



1  
2  
3 2  
4  
5 6  
7 8  
9 12  
13  
14  
15

가 , 가 ,

(CuPc:copper phthalocyanine), N,N- ( -1- )-N,N'- (N,N'-Di(naphthalene-1-yl  
)-N,N'-diphenyl-benzidine: NPB) , -8- (tris-8-hydroxyquinoline aluminum)(

가 (hole) , 가 (exiton)

가 , 가  
efficiency (light coupling efficiency) (internal efficiency) (external

(guiding)

(12) (11) , 1 (13) (11) ITO



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1 , 2

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가 가

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1 , 2

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1 , 1

2 ,

가 가

가 가

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1 , 1 ,

2 ;

1 ;

2

2

가 가

;

1

1

2

;

1

;

1

가

가 가

(organic light emitting display)

2

1

(22),  
(30)

1

(22)

(20)

(21)

(30),

2

(23)

1

(22)

(21)

(anode)

ITO

2

(23)

2

(23)

31),  
-1,4-(30)  
(32),  
(Alq<sub>3</sub>)3  
(33),  
(Alq<sub>3</sub>)

(34)

1

(21)

(p-

(30)

(2-

8-

-5-(2'-

(

)

(21)

1

(21)

가 가

(100)

(50)

(100)

(100)

(P)

(H)

가

(111)

(111)

가 200

2,000nm

(111)

50

5,000nm

(111)

가

SnO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, MGF2, CAF2,  
O<sub>2</sub>SiOx(x>1), SiNx, Si<sub>3</sub>N<sub>4</sub>, TiO<sub>2</sub>, MgO, ZnO, Al<sub>2</sub>O<sub>3</sub>, Ti

(50)

(111)가  
( )가

1

(22)

1

(22)

4

가

1,2

(120)

200

2,000nm

(120)

(T)

0.01

(P)  
50μm

1,2 (22)(23) (30) (25)

(50) 1 (22) 2 (22)

(60) 5 6 (60) (50) 1 (22)

TiO<sub>2</sub> (60) 2.3 (60)

7 8 (71) 1

(72) 1 (71) (73) (70)가 (72)

2 (74) 가 (210),(220) (200)가

(70) (70) (50)

7 (200) (210)

가 (211) 8 (220)

1 (dot) 1,2 가 (220)

2 0.3 3 가 가 1

가 0.3 (scattering efficiency)가

9 10 AM

(AMOLCD(Active matrix organin light emitting display))

9 (150) (151) (152) (

152) (TFT) 가 (161) 가 (170) (160) ,

(152) p n (171) (17

2) (172) (171) (173)

1 (174) , 1 (174) (172) (175a)(176a)

(171) 1 (174) (175) (176)

177a) , 1 (177a) (176) 1 (174) 1 (177b)

(177) 2 (178) (175) (176) 1 (174)

(160) 2 (178) 2 (178)

(161a) 2 (161) 2 (178)

(162) , 2 (178)

1 (163) 1 (163) 2 (178)

3 ( ) 3 (162)

3 (200) (100) (

200)가 (50) 3 가 가 (200)

9 가 (111) 10

12 3 1,2 (60) (120) 11

(60) (100)

1 (22),(72) 2 (23)

, (74) e) 가 1 (22), (72) (23), (74) (34) (31) (32) (33) (33) (30)(73) (50) (exiton) (21) (71) 3 (200) ITO 1 (22)(72) (50) (30)(70) 1 (22)(72) (50) 2 (21)(71) (50) (111) (111) (50) (evanescent wave coupling) 1 (22) 가 (22) (100) 가 (120) 1,2 (Anti-reflection) (50) (10)(210)(220) 가 가 가 { 1} SiO<sub>2</sub> TiO<sub>2</sub>, SiNx 200 2,000nm 50 5,000nm 1 1 3 14 FDTD (Finite Difference Time Domain) 1 13 0 4 1 2 .41 , TiO<sub>2</sub> 3.67 3.90 , SiNx 2 가 200nm 가 14 가 { 2}

2.36 TiO<sub>2</sub> 1 1  
 15 0( 1  
 ) , 400nm  
 가 4 가 50nm 1  
 47.1% 가 가 .( 15 50 - 2000n  
 m)  
 { 1}  
 , 1 , 2  
 .  
 34.9% , 1,2 가 (guiding)  
 42.8% , (guiding) (guiding) 22.3%  
 { 2}  
 가 ( 1 , 2  
 가 SiO<sub>2</sub> TiO<sub>2</sub>  
 1 2.37 , TiO<sub>2</sub> 2.38 SiO<sub>2</sub>  
 .

