

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
C09K 11/06(11)
(43)2001 - 0082752
2001 08 30(21) 10 - 2001 - 0008174
(22) 2001 02 19

(30) 2000 - 40925 2000 02 18 (JP)

(71) 가 가
가
5 7 1

(72) 5 7 1 가 가

(74)

:

(54) E L E L

, , , 가 EL (5) ,
2', 3' - 1m] {[f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1',

1

EL , ,

1

EL

2

가

3

4 10 L - V J - V

5 EL

*

*

1.... 2....

3.... 4....

5.... 6....

7....

가 EL (EL) EL , ,

, EL , EL 7a([a]) ,

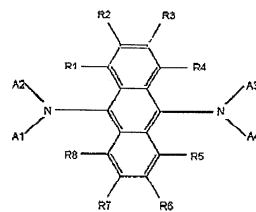
7a(Q)₃ - Al ... [a]

[7a Q , 8 - .]

, 7b([b])

7b

일반식 [b]

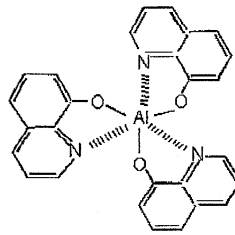


[7b Al - A4 , 6 - 18 . R1 - R8 , .]

1996) EL, C.W. "SID 96", 14.1, pp. 181 - 184(8(4))

8

화합물 4



(8 -) , DCJT
 10 - 72581 , 7b([b]) ,
 .
 , (現狀) EL , ,
 , , ,
 가 가 , 가 ,
 가 가 .

, EL . 5 EL . 5
 EL , (1) ITO() (2) ,
 (3), (4), (5), (6) EL (7) .
 (5) , (7a) , 가
 . , (6) (7a) .

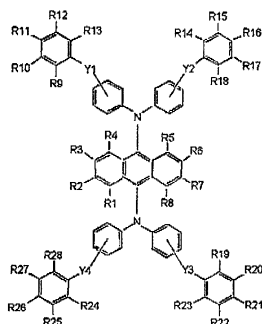
가 가 가 가 가

, (1) - (15) EL EL .

(1) , 1([1]) EL

1

일반식 [1]

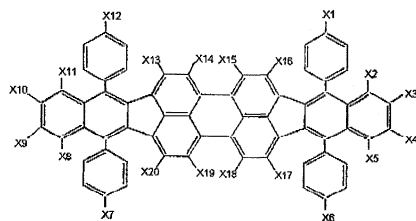


[1 R1 - R28 , , , . Y1 - Y4 , O, S, SO₂, C="O," CH₂O, CH₂OCH₂, . R1 - R4, R5 - R8 , .]

, 2([2])

2

일반식 [2]



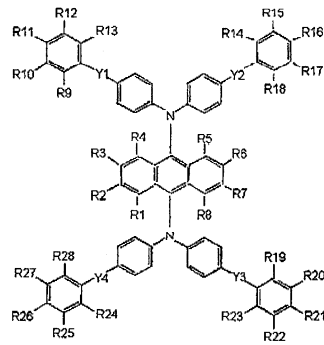
[2 X1 - X20 , , , . X1 - X20 , .]

1 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m] EL .

(2) , 4([4]) EL

4

일반식 [4]



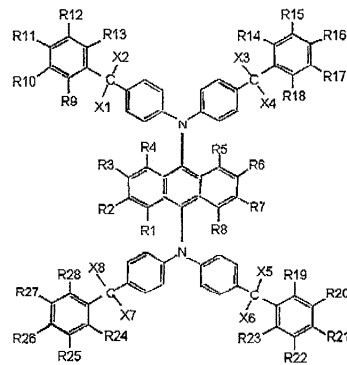
[4 R1 - R28 , , , , Y1 - Y4 , O, S, SO₂, C="O," CH₂O, CH₂OCH₂, R1 - R4, R5 - R8 , .]

1, 2, 3 - cd:1', 2', 3' - 1m] 2 1 {[f,f'] - 4, 4', 7, 7' - 가 } [EL

(3) , 5([5]) EL

5

일반식 [5]



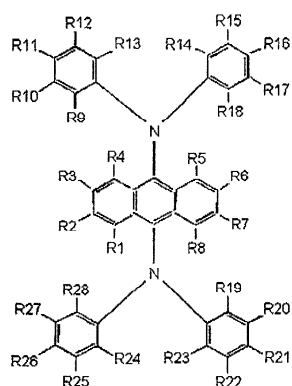
[5 R1 - R28 , , , , X1 - X8 , 1 - 20 , 6 - 16 R1 - R4, R5 - R8 , .]

