

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl.⁷
H05B 33/22

(11)
(43)

10-2005-0013918
2005 02 05

(21)

10-2004-0033224

(22)

2004 05 11

(30)

JP - P - 2003 - 00282202 2003 07 29

(JP)

(71)

575

(72)

5 7-1 가 가

5 7-1 가 가

5 7-1 가 가

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5 7-1 가 가

5 7-1 가 가

(74)

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(54)

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가

가

가

가 ,

가

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1 2 ,
 3 7 ,
 8 11 ,
 12 ,
 13 ,
 14 ,
 15 16
 17 18 .
 19 21 .
 ()
 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 100, 101, 600 :
 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 200, 201, 650 :
 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 300, 301, 651 :
 40: 41 : (L)
 42 : 50 :
 60 : 61 :
 62 : 70 :
 71 : 72 :
 73, 74, 75 : 80 :
 81 : 82 :
 83 : 84 :
 90 : 91 :
 500, 501 : 510 :
 520 : 530 :
 540 :

,
 ,
 (EL) 가 ,
 . C.W.Tang
 (C.W.Tang, S.A.VanSlyke,
 (Applied Physics Letters), 5
 1 , 913 , 1987) 가 (8-)
 . Tang
 ,
 (block)
 ,
 ,
) , , () 3 , () 2 , ()
 , 가 ,
 ,
 25%
 ,
 ,
 1.6 20%
 5%
 (筒井哲夫「」: , Vol.1, No.3, p11,
 1995 9).
 ,
 가 (1-220394) (63-314795) ,
 가 (62-172691)
 ,
 2002-260844 가,
 (2)
).
 , 2002-260866 가 , ,
 , 0026: 1). (1,
 , 2002-260845 , , 1
 1 ,
 ,
 8). (

가 μm 가 , 가 가 .

가 , 가 .

가 , .

() 가 .

2002-260844 , .

2002-260866 가 가 ,

가 .

2002-260845
2002-260845
(10 0032 10), 가 ,

가 가 .

가 .

/

() .

, 가 가 가

가 가 .

가 , 가 가 (L)

(W) 1 .

$W/L = \tan(\arcsin(n_1/n_2))$

(1 , n_1 , n_2 .)

(分節) , , 가 1

가 1

가 (W) 100nm 가 200 μ m 가 1 가 1

30nm 가 25 μ m 가 , 가 가

1 가 (10) 가 (20) 가

3 7 3 7 (22 26) (32 36)가

(10) 가 (10) 가 400 800nm

(PES), (PET),

() , 1 ()

(10) , (20)가 1, 2, ()

(20, 21, 27, 28, 29, 201, 202) , (30, 31, 37, 38, 39, 301, 302) (2

(20, 21, 27, 28, 29, 201, 202) (10) ()

0, 21, 27, 28, 29, 201, 202) ()

(20) 400 800nm (20)

(30) (10) ()

가 (가)가 ()

() , 가 ()

() () () (30)

(20) (30)가 ()

(20) (30)가 ()

(20) 130nm 25 μ m

100nm 20 μ m 110nm

10 μ m

가

(22) 4 5 (25, 26) 30%가

0.5 60%가

가 1

(22, 25)가

(22)가

(25)가

1 (: (), : () 1 () 3, 6 7

130nm 25 μ m

100nm 20 μ m 100nm 10 μ m

8 (27) (12) (28) (13) 9

(50) 가 10 (40) (40) 100nm

(51) (15) (200) (15)

(15) (51) (15) (c) : $c = \arcsin(n1/n2)$; 41) "L" ;

42) "W" 1 W/L $\tan(\arcsin(n1/n2))$; "W" 8 (37, 38)

9 "L" (27, 28)

(10, 12, 13) () 1, 8 9 (20, 27, 28)

가

가

()

12, (72) () . (72) .

13 2 가 , 2 .
 (d) “ ”, (74) 2
 , d=(/2)/[sin(/2)]가 . d 180° d
 /2가 , =488nm , d 244nm
 244nm .
 2 , d , , , , ,
 , 가
 e-Ne , Ar , Kr , YAG , YAG (倍波), YAG 3 , , H
 , Cu , He-Cd , N₂ .

14 (74) , 가 15 (90)
 , , 가
 , (90) (91)
 , CVD , (90)
 (91) CMP) , 16 (91) , (91)
 (91) (91) SiO₂ / (91)
 , SiO₂ /TiO₂ / () . , (90)
 가 (91) , 가 .

520, 500, 501) (510, 530, 540) 1 2 , 17 18 ()
 / / , / / / , /
 / / , / / / / . ,
 , .

, N-N'- -N-N'- (3-)-1-1'- , -4-4'- , N-N' (P-) -N-N- (1-)-1,1'-
 -)-4-4'- .

-(4-t- }-1,3,4- }-m- , 2-(4-)-5-(4-t-)-1,3,4- , {2
 ,

, (2-247278 , 5-17765), ,
 (68-264692), (8-298
 186 , 9-268284) (9-157643 , 9-268283
 , 10-72581), (5-70773) .

