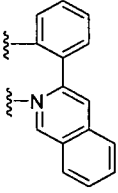
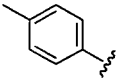
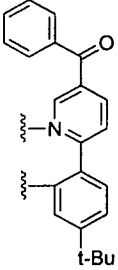
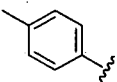
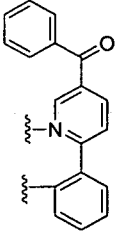
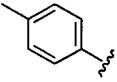
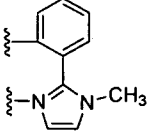
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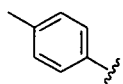
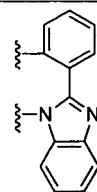
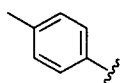
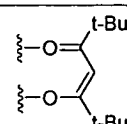
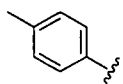
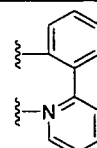
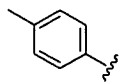
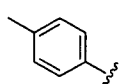
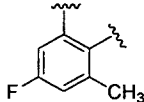
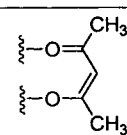
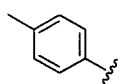
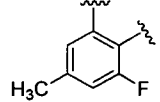
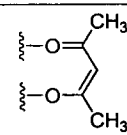
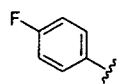
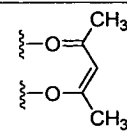
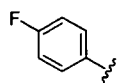
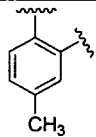
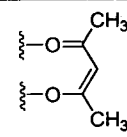
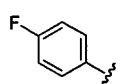
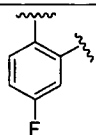
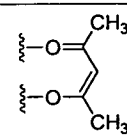
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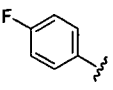
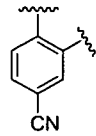
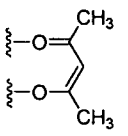
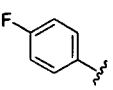
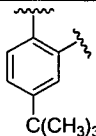
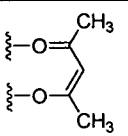
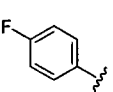
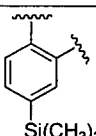
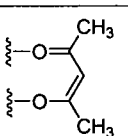
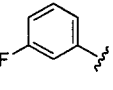
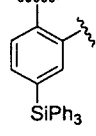
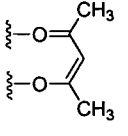
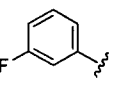
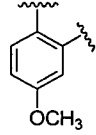
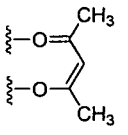
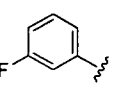
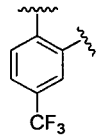
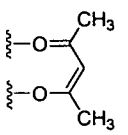
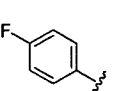
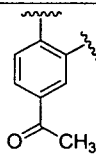
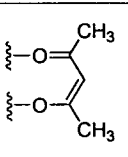
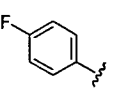
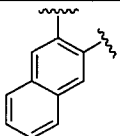
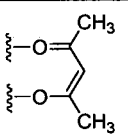
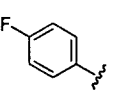
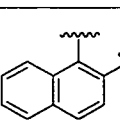
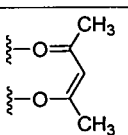
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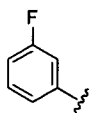
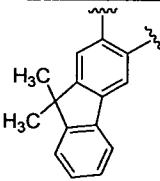
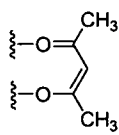
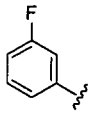
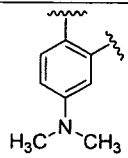
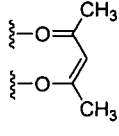
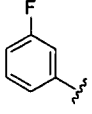
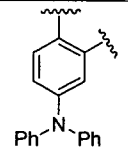
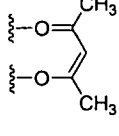
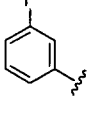
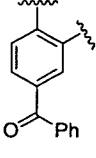
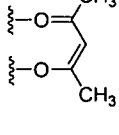
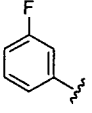
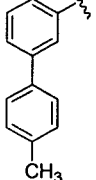
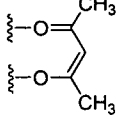
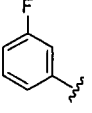
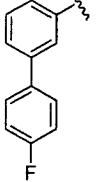
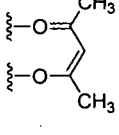
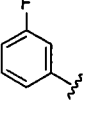
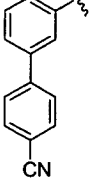
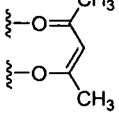
266

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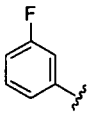
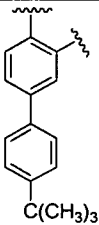
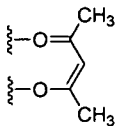
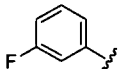
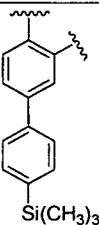
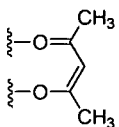
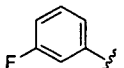
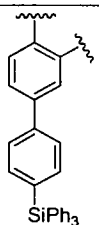
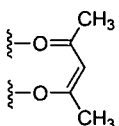
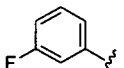
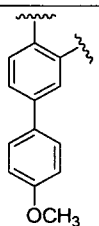
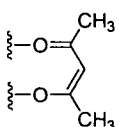
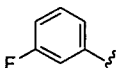
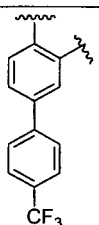
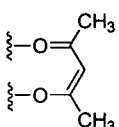
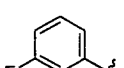
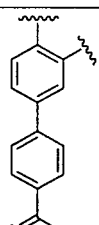
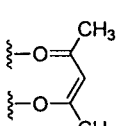
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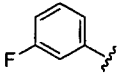
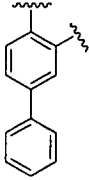
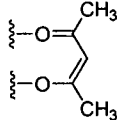
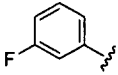
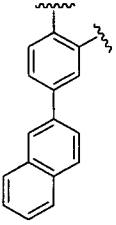
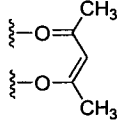
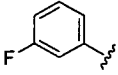
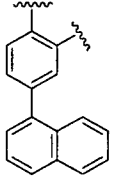
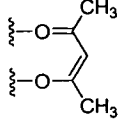
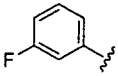
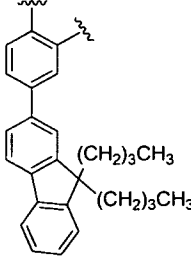
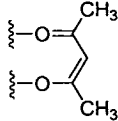
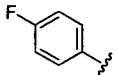
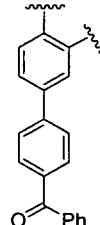
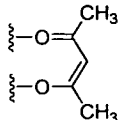
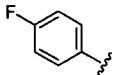
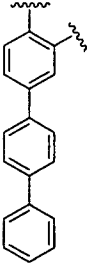
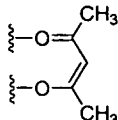
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1444	H	H	H	H	H	H		H			2
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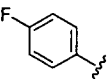
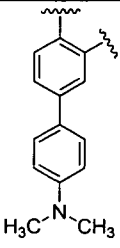
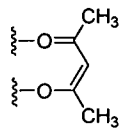
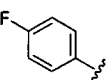
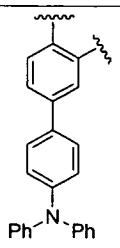
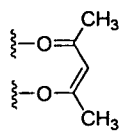
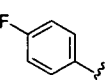
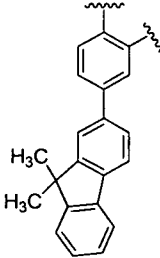
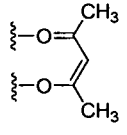
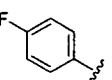
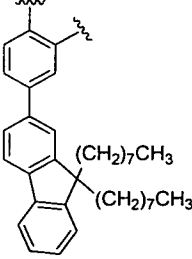
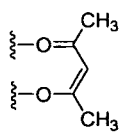
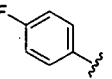
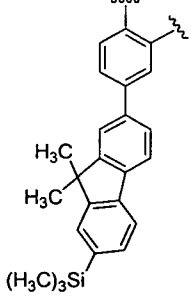
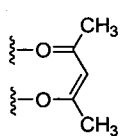
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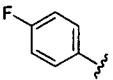
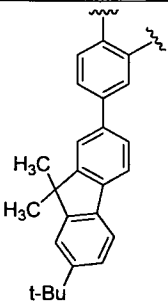
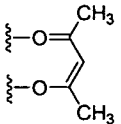
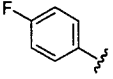
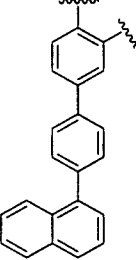
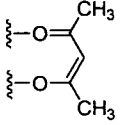
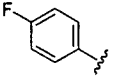
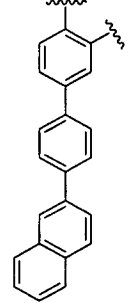
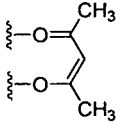
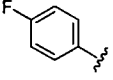
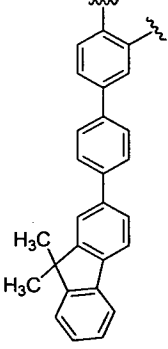
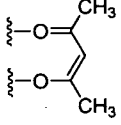
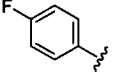
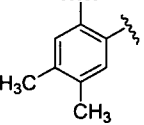
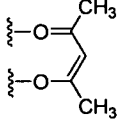
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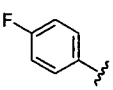
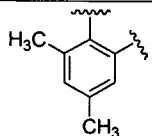
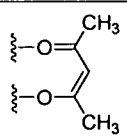
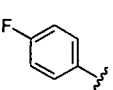
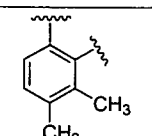
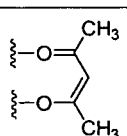
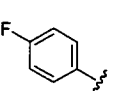
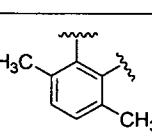
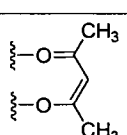
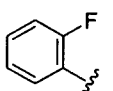
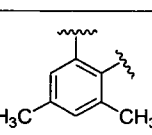
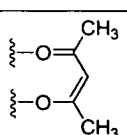
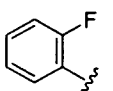
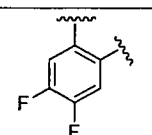
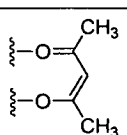
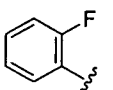
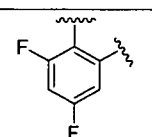
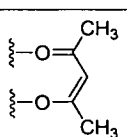
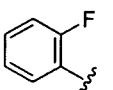
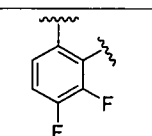
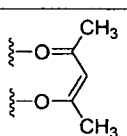
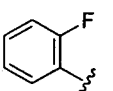
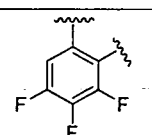
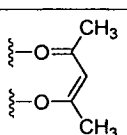
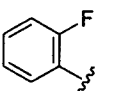
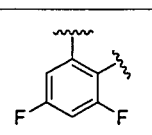
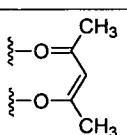
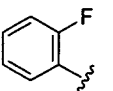
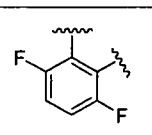
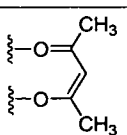
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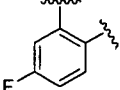
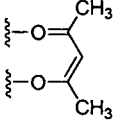
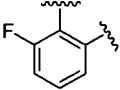
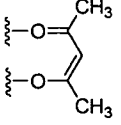
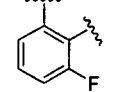
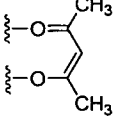
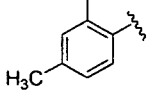
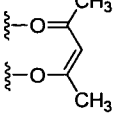
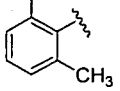
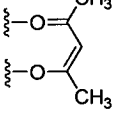
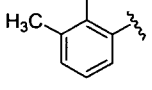
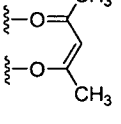
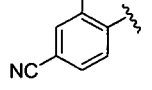
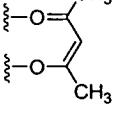
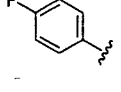
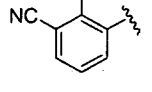
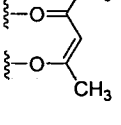
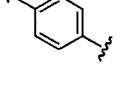
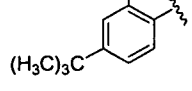
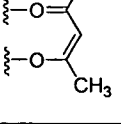
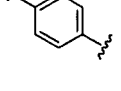
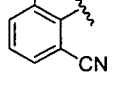
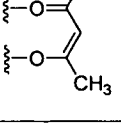
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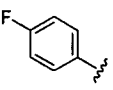
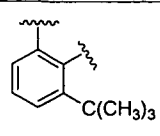
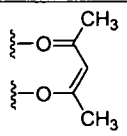
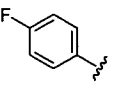
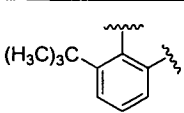
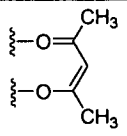
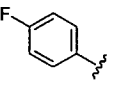
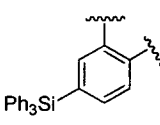
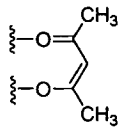
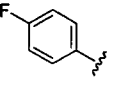
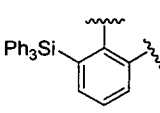
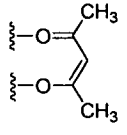
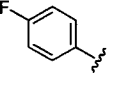
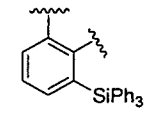
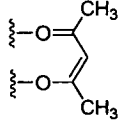
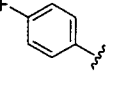
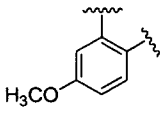
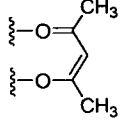
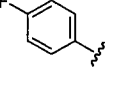
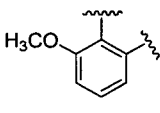
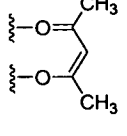
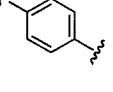
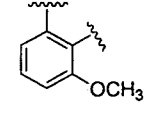
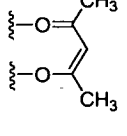
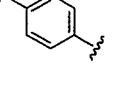
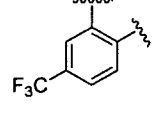
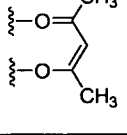
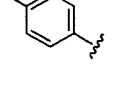
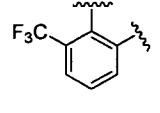
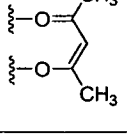
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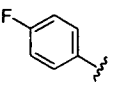
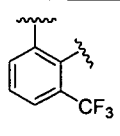
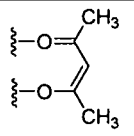
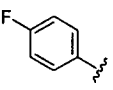
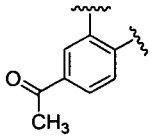
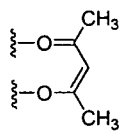
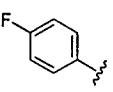
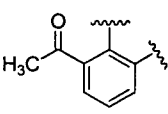
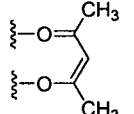
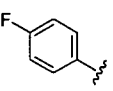
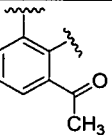
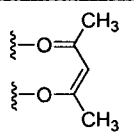
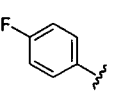
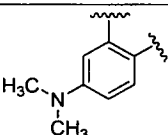
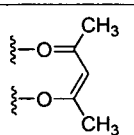
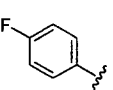
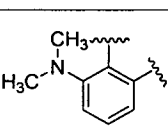
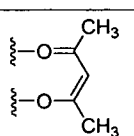
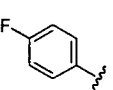
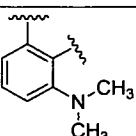
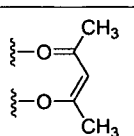
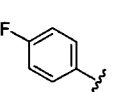
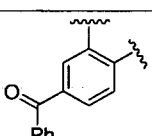
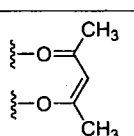
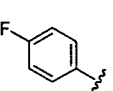
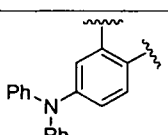
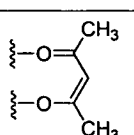
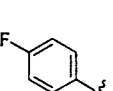
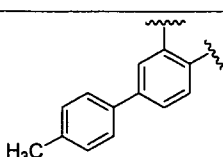
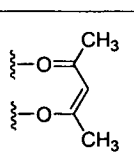
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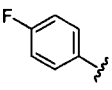
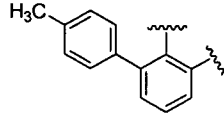
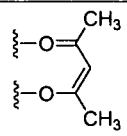
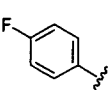
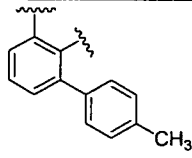
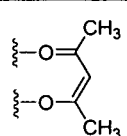
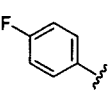
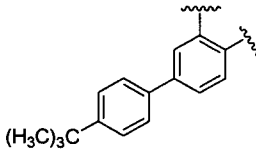
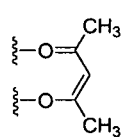
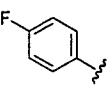
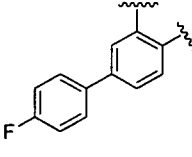
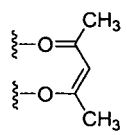
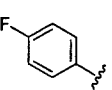
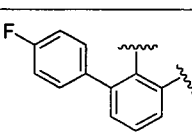
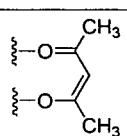
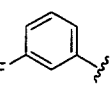
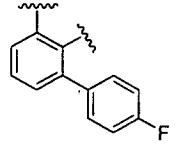
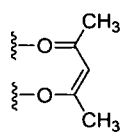
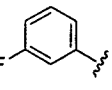
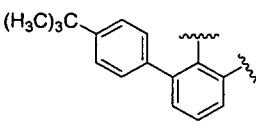
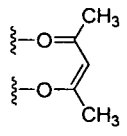
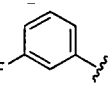
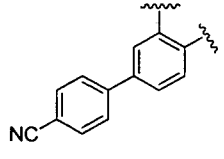
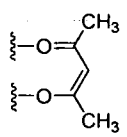
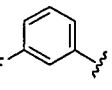
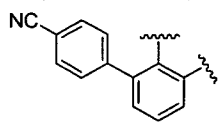
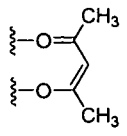
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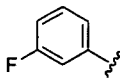
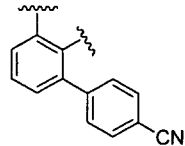
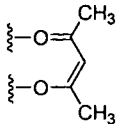
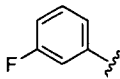
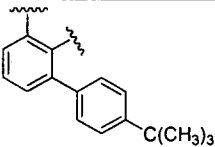
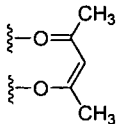
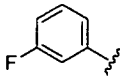
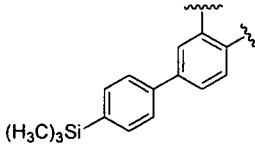
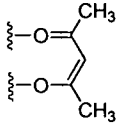
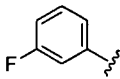
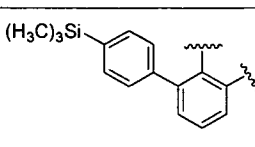
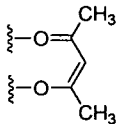
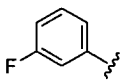
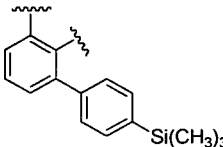
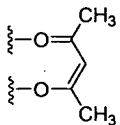
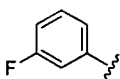
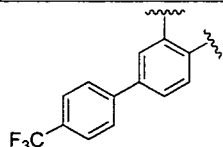
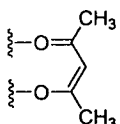
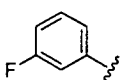
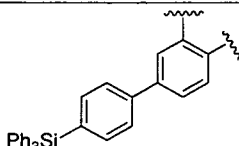
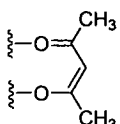
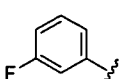
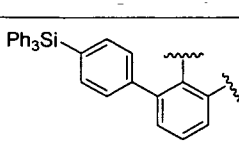
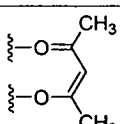
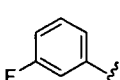
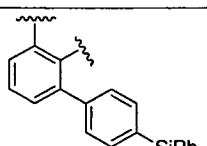
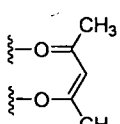
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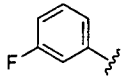
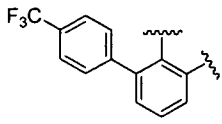
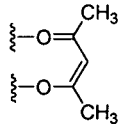
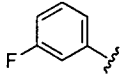
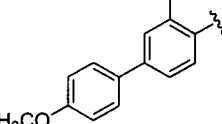
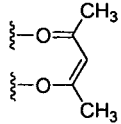
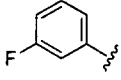
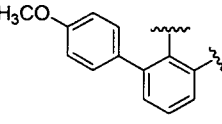
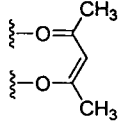
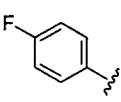
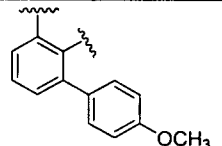
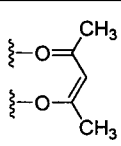
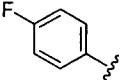
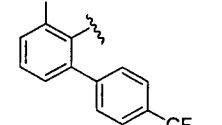
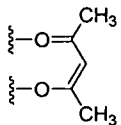
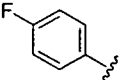
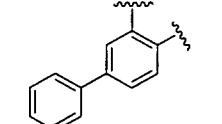
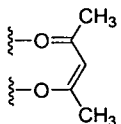
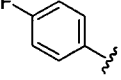
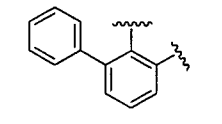
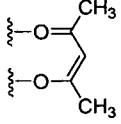
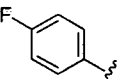
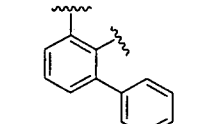
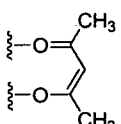
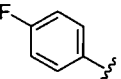
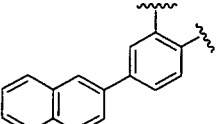
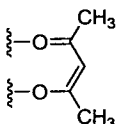
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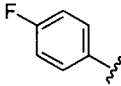
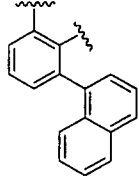
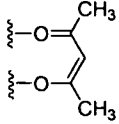
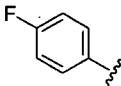
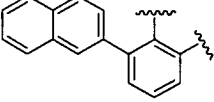
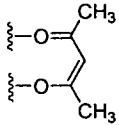
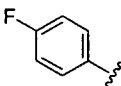
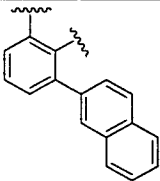
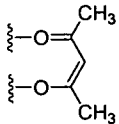
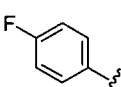
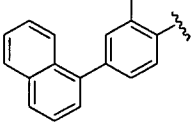
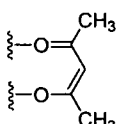
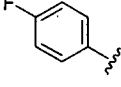
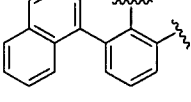
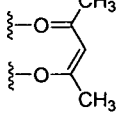
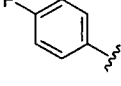
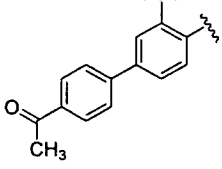
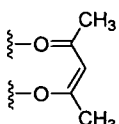
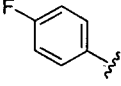
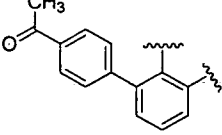
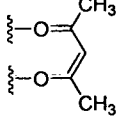
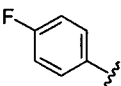
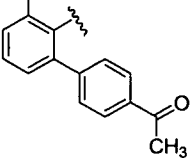
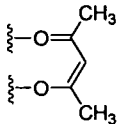
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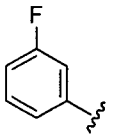
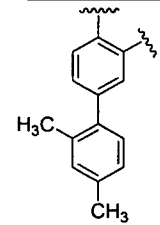
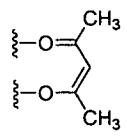
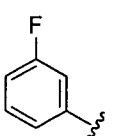
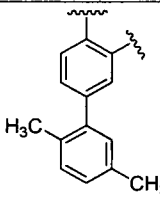
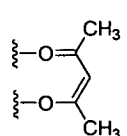
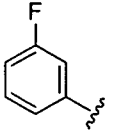
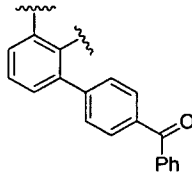
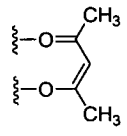
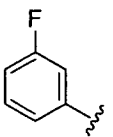
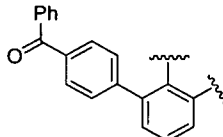
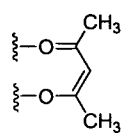
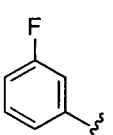
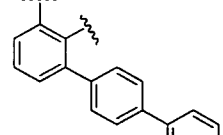
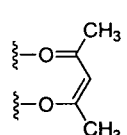
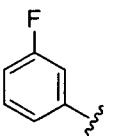
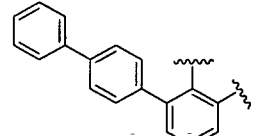
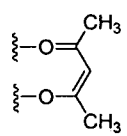
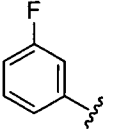
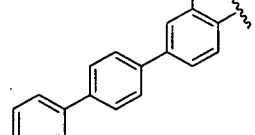
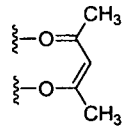
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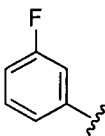
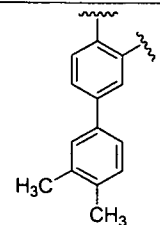
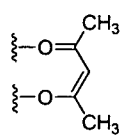
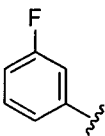
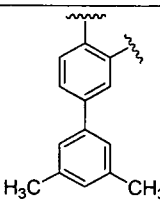
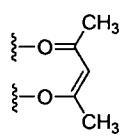
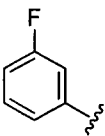
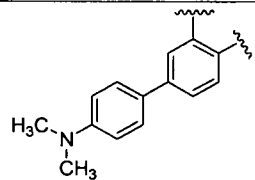
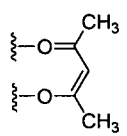
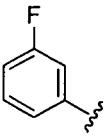
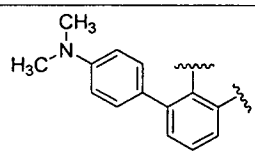
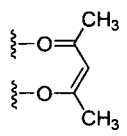
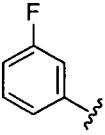
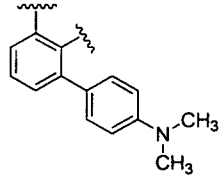
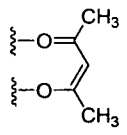
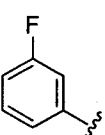
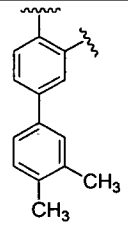
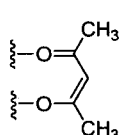
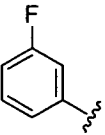
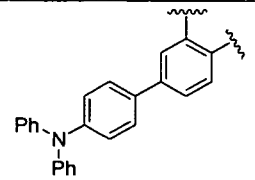
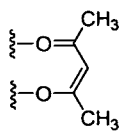
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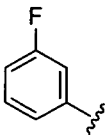
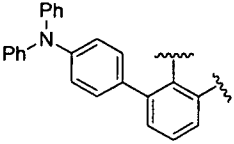
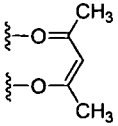
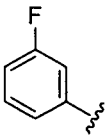
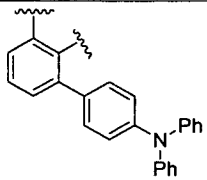
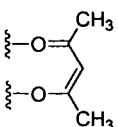
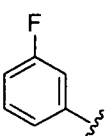
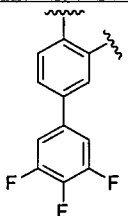
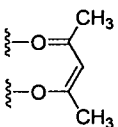
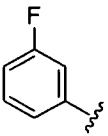
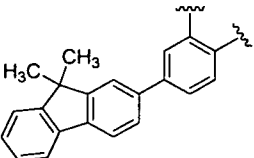
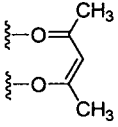
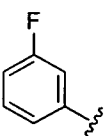
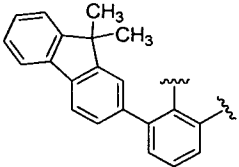
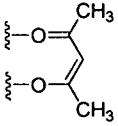
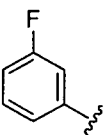
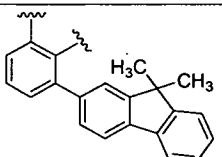
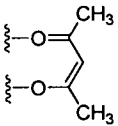
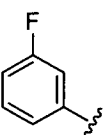
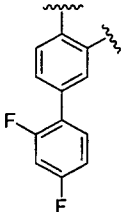
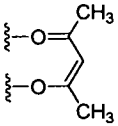
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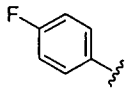
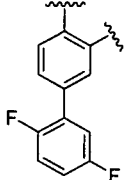
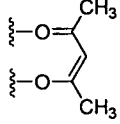
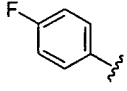
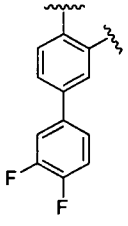
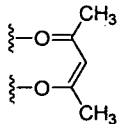
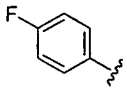
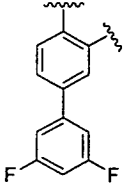
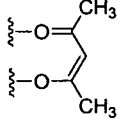
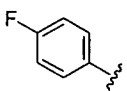
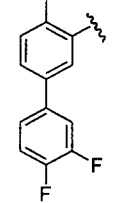
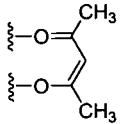
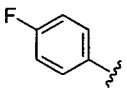
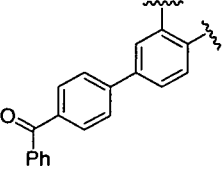
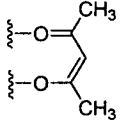
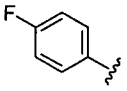
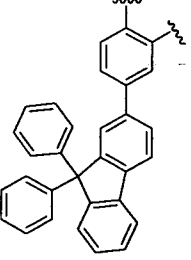
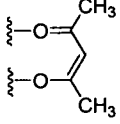
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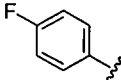
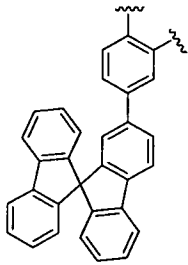
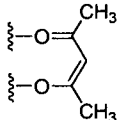
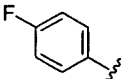
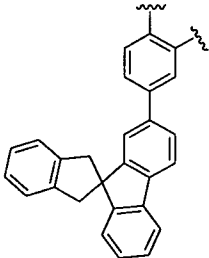
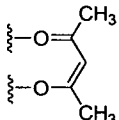
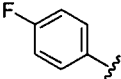
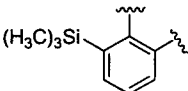
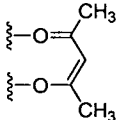
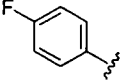
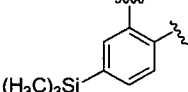
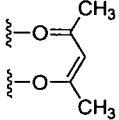
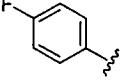
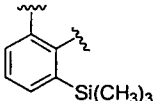
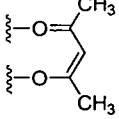
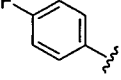
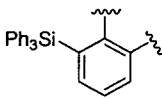
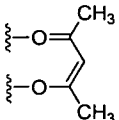
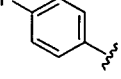
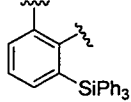
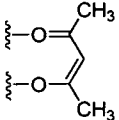
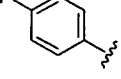
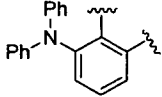
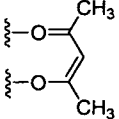
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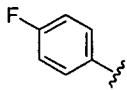
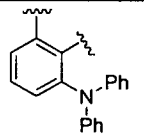
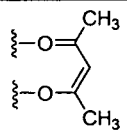
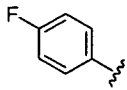
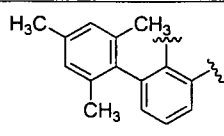
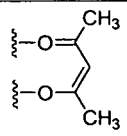
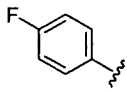
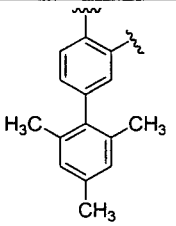
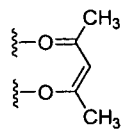
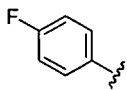
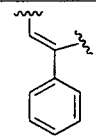
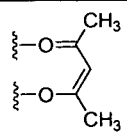
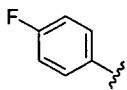
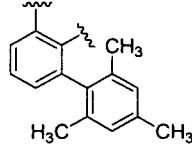
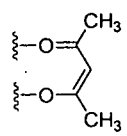
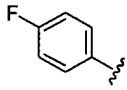
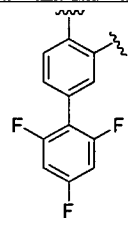
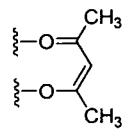
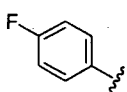
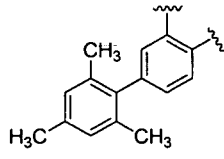
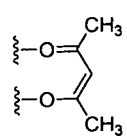
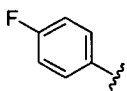
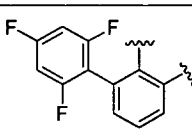
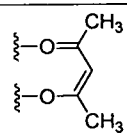
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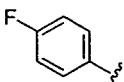
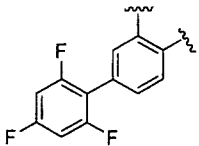
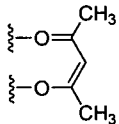
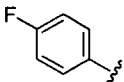
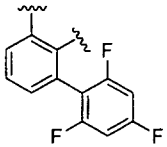
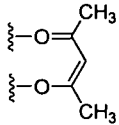
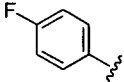
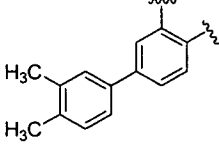
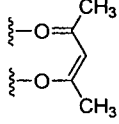
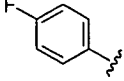
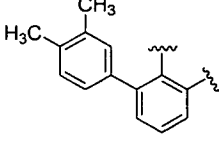
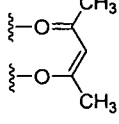
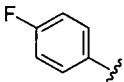
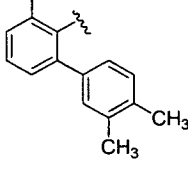
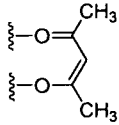
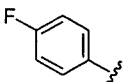
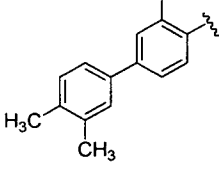
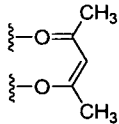
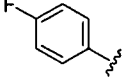
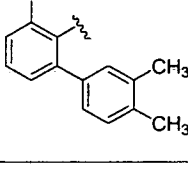
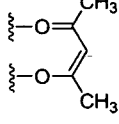
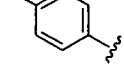
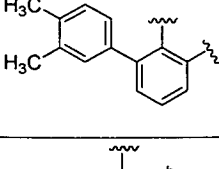
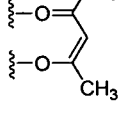
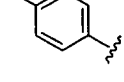
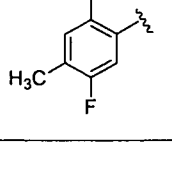
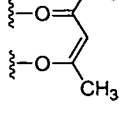
285