1, 2, 3 - cd:1', 2', 3' - 1m] 2 1 {[f,f'] - 4, 4', 7, 7' - 가 } [EL

(4) , 6([6]) EL

6

일반식 [6]

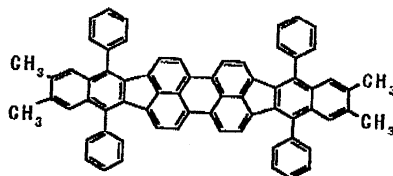

$$[\begin{matrix} & R_1 - R_{28}, \\ , & , \\ , & .R_1 - R_4, R_5 - R_8, \\ & 6 \\ & 5 \end{matrix}]$$

[1, 2, 3 - cd:1', 2', 3' - 1m] 1 { [f,f'] - 4, 4', 7, 7' - } E
 L . 가

(5) $\begin{matrix} 2 \\ 2a \end{matrix} \{ [f, f'] - 4, 4', 7, 7' - \} \quad [1, 2, 3 - cd:1', 2', 3' - 1m] \quad \text{가}$
 $(1) - (4) \quad EL \quad .$

2a

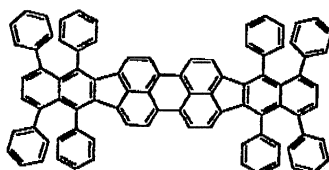
식 [2 a]



(6) $\begin{matrix} 2 \\ 2b \end{matrix} \{ [f, f'] - 4, 4', 7, 7' - \} \quad [1, 2, 3 - cd:1', 2', 3' - 1m] \quad \text{가}$
 $(1) - (4) \quad EL \quad .$

2b

식 [2 b]

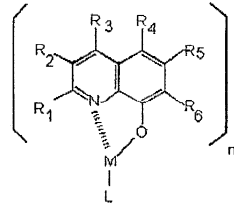


(7) 1, 4, 5 6 , 2 { [f,f'] - 4, 4', 7, 7' -
 } [1, 2, 3 - cd:1', 2', 3' - 1m] 가 , 1 - 10% (
 1) - (6) EL .

(8) , 3([3])

3

일반식 [3]



[3 M . R1 - R6 , , , ,
 , , , , , , ,
 , . L , , , , , ,
 , . n 1 2 , .]

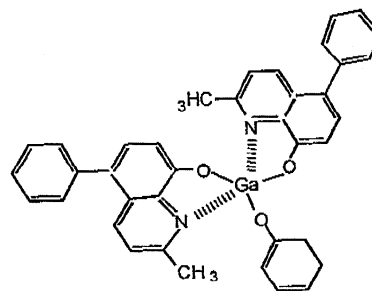
(1) - (7) EL .

(9) 3 R4가 (8) EL .

(10) 3 가 3a (9) EL .

3a

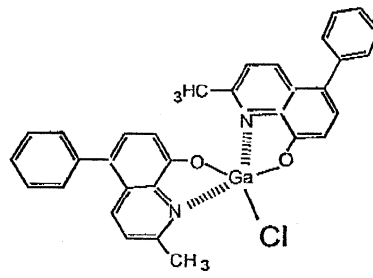
식 [3 a]



(11) 3 가 3b (9) EL .

3b

식 [3 b]



(12) , 3
(8) - (11) EL .

(13) , 3a 3b
(12) EL .

(14) , 7a

(7a)

(Q)₃ - Al ... [a]

[7a Q , 8 - .]

(1) - (13) EL .

(15) (1) - (14) EL EL .

, 1, 4, 5, 6 , 2
 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m] ,
 () , (濃度消光)
 , , 가 EL .

, { [f,f'] - 4, 4', 7, 7' -
 } [1, 2, 3 - cd:1', 2', 3' - 1m] ,
 .

, 3 ,
 . , 1 ,
 가 , ()가 , 가 ,
 2 ,
 ,

EL (7) (2) (3), (4), (5), (6) EL (1) ITO() (3)

{[f,f'] - 4, 4', 7, 7' - } (5) [1, 2, 3 - cd:1', 2', 3' - 1m] 2
 {[f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m]
 1 - 10%

1
 (fluoranthene) 2 / [k]

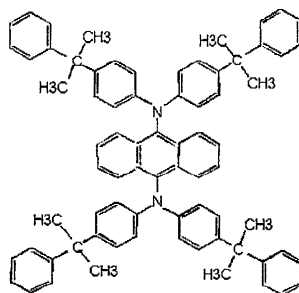
(6) 3
 3 L
 2 - -8- 2 , L 3 8 -
 1 ,

(1)

EL (5) 9(1)

9

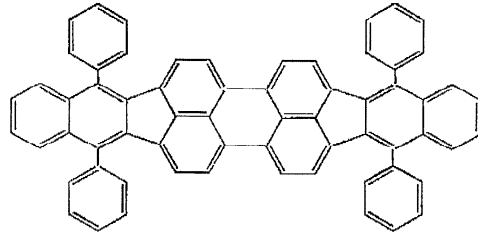
화합물1



, 10(2)

10

화합물 2

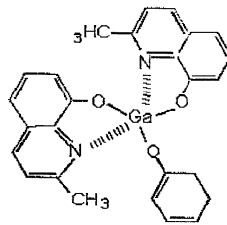


2.5% (6) , 11(

3)

11

화합물 3



, 6cd/A (1,000cd/m²), 38,000cd/m²
가
(V) 2 , 가 CIE X Y 가 X ,
가 가 가
, 5mA/cm² 가
3 (Hr) ,
, 3,000 90%
()

(1)

10 - 72581 , 9(1)
1% 가 , 1 41m/W, 38,000cd/m²
, 3mA/cm² , 1,000 ,

(2)

10 - 330295 , 10(2)

, 15V 가 1,250cd/m² . , 4,4' - [N - - N - (1" -
)] , 2 가 5% 가 , 15V 가
 가 2,650cd/m² . , 가

(3)

11 - 233261 , 8(4) (8 - (8 - quinolinolato)
 , 2 8% 가 , 가 9.7V 52cd/m²
 . 2,700 가 , 30cd/m² .
 , 가 , .

