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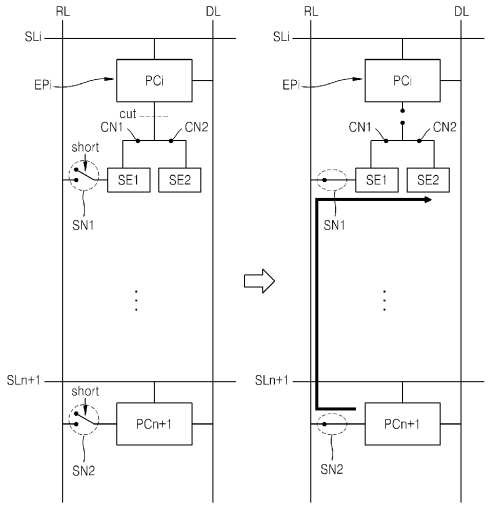
(54) **Organic light-emitting display apparatus and method of repairing the same**

(57) Provided is an organic light-emitting display apparatus (100) and a method of repairing the same. The organic light-emitting display apparatus (100) includes: an emission device (E) comprising a plurality of sub-emission devices (SE1, SE2); an emission pixel circuit (PCi) configured to supply a driving current to the emission device; a dummy pixel circuit (PCn+1) configured to supply the driving current to the emission device (E); and a repair line (RL) coupling the emission device (E) to the dummy pixel circuit (PCn+1), wherein the emission device (E)is configured to receive the driving current from the emission pixel circuit (PCi) or the dummy pixel circuit (PCn+1).

FIG. 27



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EUROPEAN SEARCH REPORT

Application Number
EP 14 16 9289

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TECHNICAL FIELDS SEARCHED (IPC)
G09G
H01L
G02F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 January 2015	Njibamum, David

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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EUROPEAN SEARCH REPORT

Application Number
EP 14 16 9289

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	US 2001/028429 A1 (WU BIING-SENG [TW]) 11 October 2001 (2001-10-11) * paragraph [0026] - paragraph [0055] *	16	TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims

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Munich	27 January 2015	Njibamum, David

CATEGORY OF CITED DOCUMENTS

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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
EP 14 16 9289

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: 1-5, 13, 17, 18, 22, 23, 26-29, 31, 32

An organic light-emitting display apparatus (100) comprising an emission device (E) comprising a plurality of sub-emission devices (SE1, SE2), wherein each of the plurality of sub-emission devices (SE1, SE2) comprises a lower electrode among a plurality of separated lower electrodes, an upper electrode commonly facing the plurality of separated lower electrodes, and the plurality of separated lower electrodes are electrically coupled to each other through an electrode connection wiring at a same layer and of a same material as an active layer of the emission pixel circuit (PCi).

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2. claims: 6-10, 24, 25

An organic light-emitting display apparatus wherein an electrode connection wiring comprises a plurality of first connection units (CU1) coupled to a plurality of separated lower electrodes, a second connection unit (CU2) coupled to an emission pixel circuit (PCi), and a plurality of cut nodes (CN1, CN2) between the first connection units (CU1) and the second connection unit (CU2), wherein the cut nodes (CN1, CN2) are cut to electrically isolate the plurality of separated lower electrodes from each other.

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3. claims: 11, 12

An organic light-emitting display apparatus in which a dummy pixel circuit (PCn+1) is on at least one row among first and last rows of each column, or at least one column among first and last columns of each row.

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4. claims: 14, 30

An organic light-emitting display apparatus in which a dummy pixel circuit (PCn+1) is coupled to an emission device (E) through a second repair connection wiring (16) having one end coupled to the repair line (RL) and another end overlapping with a second short wiring (17) coupled to the dummy pixel circuit (PCn+1), wherein an insulating layer (104) is between the second repair connection wiring (16) and the second short wiring (17).

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5. claims: 15, 16

An organic light-emitting display apparatus in which a

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 14 16 9289

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:

repair line (RL) is coupled to a power voltage line (ELVDDL) through a power connection wiring (18) and is configured to be electrically isolated from the power voltage line (ELVDDL) by cutting the power connection wiring (18).

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6. claims: 19, 20

An organic light-emitting display apparatus wherein an emission pixel circuit (PCi) further comprises a fourth transistor (TA4) connected to between the first transistor (TA1) and the one electrode of the first capacitor (C1), a fifth transistor (TA5) connected to between the data line (DL) and the one electrode of the first capacitor (C1), and a third capacitor (C3) having one electrode connected to a node between the first transistor (TA1) and the fourth transistor (TA4) and another electrode connected to a gate electrode of the fifth transistor (TA5).

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7. claim: 21

A organic light-emitting display apparatus wherein a dummy pixel circuit (PCn+1) is configured to supply the driving current to the emission device (E) at a predetermined time.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 16 9289

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专利名称(译)	有机发光显示装置及其修复方法		
公开(公告)号	EP2806458A3	公开(公告)日	2015-03-11
申请号	EP2014169289	申请日	2014-05-21
[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DISPLAY CO.，LTD.		
当前申请(专利权)人(译)	三星DISPLAY CO.，LTD.		
[标]发明人	CHO YOUNG JIN HWANG YOUNG IN KIM DONG GYU		
发明人	CHO, YOUNG-JIN HWANG, YOUNG-IN KIM, DONG-GYU		
IPC分类号	H01L27/32 H01L27/12 G09G3/32		
代理机构(译)	NIEPELT，CARSTEN		
优先权	1020130057959 2013-05-22 KR 1020130068638 2013-06-14 KR		
其他公开文献	EP2806458B1 EP2806458A2		
外部链接	Espacenet		

摘要(译)

提供一种有机发光显示装置（100）及其修复方法。有机发光显示装置（100）包括：发射装置（E），包括多个子发射装置（SE1，SE2）;发射像素电路（PCi），被配置为向发射装置提供驱动电流;虚设像素电路（PCn + 1），用于向发光装置（E）提供驱动电流;以及将发射装置（E）耦合到虚设像素电路（PCn + 1）的修复线（RL），其中发射装置（E）被配置为从发射像素电路（PCi）或虚设接收驱动电流像素电路（PCn + 1）。

FIG. 27