(57)

1.

,

1 ,

2

가 가

2.

1 ,

가

3.

2 ,

가 2

4.

2 ,

가 200 2,000nm

5.

4 ,

50 5,000nm

6.

1 ,

2 ITO

7.

1 ,

SiOx(x>1), SiNx, Si<sub>3</sub>N<sub>4</sub>, TiO<sub>2</sub>, MgO, ZnO, Al<sub>2</sub>O<sub>3</sub>, SnO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, MGF2 CAF2

8.

7 ,

TiO<sub>2</sub>

9.

1 ,

2

10.

9 ,

TiO<sub>2</sub>

11.

9 ,

2.3

12.

9 ,

2000nm

13.

,

1 ,

2

가

14.

13

가

15.

14

가

2

16.

14

가 200 2,000nm

17.

14

50 5,000nm

18.

1

SiOx(x>1), SiNx, Si<sub>3</sub>N<sub>4</sub>, TiO<sub>2</sub>, MgO, ZnO, Al<sub>2</sub>O<sub>3</sub>, SnO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, MGF2 CAF

2

19.

18

TiO<sub>2</sub>

20.

13

2

21.

20

2.3

22.

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1

,

1

,

2

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1

;

2

가 가

.

**23.**

22

,

1

.

**24.**

22

,

가

.

**25.**

22

,

가

2

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**26.**

24

,

가 200 2,000nm

.

**27.**

24

,

50 5,000nm

.

**28.**

23

,

SiOx(x>1), SiNx, Si<sub>3</sub>N<sub>4</sub>, TiO<sub>2</sub>, MgO, ZnO, Al<sub>2</sub>O<sub>3</sub>, SnO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, MGF2 CAF

2

.

**29.**

23

,

2

.

**30.**

20

,

2.3

.

**31.**

,

1

,

1

2

,

가

가

,

가 가

32.

31 ,

1

33.

31 32 ,

가 50 3,000nm

34.

3 ,

0.01 50 $\mu$ m

35.

31 ,

가 0.3 , 3

36.

35 ,

SiOx(x>1), SiNx, Si<sub>3</sub>N<sub>4</sub>, TiO<sub>2</sub>, MgO, ZnO, Al<sub>2</sub>O<sub>3</sub>, SnO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, MGF2 CAF2

37.

1 8 ,

SiOx(x>1) TiO<sub>2</sub>

38.

;

1 , 1 ,

2 ;

1 ;

2 ,

가 가

가

39.

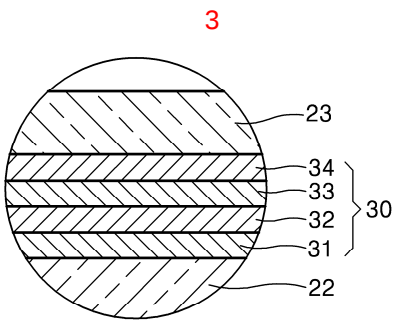
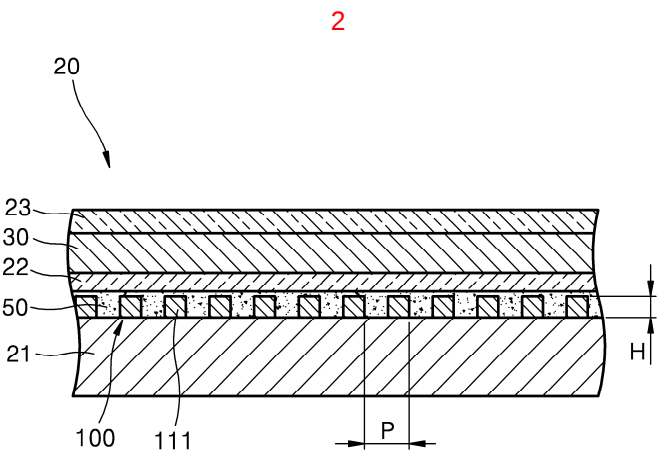
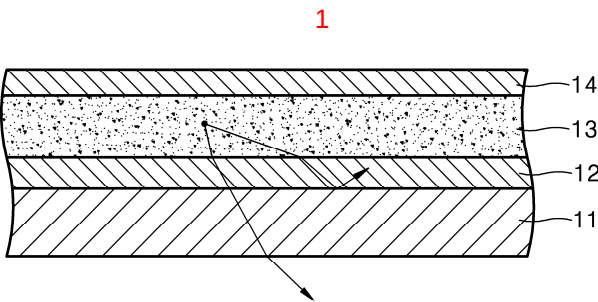
38 ,