(4)

10 - 88121 , 3
 11(3) , 8V 1,500cd/m²,
 2,351m/W , 3 .
 , , , .

(5)

2828821 , , , 16V 가 (2 - - 8 -
) 4 . , 가 850cd/m²
 , 가 , .

(2)

(6) , 8(4) (8 -) , 1
 EL EL (2) (7) 가 ,
 5cd/A (1,000cd/m²), 35,000cd/m² .

(3)

(5) , 9(1) , 2b { [f,f'] [1, 2, 3 -
 cd:1', 2', 3' - 1m] , 1 EL
 EL (2) (7) 가 , 5cd/A (1,000cd/m²), 33,000cd/
 m² .

(4)

EL , (5) 9(1) , 2b
 2.5% . (6) 가 , 3a
 EL (2) (7) 6.8cd/A (1,000cd/m²),
 45,000cd/m² .

(5)

(6) , 3a 3b , 4
 EL . 3a : 3b
 9 : 1 . EL (2) (7) 가 , 6.6cd/A (1,0
 00cd/m²), 43,000cd/m² .
 (6)

(6) , 11(3) , 4
 EL . EL (2) (7) 가 , 6cd/A (1,0
 00cd/m²), 38,000cd/m² .
 (7)

EL , (5) 9(1) , 2a
 2.5% . (6) , 3a
 . EL (2) (7) 가 , 6.5cd/A (1,000cd/m²),
 42,000cd/m² .
 (8)

(6) , 3a 3b , 7
 EL . 3a : 3b
 9 : 1 . EL (2) (7) 가 , 6.4cd/A (1,000
 cd/m²), 41,000cd/m² .
 (9)

(6) , 11(3) , 7
 EL . EL (2) (7) 가 , 5.
 8cd/A (1,000cd/m²), 37,000cd/m² .
 1,4 - 8 EL 1 .

[1]

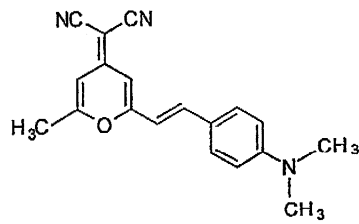
	실온수명*1 (시간)	100cd/m ² 시 효율 (cd/A)	최고휘도 (cd/m ²)	85°C수명*1 (시간)	색도@100cd/m ²
실시예 1	10000	6	38000	500	(0.62, 0.38)
실시예 4	15000	6.8	45000	1900	(0.63, 0.36)
실시예 5	16000	6.6	43000	2000 이상	(0.63, 0.37)
실시예 6	10000	6	38000	700	(0.63, 0.37)
실시예 7	12000 이상	6.5	42000	1600	(0.62, 0.37)
실시예 8	12000 이상	6.4	41000	2000 이상	(0.62, 0.37)
실시예 9	10000	5.8	37000	600	(0.62, 0.38)

*1: 초기 200cd/m²

EL, (5) 9(1), 2
2.5% (6), 3a

4, 10 L - V J - V
5) 8(4) (8 -) 5 (DCM)
(6) 8(4) (8 -)
4, 10 가 가

화합물5



- 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m] {[f,f']
()
가
가
{[f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m]

1 2
{[f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m]
2 {[f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m]
2 가 1 - 10%
]

EL 가 EL

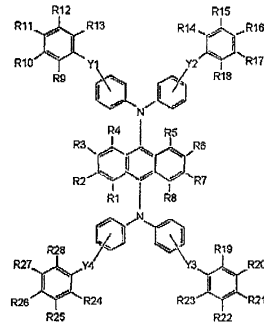
(57)

1.

EL

(1)

일반식 [1]

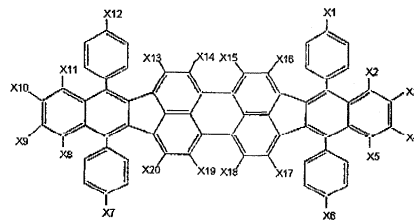


[1 R1 - R28 , , , . Y1 - Y4 , O, S, SO₂, C="O," CH₂O, CH₂OCH₂, . R1 - R4, R5 - R8 , 5 6 .]

2

(2)

일반식 [2]



[2 X1 - X20 , , , . X1 - X20 , 5 6 .]

1 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m] 가 EL .

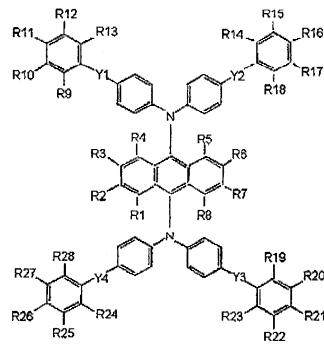
2.

EL

, 4

(4)

일반식 [4]

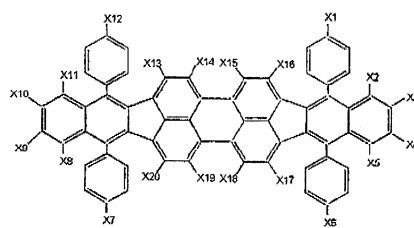


[4 R1 - R28 , , , , Y1 - Y4 , O, S, SO₂, C="O," CH₂O, CH₂OCH₂, R1 - R4, R5 - R8 , .]