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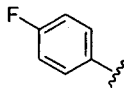
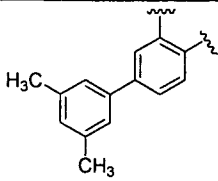
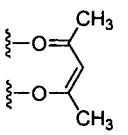
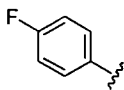
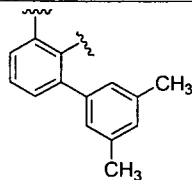
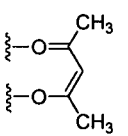
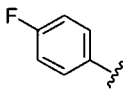
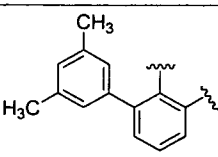
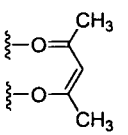
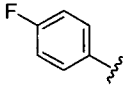
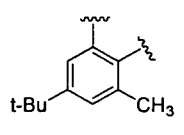
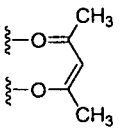
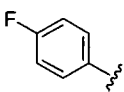
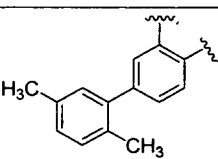
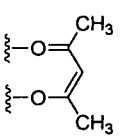
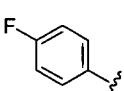
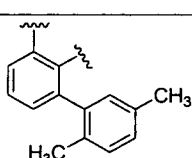
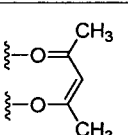
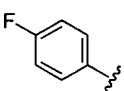
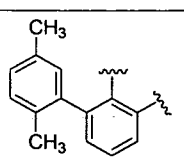
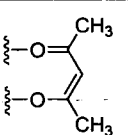
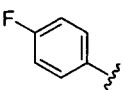
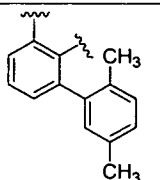
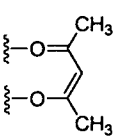
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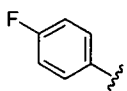
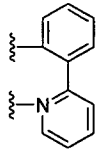
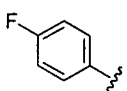
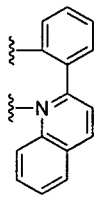
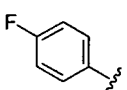
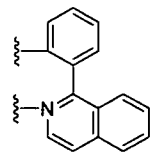
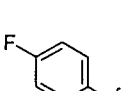
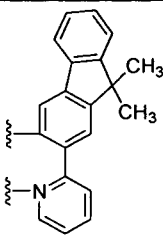
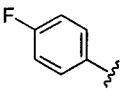
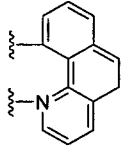
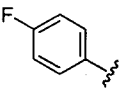
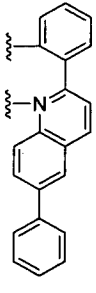
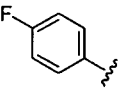
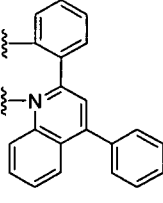
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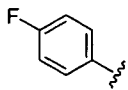
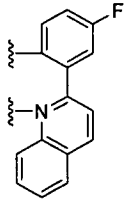
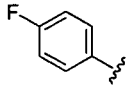
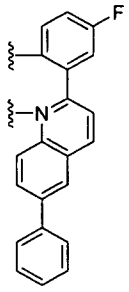
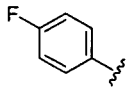
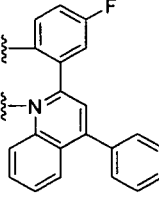
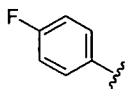
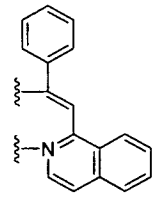
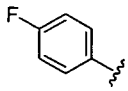
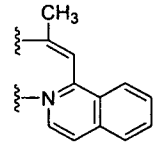
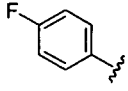
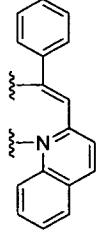
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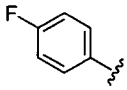
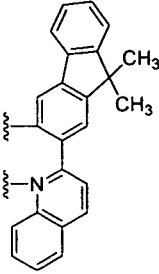
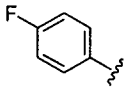
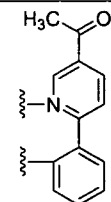
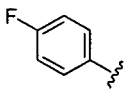
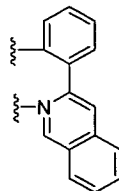
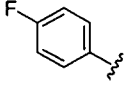
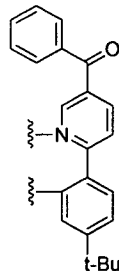
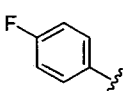
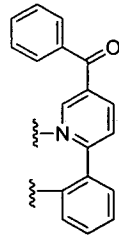
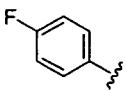
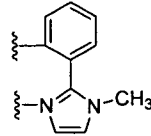
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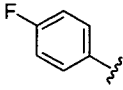
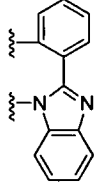
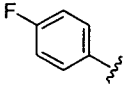
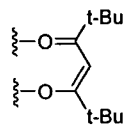
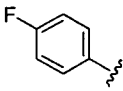
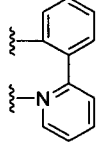
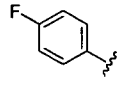
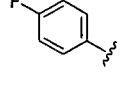
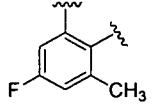
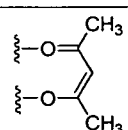
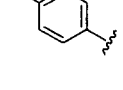
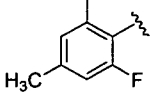
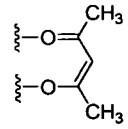
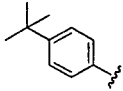
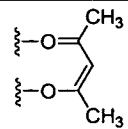
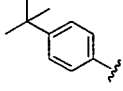
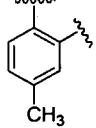
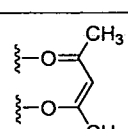
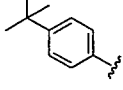
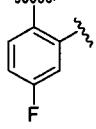
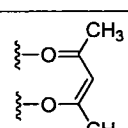
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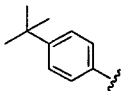
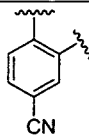
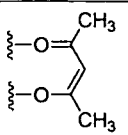
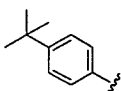
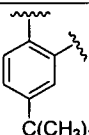
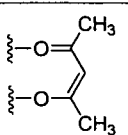
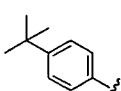
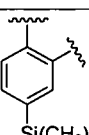
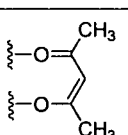
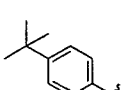
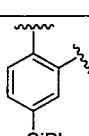
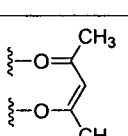
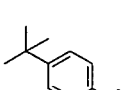
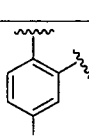
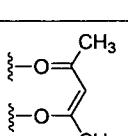
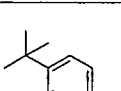
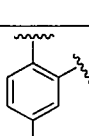
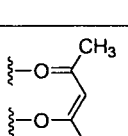
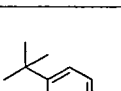
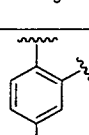
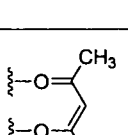
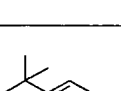
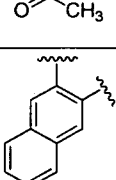
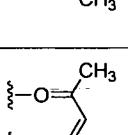
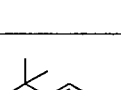
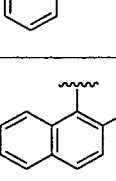
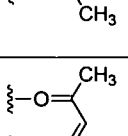
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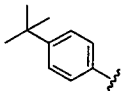
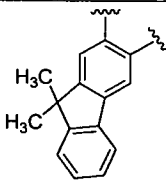
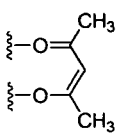
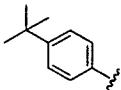
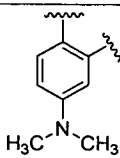
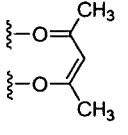
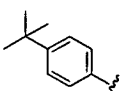
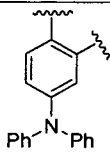
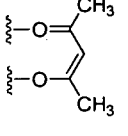
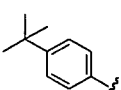
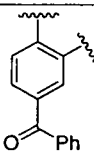
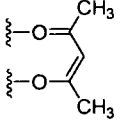
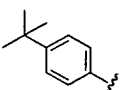
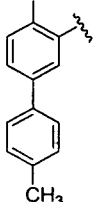
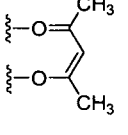
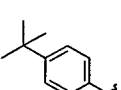
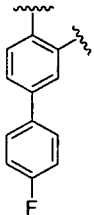
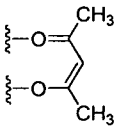
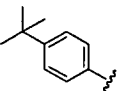
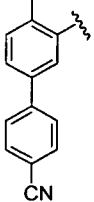
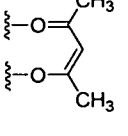
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1626	H	H	H	H	H	H		H			2
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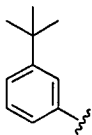
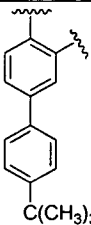
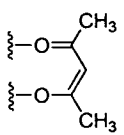
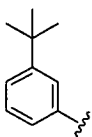
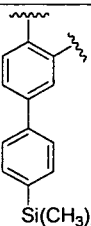
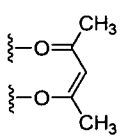
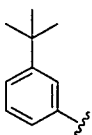
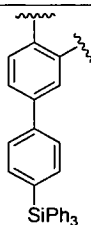
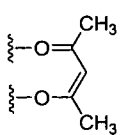
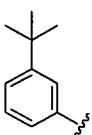
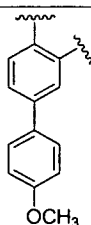
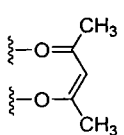
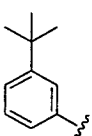
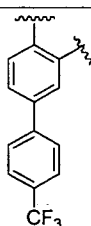
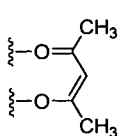
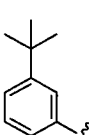
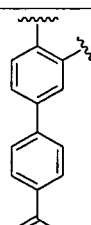
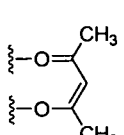
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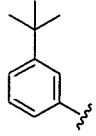
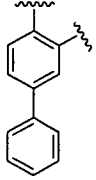
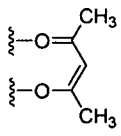
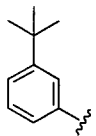
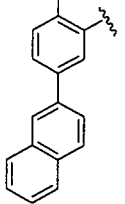
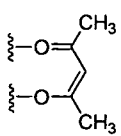
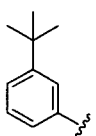
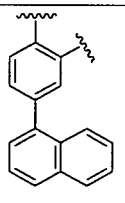
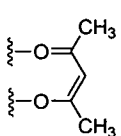
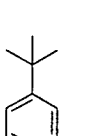
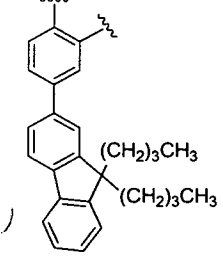
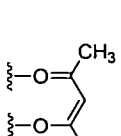
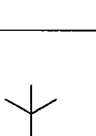
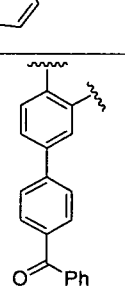
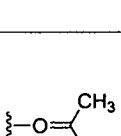
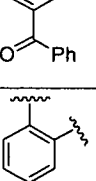
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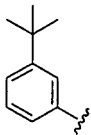
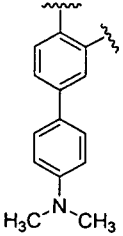
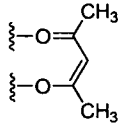
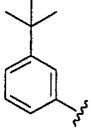
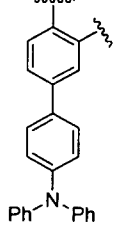
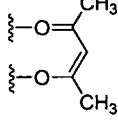
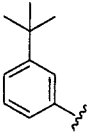
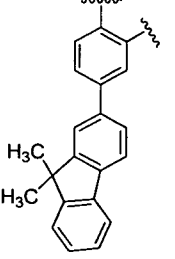
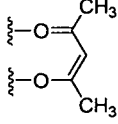
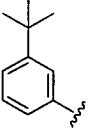
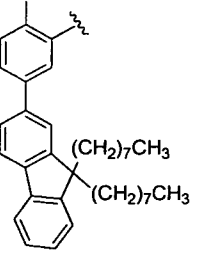
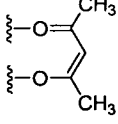
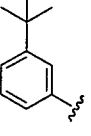
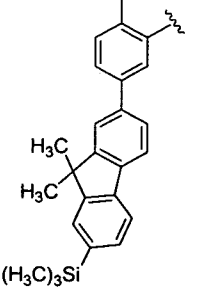
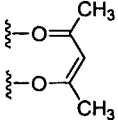
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1645	H	H	H	H	H	H		H			2
1646	H	H	H	H	H	H		H			2
1647	H	H	H	H	H	H		H			2
1648	H	H	H	H	H	H		H			2
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1650	H	H	H	H	H	H		H			2
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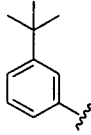
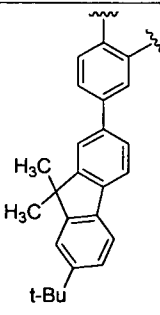
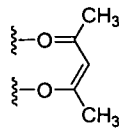
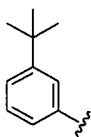
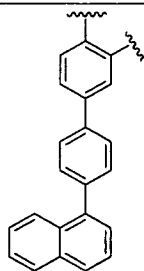
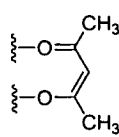
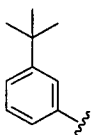
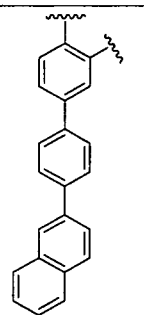
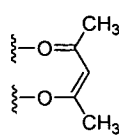
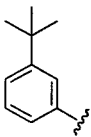
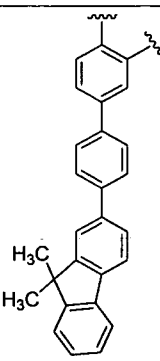
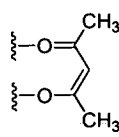
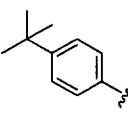
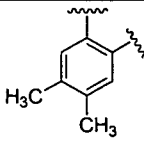
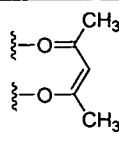
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1665	H	H	H	H	H	H		H			2

