(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 296 203 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
04.12.2013 Bulletin 2013/49

(43) Date of publication A2:
16.03.2011 Bulletin 2011/11

(21) Application number: **10251604.4**

(22) Date of filing: **15.09.2010**

(51) Int Cl.:
H01L 51/50 *(2006.01)* ***H01L 51/52*** *(2006.01)*

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR
Designated Extension States:
BA ME RS

(30) Priority: **15.09.2009 KR 20090086935**

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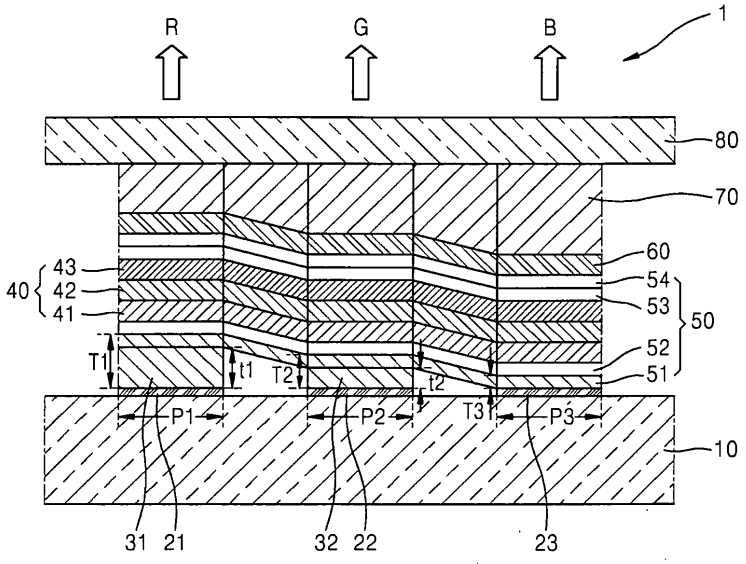
(54) Organic light-emitting display device

(57) An organic light emitting display device includes a substrate (10) and a plurality of pixels (P1, P2, P3) on the substrate (10). The pixels (P1, P2, P3) include a plurality of first electrodes (21, 22, 23), a second electrode (60), a white light emitting layer (40), and a first thin film layer (31, 32) between the first electrodes (21, 22, 23) and the second electrode (60). White light emitted from the white light emitting layer (40) causes resonance to occur between the first electrodes (21, 22, 23) and the second electrode (60).

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 10 25 1604

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2008/111474 A1 (SUNG YEUN-JOO [KR] ET AL) 15 May 2008 (2008-05-15) * paragraphs [0019] - [0036]; figures 1-3 * -----	1-12,17 13-16, 18,19	INV. H01L51/50 H01L51/52
X Y	US 2009/051275 A1 (KOBAYASHI HIDEKAZU [JP] ET AL) 26 February 2009 (2009-02-26) * paragraphs [0004] - [0014], [0031], [0032], [0066] - [0078], [0100] - [0115], [0146] - [0152]; figures 1,4,6,9,10 * -----	1-12,17 13-16, 18-20	
Y	US 2004/041147 A1 (PARK JAE-YONG [KR]) 4 March 2004 (2004-03-04) * paragraphs [0011] - [0028], [0047] - [0053], [0073] - [0075]; figures 2-4 * -----	13-16	
Y	US 6 268 695 B1 (AFFINITO JOHN D [US]) 31 July 2001 (2001-07-31) * column 2, line 54 - column 4, line 20; figure 2 * -----	13-15	TECHNICAL FIELDS SEARCHED (IPC)
Y	US 2005/073230 A1 (NISHIKAWA RYUJI [JP] ET AL) 7 April 2005 (2005-04-07) * paragraphs [0054], [0057]; figures 7,8 * -----	18-20	H01L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	23 October 2013	Boetticher, Harald

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-12, 17

   An OLED display wherein hole injection layer thickness is adapted for resonance to occur between electrodes such that red, green and blue light is emitted from corresponding pixels, on the basis of a white light emitting layer; optionally a further hole injection layer HIL, or an HTL, ETL, EIL.

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2. claims: 13-16

   A sealing member on the second electrode of the display, of glass or alternating organic and inorganic layers

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3. claims: 18-20

   Color filters located on some of the pixels

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 25 1604

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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23-10-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 2009051275 A1	26-02-2009	JP 5167723 B2	21-03-2013
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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	有机发光显示装置		
公开(公告)号	EP2296203A3	公开(公告)日	2013-12-04
申请号	EP2010251604	申请日	2010-09-15
[标]申请(专利权)人(译)	三星显示有限公司		
申请(专利权)人(译)	三星移动显示器有限公司.		
当前申请(专利权)人(译)	三星DISPLAY CO.，LTD.		
[标]发明人	JO JAE YOUNG		
发明人	JO. JAE YOUNG		
IPC分类号	H01L51/50 H01L51/52		
CPC分类号	H01L51/5036 H01L51/5265 H01L2251/558		
优先权	1020090086935 2009-09-15 KR		
其他公开文献	EP2296203A2		
外部链接	Espacenet		

摘要(译)

有机发光显示装置包括基板（10）和基板（10）上的多个像素（P1，P2，P3）。像素（P1，P2，P3）包括多个第一电极（21,22,23），第二电极（60），白色发光层（40）和第一薄膜层（31,32）在第一电极（21,22,23）和第二电极（60）之间。从白色发光层（40）发射的白光导致在第一电极（21,22,23）和第二电极（60）之间发生共振。

FIG. 1