

(19)  
(12)

(KR)  
(A)

(51) 。 Int. Cl.<sup>7</sup>  
H05B 33/26

(11)  
(43)

10-2004-0090558  
2004 10 26

(21)

10-2003-0024424

(22)

2003 04 17

(71)

575

(72)

307 802

650

411/1805

553

116-703

(74)

:

(54)

1 2 , 1 2 ,

1 2 - , 1 -

2 , 가 .

2

, -

1

2

$$[ \quad ]$$

[ ]

(CRT)

(LCD)

(7)

(1)

가

(2)

(6)

(3)

(5)

(4)

(4)

iF, BaF<sub>2</sub>, CsF

5,776,622

1 nm

L

Li

가

(SID 97, Digest, P775),

6,396,209

가, Li

가

가

6,396,209

[illegible]

ITO IZO

1 2 (8) 1

2 2

1

1 10 nm 0.5 10 nm

(3) (4) 2 (9) (3)

가 1 2 (8) 2 (1)

2 (9) 2 (1)

1 (8) 2 (9) (2)

2 (9)

(3)

1 (7) (6) (7) (4) 2

1 (7) , ITO IZO

nm (island) 가

nm 가

가 가 가 가

가

가

가

가

1 (8) 2 (9)

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1

| ITO          | 10 <sup>-6</sup> Torr | 10 nm                                                | (copper phthalocyanine)(CuP       |
|--------------|-----------------------|------------------------------------------------------|-----------------------------------|
| c)           | 10 <sup>-6</sup> Torr | 10 nm                                                | N,N'-(1- )-N,N'-(                 |
| NPD)         | 10 <sup>-6</sup> Torr | 50 nm                                                | (CBP)                             |
|              | (                     | )(Iridium tris(phenylpyridine); Irppy <sub>3</sub> ) | 30 nm                             |
|              |                       | - (8- )                                              | (biphenoxy-bi(8-quinolinolato)alu |
| minium; BAQ) | 5 nm                  | (8-                                                  | (tris(8-quinolinolato)alumin      |
| ium; Alq)    | 8-                    | (8-quinolinolato lithium; Liq)                       | 10 <sup>-6</sup> Torr             |
|              |                       | Liq 1nm                                              | 1 nm                              |
|              |                       |                                                      | Al Liq                            |

300 nm

400 cd/m<sup>2</sup> 1,000 6 V 1,000 cd/m<sup>2</sup>, 25 cd/A,

2

ITO (copper phthalocyanine)(CuP  
c) 10<sup>-6</sup> Torr 10 nm N,N'- (1- )-N,N'- ( )  
NPD) 10<sup>-6</sup> Torr 50 nm (Iridium tris(phenylpyridine); Irppy<sub>3</sub>) 5 % (CBP)  
( ) (biphenoxy-bi(8-quinolinolato)aluminum; BAQ) 5 nm (8- ) (tris(8-quinolinolato)aluminum; Alq) 8-  
ium; Alq) 20 nm (8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 1 nm  
(8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 1 nm Al LiF 30  
0 nm

400 cd/m<sup>2</sup> 900 6 V 900 cd/m<sup>2</sup>, 24 cd/A,

3

ITO (copper phthalocyanine)(CuP  
c) 10<sup>-6</sup> Torr 10 nm N,N'- (1- )-N,N'- ( )  
NPD) 10<sup>-6</sup> Torr 50 nm (Iridium tris(phenylpyridine); Irppy<sub>3</sub>) 5 % (CBP)  
( ) (biphenoxy-bi(8-quinolinolato)aluminum; BAQ) 5 nm (8- ) (tris(8-quinolinolato)aluminum; Alq) 8-  
minium; BAQ) 5 nm (8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 20 nm  
(8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 20 nm Al Liq  
300 nm

400 cd/m<sup>2</sup> 1,200 6 V 1,200 cd/m<sup>2</sup>, 27 cd/A,

4

ITO (copper phthalocyanine)(CuP  
c) 10<sup>-6</sup> Torr 10 nm N,N'- (1- )-N,N'- ( )  
NPD) 10<sup>-6</sup> Torr 50 nm (Iridium tris(phenylpyridine); Irppy<sub>3</sub>) 5 % (CBP)  
( ) (biphenoxy-bi(8-quinolinolato)aluminum; BAQ) 5 nm (8- ) (tris(8-quinolinolato)aluminum; Alq) 8-  
minium; BAQ) 5 nm (8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 20 nm  
(8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 20 nm Al Liq  
300 nm

400 cd/m<sup>2</sup> 1,100 6 V 1,100 cd/m<sup>2</sup>, 26 cd/A,

1

ITO (copper phthalocyanine)(CuP  
e)(CuPc) 10<sup>-6</sup> Torr 10 nm N,N'- (1- )-N,N'- ( )  
(NPD) 10<sup>-6</sup> Torr 50 nm (Iridium tris(phenylpyridine); Irppy<sub>3</sub>) 5 % (CB  
P) ( ) (biphenoxy-bi(8-quinolinolato)aluminum; BAQ) 5 nm (8- ) (tris(8-quinolinolato)aluminum; Alq) 8-  
(8-quinolinolato lithium; Liq) 3:1 10<sup>-6</sup> Torr 20 nm Al Liq

ato)aluminium; BAiq) 5 nm (8- ) (tris(8-quinolinolato  
)aluminium; Alq) 8- (8-quinolinolato lithium; Liq) 1:1 10<sup>-6</sup> Torr  
20 nm Al 300 nm