1666	H	H	H	H	H	H		H	 C(CH ₃) ₃		2
1667	H	H	H	H	H	H		H	 Si(CH ₃) ₃		2
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1669	H	H	H	H	H	H		H	 OCH ₃		2
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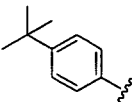
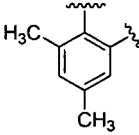
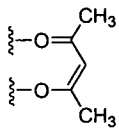
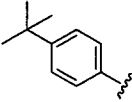
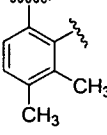
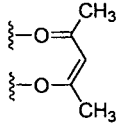
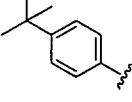
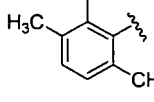
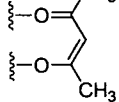
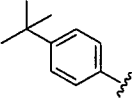
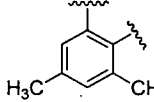
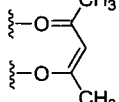
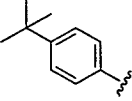
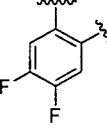
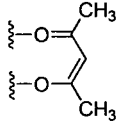
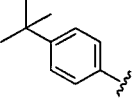
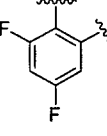
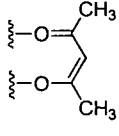
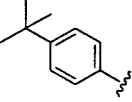
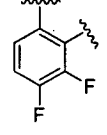
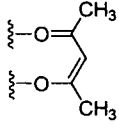
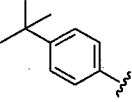
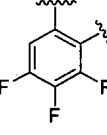
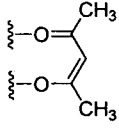
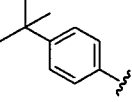
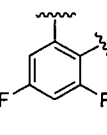
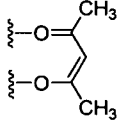
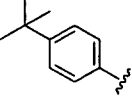
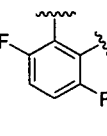
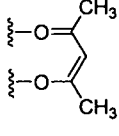
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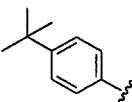
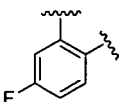
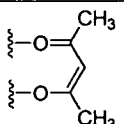
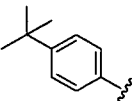
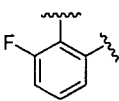
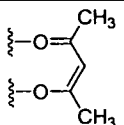
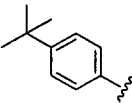
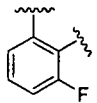
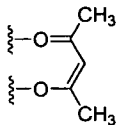
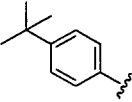
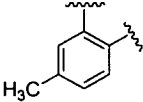
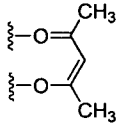
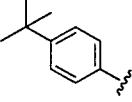
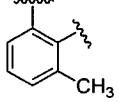
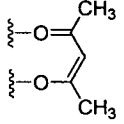
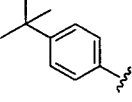
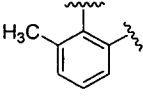
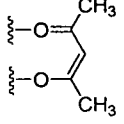
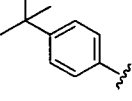
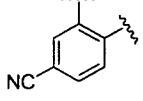
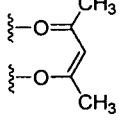
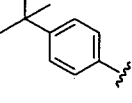
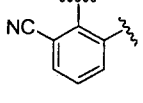
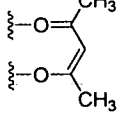
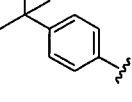
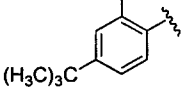
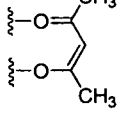
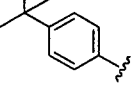
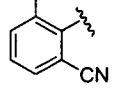
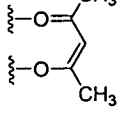
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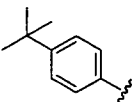
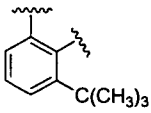
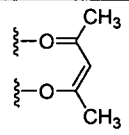
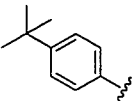
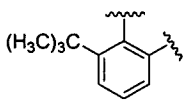
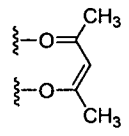
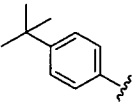
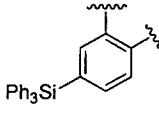
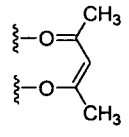
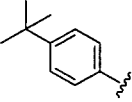
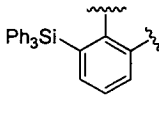
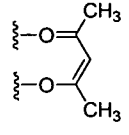
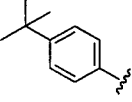
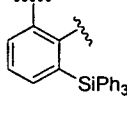
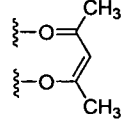
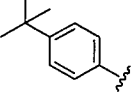
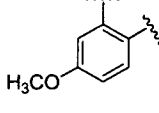
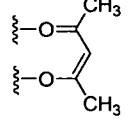
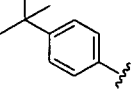
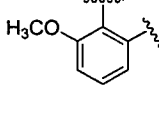
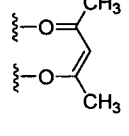
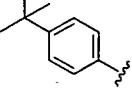
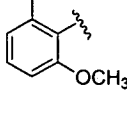
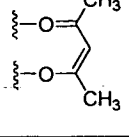
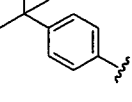
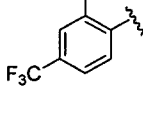
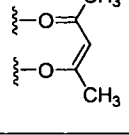
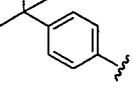
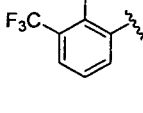
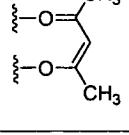
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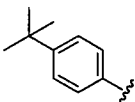
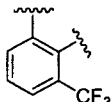
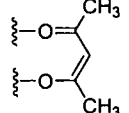
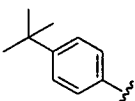
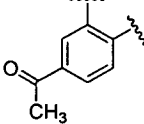
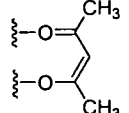
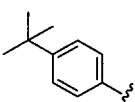
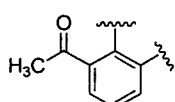
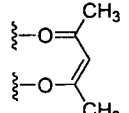
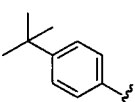
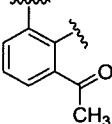
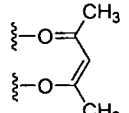
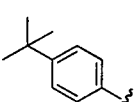
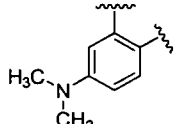
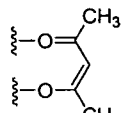
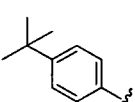
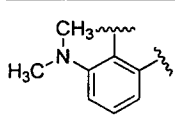
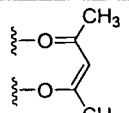
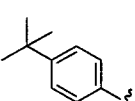
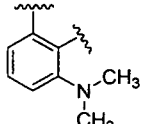
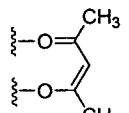
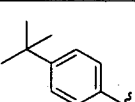
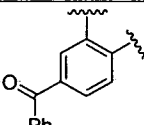
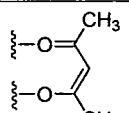
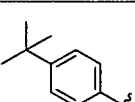
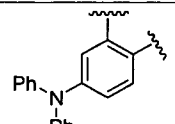
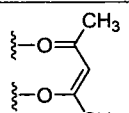
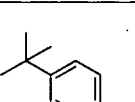
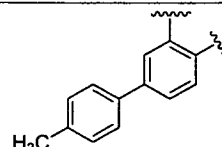
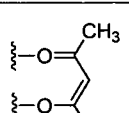
301