2

(2)

일반식 [2]



[2 X1 - X20 , , , , X1 - X20 , , 5 6 .]

1 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m] EL .

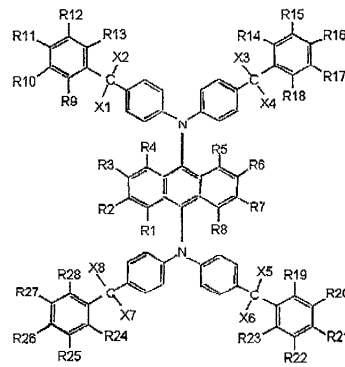
3.

EL

5

(5)

일반식 [5]

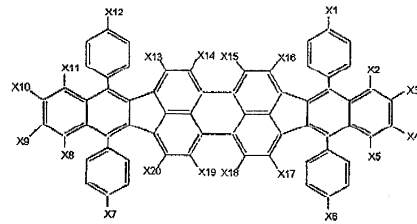


[5 R1 - R28 , , , , X1 - X8 ,
1 - 20 , 6 - 16 , R1 - R4, R5 - R8 ,
5 6 .]

, 2

(2)

일반식 [2]



[2 X1 - X20 , , , X1 - X20 ,
, 5 6 .]

1 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m]
가 EL .

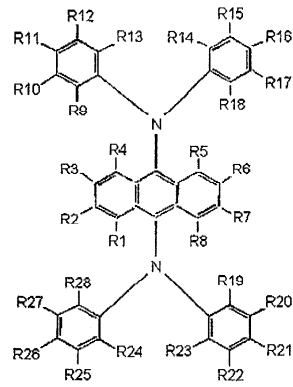
4.

EL

, 6 ,

(6)

일반식 [6]

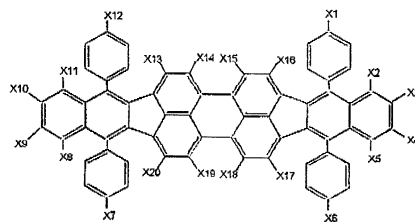


[6 R1 - R28 , , , , R1 - R4, R5 - R8 ,
5 6 .]

2

(2)

일반식 [2]



[2 X1 - X20 , , , X1 - X20 ,
5 6 .]

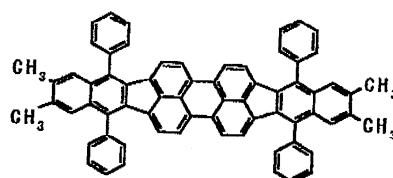
1 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - cd:1', 2', 3' - 1m]
가 EL .

5.

1 4 , 2 { [f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - c
d:1', 2', 3' - 1m] 가 2a EL .

(2a)

식 [2 a]

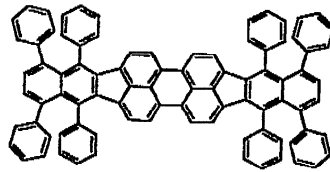


6.

1 4
d:1', 2', 3' - 1m] 가 2b {[f,f'] - 4, 4', 7, 7' - } [1, 2, 3 - c
EL .

(2b)

식 [2 b]



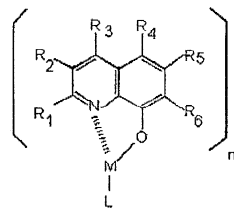
7.

1 6
2 {[f,f'] - 4, 4', 7, 7' - } 1, 4, 5 6
1 - 10% EL [1, 2, 3 - cd:1', 2', 3' - 1m] 가 ,

8.

1 7 , 3
(3)

일반식 [3]



[3 M . R1 - R6 , , , , ,
, , . L , , , , ,
, . n 1 2 .]

EL .

9.

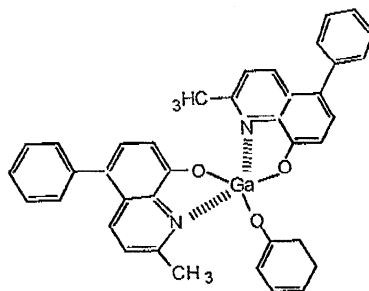
8, 3, R4가 EL.

10.

9, 3가 3a EL.

(3a)

식 [3 a]

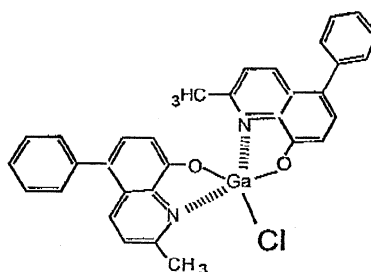


11.

9, 3가 3b EL.

(3b)

식 [3 b]



12.

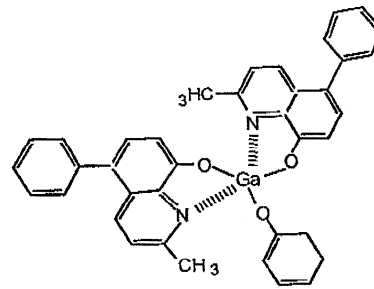
8 11, 3 EL.

13.

12, 3a 3b EL.

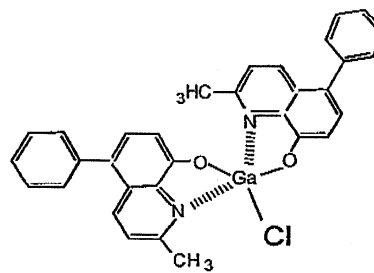
(3a)

식 [3 a]



(3b)

식 [3 b]



14.

