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(54) PIXEL CIRCUITS FOR LIGHT EMITTING ELEMENTS

(57) Embodiments of pixel circuits for light emitting elements are disclosed herein. In one example, a pixel circuit includes a pixel driver and a bridge transistor. The pixel driver is configured to receive a data signal and drive a light emitting element based on the data signal. The bridge transistor includes a gate terminal receiving a first bias signal, a source terminal coupled to the pixel driver, a drain terminal coupled to a terminal of the light emitting element, and a body terminal coupled to the source terminal or receiving the data signal. The first bias signal controls a voltage at the source terminal.

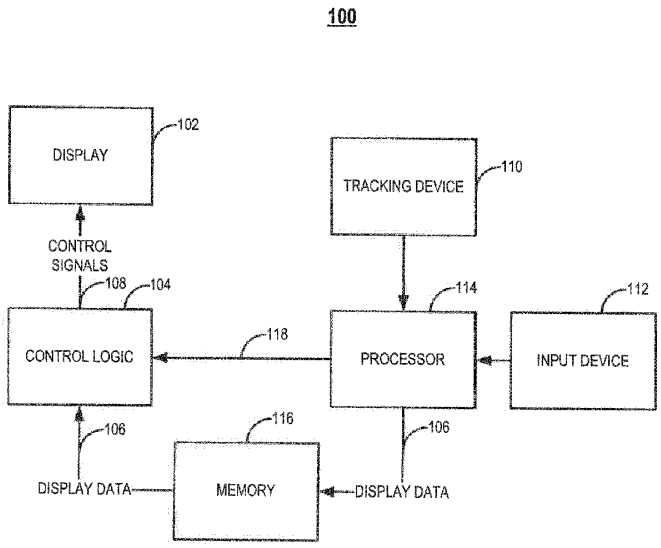

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 19 17 7148

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 2013/088416 A1 (SMITH EUAN C [GB] ET AL) 11 April 2013 (2013-04-11) * paragraphs [0003], [0008] - [0011], [0033] - [0050]; figures 3-5 * -----	1-5	INV. G09G3/3233

TECHNICAL FIELDS SEARCHED (IPC)

G09G

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
The Hague	23 September 2019	Vázquez del Real, S

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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Application Number
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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:

1-5

☐ 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 19 17 7148

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

These claims refer to a pixel circuit encapsulated in a chiplet made by transistors of crystalline silicon that have different driving behaviour than the TFTs with regards to withstand voltage and in order to cope with such different behaviour, a bridge transistor is incorporated in the pixel circuit between the driving transistor and the OLED

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2. claims: 6-15

These claims refer to a OLED pixel driving arrangement wherein the number of transistor per pixel circuit is reduced by sharing the emission and/or the discharge transistor between several pixel circuits.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 19 17 7148

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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23-09-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013088416 A1	11-04-2013	GB 2495507 A	17-04-2013
		US 2013088416 A1	11-04-2013

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)	发光元件的像素电路		
公开(公告)号	EP3576081A3	公开(公告)日	2020-02-26
申请号	EP2019177148	申请日	2019-05-29
[标]发明人	PENG YU HSUN CHANG YU KUANG SU CHAO WEI HUANG CHUN WEI		
发明人	PENG, YU-HSUN CHANG, YU-KUANG SU, CHAO-WEI HUANG, CHUN-WEI		
IPC分类号	G09G3/3233		
CPC分类号	G09G3/32 G09G3/3208 G09G3/3225 G09G3/3233 G09G2300/0465 G09G2300/0842 G09G2300/0861 G09G2310/063 G09G2320/043 G09G3/3258 G09G3/3266 G09G3/3275 G09G2310/0243 H01L27/3265		
优先权	15/992180 2018-05-30 US		
其他公开文献	EP3576081A2		
外部链接	Espacenet		

摘要(译)

本文公开了用于发光元件的像素电路的实施例。 在一示例中，像素电路包括像素驱动器和桥式晶体管。 像素驱动器被配置为接收数据信号并基于该数据信号驱动发光元件。 桥式晶体管包括：栅极端子，其接收第一偏置信号；源极端子，其耦合至像素驱动器；漏极端子，其耦合至发光元件的端子；以及体端子，其耦合至源极端子或接收数据信号。 第一偏置信号控制源极端子处的电压。

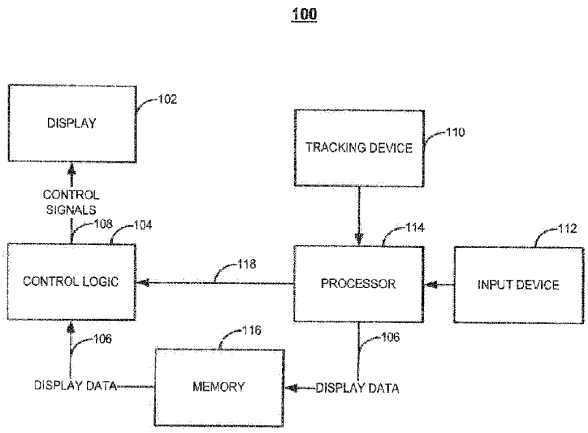

FIG. 1