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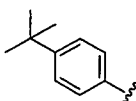
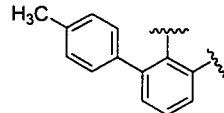
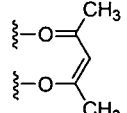
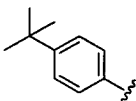
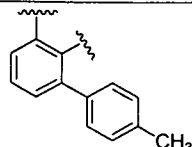
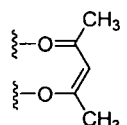
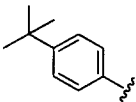
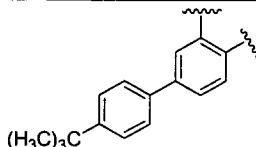
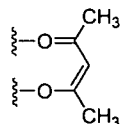
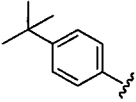
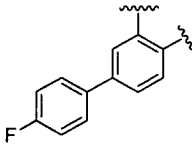
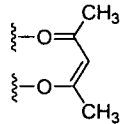
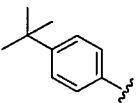
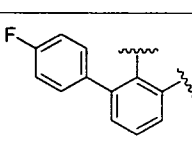
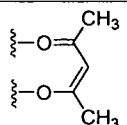
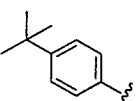
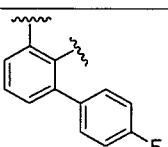
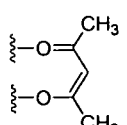
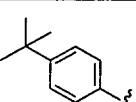
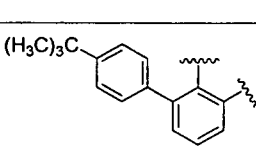
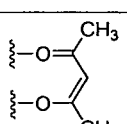
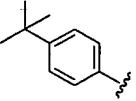
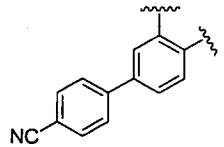
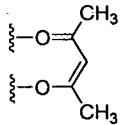
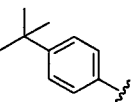
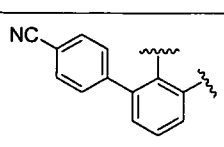
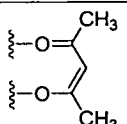
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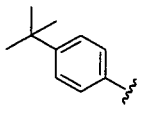
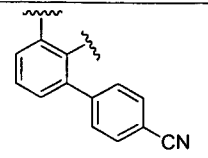
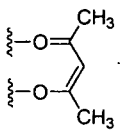
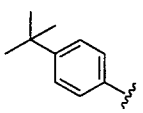
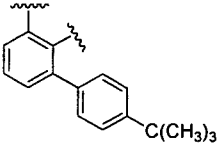
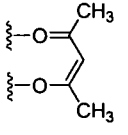
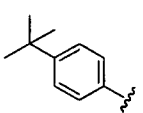
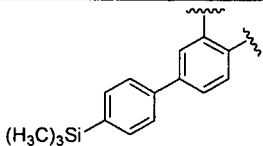
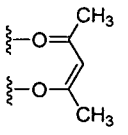
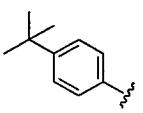
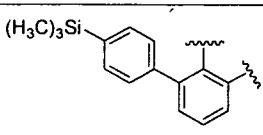
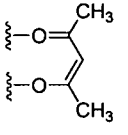
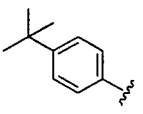
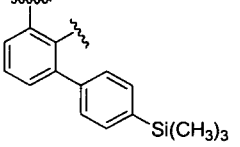
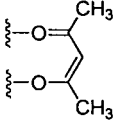
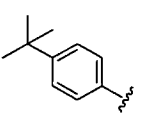
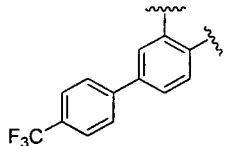
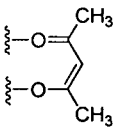
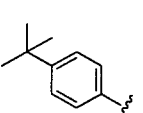
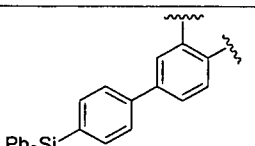
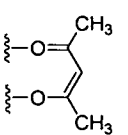
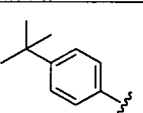
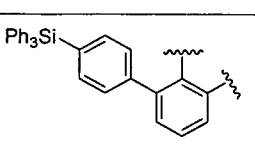
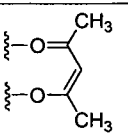
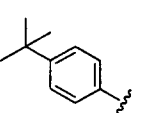
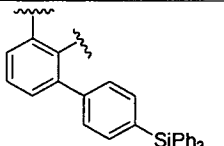
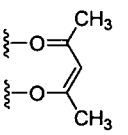
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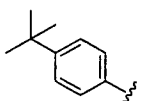
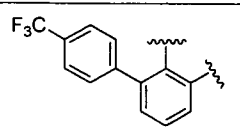
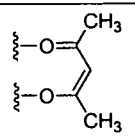
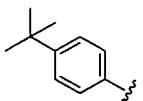
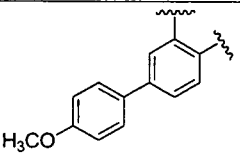
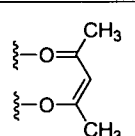
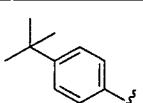
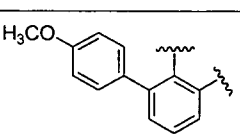
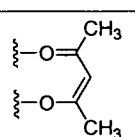
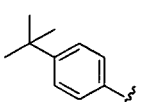
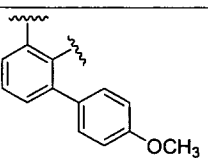
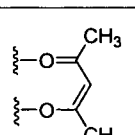
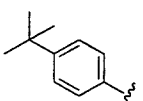
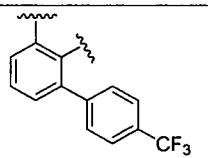
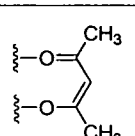
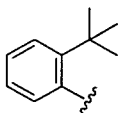
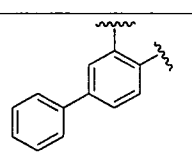
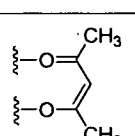
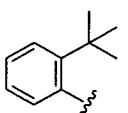
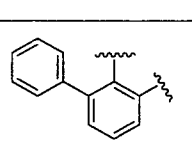
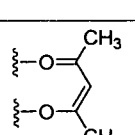
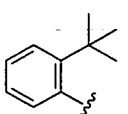
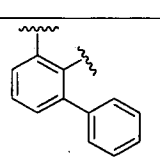
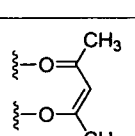
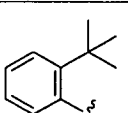
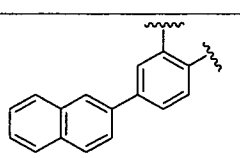
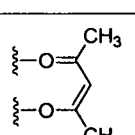
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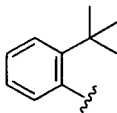
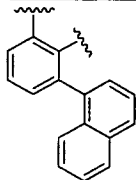
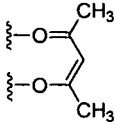
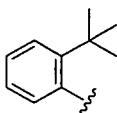
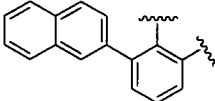
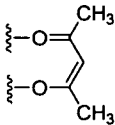
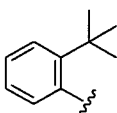
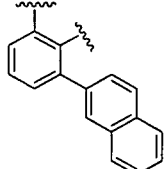
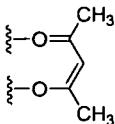
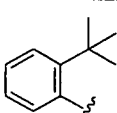
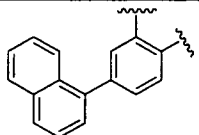
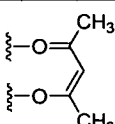
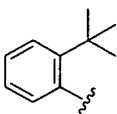
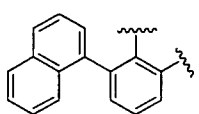
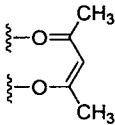
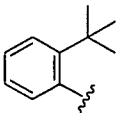
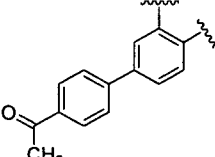
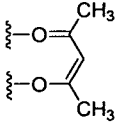
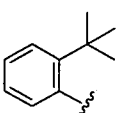
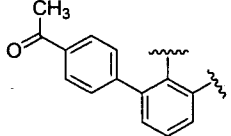
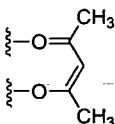
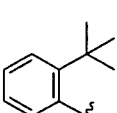
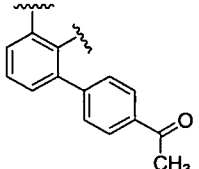
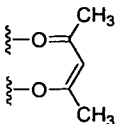
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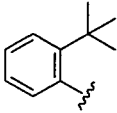
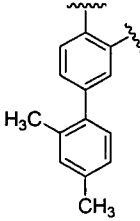
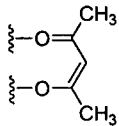
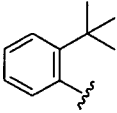
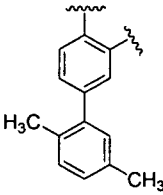
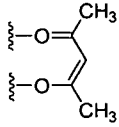
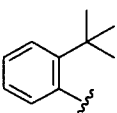
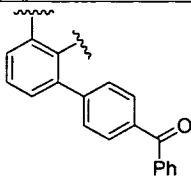
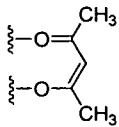
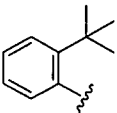
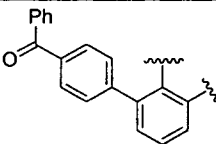
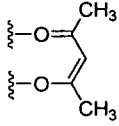
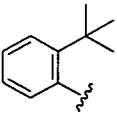
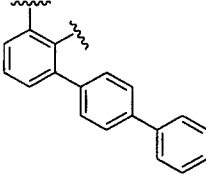
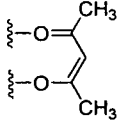
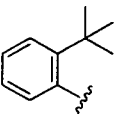
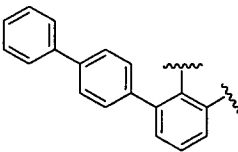
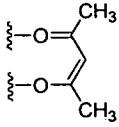
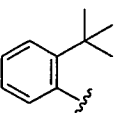
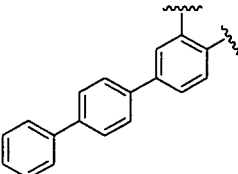
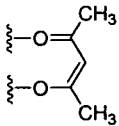
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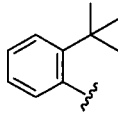
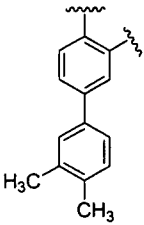
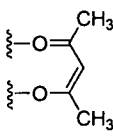
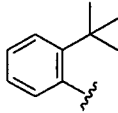
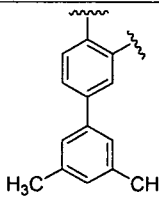
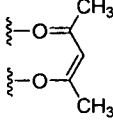
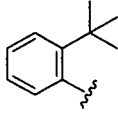
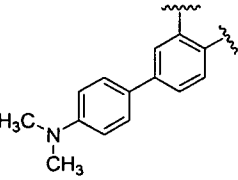
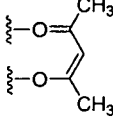
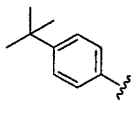
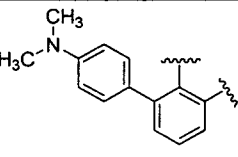
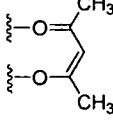
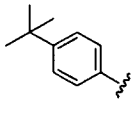
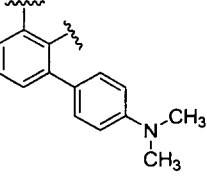
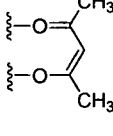
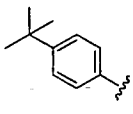
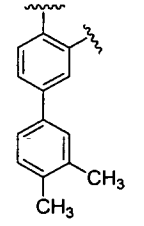
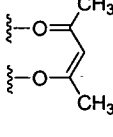
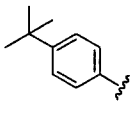
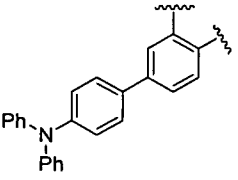
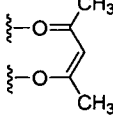
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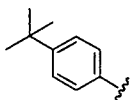
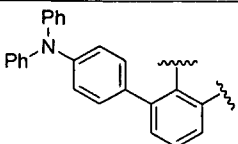
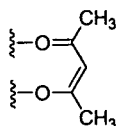
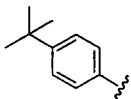
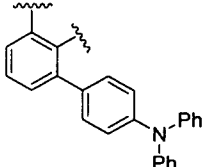
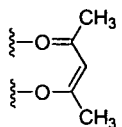
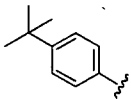
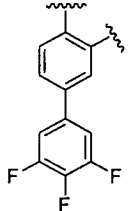
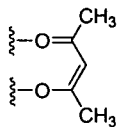
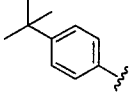
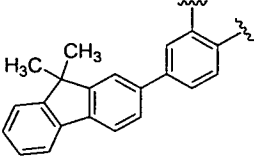
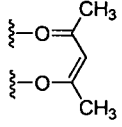
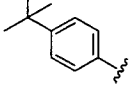
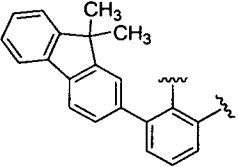
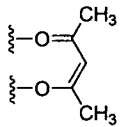
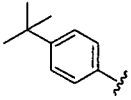
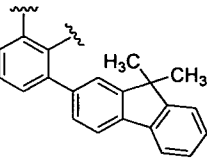
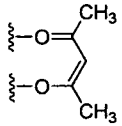
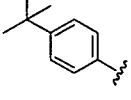
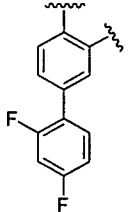
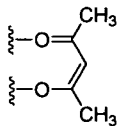
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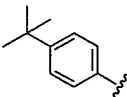
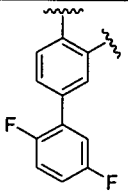
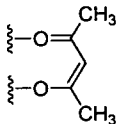
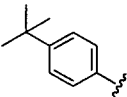
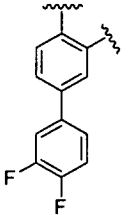
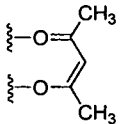
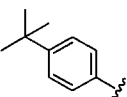
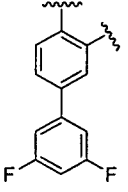
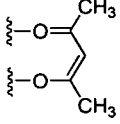
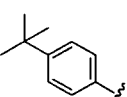
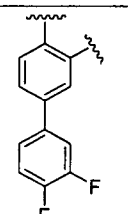
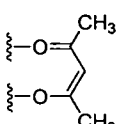
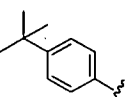
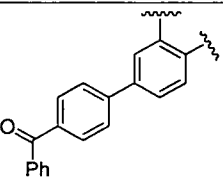
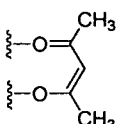
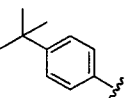
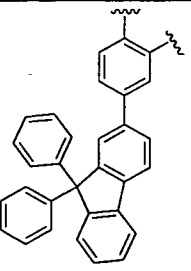
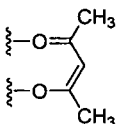
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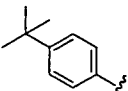
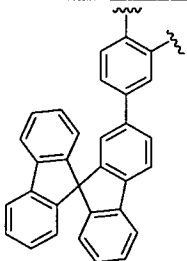
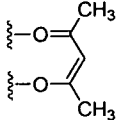
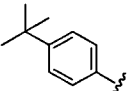
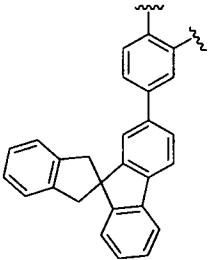
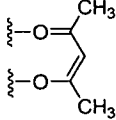
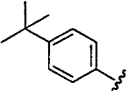
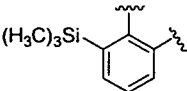
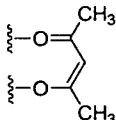
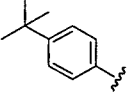
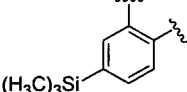
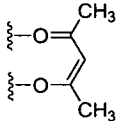
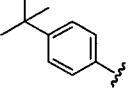
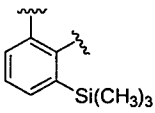
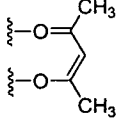
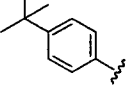
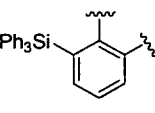
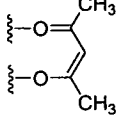
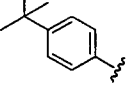
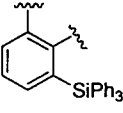
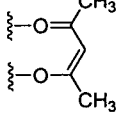
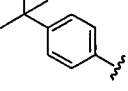
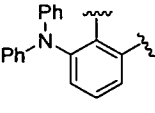
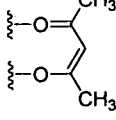
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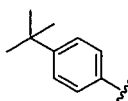
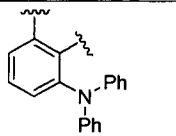
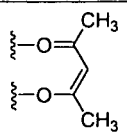
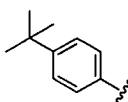
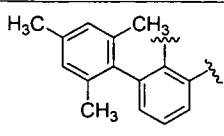
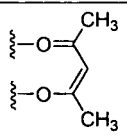
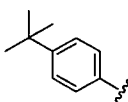
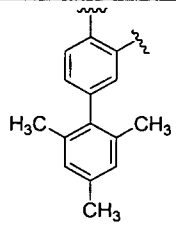
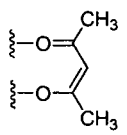
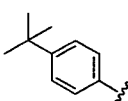
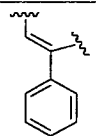
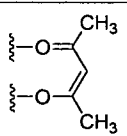
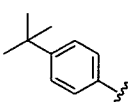
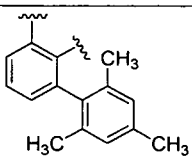
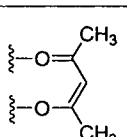
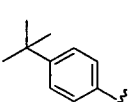
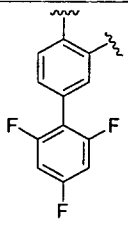
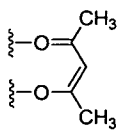
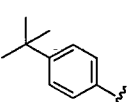
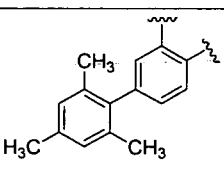
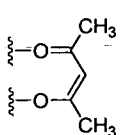
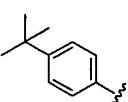
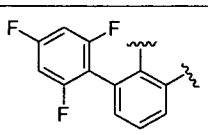
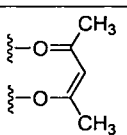
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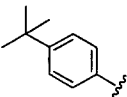
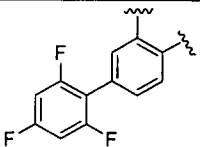
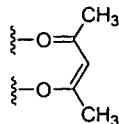
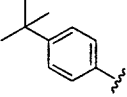
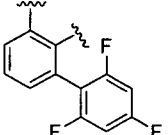
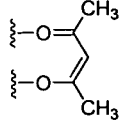
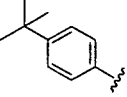
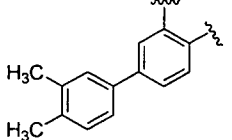
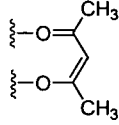
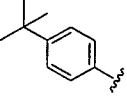
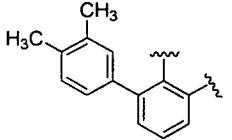
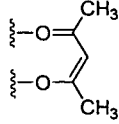
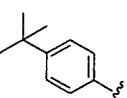
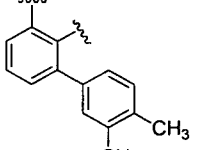
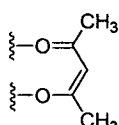
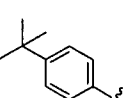
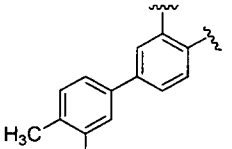
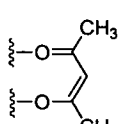
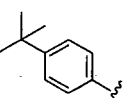
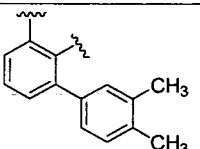
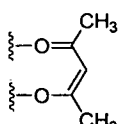
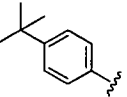
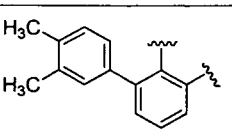
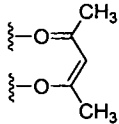
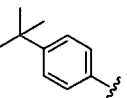
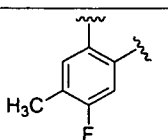
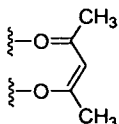
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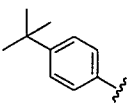
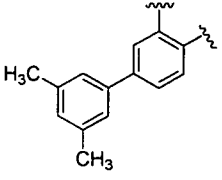
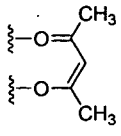
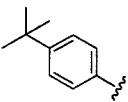
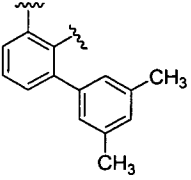
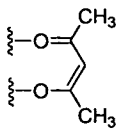
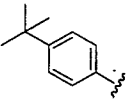
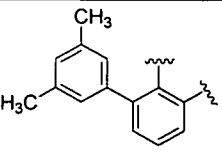
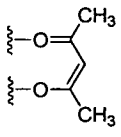
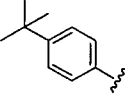
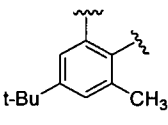
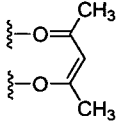
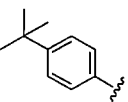
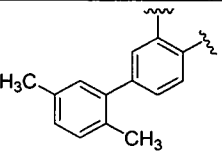
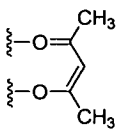
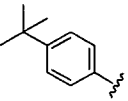
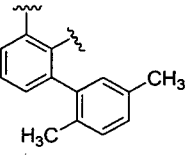
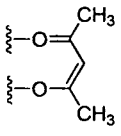
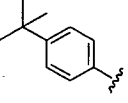
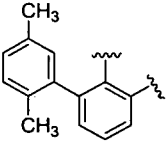
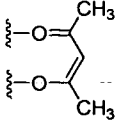
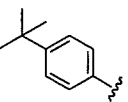
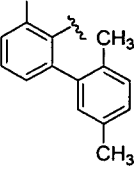
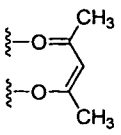
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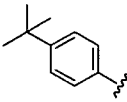
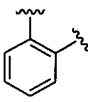
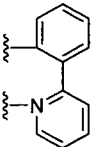
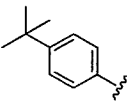
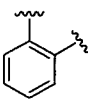
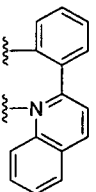
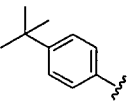
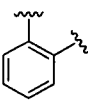
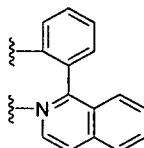
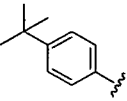
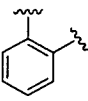
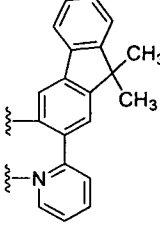
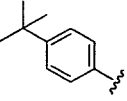
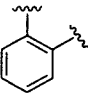
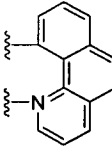
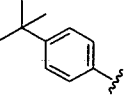
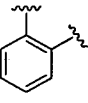
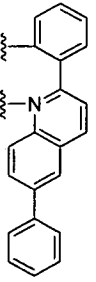
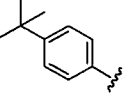
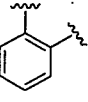
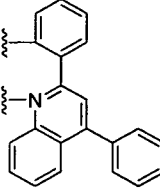
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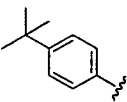
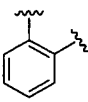
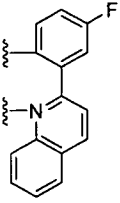
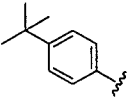
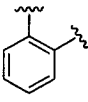
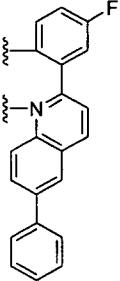
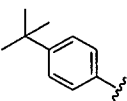
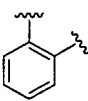
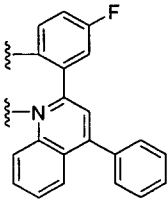
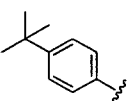
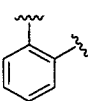
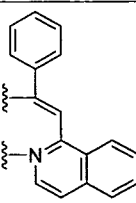
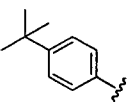
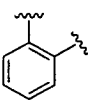
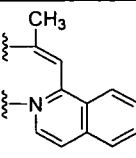
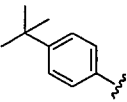
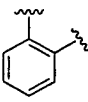
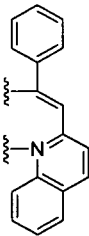
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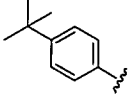
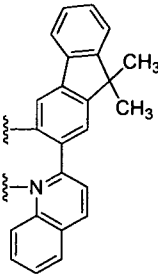
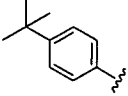
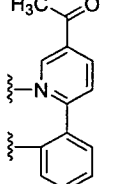
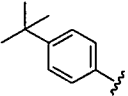
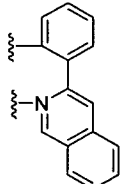
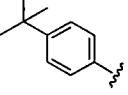
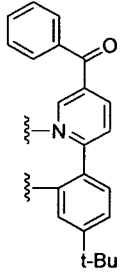
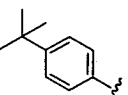
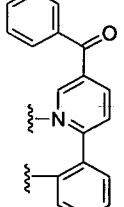
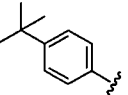
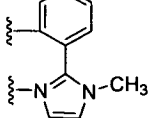
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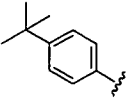
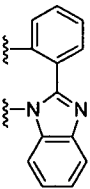
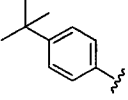
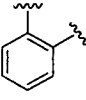
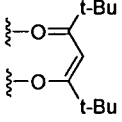
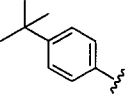
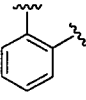
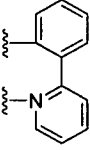
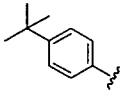
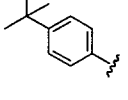
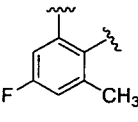
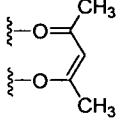
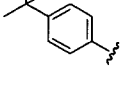
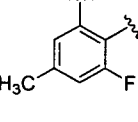
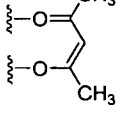
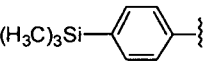
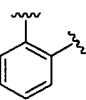
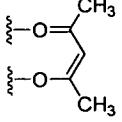
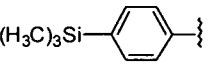
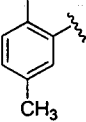
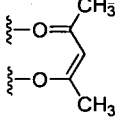
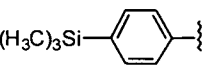
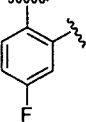
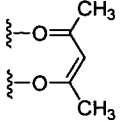
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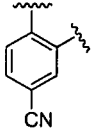
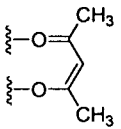
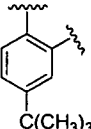
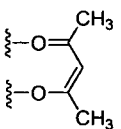
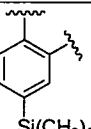
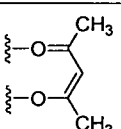
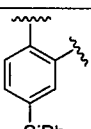
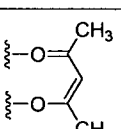
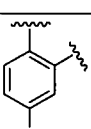
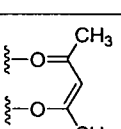
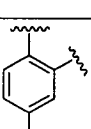
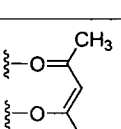
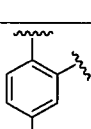
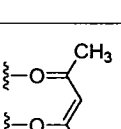
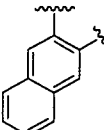
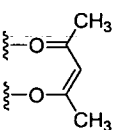
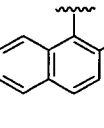
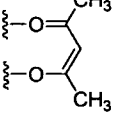
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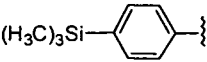
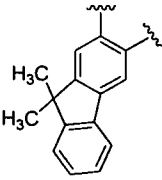
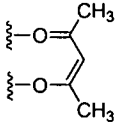
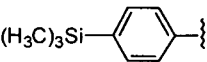
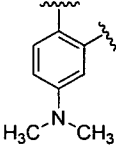
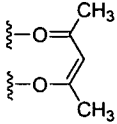
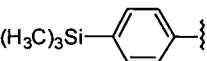
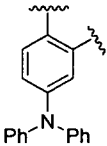
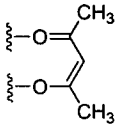
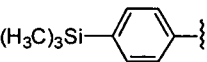
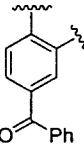
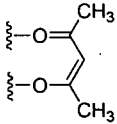
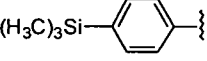
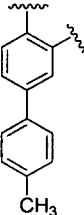
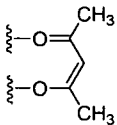
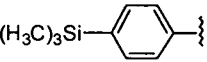
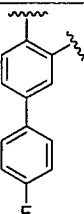
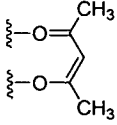
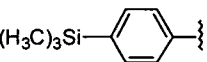
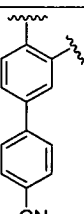
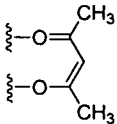
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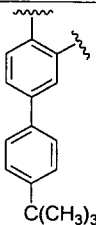
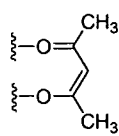
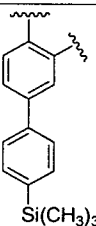
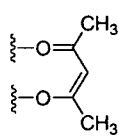
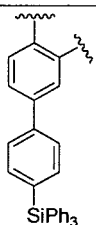
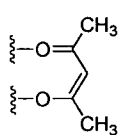
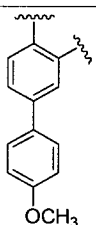
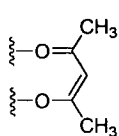
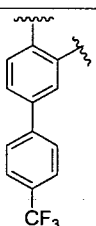
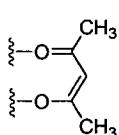
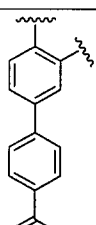
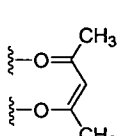
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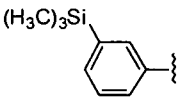
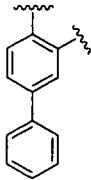
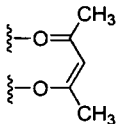
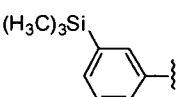
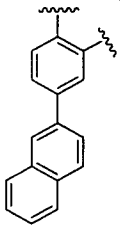
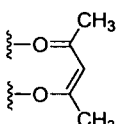
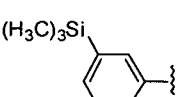
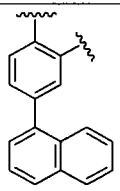
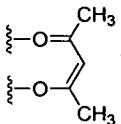
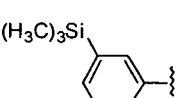
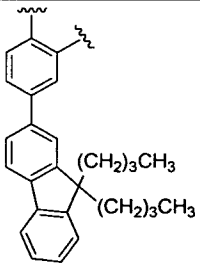
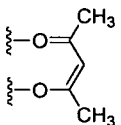
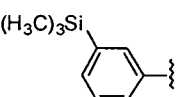
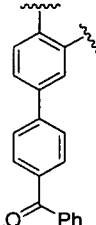
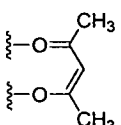
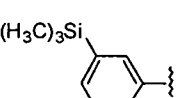
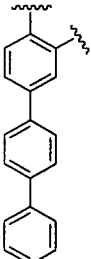
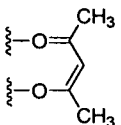
320