1 13

, 7a

(7a)

(Q)₃ - Al ... [a]

[7a Q , 8 - .]

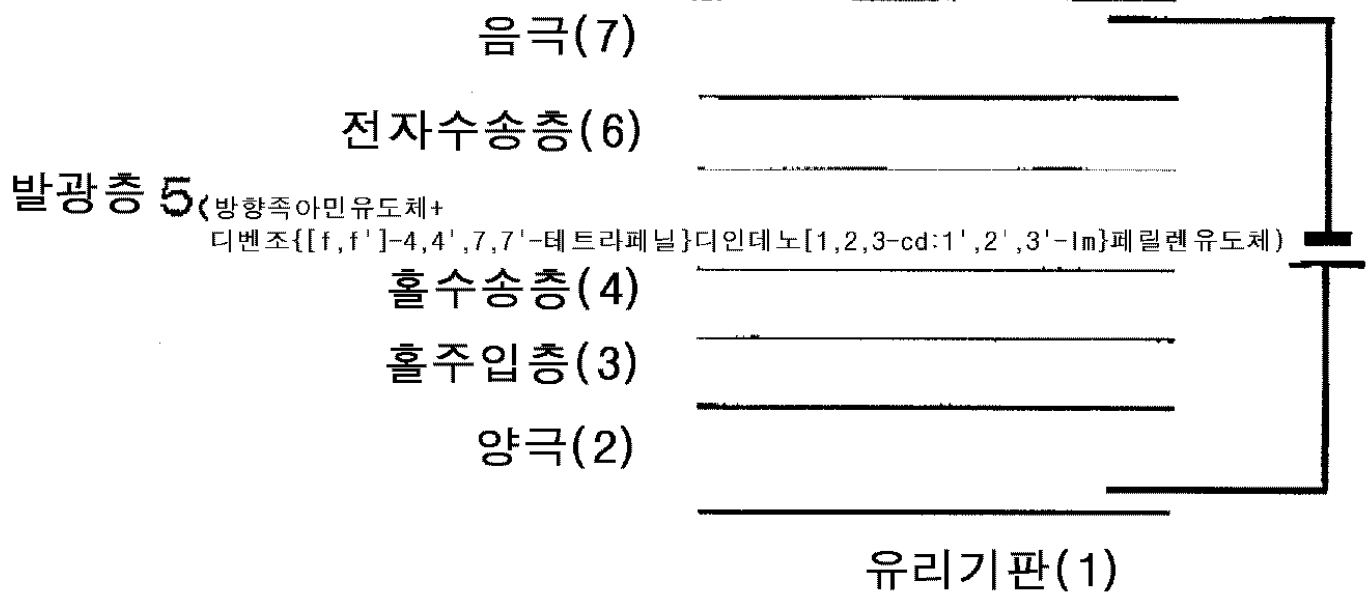
EL .

15.

