



(11) **EP 3 264 409 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
14.03.2018 Bulletin 2018/11

(51) Int Cl.:
G09G 3/3233 (2016.01) G09G 3/3266 (2016.01)

(43) Date of publication A2:
03.01.2018 Bulletin 2018/01

(21) Application number: **17179175.9**

(22) Date of filing: **30.06.2017**

(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 RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

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(30) Priority: **01.07.2016 KR 20160083498**

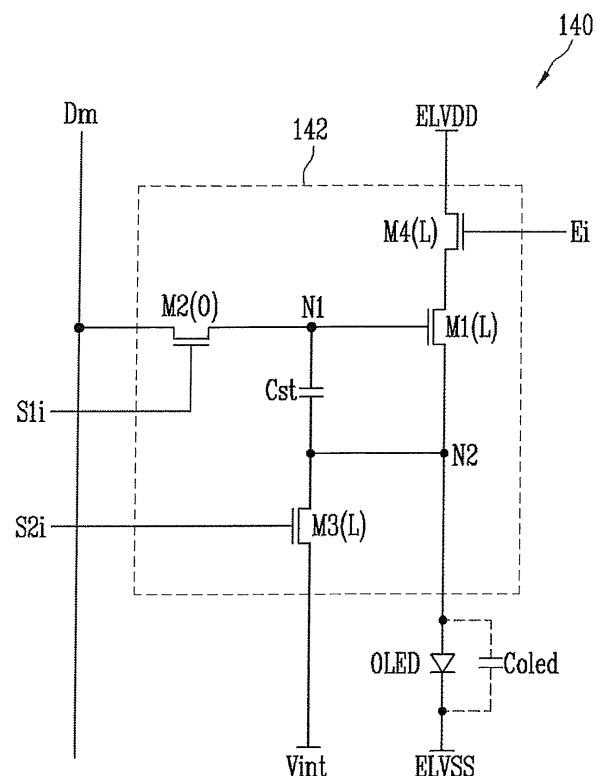
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(54) **PIXEL, STAGE CIRCUIT AND ORGANIC LIGHT EMITTING DISPLAY DEVICE HAVING THE PIXEL AND THE STAGE CIRCUIT**

(57) A pixel includes a plurality of transistors and an organic light emitting diode. The transistors include a first transistor to control an amount of current flowing to the organic light emitting diode. Additional transistors are connected to the first transistor or the organic light emitting diode. The first transistor is a Low Temperature Poly-Silicon (LTPS) thin film transistor. One or more of the other transistors are oxide semiconductor transistors.

FIG. 2





EUROPEAN SEARCH REPORT

Application Number
EP 17 17 9175

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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 2015/371589 A1 (KIM JUNGHYEON [KR] ET AL) 24 December 2015 (2015-12-24)	1,3,4,8, 10-12, 16-20	INV. G09G3/3233 G09G3/3266
Y	* paragraphs [0003], [0032] - [0035], [0039], [0040], [0042] - [0050], [0055], [0081]; figures 1,2,3,12 *	2,9, 13-15	
Y	US 2009/091562 A1 (UCHINO KATSUhide [JP] ET AL) 9 April 2009 (2009-04-09) * paragraphs [0086] - [0088]; figure 21 *	2,9	
X	US 2012/062528 A1 (KIMURA HAJIME [JP] ET AL) 15 March 2012 (2012-03-15)	5-7	
Y	* paragraphs [0212] - [0223], [0310], [0317] - [0324], [0333] - [0334]; figures 10A-10C, 11A-11C, 16A, 25B *	13-15	
X	CN 105 612 620 A (LG DISPLAY CO LTD) 25 May 2016 (2016-05-25)	5-7	
Y	* figures 9,10 * & EP 3 113 226 A1 (LG DISPLAY CO LTD [KR]) 4 January 2017 (2017-01-04) * paragraphs [0107] - [0108]; figures 9,10 *	13-15	TECHNICAL FIELDS SEARCHED (IPC) G09G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 February 2018	Examiner Ladiray, Olivier
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.

☐ 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

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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: 1-4, 8-12, 16-20

pixel circuit

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2. claims: 5-7, 13-15

buffer

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

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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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06-02-2018

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			EP 3113226 A1	04-01-2017

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)	像素，级电路和有机发光显示装置，具有像素和级电路		
公开(公告)号	EP3264409A3	公开(公告)日	2018-03-14
申请号	EP2017179175	申请日	2017-06-30
[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.		
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IPC分类号	G09G3/3233 G09G3/3266		
CPC分类号	G09G3/3233 G09G3/3266 G09G2300/0861 G09G2310/0286 G09G2310/0291		
审查员(译)	LADIRAY , OLIVIER		
优先权	1020160083498 2016-07-01 KR		
其他公开文献	EP3264409A2		
外部链接	Espacenet		

摘要(译)

像素包括多个晶体管和有机发光二极管。晶体管包括用于控制流向有机发光二极管的电流量的第一晶体管。额外的晶体管连接到第一晶体管或有机发光二极管。第一个晶体管是低温多晶硅 (LTPS) 薄膜晶体管。一个或多个其他晶体管是氧化物半导体晶体管。

FIG. 2