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1843	H	H	H	H	H	H		H			2
1844	H	H	H	H	H	H		H			1
1845	H	H	H	H	H	H		H		-	3
1846	H	H	H	H	H	H		H			2
1847	H	H	H	H	H	H		H			2
1848	H	H	H	H	H	H		H			2
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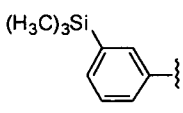
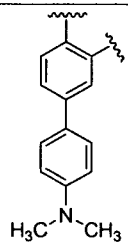
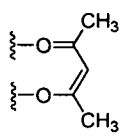
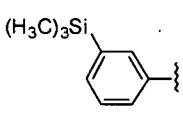
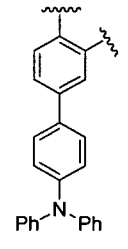
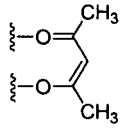
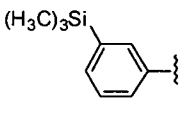
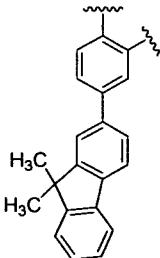
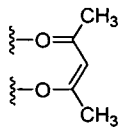
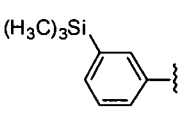
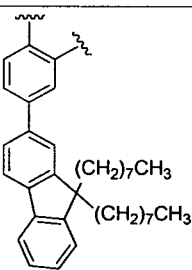
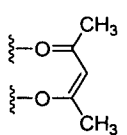
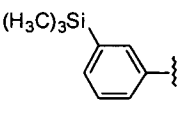
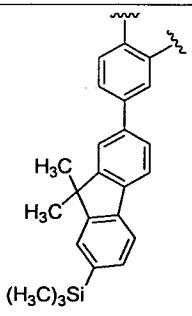
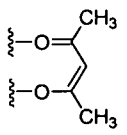
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1852	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1853	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1854	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1855	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1856	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1857	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1858	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1859	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2