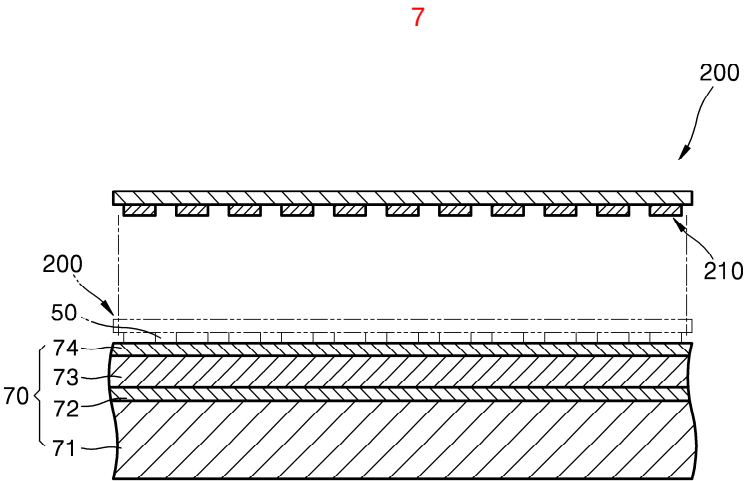
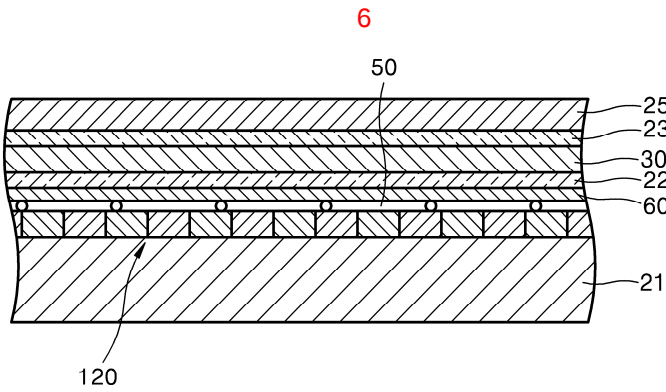
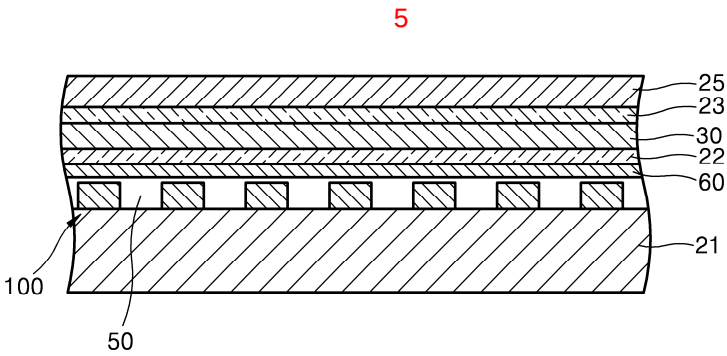
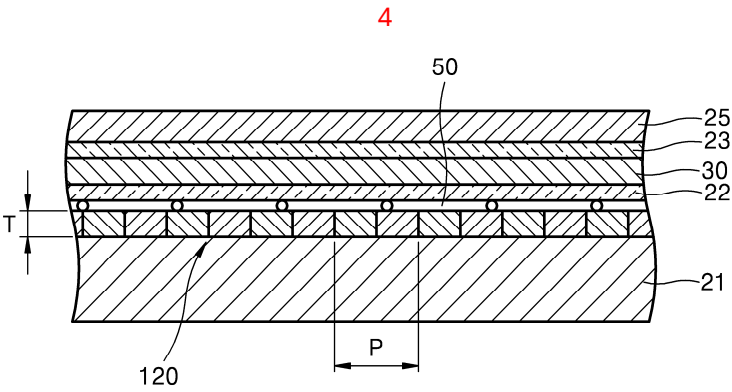
가 50 3,000nm

