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(54) **Organic light emitting diode display**

(57) An organic light emitting diode (OLED) display is disclosed; the OLED display includes i) a plurality of pixels (a,b,c) comprising a blue light emitting region, a green light emitting region, and a red light emitting region on a substrate (200) and formed by stacking a lower elec-

trode (290), an organic layer (300), and an upper electrode (310); the blue and green light emitting regions are formed in a microcavity structure, and the red light emitting region is formed in a non-microcavity structure.

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EUROPEAN SEARCH REPORT

Application Number  
EP 11 17 1668

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	US 2005/225232 A1 (BOROSON MICHAEL L [US] ET AL) 13 October 2005 (2005-10-13)	1,3,8,9	INV. H01L51/52
Y	* paragraphs [0030] - [0115]; figures 2,3,5,6 *	2,4-7, 10-13	
Y	US 2010/133994 A1 (SONG JUNG-BAE [KR] ET AL) 3 June 2010 (2010-06-03)	2,4-7, 10-12	
	* paragraphs [0025], [0047] - [0068], [0092], [0099] *		
A	US 2009/200922 A1 (LEE SUNG-SOO [KR] ET AL) 13 August 2009 (2009-08-13)	1-12	
	* paragraphs [0068] - [0077] *		
Y	US 2007/052119 A1 (SAKAI HIROFUMI [JP] ET AL) 8 March 2007 (2007-03-08)	13	TECHNICAL FIELDS SEARCHED (IPC) H01L
	* paragraphs [0007], [0214] - [0235]; figure 17c *		
A	US 2003/030766 A1 (KIGUCHI HIROSHI [JP] ET AL) 13 February 2003 (2003-02-13)	13	
	* paragraphs [0002], [0007], [0057] - [0059]; figures 2,3 *		
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 February 2012	Examiner Boetticher, Harald
CATEGORY OF CITED DOCUMENTS		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	
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			

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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).



**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
EP 11 17 1668

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

OLED display with blue and green light emitting regions having microcavity structure, and red light emitting region having non-microcavity structure and colour filter on the upper electrode  
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2. claim: 13

OLED display with colour filter as part of an encapsulation substrate bonded to the substrate of the display, instead of colour filter on upper electrode  
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ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

EP 11 17 1668

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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29-02-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005225232 A1	13-10-2005	US 2005225232 A1 WO 2005101541 A1	13-10-2005 27-10-2005
US 2010133994 A1	03-06-2010	KR 20100062710 A US 2010133994 A1	10-06-2010 03-06-2010
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专利名称(译)	有机发光二极管显示器		
公开(公告)号	<a href="#">EP2403030A3</a>	公开(公告)日	2012-04-11
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[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.		
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发明人	LEE, SEUNG-MOOK KIM, DO-YOUNG PYO, SANG-WOO KANG, TAE-MIN JEONG, HEE-SEONG		
IPC分类号	H01L51/52		
CPC分类号	H01L51/5265 H01L27/3211 H01L51/5203 H01L51/5234		
优先权	1020100062880 2010-06-30 KR		
其他公开文献	EP2403030A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

公开了一种有机发光二极管 ( OLED ) 显示器; OLED显示器包括i) 多个像素 ( a , b , c ) , 其包括在基板 ( 200 ) 上的蓝色发光区域, 绿色发光区域和红色发光区域, 并且通过堆叠下电极形成 ( 290 ) , 有机层 ( 300 ) 和上电极 ( 310 );蓝色和绿色发光区域形成在微腔结构中, 红色发光区域形成为非微腔结构。

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2005/226232 A1 (BOROSON MICHAEL L [US] ET AL) 13 October 2005 (2005-10-13) * paragraphs [0030] - [0115]; figures 2, 3, 5, 6	1, 3, 8, 9	INV - H01L51/52
Y	US 2010/133994 A1 (SONG JUNG-BAE [KR] ET AL) 3 June 2010 (2010-06-03) * paragraphs [0025], [0047] - [0068], [0092], [0099]	2, 4-7, 10-13	
Y	US 2009/200922 A1 (LEE SUNG-SOO [KR] ET AL) 13 August 2009 (2009-08-13) * paragraphs [0068] - [0077]	2, 4-7, 10-12	1-12
A	US 2007/052119 A1 (SAKAI HIROFUMI [JP] ET AL) 8 March 2007 (2007-03-08) * paragraphs [0007], [0214] - [0235]; figure 17C	13	
A	US 2003/030766 A1 (KIGUCHI HIROSHI [JP] ET AL) 13 February 2003 (2003-02-13) * paragraphs [0052], [0097], [0057] - [0059]; figures 2, 3	13	TECHNICAL FIELD SEARCHED (IPC) H01L

  

The present search report has been drawn up for all claims		
Munich	29 February 2012	Boetticher, Harald

  

CATEGORY OF CITED DOCUMENTS		Theory of principle underlying the invention
<ul style="list-style-type: none"> <li>W: particularly relevant if combined with another document of the same category</li> <li>A: non-written observations</li> <li>D: non-written observations</li> <li>F: intermediate document</li> </ul>	<ul style="list-style-type: none"> <li>T: theory of principle underlying the invention</li> <li>E: earlier patent document, for published only, or after the filing date</li> <li>D: document cited in the application</li> <li>L: document cited for other reasons</li> <li>&amp; member of the same patent family, corresponding document</li> </ul>	