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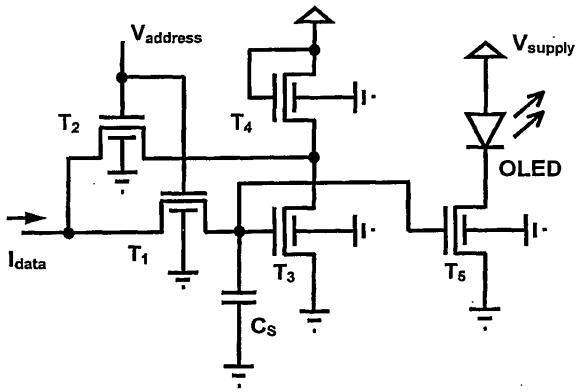
(54) Pixel driver circuit for organic light emitting device

(57) A pixel current driver comprises a plurality of thin film transistors (TFTs) each having dual gates and for driving OLED layers. A top gate of the dual gates is formed between a source and a drain of each of the thin film transistors, to thereby minimize parasitic capacitance. The top gate is grounded or electrically tied to a bottom gate. The plurality of thin film transistors may be two thin film transistors formed in voltage-programmed manner or five thin film transistors formed in a current-programmed ΔV_T-compensated manner. Other versions of the current-programmed circuit with different numbers of thin film transistors are also presented that compensate for δV_T. The OLED layer are continuous and vertically stacked on the plurality of thin film transistors to provide an aperture ratio close to 100%.

Fig. 6A



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PARTIAL EUROPEAN SEARCH REPORT

under Rule 62a and/or 63 of the European Patent Convention. This report shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number
EP 10 00 0421

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
E	EP 1 310 939 A2 (SEMICONDUCTOR ENERGY LAB [JP]) 14 May 2003 (2003-05-14) * paragraphs [0104] - [0111], [0146] - [0193], [0213], [0225]; figure 10B *	1	INV. H01L27/32 G09G3/32
A	US 6 091 203 A (KAWASHIMA SHINGO [JP] ET AL) 18 July 2000 (2000-07-18) * column 7, line 32 - column 8, line 28; figure 2 *	1	

TECHNICAL FIELDS SEARCHED (IPC)

G09G

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

1

Place of search	Date of completion of the search	Examiner
Munich	16 March 2012	Boetticher, Harald

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 (P04E07)

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INCOMPLETE SEARCH
SHEET C

Application Number
EP 10 00 0421

Claim(s) completely searchable:
-

Claim(s) searched incompletely:
1

Claim(s) not searched:
2-15

Reason for the limitation of the search:

1.1 No wording corresponding to that of claim 1 could be found in in the earlier application.
1.2 If Figs. 12, 14 and 16 shall form a basis for circuits A), B) and C) of claim 1, the features shown in said figures should be included in claim 1, such as an OLED, a capacitor Cs, "ground" instead of "potential", all the connections made between transistors, the transistors being dual gate transistors.
1.3 Once claim 1 shows all features of the respective circuits disclosed in the drawings, it will include many features of present claims 3 to 8, 11, 14, 15; further, claim 2 would also have to be amended to include all essential features.
1.4 Because circuit A) of claim 1 is defined more clearly than circuits B) and C) (only the function of the fourth transistor is obscure because its source and drain are left unconnected), it has been attempted to search circuit A), but since claim 1 lacks essential features, the relevance of the found prior art could not be judged completely, making a meaningful search impossible.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 00 0421

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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16-03-2012

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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)	用于有机发光器件的像素驱动电路		
公开(公告)号	EP2180508A3	公开(公告)日	2012-04-25
申请号	EP2010000421	申请日	2002-02-18
[标]申请(专利权)人(译)	伊格尼斯创新公司		
申请(专利权)人(译)	IGNIS创新INC.		
当前申请(专利权)人(译)	IGNIS创新INC.		
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IPC分类号	H01L27/32 G09G3/32 H01L51/50 G09F9/30 G09G3/20 G09G3/30 H01L21/336 H01L27/12 H01L27/15 H01L29/786		
CPC分类号	G09G3/3233 G09G3/3241 G09G2300/0804 G09G2320/0223 H01L27/12 H01L27/283 H01L27/3276		
代理机构(译)	GRÜNECKER，KINKELDEY，STOCKMAIR & SCHWANHÄUSSER		
优先权	60/268900 2001-02-16 US		
其他公开文献	EP2180508A2		
外部链接	Espacenet		

摘要(译)

像素电流驱动器包括多个薄膜晶体管（TFT），每个薄膜晶体管具有双栅极并用于驱动OLED层。双栅极的顶栅形成在每个薄膜晶体管的源极和漏极之间，从而最小化寄生电容。顶栅接地或电连接到底栅。多个薄膜晶体管可以是以电压编程方式形成的两个薄膜晶体管，或者是以电流编程的ΔVT补偿方式形成的五个薄膜晶体管。还提供了具有不同数量的薄膜晶体管的其他版本的电流编程电路，其补偿δVT。 OLED层连续且垂直地堆叠在多个薄膜晶体管上，以提供接近100％的孔径比。

Fig. 6A