(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 933 399 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
25.05.2011 Bulletin 2011/21

(43) Date of publication A2:
18.06.2008 Bulletin 2008/25

(21) Application number: **07024076.7**

(22) Date of filing: **12.12.2007**

(51) Int Cl.:
H01L 51/52 *(2006.01)*

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

(30) Priority: **15.12.2006 KR 20060128274**

(71) Applicant: **Samsung Electronics Co., Ltd.**
Yeongtong-gu
Suwon-city, Gyeonggi-do 442-742 (KR)

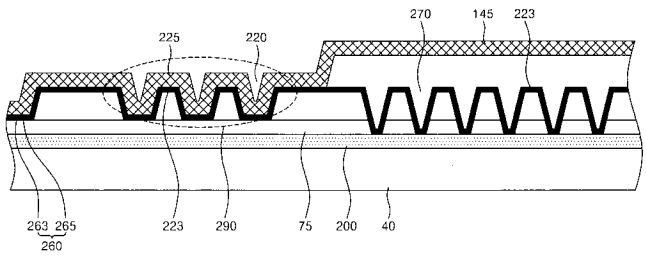
(72) Inventors:
- **Kim, Hoon**
  Hwaseong-si,
  Gyoenggi-do (KR)
- **Chung, Jin Koo**
  Suwon-si,
  Gyeonggi-do (KR)
- **Koo, Won-Heo**
  Suwon-si,
  Gyeonggi-do (KR)
- **Choi, Jung-Mi**
  Yongin-si,
  Gyeonggi-do (KR)

(74) Representative: **Dr. Weitzel & Partner**
Patentanwälte
Friedenstrasse 10
89522 Heidenheim (DE)

(54) Organic electro-luminescent display device

(57) An organic electro-luminescent display device includes barriers in a non-display area (20) to protect a display area (10) from water and oxygen. Barriers may include a permeation prevention barrier (290), a voltage contact portion (270), and a blocking layer (260). A permeation prevention barrier (290) includes contact portions (270) where a barrier layer (263) having a lower permeability than a passivation layer (75) penetrates through the passivation layer (75). A voltage contact portion (270) penetrates the passivation layer (75) so that a signal supply line (200) contacts a conductive material (223). A blocking layer (260) covers a wall (150), a planarization layer (130), and an inorganic insulation layer (75), and has a lower permeability than the planarization layer (130), the wall (150), and the inorganic insulation layer (75). The permeation prevention barrier (290), the voltage contact portion (270), and the blocking layer (260) may be used in various combinations.

FIG. 12



EP 1 933 399 A3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 07 02 4076

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 2003/089991 A1 (YAMAZAKI SHUNPEI [JP] ET AL) 15 May 2003 (2003-05-15)	1-4, 6-14,19, 20	INV. H01L51/52
A	* paragraph [0122] - paragraph [0140]; figures 1,2,7 *	5,15-18, 25	

X	US 2005/231107 A1 (YAMAZAKI SHUNPEI [JP] ET AL) 20 October 2005 (2005-10-20) * paragraph [0073] - paragraph [0087]; figure 4 *	1-3, 19-23	

X	US 2003/122495 A1 (NAKANISHI HAYATO [JP]) 3 July 2003 (2003-07-03) * paragraph [0029] - paragraph [0047]; figures 1-4 *	19,20,24	

TECHNICAL FIELDS SEARCHED (IPC)

H01L
H05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	11 April 2011	Bakos, Tamás

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)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 02 4076

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.

11-04-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003089991 A1	15-05-2003	CN 1429055 A	09-07-2003
		US 2006006424 A1	12-01-2006
		US 2009256467 A1	15-10-2009
		US 2010201662 A1	12-08-2010
US 2005231107 A1	20-10-2005	CN 1684559 A	19-10-2005
		JP 2011040408 A	24-02-2011
US 2003122495 A1	03-07-2003	CN 1440015 A	03-09-2003
		JP 2009134327 A	18-06-2009
		KR 20030047848 A	18-06-2003
		TW 575857 B	11-02-2004

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)	有机电致发光显示装置		
公开(公告)号	EP1933399A3	公开(公告)日	2011-05-25
申请号	EP2007024076	申请日	2007-12-12
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	SAMSUNG ELECTRONICS CO.，LTD.		
当前申请(专利权)人(译)	三星DISPLAY CO.，LTD.		
[标]发明人	KIM HOON CHUNG JIN KOO KOO WON HEO CHOI JUNG MI		
发明人	KIM, HOON CHUNG, JIN KOO KOO, WON-HEO CHOI, JUNG-MI		
IPC分类号	H01L51/52		
CPC分类号	H01L51/5253		
代理机构(译)	DR.威猛和合作伙伴		
优先权	1020060128274 2006-12-15 KR		
其他公开文献	EP1933399A2 EP1933399B1		
外部链接	Espacenet		

摘要(译)

有机电致发光显示装置包括在非显示区域中的屏障，以保护显示区域免受水和氧气的影响。屏障可包括防渗透屏障，电压接触部分和阻挡层。防渗透屏障包括接触部分，其中具有比钝化层低的导磁率的阻挡层穿透钝化层。电压接触部分穿透钝化层，使得信号供应线接触导电材料。阻挡层覆盖壁，平坦化层和无机绝缘层，并且具有比平坦化层，壁和无机绝缘层低的渗透性。防渗透屏障，电压接触部分和阻挡层可以以各种组合使用。

FIG. 12