400 cd/m<sup>2</sup> 550 6 V 800 cd/m<sup>2</sup>, 25 cd/A,

2

ITO (copper phthalocyanine  
) (CuPc) 10<sup>-6</sup> Torr 10 nm N,N'- (1- )-N,N'-  
(NPD) 10<sup>-6</sup> Torr 50 nm . NPD (CBP)  
( ) (Iridium tris(phenylpyridine); Irppy<sub>3</sub>) 5 % 30 nm  
(biphenoxy-bi(8-quinolinolato  
)aluminium; BAiq) 5 nm (8- ) (tris(8-quinolinolato)a  
luminium; Alq) 10<sup>-6</sup> Torr 20 nm Alq  
Liq 3 nm Al Liq 300 nm

400 cd/m<sup>2</sup> 500 6 V 1,000 cd/m<sup>2</sup>, 21 cd/A,

1

[ 1]

|                            | @6v(nit) | (cd/A) | (h)  |
|----------------------------|----------|--------|------|
| Al/Liq/Alq3:Liq/Alq3/ ( 1) | 1000     | 25     | 1000 |
| Al/LiF/Alq3:Liq/Alq3/ ( 2) | 900      | 24     | 900  |
| Al/Liq/Alq3:Liq/ ( 3)      | 1200     | 27     | 1200 |
| Al/LiF/Alq3:Liq/ ( 4)      | 1100     | 26     | 1100 |
| Al/Alq3:Liq/Alq3/ ( 1)     | 1000     | 21     | 500  |
| Al/Liq/Alq3/ ( 2)          | 800      | 25     | 500  |

1 , 1 2 , 1 4 1 20 % 1 4  
1 2 100 %

가 20 % , 80 %

(57)

1.

1 2 , 1 2  
, 2 1 -  
1 - 2

2.

1 ,

3.

1 ,

1

4.

1 ,

-

,

,

1

5.

1 ,

1

10 nm

6.

1 ,

1

0.5 10 nm

7.

1 ,

2

10 nm

8.

1 ,

2

-

75 %

9.

1 4 ,

-

8-

(8- )

, 8-

1

10.

1 ,

11.

1 2 ,

al halide)

2

1

1

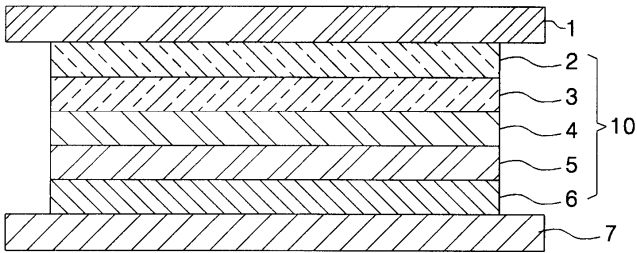
2

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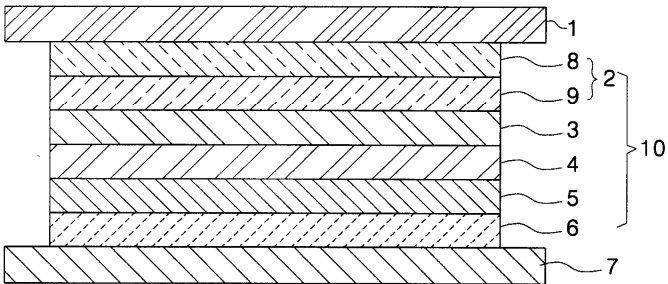
12.

- 11, .
1113. , .
- 111 , 1 .
1114. , 1
- 11- , , 1 .
1115. , 1 10 nm .
1516. , 1 0.5 10 nm .
1117. , 2 10 nm .
1118. , 2 - - 75 % .
1119. , 1 2 - 8- 1 (8-
1120. , .

1



2



|               |                                                                     |         |            |
|---------------|---------------------------------------------------------------------|---------|------------|
| 专利名称(译)       | 有机电致发光显示装置                                                          |         |            |
| 公开(公告)号       | <a href="#">KR1020040090558A</a>                                    | 公开(公告)日 | 2004-10-26 |
| 申请号           | KR1020030024424                                                     | 申请日     | 2003-04-17 |
| 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                                                           |         |            |
| [标]发明人        | LEE JUNYEOB<br>이준엽<br>KWON JANGHYUK<br>권장혁<br>CHOI YONGJOONG<br>최용중 |         |            |
| 发明人           | 이준엽<br>권장혁<br>최용중                                                   |         |            |
| IPC分类号        | H05B33/26 H01L51/50 H01L51/00                                       |         |            |
| CPC分类号        | H01L51/5096 H01L51/5092 H01L51/0081 H01L51/5048                     |         |            |
| 代理人(译)        | PARK, 常树                                                            |         |            |
| 其他公开文献        | KR100560778B1                                                       |         |            |
| 外部链接          | <a href="#">Espacenet</a>                                           |         |            |

#### 摘要(译)

本发明涉及有机电致发光显示装置。并且，通过提供包含有机电致发光显示装置以及亮度和寿命特性的效率提高效果，在发光层和电荷输送层材料中产生包含有机 - 金属配位化合物的第二有机膜。有机电致发光器件和有机 - 金属配合物。