40.  
38 ,  
2

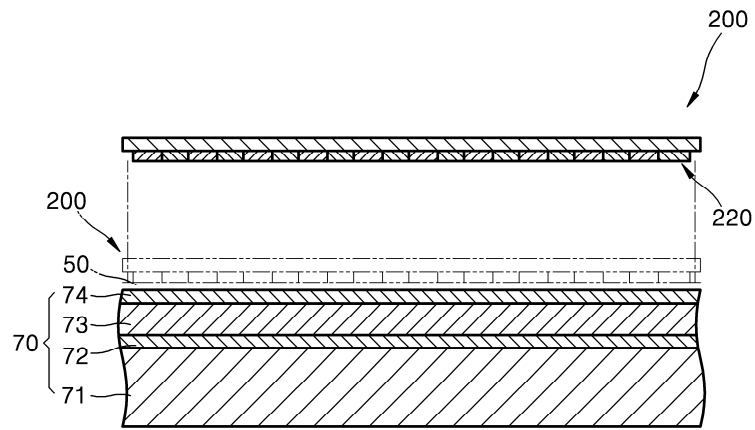
41.  
40 ,  
2.3

42.  
40 ,  
2

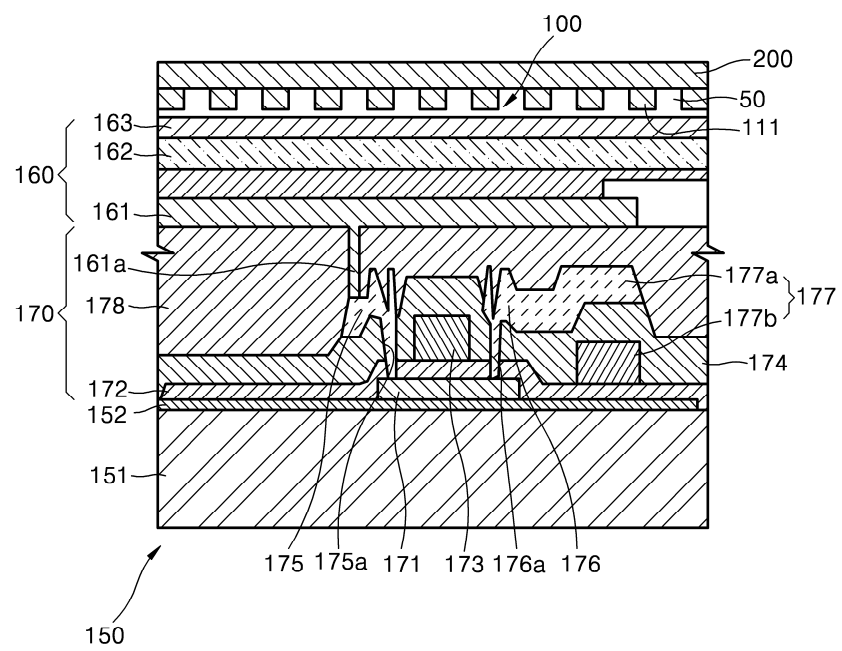




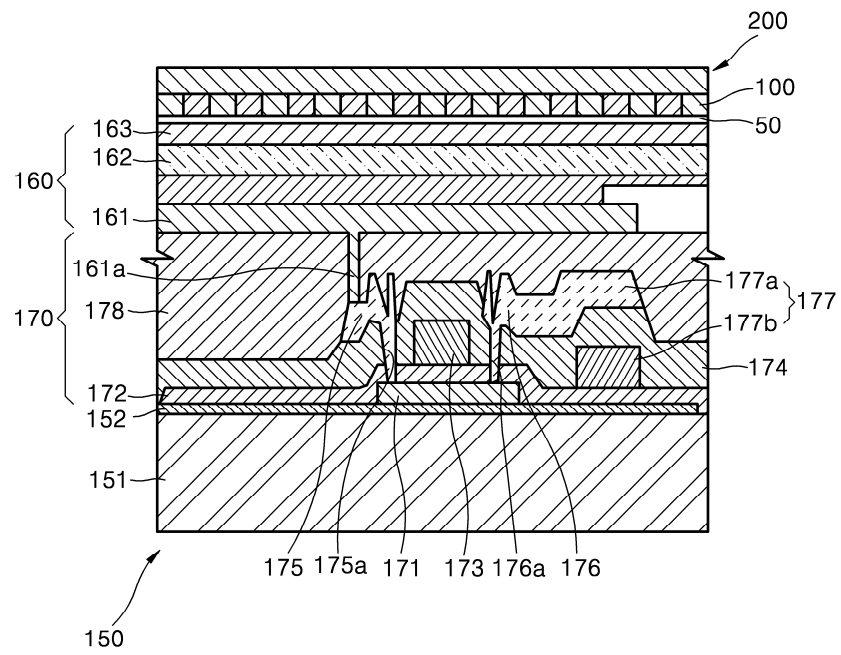
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