1860	H	H	H	H	H	H		H			2
1861	H	H	H	H	H	H		H			2
1862	H	H	H	H	H	H		H			2
1863	H	H	H	H	H	H		H			2
1864	H	H	H	H	H	H		H			2
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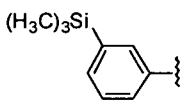
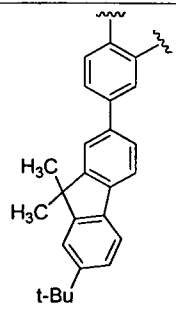
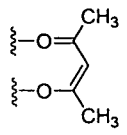
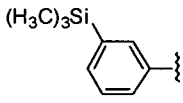
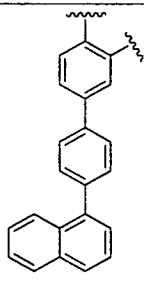
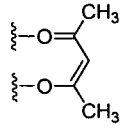
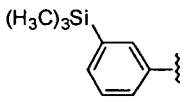
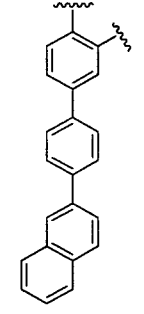
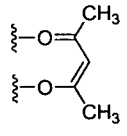
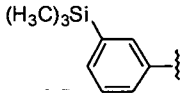
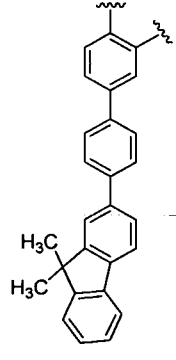
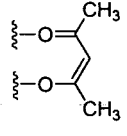
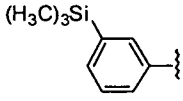
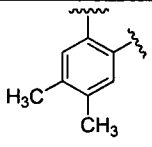
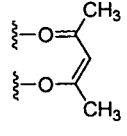
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1868	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1869	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1870	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
1871	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
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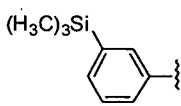
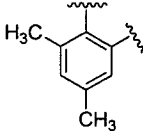
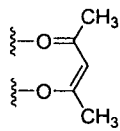
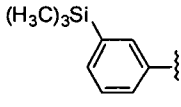
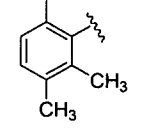
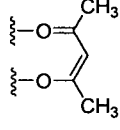
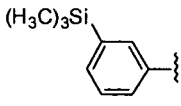
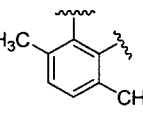
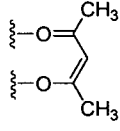
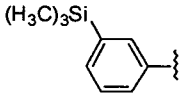
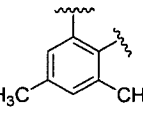
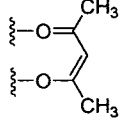
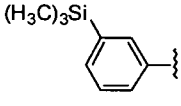
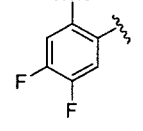
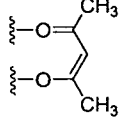
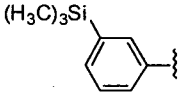
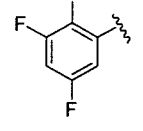
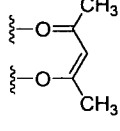
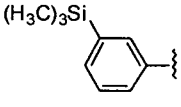
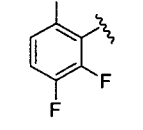
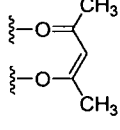
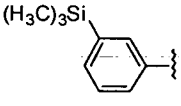
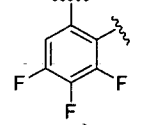
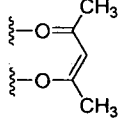
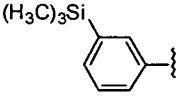
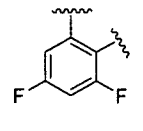
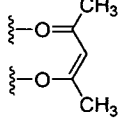
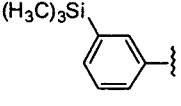
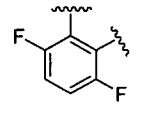
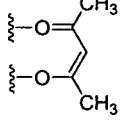
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1876	H	H	H	H	H	H		H			2
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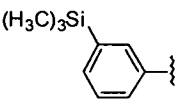
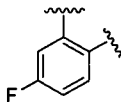
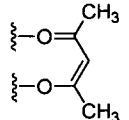
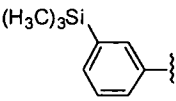
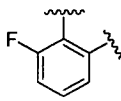
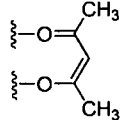
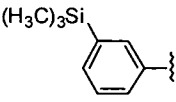
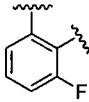
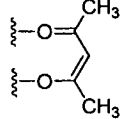
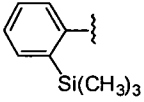
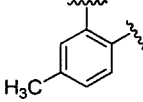
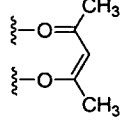
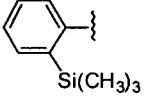
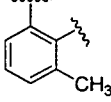
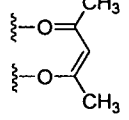
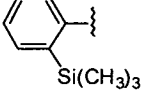
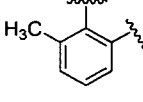
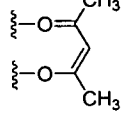
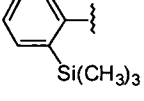
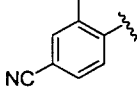
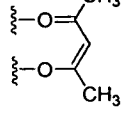
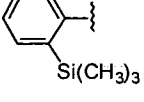
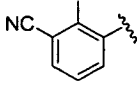
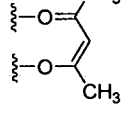
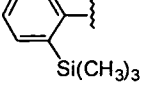
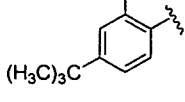
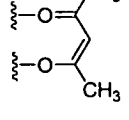
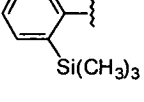
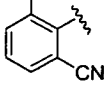
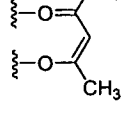
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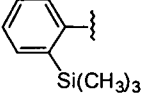
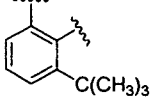
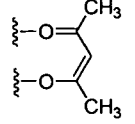
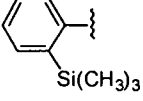
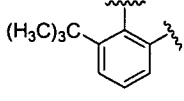
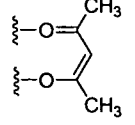
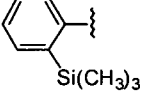
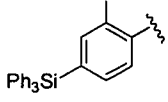
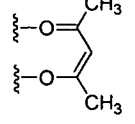
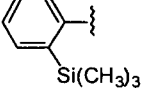
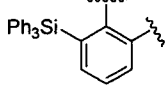
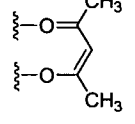
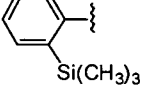
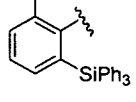
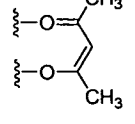
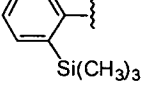
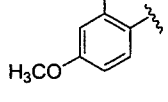
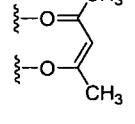
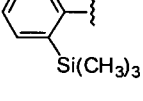
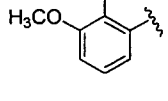
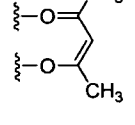
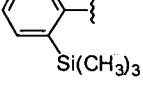
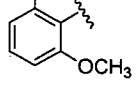
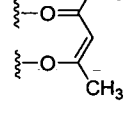
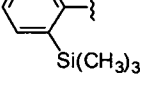
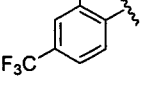
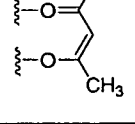
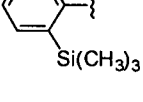
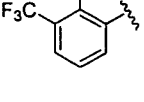
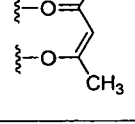
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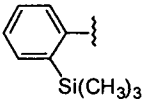
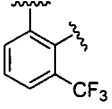
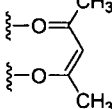
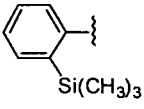
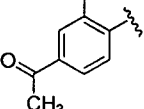
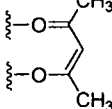
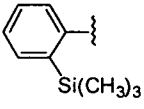
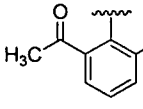
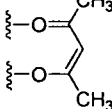
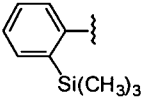
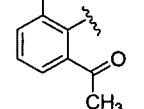
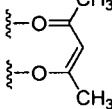
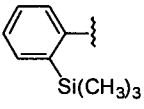
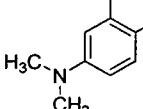
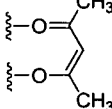
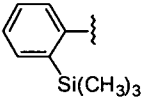
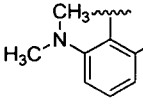
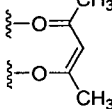
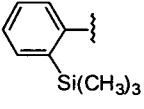
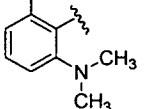
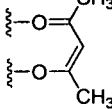
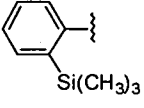
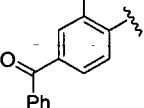
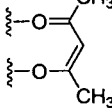
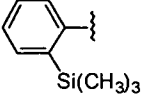
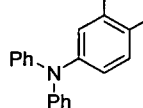
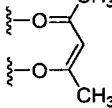
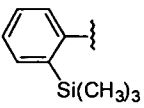
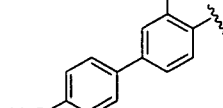
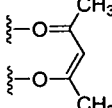
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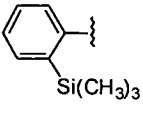
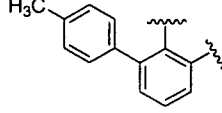
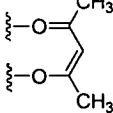
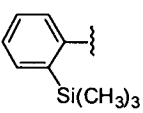
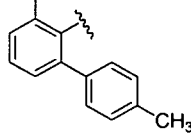
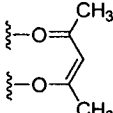
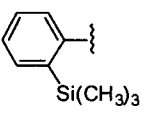
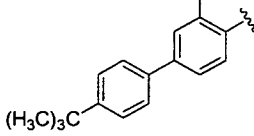
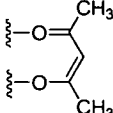
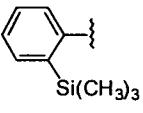
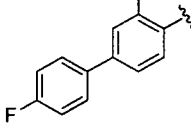
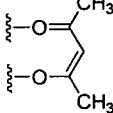
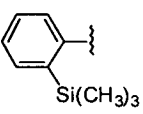
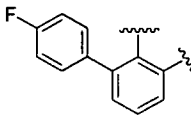
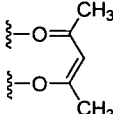
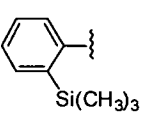
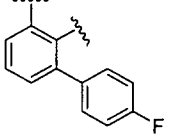
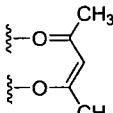
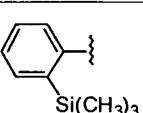
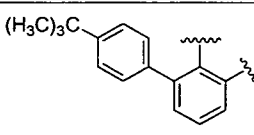
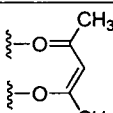
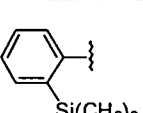
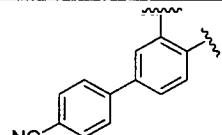
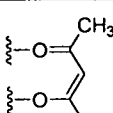
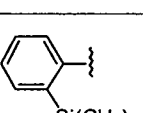
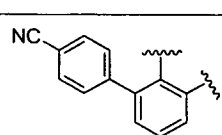
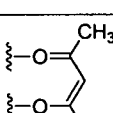
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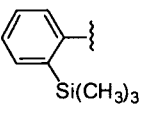
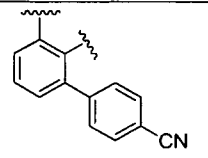
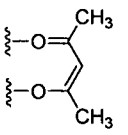
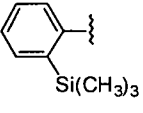
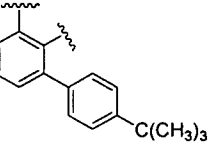
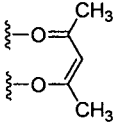
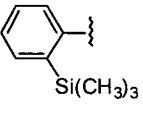
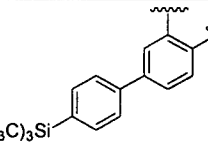
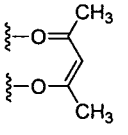
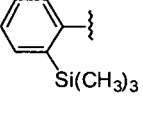
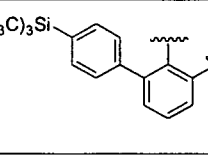
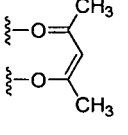
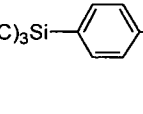
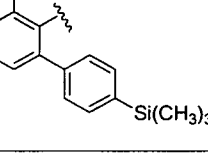
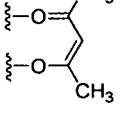
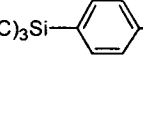
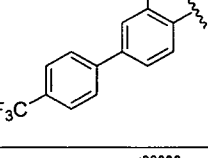
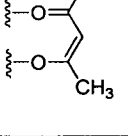
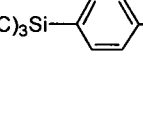
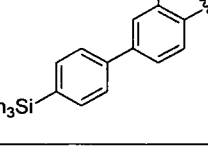
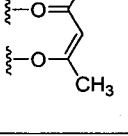
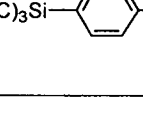
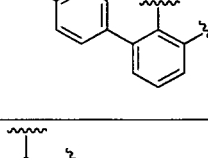
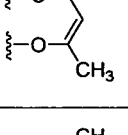
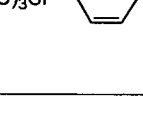
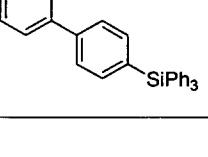
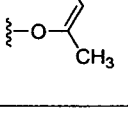
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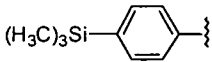
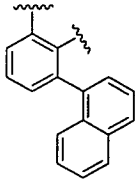
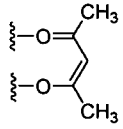
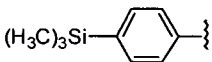
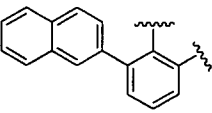
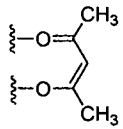
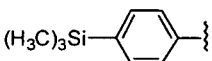
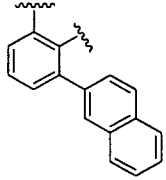
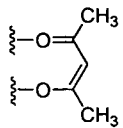
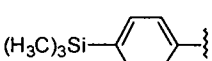
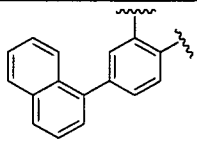
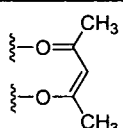
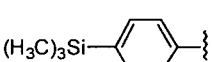
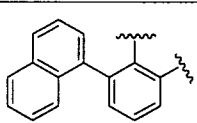
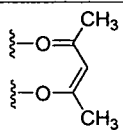
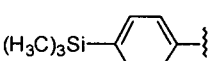
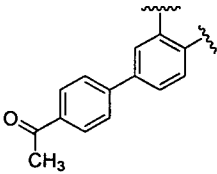
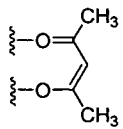
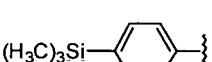
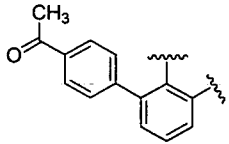
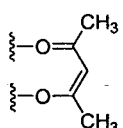
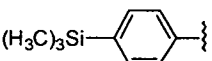
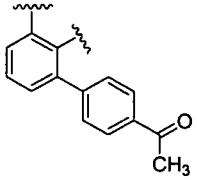
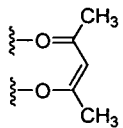
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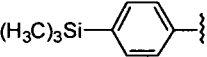
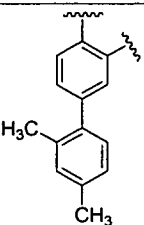
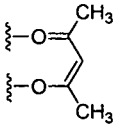
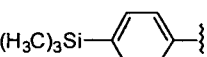
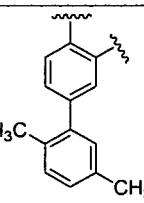
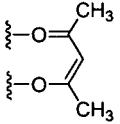
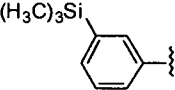
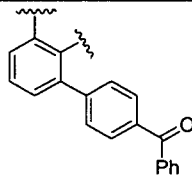
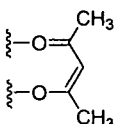
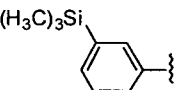
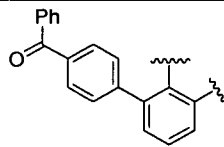
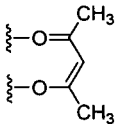
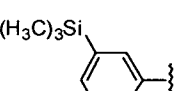
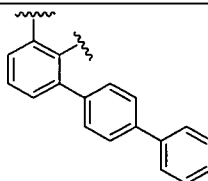
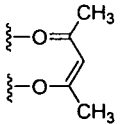
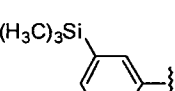
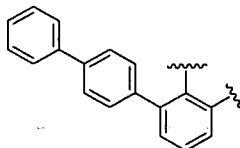
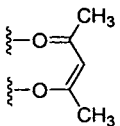
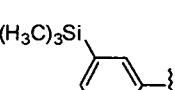
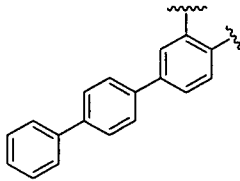
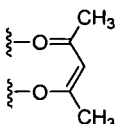
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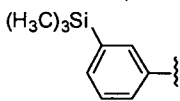
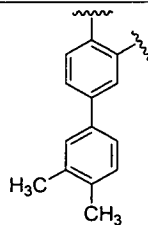
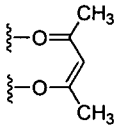
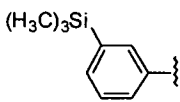
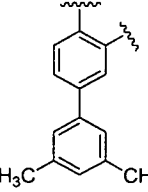
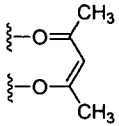
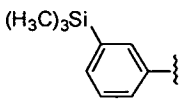
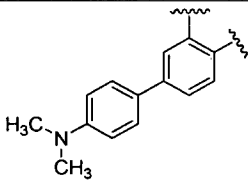
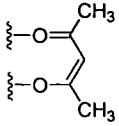
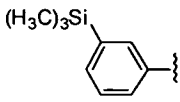
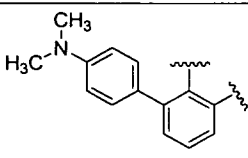
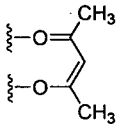
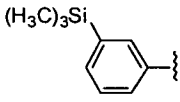
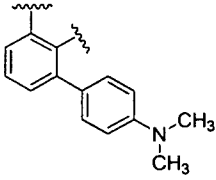
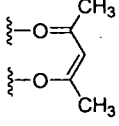
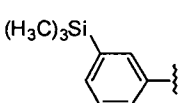
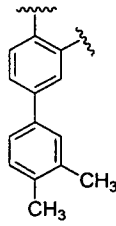
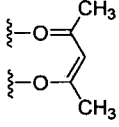
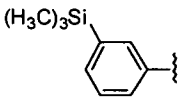
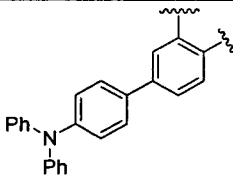
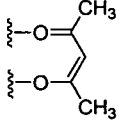
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1932	H	H	H	H	H	H		H			2
1933	H	H	H	H	H	H		H			2
1934	H	H	H	H	H	H		H			2
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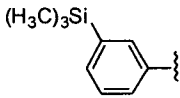
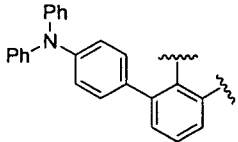
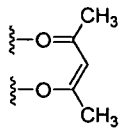
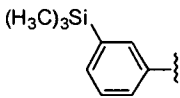
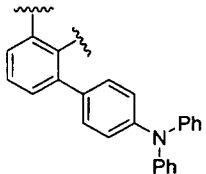
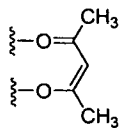
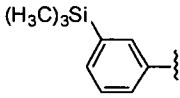
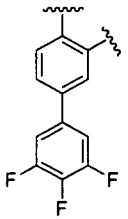
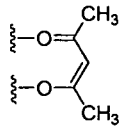
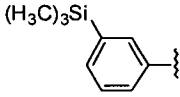
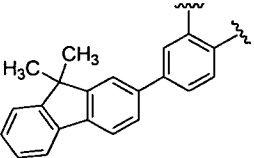
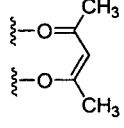
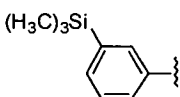
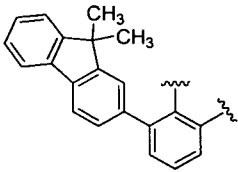
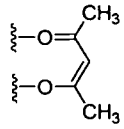
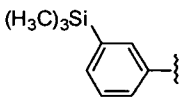
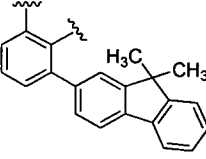
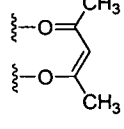
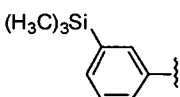
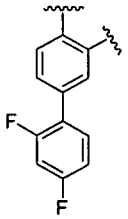
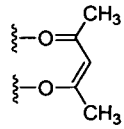
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1942	H	H	H	H	H	H		H			2
1943	H	H	H	H	H	H		H			2
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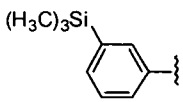
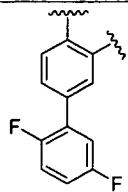
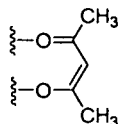
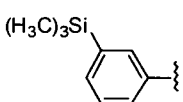
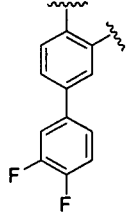
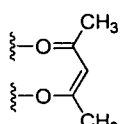
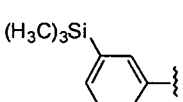
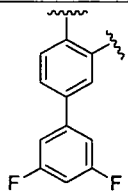
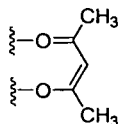
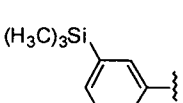
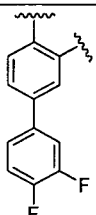
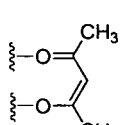
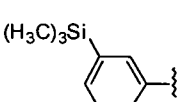
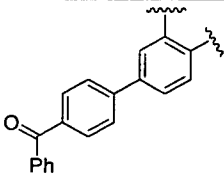
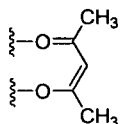
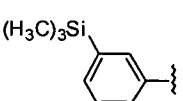
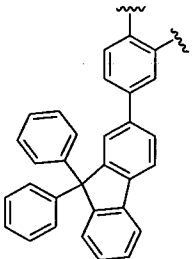
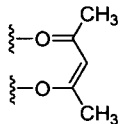
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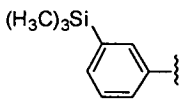
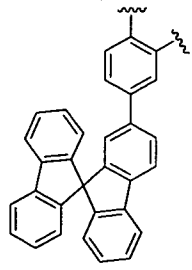
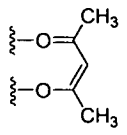
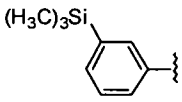
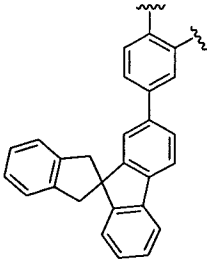
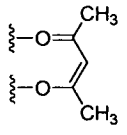
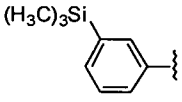
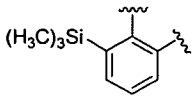
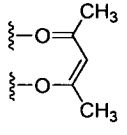
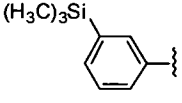
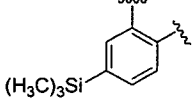
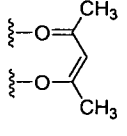
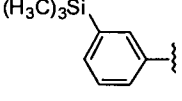
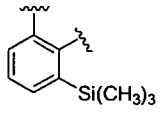
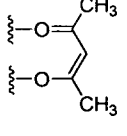
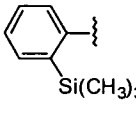
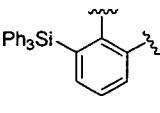
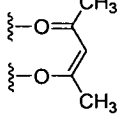
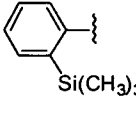
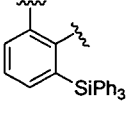
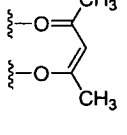
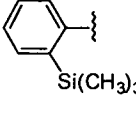
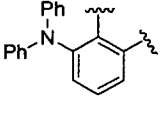
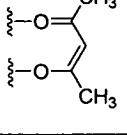
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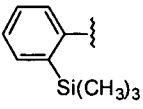
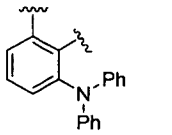
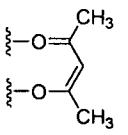
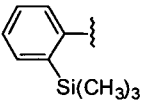
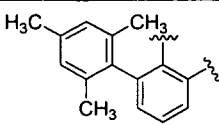
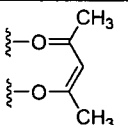
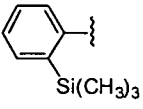
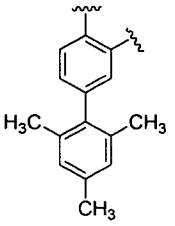
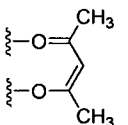
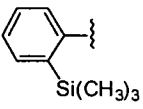
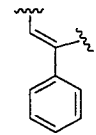
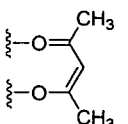
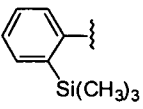
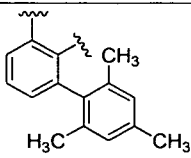
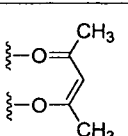
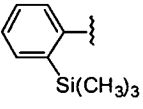
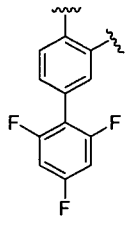
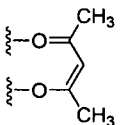
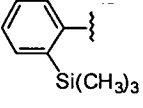
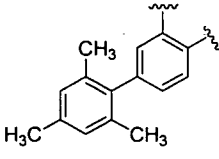
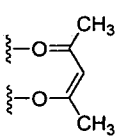
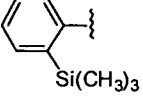
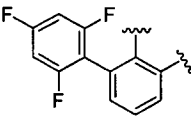
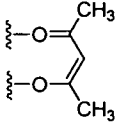
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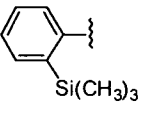
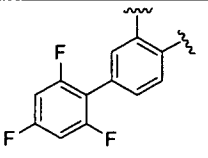
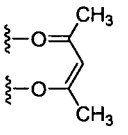
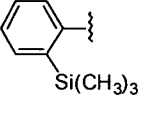
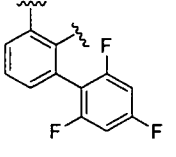
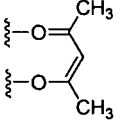
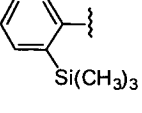
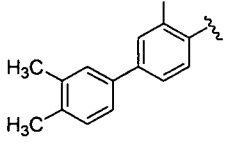
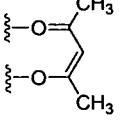
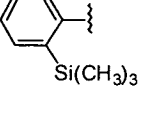
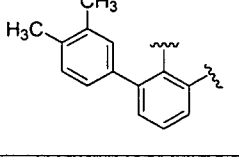
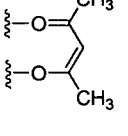
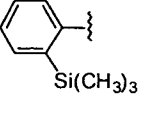
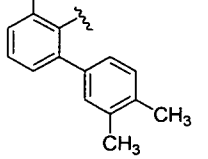
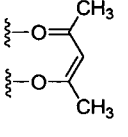
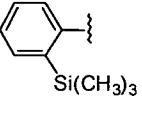
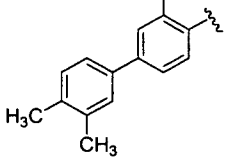
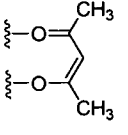
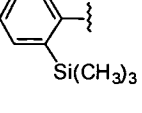
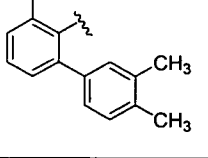
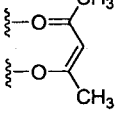
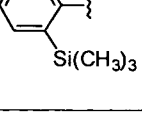
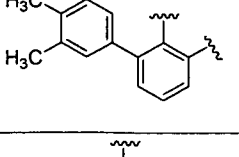
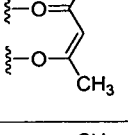
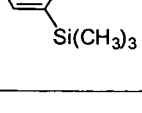
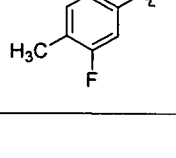
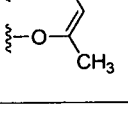
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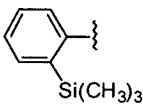
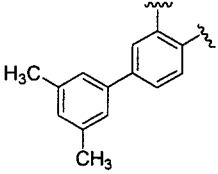
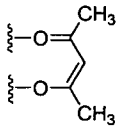
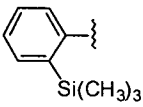
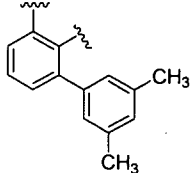
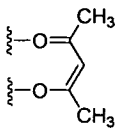
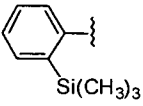
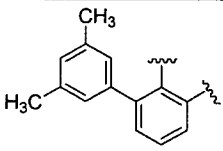
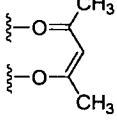
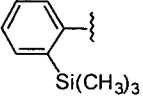
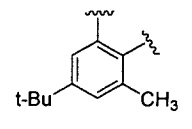
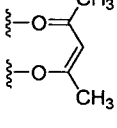
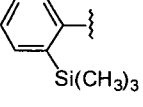
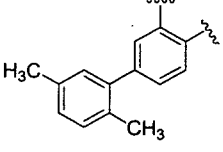
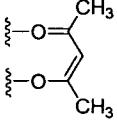
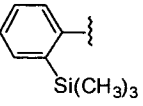
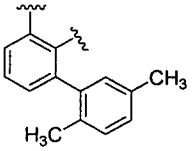
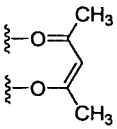
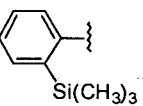
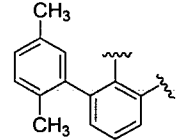
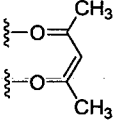
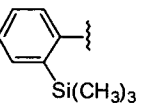
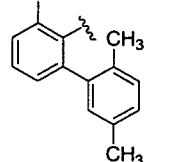
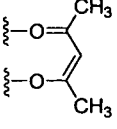
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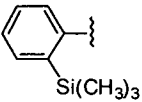
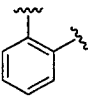
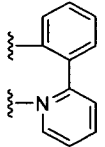
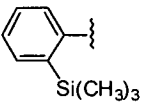
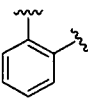
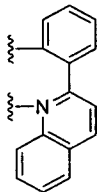
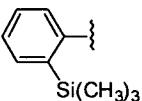
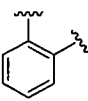
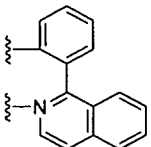
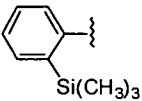
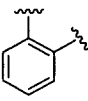
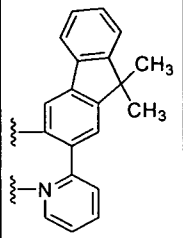
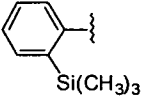
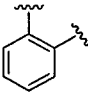
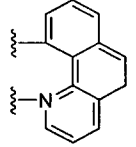
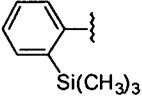
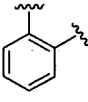
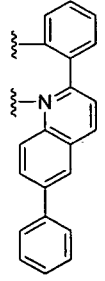
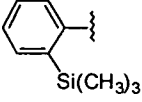
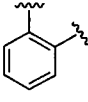
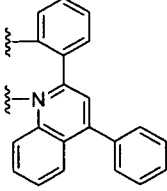
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2004	H	H	H	H	H	H		H			2
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2006	H	H	H	H	H	H		H			2

