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(54) DISPLAY APPARATUS

(57) A display apparatus includes a plurality of pixels, each of the pixels including an organic light emitting diode, a first transistor providing a driving current to operate the organic light emitting diode, a second transistor including a (GEb) rode that receives a first scan signal, a first electrode that receives a data signal, and a second electrode electrically connected to the first electrode of the first transistor, a storage capacitor including a first electrode receiving a first power voltage and a second electrode electrically connected to the gate electrode of the first transistor, and a color accuracy enhancement transistor that applies a first back bias voltage to the first transistor in response to a color accuracy enhancement signal.

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EUROPEAN SEARCH REPORT

Application Number
EP 19 16 1540

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 2007/152919 A1 (TSENG CHANG-HO [TW] ET AL) 5 July 2007 (2007-07-05) * the whole document *	1-6	INV. G09G3/3233
X	JP 2005 004183 A (ADV LCD TECH DEV CT CO LTD) 6 January 2005 (2005-01-06) * figures 1,9,10 *	1-6	

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	13 June 2019	Vázquez del Real, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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T : theory or principle underlying the invention
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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

[X] 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:

[X] 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:

1-6

[ ] 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 16 1540

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: 1-6

These claims refers to a display apparatus comprising OLED pixels wherein the OLED pixel comprises a color accuracy enhancement transistor that applies a back bias voltage to the dual gate driving transistor to avoid dispersion of the Ids current for high Vds values in the driving transistor.

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2. claims: 1, 8-10

These claims refers to a display apparatus comprising OLED pixels wherein the OLED pixel comprises a brightness boosting transistor that applies a back bias voltage to the dual gate driving transistor to increase Ids current and hence overall brightness through the driving transistor

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3. claims: 1, 7, 11, 12

These claims refers to a display apparatus comprising OLED pixels wherein the OLED pixel comprises a color accuracy enhancement transistor and a brightness boosting transistor that are controlled independently and alternatively to apply different back bias voltages to the dual gate driving transistor either to avoid dispersion of the Ids current for high Vds values in the driving transistor or to increase or to increase Ids current

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 19 16 1540

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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13-06-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007152919 A1	05-07-2007	CN 1996446 A	11-07-2007
		JP 2007183631 A	19-07-2007
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JP 2005004183 A	06-01-2005	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	显示装置		
公开(公告)号	EP3537420A3	公开(公告)日	2019-12-04
申请号	EP2019161540	申请日	2019-03-08
[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.		
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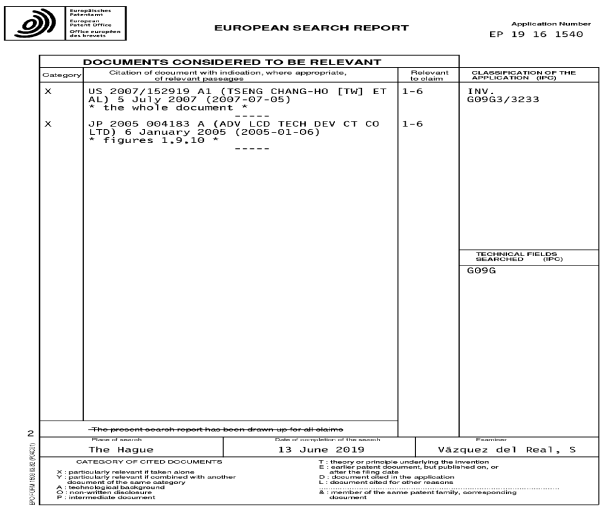
发明人	KIM, GUN HEE KIM, DO HYUNG KIM, HYEONSIK YOON, JOO-SUN PARK, SANGHO JEON, JOOHEE		
IPC分类号	G09G3/3233		
CPC分类号	G09G3/3233 G09G2320/0233 G09G2300/043 G09G2300/0842 G09G2300/0861 G09G2320/0242 G09G2320/045 G09G2320/0626 G09G3/3225 G09G2300/0819 H01L27/3262		
代理机构(译)	DR.威猛和合作伙伴		
优先权	1020180028265 2018-03-09 KR		
其他公开文献	EP3537420A2		
外部链接	Espacenet		

摘要(译)

一种显示装置，包括多个像素，每个像素包括有机发光二极管，提供驱动电流以操作有机发光二极管的第一晶体管，包括接收第一扫描信号的（GEb）杆的第二晶体管。 接收数据信号的第一电极和电连接到第一晶体管的第一电极的第二电极，存储电容器包括接收第一电源电压的第一电极和电连接到第一晶体管的栅极的第二电极 晶体管和颜色精度增强晶体管，其响应于颜色精度增强信号而将第一反向偏置电压施加到第一晶体管。



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