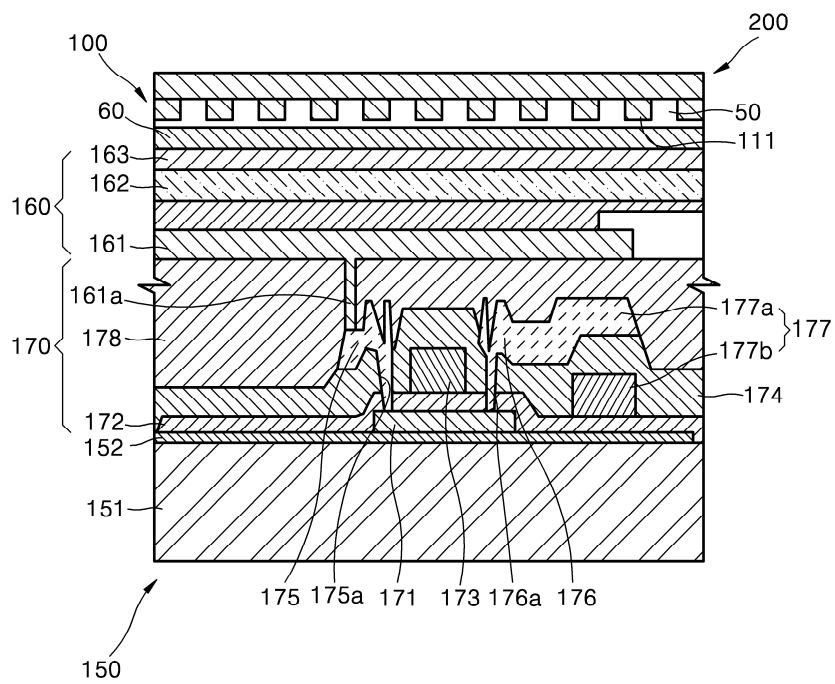
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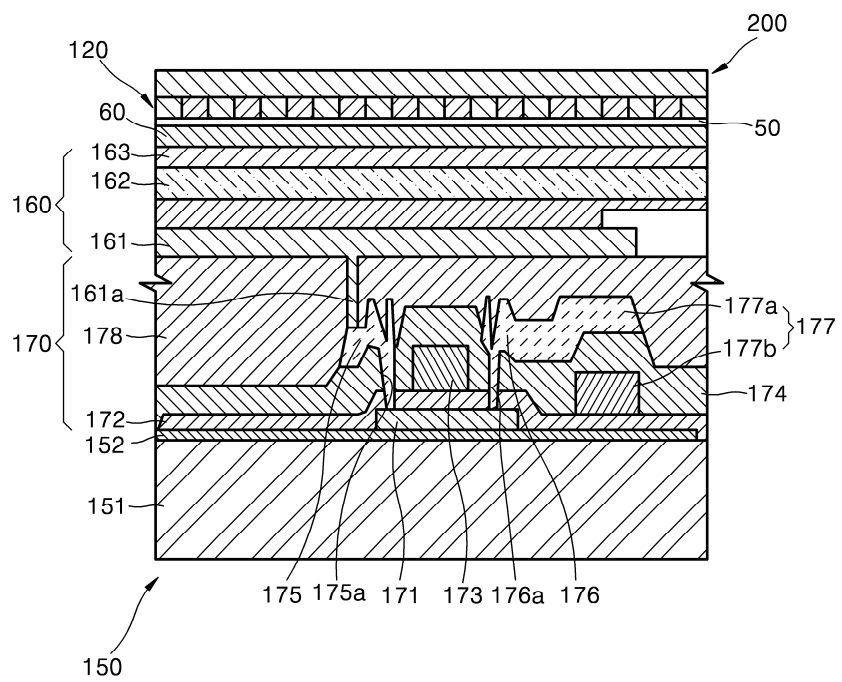
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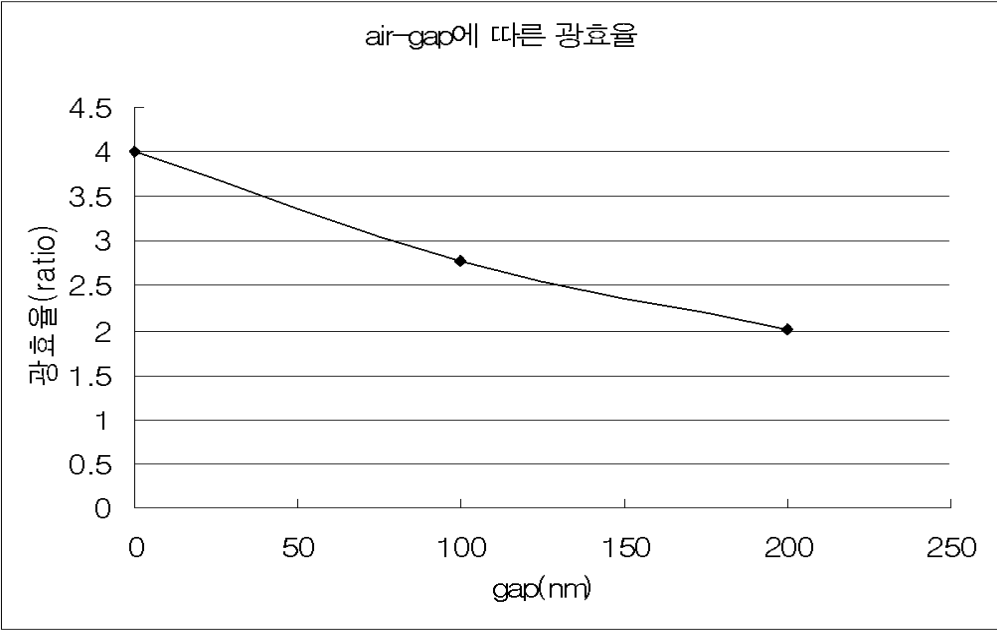