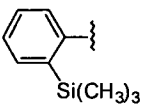
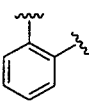
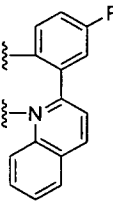
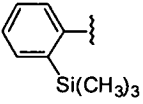
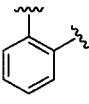
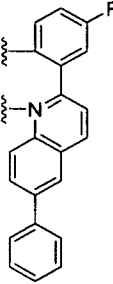
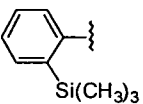
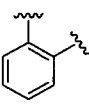
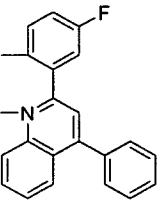
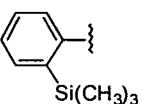
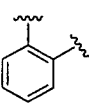
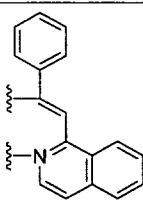
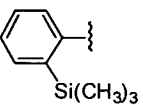
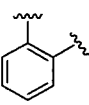
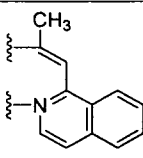
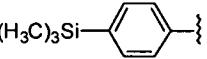
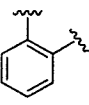
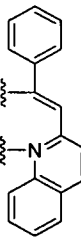
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2009	H	H	H	H	H	H		H			2
2010	H	H	H	H	H	H		H			2
2011	H	H	H	H	H	H		H			2
2012	H	H	H	H	H	H		H			2
2013	H	H	H	H	H	H		H			2
2014	H	H	H	H	H	H		H			2
2015	H	H	H	H	H	H		H			2

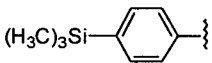
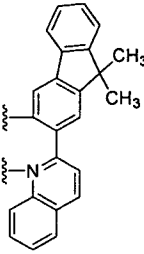
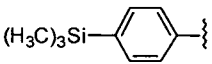
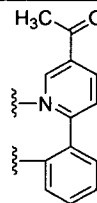
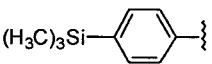
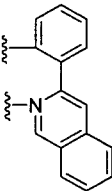
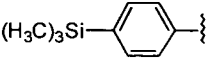
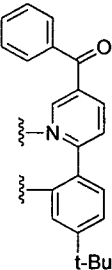
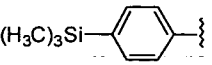
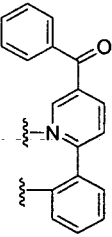
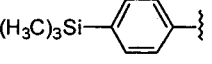
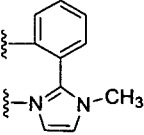
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2018	H	H	H	H	H	H		H			2
2019	H	H	H	H	H	H		H			2
2020	H	H	H	H	H	H		H			2
2021	H	H	H	H	H	H		H			2
2022	H	H	H	H	H	H		H			2
2023	H	H	H	H	H	H		H			2

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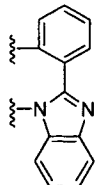
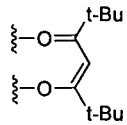
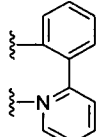
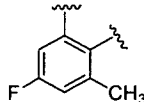
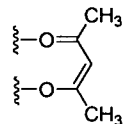
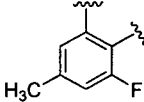
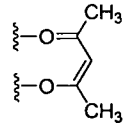
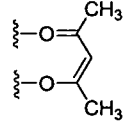
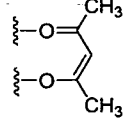
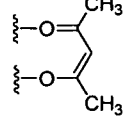
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2026	H	H	H	H	H	H		H			2
2027	H	H	H	H	H	H		H			2
2028	H	H	H	H	H	H		H			2
2029	H	H	H	H	H	H		H			2
2030	H	H	H	H	H	H		H			2

2031	H	H	H	H	H	H		H			2
2032	H	H	H	H	H	H		H			2
2033	H	H	H	H	H	H		H			2
2034	H	H	H	H	H	H		H			2
2035	H	H	H	H	H	H		H			2
2036	H	H	H	H	H	H		H			2

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2037	H	H	H	H	H	H		H			2
2038	H	H	H	H	H	H		H			2
2039	H	H	H	H	H	H		H			2
2040	H	H	H	H	H	H		H			2
2041	H	H	H	H	H	H		H			2
2042	H	H	H	H	H	H		H			2

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2043	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
2044	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
2045	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			1
2046	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H		-	3
2047	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
2048	H	H	H	H	H	H	$(\text{H}_3\text{C})_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
2049	H	H	H	H	H	H	$\text{Ph}_3\text{Si}-\text{C}_6\text{H}_4-\text{}$	H			2
2050	H	H	H	H	H	H	$\text{H}_3\text{CO}-\text{C}_6\text{H}_4-\text{}$	H			2
2051	H	H	H	H	H	H	$\text{F}_3\text{C}-\text{C}_6\text{H}_4-\text{}$	H			2

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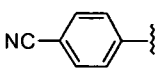
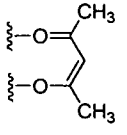
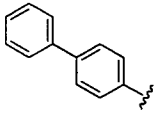
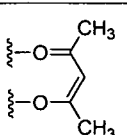
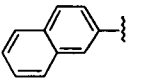
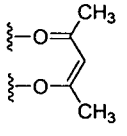
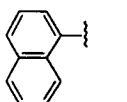
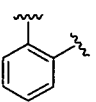
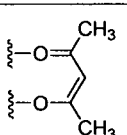
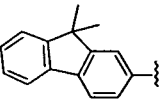
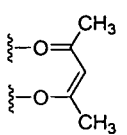
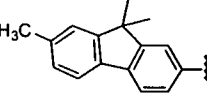
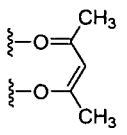
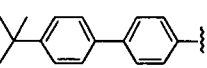
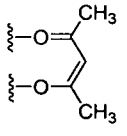
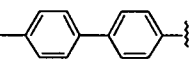
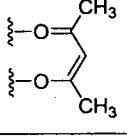
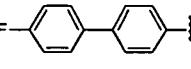
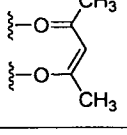
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2053	H	H	H	H	H	H		H			2
2054	H	H	H	H	H	H		H			2
2055	H	H	H	H	H	H		H			2
2056	H	H	H	H	H	H		H			2
2057	H	H	H	H	H	H		H			2
2058	H	H	H	H	H	H		H			2
2059	H	H	H	H	H	H		H			2
2060	H	H	H	H	H	H		H			2

Table 5

Compound No.	¹ H NMR (CDCl ₃ , 200 MHz)	MS/FAB	
		found	calculated

1	$\delta = 8.40(s, 2H), 8.05(m, 2H), 7.76-7.61(m, 14H), 7.42(m, 2H), 7.32(m, 8H), 4.60(s, 1H), 2.08(s, 6H)$	899	900.06
21	$\delta = 2.05(s, 6H), 4.60(s, 1H), 7.35(2H, m), 7.47(2H, m), 7.54(4H, m), 7.67(4H, m), 7.81(1H, m), 8.06-8.1(4H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)$	799.94	800.20
75	$\delta = 2.05(s, 6H), 2.34(6H, s), 4.60(s, 1H), 7.25(2H, m), 7.35(2H, m), 7.42(2H, m), 7.67(4H, m), 7.81(2H, m), 8.06-8.16(6H, m), 8.3(2H, m), 8.51(2H, m)$	827.99	828.23
159	$\delta = 2.05(s, 6H), 4.60(s, 1H), 7.16(2H, m), 7.28(2H, m), 7.35(2H, m), 7.5(2H, m), 7.67(4H, m), 7.81(2H, m), 7.88(4H, m), 8.06-8.1(4H, m), 8.16(2H, m), 8.51(2H, m), 8.81(2H, m)$	1024.09	1024.23
204	$\delta = 7.26(1H, m), 7.35(2H, m), 7.47(2H, m), 7.54(5H, m), 7.67(5H, m), 7.81(2H, m), 8.06-8.1(9H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)$	923.06	923.23
276	$\delta = 2.05(s, 6H), 4.60(s, 1H), 2.34(6H, s), 2.61(6H, s), 4.60(s, 1H), 7.0(2H, s), 7.25(2H, m), 7.42(2H, m), 7.67(4H, m), 7.8(2H, m), 8.11-8.16(4H, m), 8.3(2H, m), 8.51(2H, m)$	856.04	856.26
405	$\delta = 2.34(6H, s), 7.0(2H, s), 7.25(3H, m), 7.35(1H, m), 7.42(2H, m), 7.52(1H, m), 7.67(5H, m), 7.8(3H, m), 8.11-8.16(8H, m), 8.3(2H, m), 8.51(2H, m)$	951.12	951.26
527	$\delta = 2.05(s, 6H), 4.60(s, 1H), 7.13(2H, m), 7.41(2H, m), 7.51-7.6(12H, m), 7.67(4H, m), 7.81(2H, m), 8.06(2H, m), 8.16-8.26(4H, m), 8.51(2H, m)$	988.11	988.25
748	$\delta = 1.35(18H, s), 2.05(s, 6H), 2.34(12H, s), 4.60(s, 1H), 7.0(2H, s), 7.31(2H, m), 7.6(4H, m), 7.67(4H, m), 7.8(2H, m), 7.88(4H, m), 8.16(4H, m), 8.51(2H, m), 8.81(2H, m)$	1120.45	1120.45
869	$\delta = 0.33(18H, s), 2.05(s, 6H), 2.34(12H), 4.60(s, 1H), 7.37(2H, m), 7.67(6H, m), 7.81(2H, m), 8.11-8.16(4H, m), 8.06(2H, m), 8.51(2H, m)$	1000.40	1000.34
1029	$\delta = 8.40(s, 2H), 8.05(m, 2H), 7.76(m, 2H), 7.67-7.61(m, 12H), 7.48(m, 4H), 7.32(m, 12H), 7.22(m, 2H), 4.62(s, 1H), 2.05(s, 6H)$	1052	1052.27
1044	$\delta = 2.07(s, 6H), 4.58(s, 1H), 7.41-7.54(12H, m), 7.64(2H, s), 7.67(4H, m), 7.79-7.81(6H, m), 8.06(2H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)$	952.13	952.26
1148	$\delta = 2.07(s, 6H), 4.58(s, 1H), 7.41(4H, m), 7.51-7.6(16H, m), 7.64(2H, s), 7.67(4H, m), 7.79-7.81(6H, m), 8.06(2H, m), 8.16-8.26(4H, m), 8.51(2H, m)$	1104.32	1104.33

1349	δ = 2.07(s, 6H), 2.34(6H, m), 4.58(s, 1H), 7.29~7.33(8H, m), 7.41(2H, m), 7.51~7.6(12H, m), 7.64(2H, s), 7.67(4H, m), 7.81(2H, m), 8.06(2H, m), 8.16~8.26(4H, m), 8.51(2H, m)	1132.37	1132.36
1446	δ = 2.07(s, 6H), 4.58(s, 1H), 7.3(4H, m), 7.39(4H, m), 7.47(2H, m), 7.54(4H, m), 7.64(2H, s), 7.67(4H, m), 7.81(2H, m), 8.06(2H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)	988.11	988.25
1456	δ = 2.07(s, 6H), 4.58(s, 1H), 7.3(4H, m), 7.39(4H, m), 7.59(4H, m), 7.64(2H, s), 7.67(4H, m), 7.81(2H, m), 7.95~8(6H, m), 8.06(2H, m), 8.16(2H, m), 8.51(2H, m), 8.85(2H, m)	1088.23	1088.28
1655	δ = 1.35(18H, s), 2.07(s, 6H), 4.58(s, 1H), 7.37~7.38(8H, m), 7.64(2H, s), 7.67~7.71(8H, m), 7.81(2H, m), 8.06(2H, m), 8.16(2H, m), 8.23(2H, m), 8.51(2H, m)	1200.34	1200.36
1691	δ = 1.35(18H, s), 2.07(s, 6H), 2.34(12H, s), 4.58(s, 1H), 7.37~7.38(10H, m), 7.64(2H, s), 7.67(4H, m), 7.81(2H, m), 8.06~8.16(6H, m), 8.51(2H, m)	1120.45	1120.45
1859	δ = 0.25(18H, s), 2.07(s, 6H), 4.58(s, 1H), 7.46(4H, m), 7.55(4H, m), 7.64(4H, s), 7.64~7.67(4H, m), 7.77~7.81(6H, m), 8.06~8.1(6H, m), 8.16(2H, m), 8.46~8.55(4H, m)	1196.61	1196.37
2054	δ = 2.07(s, 6H), 4.58(s, 1H), 7.47(2H, m), 7.54~7.59(10H, m), 7.64(2H, s), 7.67(4H, m), 7.73(2H, m), 7.81(2H, m), 7.92(2H, m), 8(4H, m), 8.06(2H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)	1052.24	1052.30
2055	δ = 2.07(s, 6H), 4.58(s, 1H), 7.47(2H, m), 7.54~7.55(8H, m), 7.61(2H, m), 7.64(2H, s), 7.67(4H, m), 7.81(2H, m), 8.04~8.08(6H, m), 8.16(2H, m), 8.3(2H, m), 8.42(2H, m), 8.51~8.55(4H, m)	1052.24	1052.30
2056	δ = 2.07(s, 6H), 4.58(s, 1H), 1.72(12H, s), 7.28(2H, m), 7.38(2H, m), 7.47(2H, m), 7.54~7.55(6H, m), 7.63(2H, m), 7.64(2H, s), 7.67(4H, m), 7.77~7.81(4H, m), 7.87~7.93(4H, m), 8.06(2H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)	1184.45	1184.39
2060	δ = 2.07(s, 6H), 4.58(s, 1H), 7.25~7.3(12H, m), 7.39(4H, m), 7.47(2H, m), 7.54(4H, m), 7.64(2H, s), 7.67(4H, m), 7.81(2H, m), 8.06(2H, m), 8.16(2H, m), 8.3(2H, m), 8.51(2H, m)	1140.30	1140.31

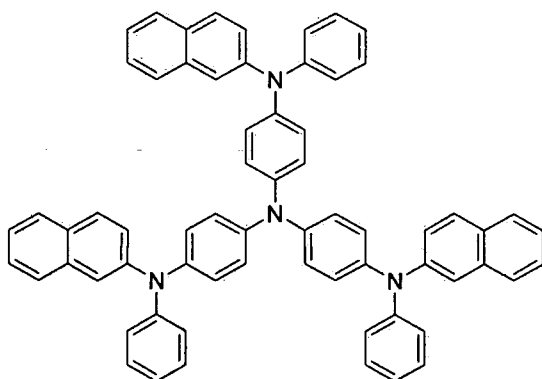
[Example 1] Manufacture of an OLED (1)

An OLED device was manufactured by using a compound for

electronic material according to the invention.

First, a transparent electrode ITO thin film ($15 \Omega/\square$) (2) prepared from glass for OLED (produced by Samsung Corning) (1) was subjected to ultrasonic washing with trichloroethylene, acetone, ethanol and distilled water, sequentially, and stored in isopropanol before use.

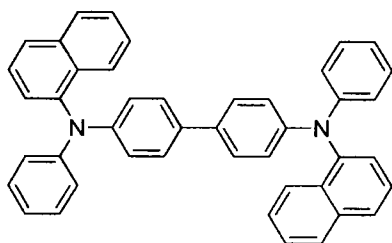
Then, an ITO substrate was equipped in a substrate folder of a vacuum vapor-deposit device, and 4,4',4''-tris(N,N-(2-naphthyl)-phenylamino)triphenylamine (2-TNATA) was placed in a cell of the vacuum vapor-deposit device, which was then ventilated up to 10^{-6} torr of vacuum in the chamber. Electric current was applied to the cell to evaporate 2-TNATA, thereby providing vapor-deposit of a hole injecting layer (3) having 60 nm thickness on the ITO substrate.



2-TNATA

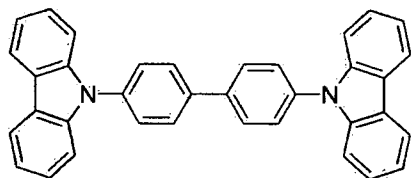
Then, to another cell of the vacuum vapor-deposit device,

charged was *N,N'*-bis(α -naphthyl)-*N,N'*-diphenyl-4,4'-diamine (NPB), and electric current was applied to the cell to evaporate NPB, thereby providing vapor-deposit of a hole transport layer (4) of 20 nm thickness on the hole injecting layer.

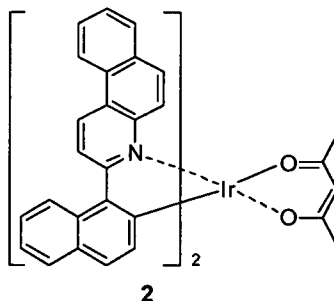


NPB

To another cell of said vacuum vapor-deposit device, charged was 4,4'-*N,N'*-dicarbazole-biphenyl (CBP) as an electroluminescent host material, and a compound for electronic material (e.g., Compound 2) according to the present invention was charged to still another cell. The two substances were evaporated at different rates to carry out doping, thereby vapor-depositing an electroluminescent layer (5) with 30 nm thickness on the hole transport layer. The suitable doping concentration is 4 to 10% by weight on the basis of CBP.

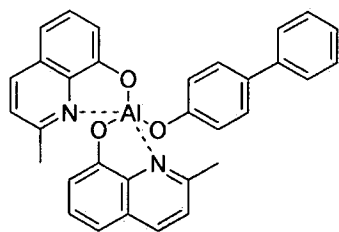


CBP

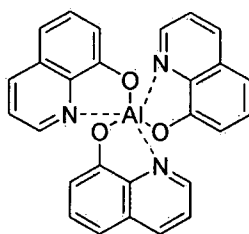


2

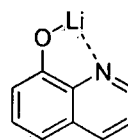
Then, on the electroluminescent layer, bis(2-methyl-8-quinolinato)(p-phenylphenolato)aluminum (III) (BALq) was vapor-deposited as a hole blocking layer with a thickness of 10 nm in the same manner for NPB, tris(8-hydroxyquinoline)aluminum (III) (Alq) was vapor-deposited as an electron transport layer (6) with a thickness of 20 nm, and then lithium quinolate (Liq) was vapor-deposited as an electron injecting layer (7) in a thickness of 1 to 2 nm. Thereafter, an Al cathode (8) was vapor-deposited with a thickness of 150 nm by using another vacuum vapor-deposit device to manufacture an OLED.



BALq



Alq

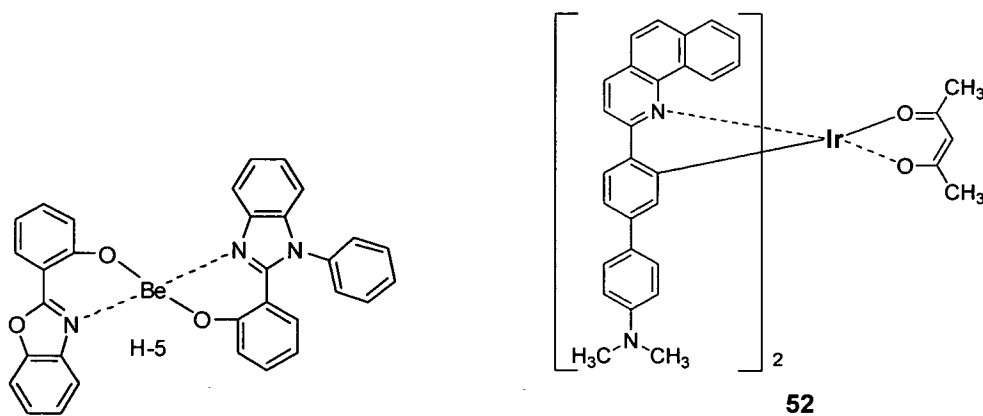


Liq

[Example 2] Manufacture of an OLED (2)

A hole injecting layer and a hole transport layer were formed according to the procedure of Example 1, and an electroluminescent layer was vapor-deposited as follows. In another cell of said vacuum vapor-deposit device, charged was H-5 as an electroluminescent host material according to the present

invention, and a compound for electronic material according to the present invention (Compound 52) was charged to still another cell. The two substances were evaporated at different rates to carry out doping, thereby vapor-depositing an electroluminescent layer (5) with 30 nm thickness on the hole transport layer. The suitable doping concentration is 4 to 10% by weight on the basis of the host. Then, a hole blocking layer, an electron transport layer and an electron injecting layer were vapor-deposited according to the same procedure as in Example 1, and then Al cathode was vapor-deposited with a thickness of 150 nm by using another vacuum vapor-deposit device to manufacture an OLED.



