



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
01.08.2012 Bulletin 2012/31

(51) Int Cl.:
H01L 27/32 (2006.01) **G06F 3/044** (2006.01)
G06F 3/041 (2006.01)

(43) Date of publication A2:
15.12.2010 Bulletin 2010/50

(21) Application number: **09170313.2**

(22) Date of filing: **15.09.2009**

(84) Designated Contracting States:
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 SE SI SK SM TR
Designated Extension States:
AL BA RS

(72) Inventors:
• **Lee, Jaedo**
Kyungbuk (KR)
• **Choi, Howon**
Daegu (KR)
• **Seo, Sangwoo**
Kyungbuk (KR)

(30) Priority: **08.06.2009 KR 20090050572**

(74) Representative: **Viering, Jentschura & Partner**
Schwepnitz Str. 2
01097 Dresden (DE)

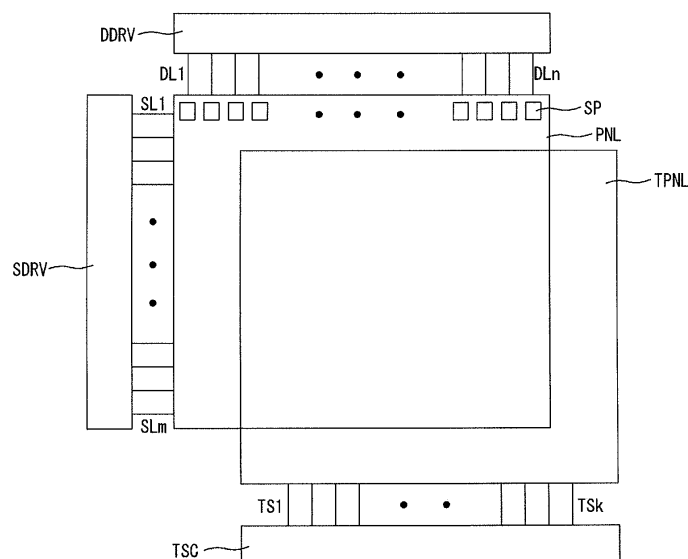
(71) Applicant: **LG Display Co., Ltd.**
Seoul 150-721 (KR)

(54) **Organic light emitting diode touch screen**

(57) An organic light emitting diode (OLED) display is disclosed. The OLED display includes a plurality of subpixels on one surface of a first substrate, a second substrate attached to the first substrate, a shield electrode on one surface of the second substrate that is not opposite to the subpixels, the shield electrode being connected to a low potential voltage source, a touch screen

panel on the shield electrode, a first printed circuit board (PCB) attached to the one surface of the first substrate, the first PCB receiving a driving signal driving the subpixels from a driving device, and a second PCB attached to the one surface of the second substrate, the second PCB transmitting a sensing signal generated by the touch screen panel to an external device.

FIG. 1





EUROPEAN SEARCH REPORT

 Application Number
 EP 09 17 0313

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2007/242055 A1 (LAI YUANG WEI [TW]) 18 October 2007 (2007-10-18) * paragraphs [0002] - [0032]; figure 4 *	1-10,13	INV. H01L27/32 G06F3/044 G06F3/041
Y	US 6 424 094 B1 (FELDMAN RODNEY D [US]) 23 July 2002 (2002-07-23) * column 1, line 10 - column 3, line 6; figures 1-4 *	1-4	
Y	US 6 885 157 B1 (COK RONALD S [US] ET AL) 26 April 2005 (2005-04-26) * column 1, line 5 - column 3, line 46; figure 5 *	5-9,11, 12	
Y	EP 1 953 626 A2 (SEIKO EPSON CORP [JP]) 6 August 2008 (2008-08-06) * paragraphs [0002] - [0008], [0020] - [0031], [0038]; figure 4 *	10-14	
Y	US 2002/186209 A1 (COK RONALD S [US]) 12 December 2002 (2002-12-12) * paragraphs [0001], [0011], [0012] *	4,9,14	
Y	US 2001/046604 A1 (GEAGHAN BERNARD O [US]) 29 November 2001 (2001-11-29) * paragraphs [0005], [0027] - [0029], [0045] *	4,9,14	TECHNICAL FIELDS SEARCHED (IPC)
			H01L G06F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 June 2012	Examiner 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			

 2
 EPO FORM 1503 03.82 (P04C01)



Application Number

EP 09 17 0313

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

EP 09 17 0313

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: 1-3

OLED display with a shield electrode on a surface not opposite to subpixels, and with a touch screen with one or two transparent electrodes

2. claim: 4

Similar OLED, the touch screen not having transparent electrodes, but having a polarizing plate put on it

3. claims: 5-9

Similar OLED, but the shield electrode being formed on a substrate surface on which subpixels are not formed

4. claims: 10-14

Similar OLED, but the shield electrode being formed on a surface opposite the sub-pixels

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

EP 09 17 0313

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-06-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007242055 A1	18-10-2007	TW 1317086 B US 2007242055 A1	11-11-2009 18-10-2007
US 6424094 B1	23-07-2002	CN 1385814 A EP 1258922 A2 JP 2002359078 A KR 20020087359 A TW 546675 B US 6424094 B1	18-12-2002 20-11-2002 13-12-2002 22-11-2002 11-08-2003 23-07-2002
US 6885157 B1	26-04-2005	US 6885157 B1 WO 2005055329 A2	26-04-2005 16-06-2005
EP 1953626 A2	06-08-2008	CN 101236320 A EP 1953626 A2 JP 2008185785 A KR 20080071489 A TW 200841071 A US 2008180407 A1	06-08-2008 06-08-2008 14-08-2008 04-08-2008 16-10-2008 31-07-2008
US 2002186209 A1	12-12-2002	JP 2003036144 A US 2002186209 A1	07-02-2003 12-12-2002
US 2001046604 A1	29-11-2001	AU 3479101 A JP 2003521790 A US 2001046604 A1 WO 0157841 A1	14-08-2001 15-07-2003 29-11-2001 09-08-2001

专利名称(译)	有机发光二极管触摸屏		
公开(公告)号	EP2261986A3	公开(公告)日	2012-08-01
申请号	EP2009170313	申请日	2009-09-15
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG DISPLAY CO. , LTD.		
当前申请(专利权)人(译)	LG DISPLAY CO. , LTD.		
[标]发明人	LEE JAEDO CHOI HOWON SEO SANGWOO		
发明人	LEE, JAEDO CHOI, HOWON SEO, SANGWOO		
IPC分类号	H01L27/32 G06F3/044 G06F3/041		
CPC分类号	G06F3/0412 G06F3/0443 G06F3/0446 G06F2203/04107 H01L27/323 H01L27/3244 H01L27/3281 G06F3/0416 G06F3/044		
代理机构(译)	庆祝活动, JENTSCHURA & PARTNER		
优先权	1020090050572 2009-06-08 KR		
其他公开文献	EP2261986A2		
外部链接	Espacenet		

摘要(译)

公开了一种有机发光二极管 (OLED) 显示器。 OLED显示器包括在第一基板的一个表面上的多个子像素, 附着到第一基板的第二基板, 在第二基板的不与子像素相对的一个表面上的屏蔽电极, 屏蔽电极连接到低电位电压源, 屏蔽电极上的触摸屏面板, 连接到第一基板的一个表面的第一印刷电路板 (PCB), 第一PCB接收驱动子像素从驱动装置驱动的驱动信号, 以及第二PCB PCB附着到第二基板的一个表面, 第二PCB将由触摸屏面板产生的感测信号传输到外部设备。

FIG. 1