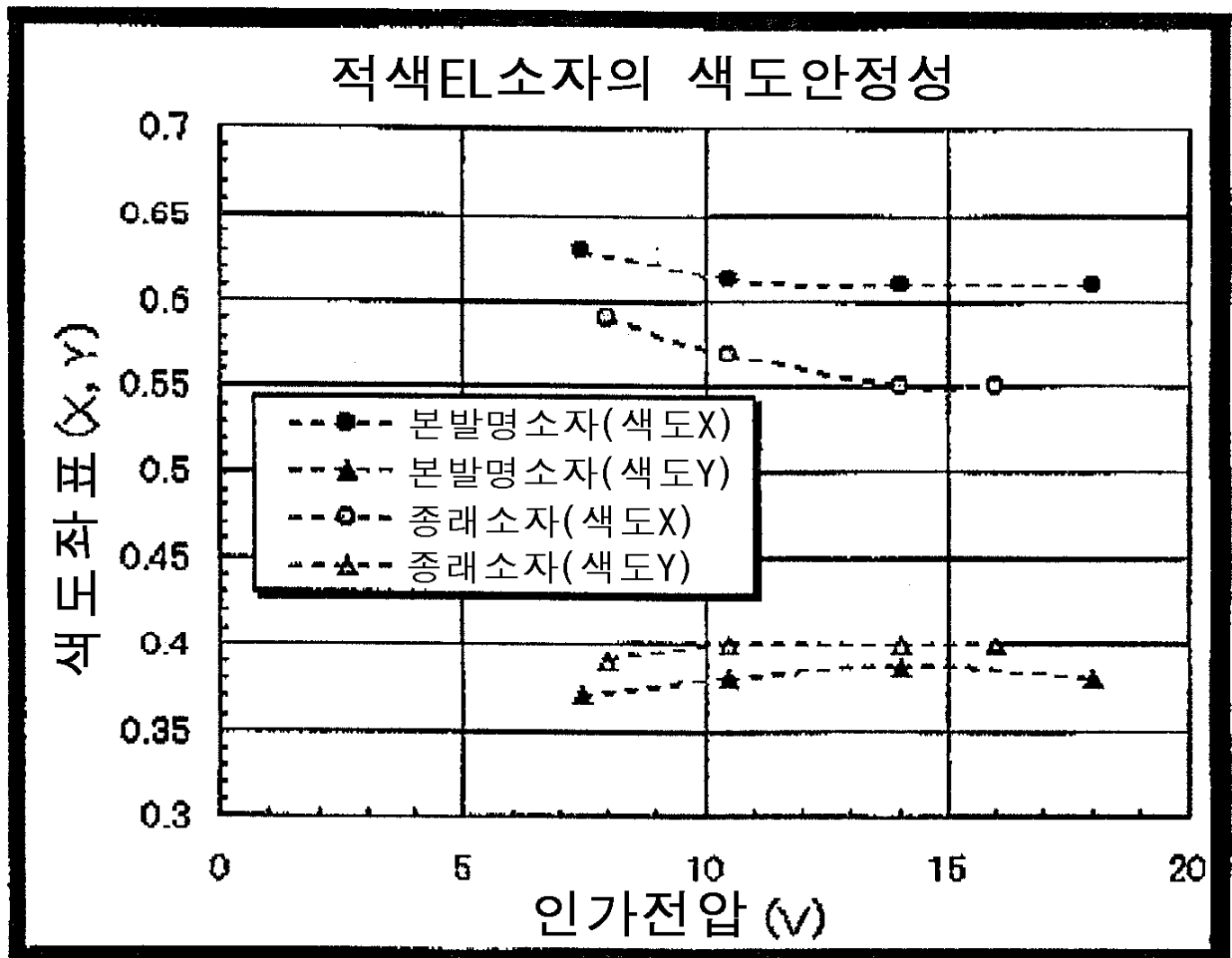
1 14

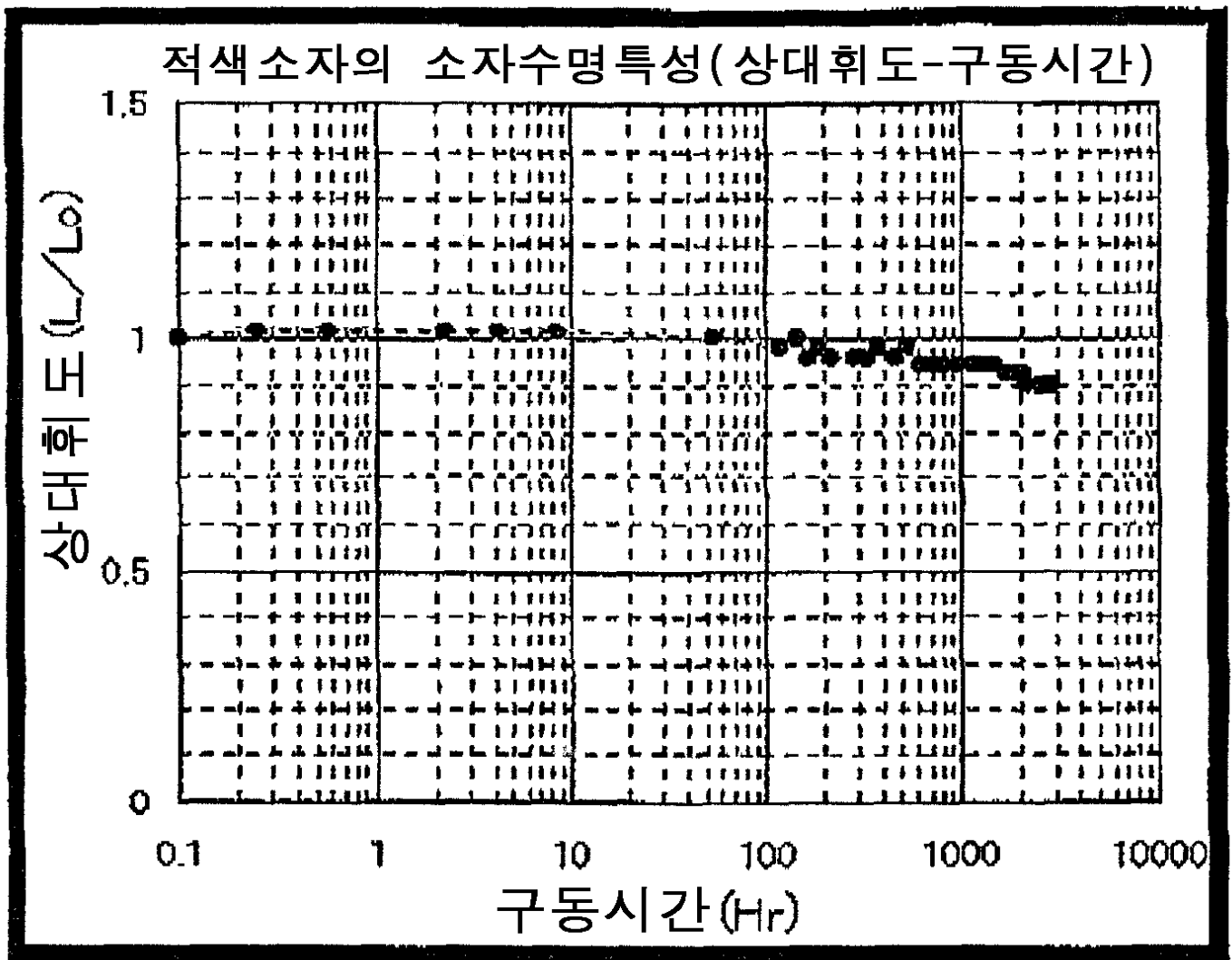
EL EL .

