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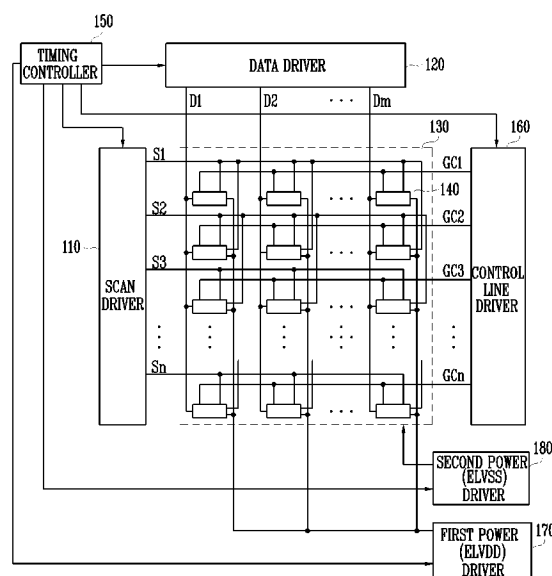
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(54) **Organic light emitting display and driving method thereof**

(57) An organic light emitting display includes a display unit (130) includes pixels (140, 240) coupled to scan lines (S1, S2, S3, Sn), control lines (GC1, GC2, GC3, GCn), and data lines (D1, D2, Dm). A control line driver (160) provides control signals to the respective pixels (140, 240) through the control lines (GC1, GC2, GC3, GCn) and a first power driver (170) applies a first power (ELVDD) to the pixels (140, 240) of the display unit (130) while a second power driver (180) applies a second power (ELVSS) to the pixels (140, 240) of the display unit (130). The first power (ELVDD) and/or the second power (ELVSS) is applied to the pixels (140, 240) of the display unit (130) having voltage values at different levels during periods of one frame, and the control signals and the first and second powers (ELVDD, ELVSS) are concurrently provided to all of the pixels (140, 240) during the emission period of a frame.

FIG. 1





## EUROPEAN SEARCH REPORT

Application Number  
EP 10 17 1396

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	* column 3, line 25 - column 9, line 43; figures 2-11 *	3,6-15	
X	US 2009/058843 A1 (ISHIZUKA SHINICHI [JP]) 5 March 2009 (2009-03-05) * paragraph [0054] - paragraph [0065]; figures 7,8 *	1,3-5	
Y	US 2008/036706 A1 (KITAZAWA TAKAYUKI [JP]) 14 February 2008 (2008-02-14) * paragraph [0119] - paragraph [0160]; figures 7-9 *	6,7,9-15	
Y	WO 2007/021458 A1 (CHANG SIN-MIN [US]) 22 February 2007 (2007-02-22) * paragraph [0029] - paragraph [0039]; figures 2, 3 *	8	
Y	US 2004/239664 A1 (HU SHUO-HSIU [TW] ET AL) 2 December 2004 (2004-12-02) * column 1, line 50 - column 3, line 36; figures 1-4 *	3	TECHNICAL FIELDS SEARCHED (IPC)
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X	US 6 731 276 B1 (ISHIZUKA SHINICHI [JP]) 4 May 2004 (2004-05-04) * column 5, line 35 - column 9, line 10; figures 6-14 *	1,2,4,5	
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 August 2011	Examiner Morris, David
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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  .....  &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.02 (P04C01)



## EUROPEAN SEARCH REPORT

Application Number  
EP 10 17 1396

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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A	US 2005/083270 A1 (MIYAZAWA TAKASHI [JP]) 21 April 2005 (2005-04-21) * paragraph [0096] - paragraph [0105]; figures 2-4 *	1,6,7, 9-15	
A	US 6 229 506 B1 (DAWSON ROBIN MARK ADRIAN [US] ET AL) 8 May 2001 (2001-05-08) * column 4, line 35 - column 6, line 55; figures 3, 4 *	1,6,7, 9-15	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search <b>Munich</b>		Date of completion of the search <b>29 August 2011</b>	Examiner <b>Morris, David</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>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</p> <p>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 ..... &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)



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:

☐ 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: 1-5

Directed to an organic light emitting display in which a scan driver sequentially applies scan signals line by line during a scanning period and concurrently provides scan signals to all of the pixels during a light emission period. This is to overcome problems of flicker due to the scanning of a next frame interfering with the emission of pixels in response to data from a current frame.

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2. claims: 6, 7, 9-15

Directed to an organic light emitting display, and a method of driving thereof, in which a threshold voltage of a driving transistor of a pixel is stored in a capacitor between a data input node and the gate of the driving transistor. This is to overcome variations in the luminosities of pixels resulting from the threshold voltage of driver transistors for different pixels changing over time.

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3. claim: 8

Directed to a method of driving an organic light emitting display such as to give the effect of displaying three dimensional images. This overcomes a sense of a lack of realism of the user when viewing a flat panel screen due to only one perspective being available.

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

EP 10 17 1396

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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29-08-2011

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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)	有机发光显示器及其驱动方法		
公开(公告)号	<a href="#">EP2293274A3</a>	公开(公告)日	2011-10-05
申请号	EP2010171396	申请日	2010-07-30
[标]申请(专利权)人(译)	三星显示有限公司		
申请(专利权)人(译)	三星移动显示器有限公司.		
当前申请(专利权)人(译)	三星DISPLAY CO. , LTD.		
[标]发明人	LEE BAEK WOON		
发明人	LEE, BAEK-WOON		
IPC分类号	G09G3/32		
CPC分类号	G09G3/3291 G09G3/003 G09G3/3208 G09G3/3233 G09G3/3258 G09G2300/043 G09G2300/0866 G09G2310/063 G09G2320/043		
优先权	1020090071280 2009-08-03 KR		
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#### 摘要(译)

有机发光显示器包括显示单元 ( 130 ) , 其包括耦合到扫描线 ( S1 , S2 , S3 , Sn ) 的像素 ( 140,240 ) , 控制线 ( GC1 , GC2 , GC3 , GCn ) 和数据线 ( D1 ) , D2 , Dm ) 。用于通过控制线 ( GC1 , GC2 , GC3 , GCn ) 和第一电源驱动器 ( 170 ) 向各个像素 ( 140,240 ) 提供控制信号的控制线驱动器 ( 160 ) 将第一电源 ( ELVDD ) 施加到显示单元 ( 130 ) 的像素 ( 140,240 ) , 而第二电源驱动器 ( 180 ) 将第二电源 ( ELVSS ) 施加到显示单元 ( 130 ) 的像素 ( 140,240 ) 。第一功率 ( ELVDD ) 和/或第二功率 ( ELVSS ) 被施加到显示单元 ( 130 ) 的像素 ( 140,240 ) , 其在一帧的时段期间具有不同电平的电压值 , 并且控制信号和在帧的发光时段期间 , 第一和第二功率 ( ELVDD , ELVSS ) 被同时提供给所有像素 ( 140,240 ) 。

FIG. 1

