

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
10 March 2011 (10.03.2011)

(10) International Publication Number
WO 2011/028473 A3

(51) International Patent Classification:
H01L 51/52 (2006.01) *C09K 11/06* (2006.01)
H01L 51/54 (2006.01)

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(21) International Application Number:
PCT/US2010/046322

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(22) International Filing Date:
23 August 2010 (23.08.2010)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/236,179 24 August 2009 (24.08.2009) US

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(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,

[Continued on next page]

(54) Title: ORGANIC LIGHT-EMITTING DIODE LUMINAIRES

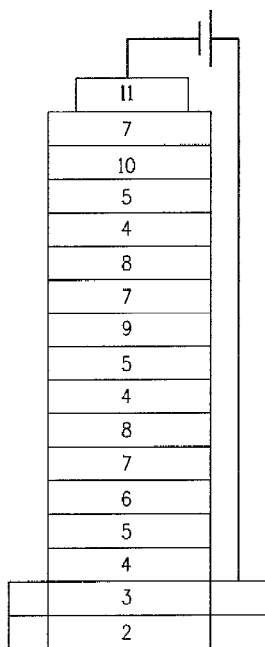


FIG. 1A

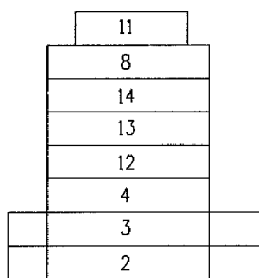


FIG. 1B

(57) Abstract: There is provided an organic light-emitting diode luminaire. The luminaire includes a patterned first electrode, a second electrode, and a light-emitting layer therebetween. The light-emitting layer includes a first plurality of pixels having an emission color that is blue and a second plurality of pixels having an emission color that is yellow, the second plurality of pixels being laterally spaced from the first plurality of pixels. The additive mixing of the emitted colors results in an overall emission of white light.

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ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:

19 May 2011

Published:

— *with international search report (Art. 21(3))*

A. CLASSIFICATION OF SUBJECT MATTER***H01L 51/52(2006.01)i, H01L 51/54(2006.01)i, C09K 11/06(2006.01)i***

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)

H01L 51/52; G09F 9/33; H05B 33/14; H05B 33/22; H01L 33/00; C09K 11/06; H01L 51/50; H05B 33/18

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: OLED, "white light", "color addition", "white emission", blue, yellow

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-2009-0083275 A (TSINGHUA UNIVERSITY et al.) 03 August 2009 See abstract, figures 1-10, and their corresponding descriptions.	1-15
A	JP 10-161567 A (MATSUSHITA ELECTRON CORP.) 19 June 1998 See abstract, figures 1-2, and their corresponding descriptions.	1-15
A	JP 07-142169 A (MITSUBISHI CHEM. CORP.) 02 June 1995 See abstract, figures 1-12, and their corresponding descriptions.	1-15
A	KR 10-2008-0111512 A (EASTMAN KODAK COMPANY) 23 December 2008 See abstract, figures 1-6, and their corresponding descriptions.	1-15

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

30 MARCH 2011 (30.03.2011)

Date of mailing of the international search report

30 MARCH 2011 (30.03.2011)

Name and mailing address of the ISA/KR

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Government Complex-Daejeon, 189 Cheongsa-ro,
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

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Telephone No. 82-42-481-5227



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/046322

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 10-2009-0083275 A	03.08.2009	EP 2086032 A2 JP 2009-182322 A US 2009-0189509 A1	05.08.2009 13.08.2009 30.07.2009
JP 10-161567 A	19.06.1998	None	
JP 07-142169 A	02.06.1995	JP 3451680 B2	29.09.2003
KR 10-2008-0111512 A	23.12.2008	EP 1999803 A1 JP 2009-532825 A US 2007-0228938 A1 US 7332860 B2 WO 2007-126752 A1	10.12.2008 10.09.2009 04.10.2007 19.02.2008 08.11.2007