

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
H05B 33/14(11)
(43)2002 - 0008076
2002 01 29(21) 10 - 2001 - 0043321
(22) 2001 07 19(30) JP - P - 2000 - 0021 2000 07 19 (JP)
8321

(71) 가 가

3 30 2

(72) 가 가 6 - 5 - 4 - 104

가 2639 - 3

가 1 - 10 - 2

가 가 4 - 2 - 31 - B - 202

가 가 3 - 26 - 4

(74)

:

(54)

, 가 , .

1 4 EL .

< >

1: 2:

3: 4:

5: 6:

7: 9:

,

,

(, " EL ")

.

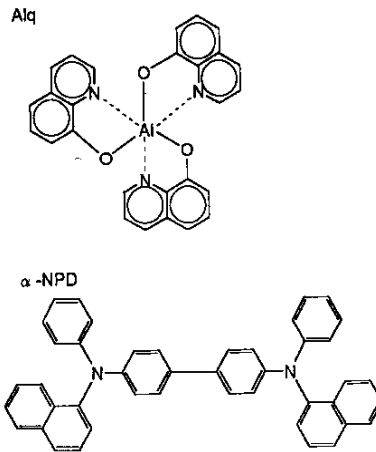
1 2 EL . 1 2 ,
EL (1), (2), (3), (4), (5), (6)
(7) EL . Symp. 125, 1 - 48(1977) 」

1 2 , EL , (1) (2) (3)
(4) 가 .

1 , (4) (5) (6) (2) , (2)
(6) , 가 ITO()
(3) (4) , 가 ,
(2) (3) 50 - 200nm .

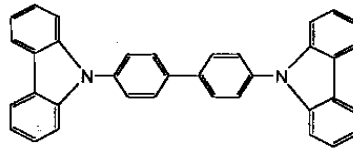
(5) , , (

(가 " Alq" .) (6)
가 " α - NPD" .)

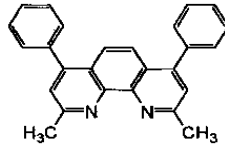


1 EL (3) (5) (2) 가
(5) (5) (2) .
(6) /
,
, 1 (7) 1 (3) (5) .
, (7) ,
(4) 2 3 , 2 3 50 - 500nm 가 .
EL
Alq α NPD ,
EL (一重項) (三重項)
가 .
(1) " (D.F. O'Brien , Vol. 74, No. 3, p.422(1999))
;
(2) " (M.A.Baldo , Vol.75, No. 1,
p. 4(1999)).
, 3 4 (4) 가 (4)
(6), (5), (9) .
Alq α - NPD (4) , CBP(4,4' -
N,N' -) BPC(2,9 - - 4,7 - - 1,10 -) , PtOEP(-
) Ir(ppy)₃ (-) .

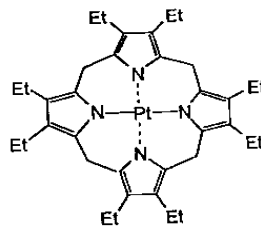
CBP



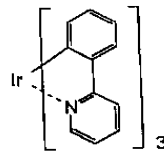
BCP



PtOEP



Ir(ppy)₃



(7), BCP , (9), α - NPD (6), Alq₃ -
6 % PtOEP 6wt.% Ir(ppy)₃ CBP (5) 가 .

가 1:3 . EL ,
25% . ,
3 ,
100% 4 .

11 - 329739 (" EL
11 - 257148(" EL),
8 - 319842 (" , 5,698,853 5,756,224
) .

, 가 , :

(1) ,

(2) ,

(3) ,

(4) ,

(5) ,

(6)

(deactivation process)

. , 가 , 가 (deactivation process) 가
()가 , 가 , 가 . ,
가

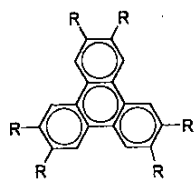
[]

[]

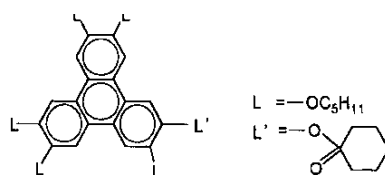
, 가 ,
가 , 가 ,
가 ,

(, Advanced Materials, 1996.8, No.10). 가

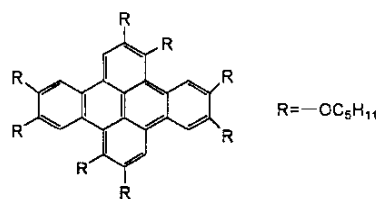
1 5

1 R = -SC₆H₁₃2 R = -OC₄H₉3 R = -OC₅H₁₁4 R = -OC₆H₁₃5 R = -OC₄H₈C₂F₅

6



7



- SC₆H₁₃ - OC₄H₉, - OC₅H₁₁ - OC₆H₁₃ R 가
1 - 47], (10⁻¹ - 10⁻³ cm/vs) , π 가

(5) ,

(7)

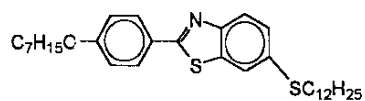
가

가

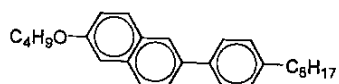
. (" O

syon Butsuri" , Vol. 68, No. 1, p.26 - (1999)).

