



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
30.08.2006 Bulletin 2006/35

(51) Int Cl.:
H01L 27/32^(2006.01) H01L 51/52^(2006.01)

(43) Date of publication A2:
31.05.2006 Bulletin 2006/22

(21) Application number: **05111347.0**

(22) Date of filing: **28.11.2005**

(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 NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

(72) Inventors:
• **Lee, Kwan-Hee,**
Samsung SDI Co., Ltd.
Suwon-si, Gyeonggi-do (KR)
• **Im, Ja-Hyun,**
Samsung SDI Co., Ltd.
Suwon-si, Gyeonggi-do (KR)

(30) Priority: **29.11.2004 KR 2004098877**

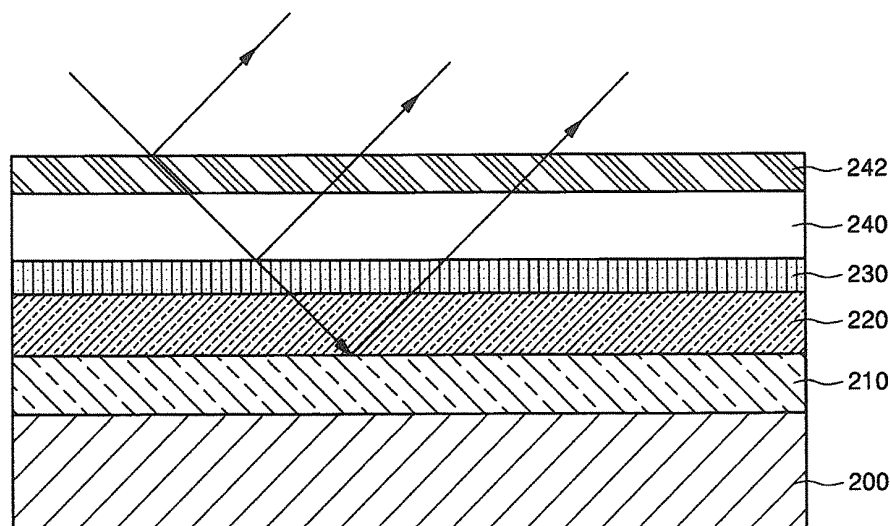
(71) Applicant: **Samsung SDI Co., Ltd.**
Suwon-si
Gyeonggi-do (KR)

(74) Representative: **Hengelhaupt, Jürgen et al**
Gulde Hengelhaupt Ziebig & Scheider
Wallstrasse 58/59
10179 Berlin (DE)

(54) **Flat panel display and method of fabricating the same**

(57) A flat panel display includes a pixel electrode, an organic emission layer, an opposite electrode, a phase shift layer and a reflecting layer disposed on a substrate. The phase shift layer and the reflecting layer are stacked on the opposite electrode to destructively interfere with reflected external light to realize black and achieve excellent luminous efficiency.

FIG. 2





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 11 1347

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 6 639 250 B1 (SHIMODA TATSUYA ET AL) 28 October 2003 (2003-10-28) * abstract * * column 2, line 1 - column 5, line 7 * * column 5, line 43 - column 16, line 16 * * figures 1-8 *	1,3,4,7, 8,11,12, 16,17	INV. H01L51/52 H01L27/32
X	WO 03/096757 A (ZEOLUX CORPORATION) 20 November 2003 (2003-11-20) * page 4, line 9 - line 35 * * page 6, line 6 - page 13, line 11 * * page 19, line 5 - line 31 * * figures 5-8 *	1,3,7,10	
Y	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 08, 6 August 2003 (2003-08-06) -& JP 2003 123987 A (TOYOTA CENTRAL RES & DEV LAB INC), 25 April 2003 (2003-04-25) * abstract; figures 1,3 *	1-19	
Y	US 6 326 224 B1 (XU JI-HAI ET AL) 4 December 2001 (2001-12-04) * column 1, line 1 - column 2, line 13 * * column 3, line 13 - column 4, line 26 * * figure 2 *	1-19	H01L
Y	EP 1 154 676 A (SONY CORPORATION) 14 November 2001 (2001-11-14) * paragraphs [0029] - [0044] * * figure 4 *	4,9,12, 18	
Y	US 2004/195965 A1 (YAMAZAKI SHUNPEI ET AL) 7 October 2004 (2004-10-07) * figure 2 *	2,11	
		-/--	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 July 2006	Examiner Bernabé Prieto, A
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	

1
EPO FORM 1503 03 82 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 11 1347

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	JUNG B Y ET AL: "Control of resonant wavelength from organic light emitting materials by use of a Fabry-Perot microcavity structure" APPLIED OPTICS, OSA, OPTICAL SOCIETY OF AMERICA, WASHINGTON, DC, US, vol. 41, no. 16, 1 June 2002 (2002-06-01), pages 3312-3318, XP002345077 ISSN: 0003-6935 * page 3312 - page 3313 * * figure 1 * -----	1-19	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		19 July 2006	Bernabé Prieto, A
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			

1
EPO FORM 1503 03.82 (P04C01)

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

EP 05 11 1347

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.

19-07-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6639250	B1	28-10-2003	AU 6581800 A	19-03-2001
			EP 1145335 A2	17-10-2001
			WO 0115246 A2	01-03-2001
			GB 2353400 A	21-02-2001
			JP 2003508876 T	04-03-2003

WO 03096757	A	20-11-2003	AU 2003233516 A1	11-11-2003
			AU 2003249618 A1	12-12-2003
			AU 2003273161 A1	12-12-2003
			CN 1666578 A	07-09-2005
			CN 1666576 A	07-09-2005
			CN 1666579 A	07-09-2005
			EP 1504633 A1	09-02-2005
			EP 1504632 A1	09-02-2005
			EP 1504634 A1	09-02-2005
			JP 2005524958 T	18-08-2005
			JP 2005524964 T	18-08-2005
			JP 2005524965 T	18-08-2005
			WO 03101156 A1	04-12-2003
			WO 03101157 A1	04-12-2003

JP 2003123987	A	25-04-2003	NONE	

US 6326224	B1	04-12-2001	NONE	

EP 1154676	A	14-11-2001	WO 0139554 A1	31-05-2001
			TW 466889 B	01-12-2001

US 2004195965	A1	07-10-2004	CN 1543276 A	03-11-2004
			JP 2004311077 A	04-11-2004

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)	平板显示器及其制造方法		
公开(公告)号	EP1662574A3	公开(公告)日	2006-08-30
申请号	EP2005111347	申请日	2005-11-28
[标]申请(专利权)人(译)	三星斯笛爱股份有限公司		
申请(专利权)人(译)	三星SDI CO. , LTD.		
当前申请(专利权)人(译)	三星移动显示器有限公司.		
发明人	LEE, KWAN-HEE, SAMSUNG SDI CO., LTD. IM, JA-HYUN, SAMSUNG SDI CO., LTD.		
IPC分类号	H01L27/32 H01L51/52		
CPC分类号	H01L51/5265 H01L27/32 H01L51/5281		
代理机构(译)	hengelhaupt , Jürgen		
优先权	1020040098877 2004-11-29 KR		
其他公开文献	EP1662574A2 EP1662574B1		
外部链接	Espacenet		

摘要(译)

平板显示器包括像素电极，有机发光层，相对电极，相移层和设置在基板上的反射层。相移层和反射层堆叠在相对电极上，以破坏性地干扰反射的外部光，以实现黑色并实现优异的发光效率。

FIG. 2