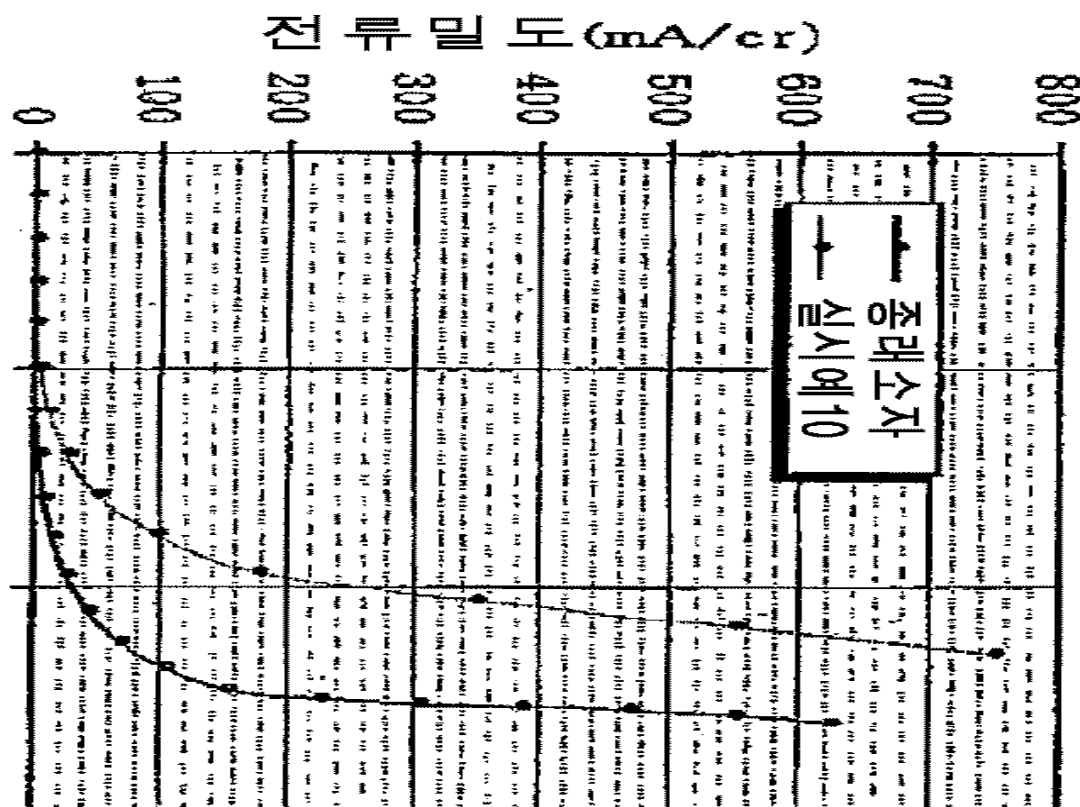
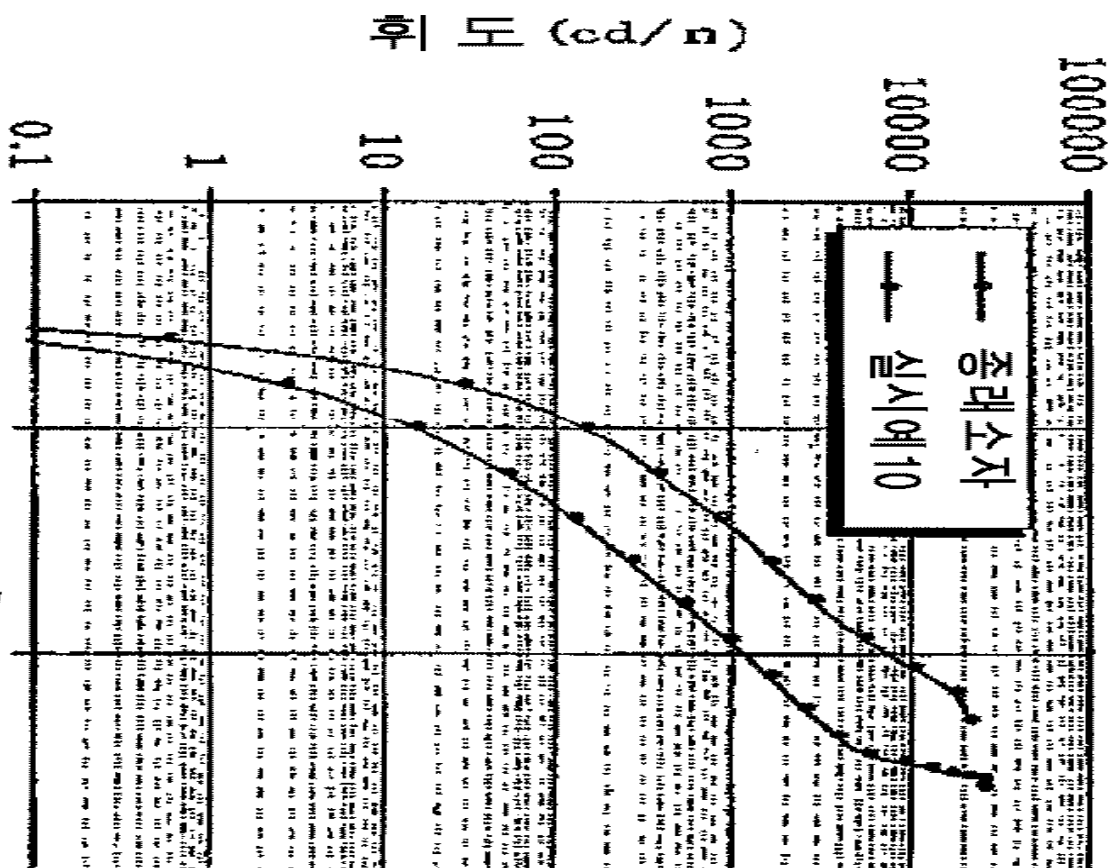
1

