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(62) Document number(s) of the earlier application(s) in
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14198459.1 / 2 988 292

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(54) **ORGANIC LIGHT EMITTING DISPLAY DEVICE AND METHOD OF REPAIRING THE SAME**

(57) Provided are an organic light emitting display (OLED) device and a method of repairing the same. The OLED device includes: a first pixel including: a first thin-film transistor (TFT) including a source electrode, a second TFT, and a third TFT including a top gate electrode, a second pixel including an OLED including a first

electrode, a repair line extending over: the first electrode of the OLED of the second pixel, the source electrode of the first TFT of the first pixel, and the top gate electrode of the third TFT of the first pixel, an insulating layer between at least a portion of: the top gate electrode of the third TFT of the first pixel, and the repair line.

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EUROPEAN SEARCH REPORT

Application Number
EP 18 15 2837

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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 2008/197778 A1 (KUBOTA TAKEHIKO [JP]) 21 August 2008 (2008-08-21)	1-8,12, 13,20	INV. G09G3/00 H01L51/52 H01L27/32
Y	* paragraph 41 - pages 1-6, paragraph 71 *	9-11, 14-19	
X	US 2013/240914 A1 (JIN GUANG HAI [KR] ET AL) 19 September 2013 (2013-09-19) * paragraph [0031] - paragraph [0080]; figures 1-4 *	1-8,12, 13,20	TECHNICAL FIELDS SEARCHED (IPC) G09G H01L
Y	KYOUNG-SEOK SON ET AL: "Characteristics of Double-Gate Ga-In-Zn-O Thin-Film Transistor", IEEE ELECTRON DEVICE LETTERS, IEEE SERVICE CENTER, NEW YORK, NY, US, vol. 31, no. 3, 1 March 2010 (2010-03-01), pages 219-221, XP011301408, ISSN: 0741-3106 * column 1 - column 2; figure 1 *	9-11	
Y	US 2014/168194 A1 (KONG NAMYONG [KR] ET AL) 19 June 2014 (2014-06-19) * paragraph [0035] - paragraph [0039]; figure 6 *	14-19	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 9 July 2018	Examiner Gartlan, Michael
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 03/02 (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.

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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):

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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.

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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:

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see sheet B

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

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

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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:

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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:

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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:

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1. claims: 1-8, 12, 13, 20

the first OLED comprises a second electrode connected to the source electrode (S2), solving the problem of enabling control of the brightness of the first OLED.

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2. claims: 9-11

the first TFT further comprises a top gate electrode over the source electrode, and the top gate electrode is on the passivation layer, solving the problem of switching time enhancement.

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3. claims: 14-19

the first pixel further includes a first sensing TFT comprising a source electrode, a drain electrode, and a top gate electrode over the source electrode and the drain electrode, and the source electrode and the drain electrode in the first sensing TFT is under the passivation layer, and the top gate electrode in the first sensing TFT is on the passivation layer, solving the problem of detecting threshold voltage deviations.

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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5 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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-07-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008197778 A1	21-08-2008	NONE	
US 2013240914 A1	19-09-2013	KR 20130105144 A US 2013240914 A1 US 2015079703 A1	25-09-2013 19-09-2013 19-03-2015
US 2014168194 A1	19-06-2014	CN 103871362 A KR 20140078419 A US 2014168194 A1 US 2016300528 A1	18-06-2014 25-06-2014 19-06-2014 13-10-2016

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)	有机发光显示装置及其修复方法		
公开(公告)号	EP3330952A3	公开(公告)日	2018-09-05
申请号	EP2018152837	申请日	2014-12-17
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG DISPLAY CO. , LTD.		
当前申请(专利权)人(译)	LG DISPLAY CO. , LTD.		
[标]发明人	LEE HYUNHAENG CHOI SOOHONG		
发明人	LEE, HYUNHAENG CHOI, SOOHONG		
IPC分类号	G09G3/00 H01L51/52 H01L27/32		
CPC分类号	G09G3/006 G09G3/3225 G09G2300/0413 G09G2300/0426 G09G2320/029 G09G2330/08 G09G2330/10 H01L27/322 H01L27/3276 H01L51/56 H01L2227/323 H01L2251/5392 H01L2251/568 G02F1/1333 G09G3/3241		
审查员(译)	GARTLAN , MICHAEL		
优先权	1020140108982 2014-08-21 KR		
其他公开文献	EP3330952B1 EP3330952A2		
外部链接	Espacenet		

摘要(译)

提供一种有机发光显示 (OLED) 器件及其修复方法。 OLED器件包括：第一像素，包括：第一薄膜晶体管 (TFT) ，包括源电极，第二TFT，和第三TFT，包括顶栅电极;第二像素，包括OLED，包括第一电极，a修复线延伸：第二像素的OLED的第一电极，第一像素的第一TFT的源电极，以及第一像素的第三TFT的顶栅电极，至少一部分之间的绝缘层：第一像素的第三TFT的顶栅电极和修复线。

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim	CLASSIFICATION OF THE DOCUMENT (IPC)
X	US 2008/197776 A1 (KUBOTA TAKEHIKO [JP]) 21 August 2008 (2008-08-21) * paragraph 41 - pages 1-6, paragraph 71 *	1-8, 12-13, 20	INV G09G3/00 H01L51/52 H01L27/32
Y	US 2013/240914 A1 (JIN GUANG HAI [KR] ET AL) 19 September 2013 (2013-09-19) * paragraph [0031] - paragraph [0080]; figures 1-4	1-8, 12, 13, 20	
X	US 2014/168194 A1 (KONG MAHYONG [KR] ET AL) 19 June 2014 (2014-06-19) * paragraph [0035] - paragraph [0039]; figure 6	14-19	TECHNICAL FIELD SEARCHED (IPC) G09G H01L
Y	KYOUNG-SEOK SON ET AL: "Characteristics of Double-Gate Ga-In-Zn-O Thin-Film Transistor" IEEE ELECTRON DEVICE LETTERS, IEEE SERVICE CENTER, NEW YORK, NY, US, vol. 31, no. 3, 1 March 2010 (2010-03-01), pages 219-221, XP01301408, ISSN: 0741-3106 * column 1 - column 2; figure 1 *	9-11	

The present search report has been drawn up for all claims

Munich 9 July 2018 Gartlan, Michael

CATEGORY OF CITED DOCUMENTS
X: particularly relevant if taken alone
Y: particularly relevant if considered with another document of the same category
P: prior art document
PA: intermediate document
E: master patent document, not published on, or after the filing of the application
L: document cited for other reasons
A: number of the same patent family, corresponding document