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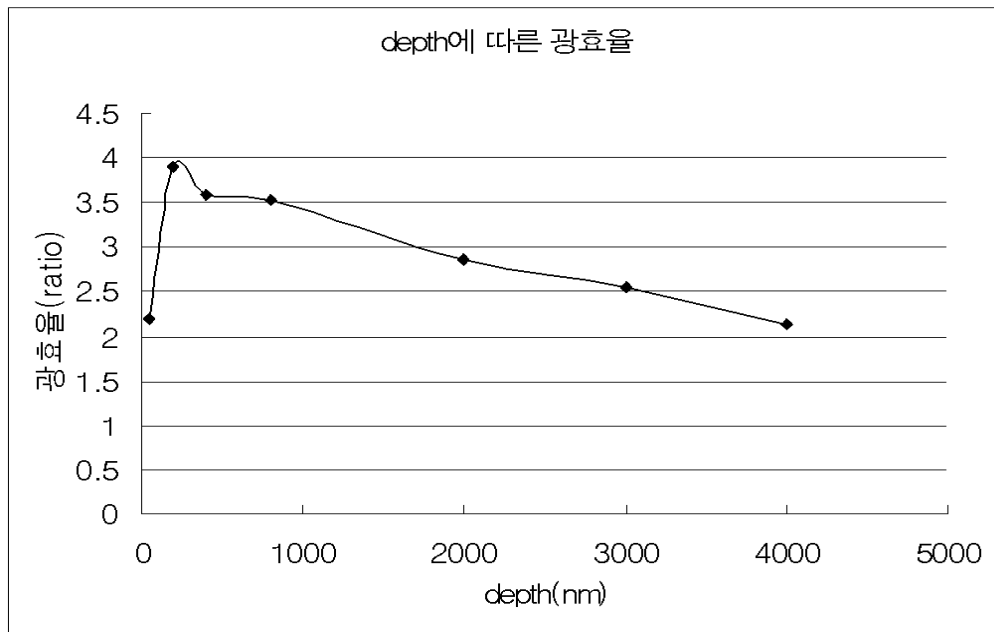
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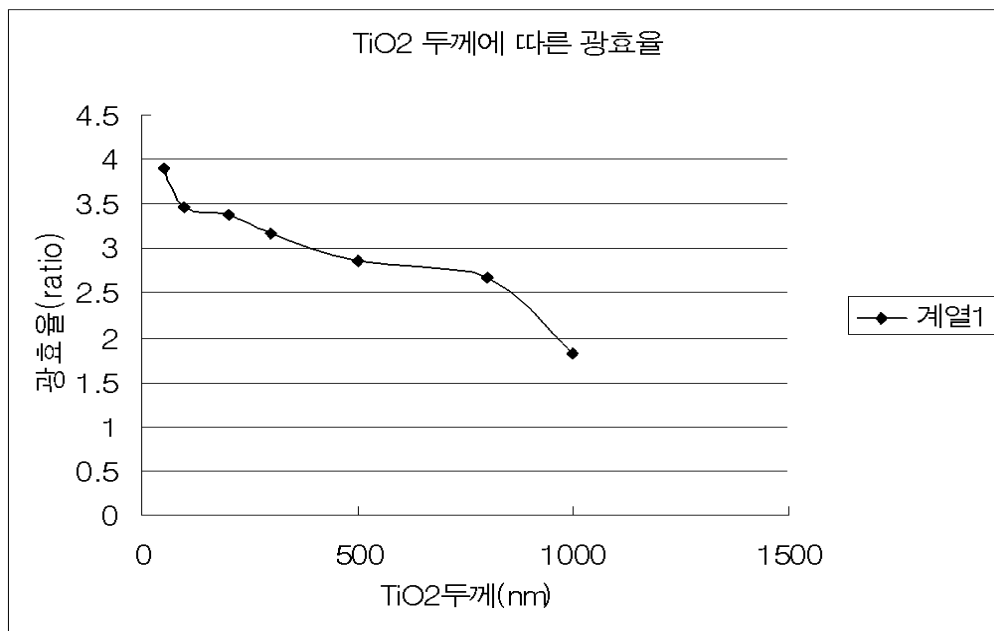
13