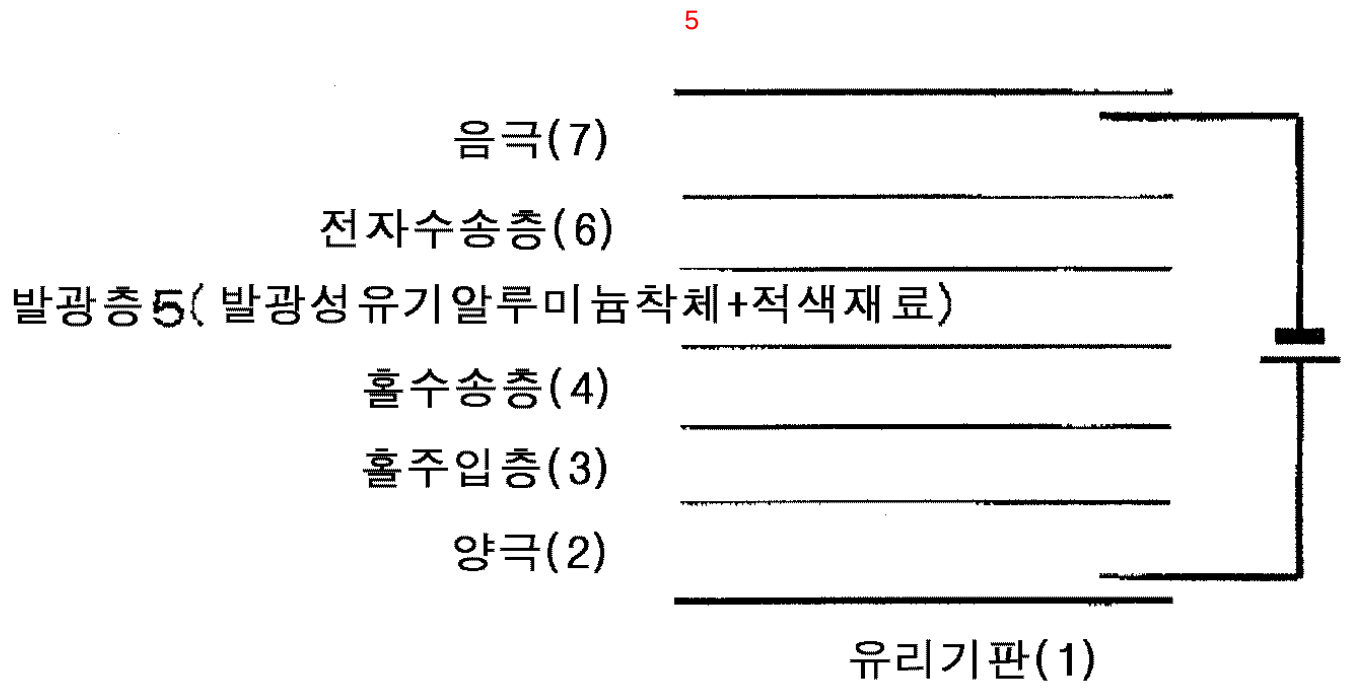


2







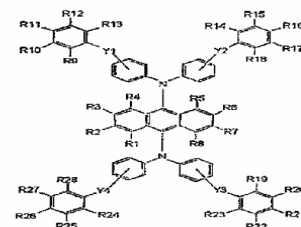


专利名称(译)	有机EL器件和有机EL显示器		
公开(公告)号	KR1020010082752A	公开(公告)日	2001-08-30
申请号	KR1020010008174	申请日	2001-02-19
申请(专利权)人(译)	三星SD眼有限公司		
当前申请(专利权)人(译)	三星SD眼有限公司		
[标]发明人	MOTOMATSU TOSHIHIKO 모토마쓰도시히코 SAKAGUCHI YOSHIKAZU 사카구치요시카즈		
发明人	모토마쓰도시히코 사카구치요시카즈		
IPC分类号	H01L51/00 H01L51/30 H01L51/50 C09K11/06 H01L51/05		
CPC分类号	H01L51/5012 C09K11/06 H01L51/006 H01L51/0056 H01L51/0081		
代理人(译)	PARK , 常树		
优先权	2000040925 2000-02-18 JP		
外部链接	Espacenet		

摘要(译)

与传统相比，它具有优异的发光效率。提供亮度和颜色优异的红牛奶电致发光电池。将4-，7,7-四苯基-二茚并[1,2,3-cd：1,2,3-，2,3-，3-1m] per衍生物混合使用。有机电致发光显示器，红光发射和芳族胺衍生物。

일반식 [1]



일반식 [2]