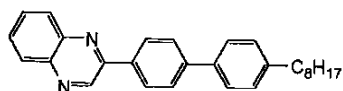
8



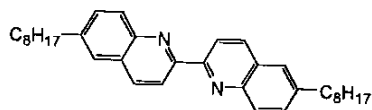
9



10



11



E (bar) 가 10^{-3} cm/V.s , (9) A A (E , (8) , A 가 .

Ir(ppy)₃ , PtOEP 가 , PtOEP 가 1 4 ,

가
가,
가
가
가, π
가

[1]

	L.C. *1	*2(cm^2/Vs)	*3(nm)	
2	Dhc	1×10^{-2}	0.359	1
3	Dhc Dhd	3×10^{-3}	0.364	0.92
4	Dhd	7×10^{-4}	0.368	0.82

*1 : Dhc =

Dhc =

*2 : $15\mu\text{m}$

*3 : X

*4: , () . 1 3

(4) ,
(Foerster transfer)

가 - (Dexter proces
s)

가 , π 가 ,
가 PtOEP
 π 가

(exciplex) 2

Ir(ppy)₃ , ³MLCT* ()
가 , ³ $\pi - \pi^*$ 가 , ³ML
CT* , 가 ³MLCT

가 가

가

2 (excited dimer associate) 가

[]

1

70nm ITO , 100nm
(Al)

1 μ m (beads)가

(4)

PtOEP 5mol.%
 $\times 10^{-2}$ Pa 110 1.3

hexagonal ordered phase) 70 98 Dhd (discotic
() () 30 30 70
/ 가 30 70 =1:4 , PtOEP 5 가 =

2

4 (9) PtOEP Ir(ppy)₃
SmA 132 1 가 , 66 SmE , 122
30 :70 =1:2.6 , Ir(ppy)₃ 30 70 (SmA) 100V

3

3 가

, 70nm ITO (1) (2) ,
 1.3 x 10 Pa 4 , , α - NPD 30nm (6), (4) Ir
 (ppy)₃ 가 95:5 30nm (5), BPC(2,9 - - 4,
 7' - - 1,10 -) 30nm (9) Alq 30nm (7) ,
 . (6),(5),(9) (7) 100mg
 가 (5)
 , (4) Ir(ppy)₃ ,
 , 0.15nm/sec 0.075nm/sec .
 , 1.8mol.% Li Al 10nm , Al 150nm
 (3) . 가 Li
 . 70 () 가 가
 , ITO (2) 가 5 ,
 , Ir(ppy)₃ .
 1
 3 (4)
 3 가 , 1
 3 , 3 1/3 , 1
 3 (4) .
 4
 PtOEP Ir(ppy)₃ 1 1 (70) 1/0.8 (120) (/
) , 4 , 1 4 4 (,
) , 1 " " , 510nm(Ir(ppy)
 3) 5 , 650nm(PtOEP) 5 ,
 1 가 , 가 P
 tOEP .

(57)

1.

2.

1 ,

3.

1 ,

4.

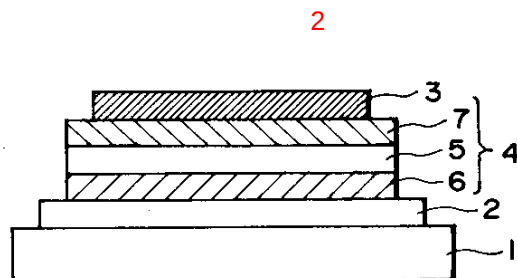
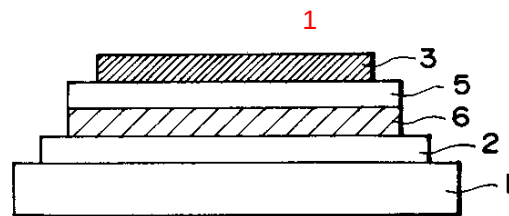
1 ,

가

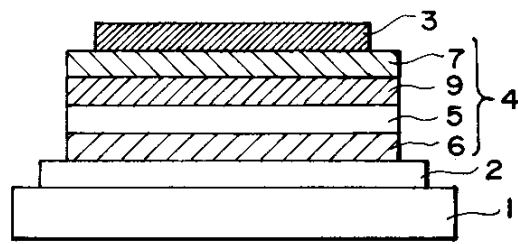
5.

1 ,

가



3



4