[Example 3] Manufacture of an OLED (3)

A hole injecting layer, a hole transport layer and an electroluminescent layer were formed according to the same procedure as in Example 2, and then an electron transport layer and an electron injecting layer were vapor-deposited. Thereafter,

Al cathode was vapor-deposited with a thickness of 150 nm by using another vacuum vapor-deposit device to manufacture an OLED.

[Experimental Example 1] Evaluation of optical properties of electroluminescent materials

The complexes having high synthetic yield were purified by vacuum sublimation at 10^{-6} torr and used as a dopant for an electroluminescent layer of an OLED. In order to examine the performances of OLED's manufactured from Examples 1 to 3, external quantum efficiency of OLED's was measured at 10 mA/cm². Various properties of the compounds according to the invention are shown in Table 6.

Table 6

	Material	Host	Hole blocking layer	EL color	Operation voltage	External quantum efficiency (%)
Ex. 1	Compound 2	CBP	BAIq	Red	8.2	6.8
	Compound 21	CBP	BAIq	Red	8.1	7.7
	Compound 46	CBP	BAIq	Red	7.9	8.2
	Compound 79	CBP	BAIq	Red	7.7	7.1
	Compound 108	CBP	BAIq	Red	7.9	7.9
	Compound 290	CBP	BAIq	Red	7.7	7.8
	Compound 401	CBP	BAIq	Red	8.2	5.8
	Compound 687	CBP	BAIq	Red	7.9	6.1
	Compound 750	CBP	BAIq	Red	8.0	5.9
	Compound 821	CBP	BAIq	Red	8.3	6.4
	Compound 907	CBP	BAIq	Red	7.7	6.0
	Compound 1044	CBP	BAIq	Red	8.2	5.6
	Compound 1245	CBP	BAIq	Red	7.7	6.4
	Compound 1508	CBP	BAIq	Red	7.9	6.1
	Compound 1712	CBP	BAIq	Red	8.0	5.8
	Compound 1890	CBP	BAIq	Red	8.0	6.9
	Compound 2043	CBP	BAIq	Red	7.6	6.7

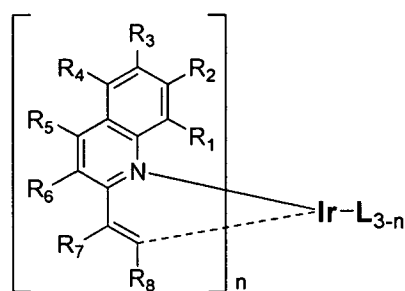
Ex. 2	Compound 52	H-5	BAlq	Red	6.6	6.8
	Compound 68	H-33	BAlq	Red	6.5	5.9
	Compound 1026	H-10	BAlq	Red	7.5	6.3
	Compound 1980	H-17	BAlq	Red	6.4	6.2
Ex. 3	Compound 106	H-7	-	Red	7.0	6.3
	Compound 1007	H-5	-	Red	6.9	6.7
	Compound 1745	H-64	-	Red	6.6	7.4

In Example 1, Compound 46 showed good properties in voltage and external quantum efficiency; in Example 2, Compound 52; and in Example 3, Compound (1745) showed good properties in voltage and external quantum efficiency.

CLAIMS

1. An organic compound for electronic material represented by Chemical Formula (1):

Chemical Formula 1



wherein, L represents an organic ligand;

R_1 and R_2 , or R_3 and R_4 are independently linked via (C3-C12)alkylene or (C3-C12)alkenylene to form at least one fused ring(s), and the substituents which do not form a fused ring are independently substituted by hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, -(C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-

C60) arylcarbonyl, carboxyl, nitro or hydroxyl;

the fused ring formed by linkage from R₁ and R₂, or R₃ and R₄ via (C3-C12)alkylene or (C3-C12)alkenylene, or the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino or other substituents which do not form a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

R₅ and R₆ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-

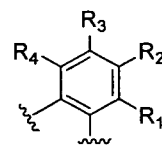
C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

R₇ and R₈ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or R₇ and R₈ may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

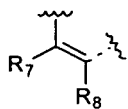
the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R₅, R₆, R₇ and R₈, or the alicyclic ring, or the monocyclic or

polycyclic aromatic ring formed therefrom by linkage via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, halo(C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl; and

n is an integer from 1 to 3;



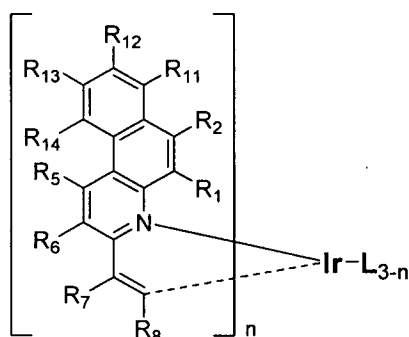
provided that, if the ring formed from R₃ and R₄ of



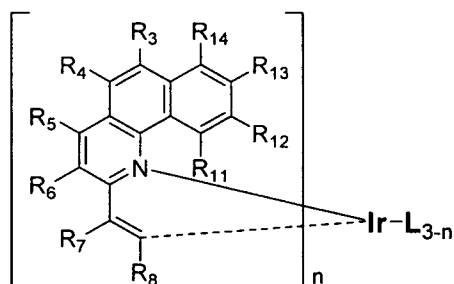
from R₇ and R₈ of by linkage via alkylene or alkenylene is not benzene.

2. The organic compound for electronic material according to claim 1, which is selected from the compounds represented by Chemical Formula (2) or (3):

Chemical Formula 2



Chemical Formula 3



wherein, L, R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈ and n are defined as in claim 1;

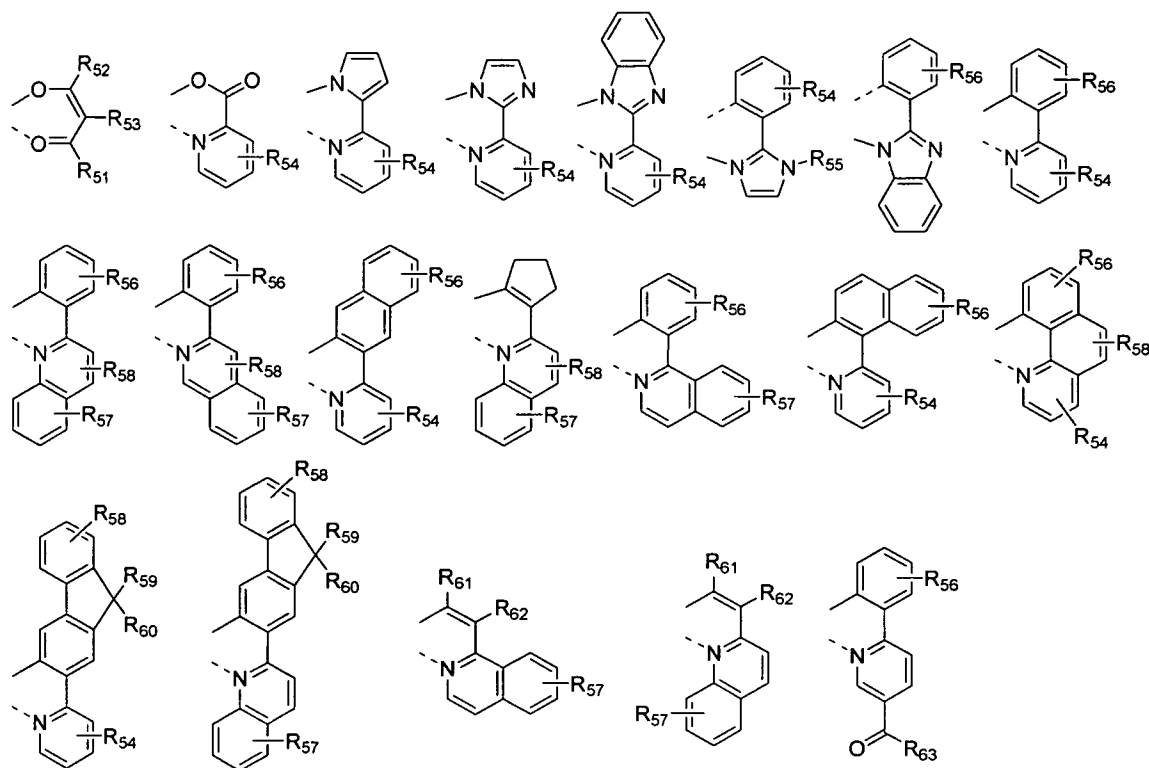
R₁₁ through R₁₄ independently represent hydrogen, deuterium, halogen, (C₁-C₆₀)alkyl, (C₆-C₆₀)aryl, (C₄-C₆₀)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C₃-C₆₀)cycloalkyl, tri(C₁-C₆₀)alkylsilyl, di(C₁-C₆₀)alkyl(C₆-C₆₀)arylsilyl, tri(C₆-

C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl; and

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₁₁ through R₁₄ may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

3. The organic compound for electronic material according to claim 2, wherein ligand L is selected from the following

structures:



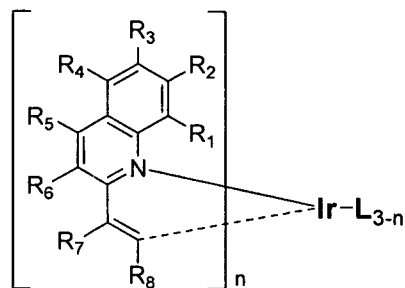
wherein, R_{51} through R_{63} independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or each of R_{51}

through R₆₃ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₅₁ through R₆₃, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)aryl, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

4. An organic solar cell which comprises an organic compound

for electronic material represented by Chemical Formula (1):

Chemical Formula 1



wherein, L represents an organic ligand;

R₁ and R₂, or R₃ and R₄ are independently linked via (C3-C12)alkylene or (C3-C12)alkenylene to form at least one fused ring(s), and the substituents which do not form a fused ring are independently substituted by hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

the fused ring formed by linkage from R₁ and R₂, or R₃ and R₄

via (C3-C12)alkylene or (C3-C12)alkenylene, or the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of other substituents which do not form a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

R₅ and R₆ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino,

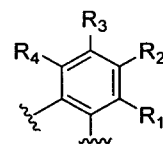
(C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

R₇ and R₈ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or R₇ and R₈ may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R₅, R₆, R₇ and R₈, or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring

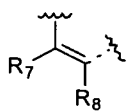
may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, halo(C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl; and

n is an integer from 1 to 3;



provided that, if the ring formed from R₃ and R₄ of

by linkage via alkylene or alkenylene is benzene, the ring formed

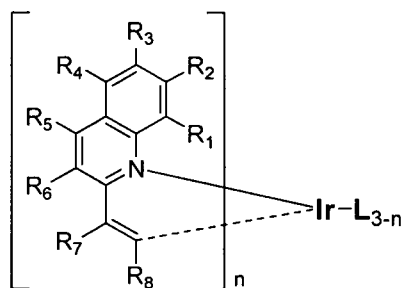


from R₇ and R₈ of by linkage via alkylene or alkenylene is not benzene.

5. An organic electronic device which is comprised of a first electrode, a second electrode, and at least one organic layer(s)

interposed between the first electrode and the second electrode; wherein the organic layer comprises an electroluminescent region, and the electroluminescent region comprises an organic compound(s) for electronic material represented by Chemical Formula (1):

Chemical Formula 1



wherein, L represents an organic ligand;

R_1 and R_2 , or R_3 and R_4 are independently linked via (C3-C12)alkylene or (C3-C12)alkenylene to form at least one fused ring(s), and the substituents which do not form a fused ring are independently substituted by hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl,

selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl;

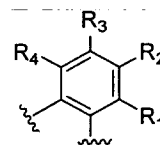
R₇ and R₈ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl, or R₇ and R₈ may be linked via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring;

the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl,

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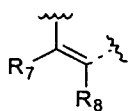
aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R_5 , R_6 , R_7 and R_8 , or the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, halo(C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl; and

n is an integer from 1 to 3;



provided that, if the ring formed from R_3 and R_4 of

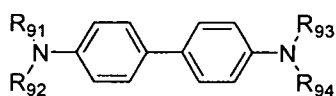
by linkage via alkylene or alkenylene is benzene, the ring formed



from R_7 and R_8 of by linkage via alkylene or alkenylene is

not benzene and one or more host selected from 1,3,5-tricarbazolylbenzene, polyvinylcarbazole, m-biscarbazolyl phenyl, 4,4',4''-tri(N-carbazolyl)triphenylamine, 1,3,5-tri(2-carbazolylphenyl)benzene, 1,3,5-tris(2-carbazolyl-5-methoxyphenyl)benzene, bis(4-carbazolylphenyl)silane, or one or more host(s) represented by one of Chemical Formulas (14) to (17):

Chemical Formula 14



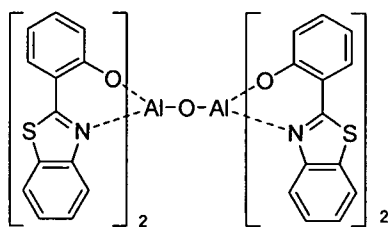
wherein, R_{91} through R_{94} independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl; or each of R_{91} through R_{94} may be linked to an adjacent substituent via (C3-

C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

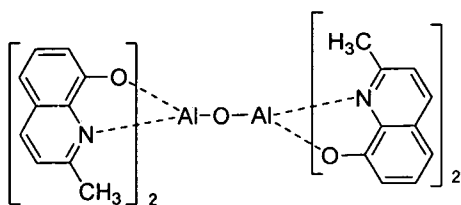
the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino, arylamino of R₉₁ through R₉₄, and the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)aryl, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl;

Chemical Formula 15

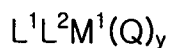
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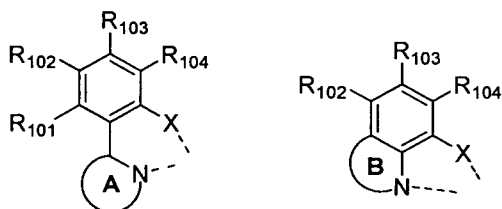
Chemical Formula 16



Chemical Formula 17



wherein, the ligands L^1 and L^2 are independently selected from the following structures;



wherein, M^1 represents a bivalent or trivalent metal;

y is 0 when M^1 is a bivalent metal, while y is 1 when M^1 is a trivalent metal;

Q is (C6-C60)aryloxy or tri(C6-C60)arylsilyl, and the aryloxy or triarylsilyl of Q may be further substituted by (C1-C60)alkyl or (C6-C60)aryl;

X is O, S or Se;

ring A represents oxazole, thiazole, imidazole, oxadiazole, thiadiazole, benzoxazole, benzothiazole, benzimidazole, pyridine or quinoline;

ring B represents pyridine or quinoline which may be further substituted by (C1-C60)alkyl, or phenyl or naphthyl with or without (C1-C60)alkyl substituent(s);

R₁₀₁ through R₁₀₄ independently represent hydrogen, deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)arylsilyl, tri(C6-C60)arylsilyl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)arylamino, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkyloxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro or hydroxyl; or each of R₁₀₁ through R₁₀₄ may be linked to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring to form an alicyclic ring, or a monocyclic or polycyclic aromatic ring; and

ring A, or the alkyl, alkenyl, alkynyl, cycloalkyl,

heterocycloalkyl, aryl, heteroaryl, arylsilyl, alkylsilyl, alkylamino or arylamino of R₁₀₁ through R₁₀₄, and the alicyclic ring, or the monocyclic or polycyclic aromatic ring formed therefrom by linkage to an adjacent substituent via (C3-C60)alkylene or (C3-C60)alkenylene with or without a fused ring may be further substituted by one or more substituent(s) selected from deuterium, halogen, (C1-C60)alkyl, (C6-C60)aryl, (C4-C60)heteroaryl, a 5- or 6-membered heterocycloalkyl containing one or more heteroatom(s) selected from N, O and S, (C3-C60)cycloalkyl, tri(C1-C60)alkylsilyl, di(C1-C60)alkyl(C6-C60)aryl, tri(C6-C60)aryl, adamantyl, (C7-C60)bicycloalkyl, (C2-C60)alkenyl, (C2-C60)alkynyl, cyano, (C1-C60)alkylamino, (C6-C60)aryl, (C6-C60)ar(C1-C60)alkyl, (C1-C60)alkoxy, (C1-C60)alkylthio, (C6-C60)aryloxy, (C6-C60)arylthio, (C1-C60)alkoxycarbonyl, (C1-C60)alkylcarbonyl, (C6-C60)arylcarbonyl, carboxyl, nitro and hydroxyl.

6. The organic electronic device according to claim 5, wherein the organic layer comprises one or more compound(s) selected from a group consisting of arylamine compounds and styrylamine compounds, or one or more metal(s) selected from a group consisting of organometals of Group 1, Group 2, 4th period and 5th

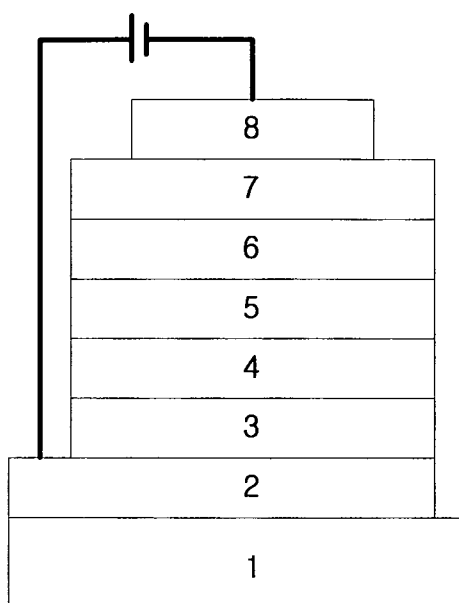
period transition metals, lanthanide metals and d-transition elements in the Periodic Table of Elements.

7. The organic electronic device according to claim 5, which comprises an organic compound or organometallic compound with green or blue electroluminescence, in addition to the organic compound for electronic material.

8. The organic electronic device according to claim 5, wherein the organic layer comprises an electroluminescent layer and a charge generating layer.

9. The organic electronic device according to claim 5, wherein a mixed region of reductive dopant and organic substance, or a mixed region of oxidative dopant and organic substance is placed on the inner surface of one or both electrode(s) among the pair of electrodes.

Fig. 1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2009/007466

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.	<i>C09K 11/06</i> (2006.01)	<i>C07C 15/60</i> (2006.01)	<i>C07D 209/86</i> (2006.01)	<i>C07F 7/08</i> (2006.01)
	<i>C07C 15/28</i> (2006.01)	<i>C07C 15/62</i> (2006.01)	<i>C07D 209/88</i> (2006.01)	<i>C07F 15/00</i> (2006.01)
	<i>C07C 15/30</i> (2006.01)	<i>C07C 211/54</i> (2006.01)	<i>C07F 3/00</i> (2006.01)	<i>H01L 51/50</i> (2006.01)
	<i>C07C 15/38</i> (2006.01)	<i>C07C 211/58</i> (2006.01)	<i>C07F 3/06</i> (2006.01)	
	<i>C07C 15/56</i> (2006.01)	<i>C07C 211/61</i> (2006.01)	<i>C07F 5/06</i> (2006.01)	

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAPLUS: Structure search broadly based on Formula 1

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	QIAO, J. et al. High-efficiency orange to near-infrared emissions from bis-cyclometalated iridium complexes with phenyl-benzoquinoline isomers as ligands. Journal of Materials Chemistry (11 July 2009) Vol. 19, pages 6573-6580.	1-3, 5, 6
Y	See page 6574, Scheme 1, Ir(pbq-) ₂ acac, Ir(dpbq-) ₂ acac & Ir(pbq-g) ₂ acac; page 6578, left column, line 8-right column, line 2; page 6580, left column, lines 5-19; and abstract.	4, 7-9
X	CAPLUS Abstract Accession No. 2007:1374363 & CN 101077971 A (TSINGHUA UNIVERSITY) 28 November 2007 See abstract, complexes on pages 17-20 and translation from http://c2e.cnpat.com.cn/Translationtoen.aspx?AppNo=HCDABBAIGCEHLBEHICFGEBDGGCECFAEAEADFOAFBOCFEGAEH&Doc=CFC^CAF&FileType=TAAH	1-3, 5, 6
Y		4, 7-9
Y	EP 2 098 532 A1 (GRACEL DISPLAY INC.) 9 September 2009 See para 10, para 22, paras 30-34, paras 39-52 and para 55.	4, 7-9



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
23 March 2010Date of mailing of the international search report
- 7 APR 2010

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/IB2009/007466

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
CN	101077971	NONE			
EP	2098532	CN	101538290	JP	2009209142
		US	2009295281	KR	20090093688
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					