14



15



|               |                                                                                                             |         |            |
|---------------|-------------------------------------------------------------------------------------------------------------|---------|------------|
| 专利名称(译)       | 有机发光显示装置的组件                                                                                                 |         |            |
| 公开(公告)号       | <a href="#">KR1020040079080A</a>                                                                            | 公开(公告)日 | 2004-09-14 |
| 申请号           | KR1020030014000                                                                                             | 申请日     | 2003-03-06 |
| 申请(专利权)人(译)   | 三星SD眼有限公司                                                                                                   |         |            |
| 当前申请(专利权)人(译) | 三星SD眼有限公司                                                                                                   |         |            |
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| 发明人           | 조상환<br>도영락<br>김윤창<br>안지훈<br>이준구                                                                             |         |            |
| IPC分类号        | H05B33/02 H01L51/50 H05B33/22 H05B33/00 H05B33/14 G09F9/30 H01L51/52 H01L27/32                              |         |            |
| CPC分类号        | H01L27/3244 H01L2251/5315 H01L51/5262                                                                       |         |            |
| 代理人(译)        | 李, 杨HAE                                                                                                     |         |            |
| 其他公开文献        | KR100563046B1                                                                                               |         |            |
| 外部链接          | <a href="#">Espacenet</a>                                                                                   |         |            |

#### 摘要(译)

根据本发明的另一方面，提供一种有机发光显示器，包括：基板；有机电致发光单元，包括第一电极层，有机发光层和形成在基板上的透明第二电极层，在基板和构成有机电致发光部分的层之间形成光损失防止层，以提高从至少有机发光部分和与防空气层相对的层产生的光的提取效率，并且其特征在于具有精细的空间层。2 指数方面 有机薄膜，光损失