, 4.5eV
 , (ITO), (NESA), , , ,
 , 가 가

(passive) (TFT)

가 (MBE)

19 20

19 20 (600) (650) (651)가 (600) (19). (651)가

(600) (650), (651) (600)

(601) (601) (602), (602)

(620) (603), (602) n p (604), (604) 1 (607b) (607a) (607b) (603) (606a, 606b) (621) , (62

(605), 1 (605) (607b) 1 (605) (621)

02) 1 (605) (607b) (621)

2) 1 (605) 2 (608) 1 2 (608) (607a) (610

) 1 (609) 1 (609) (609) (611)

(611) (610) 2 (612)

, ITO 1 (609) (600) (605, 608

(601), (603), 1 2

(650) (651) (650) (651) 2

(608) (21)

가

(TOPCON BM -5A) 0.1

()

(1.457) 4000

, Hg-Xe (:250nm) 1.0 μ m, 0.75 μ m ,

0.25 μ m 1 90 °

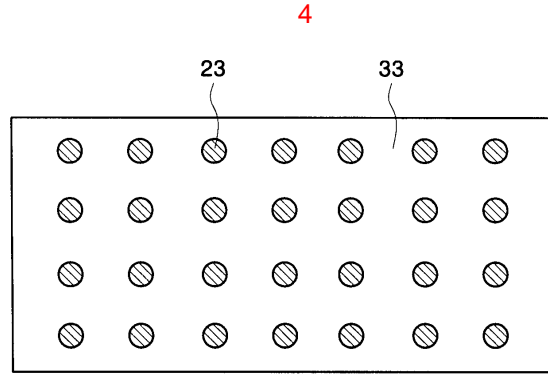
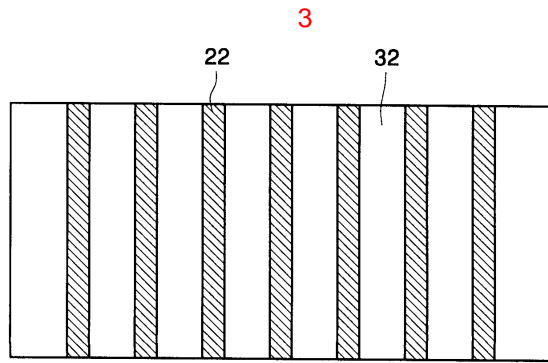
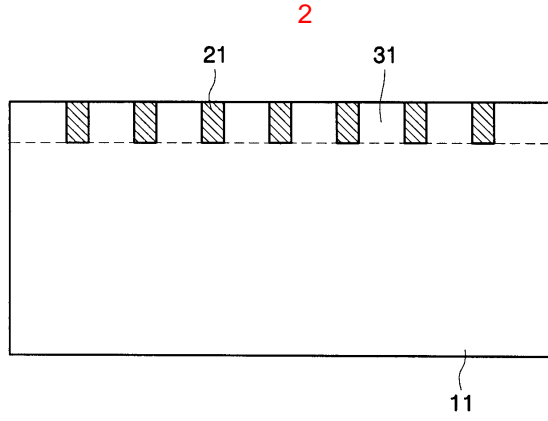
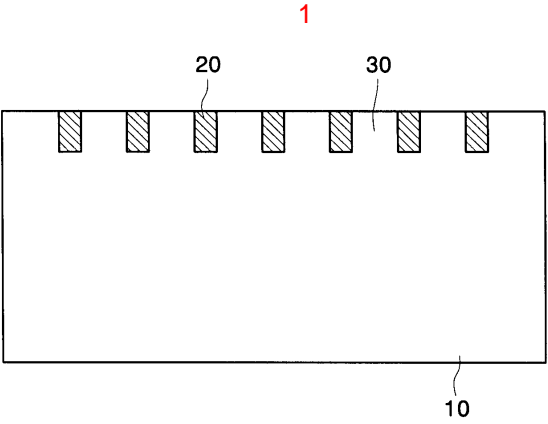
SEM 가 (RIE10NR) 가 , CF₄ (4Pa, 20SCCM)

100W 2080 10000

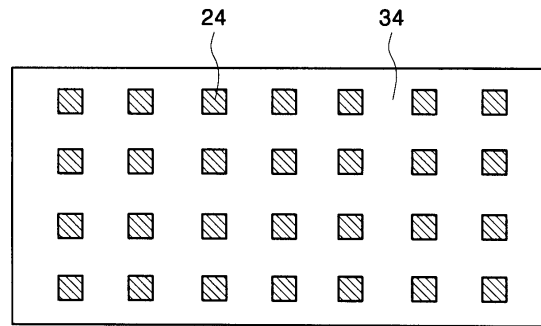
, TiO₂ 가 , TiO₂ ,
 , CMP (Chemical-mechanical polishing) , Ra=2nm TiO₂ / TiO₂ ,
 ITO 20 / ITO
 100nm
 , ITO 2 , N,N' - (3-) -
 N,N' - - [1,1' -] - 4,4' - 50nm , (8-
) 70nm , - 9:1 (
) 150nm 4mm²
 .
 5mA/cm² 가 , 275cd/m² . 1 EL
 .
 5mA/cm² 가 , 190cd/m² .
 (2)
 (1.457) 4000
 , 2 , Ar (:488nm) , . 2
 2 , 31 가
 (:100mA/cm² , 15) . 1 90 °
 ,
 475nm , AZ300MIF() , . SEM ,
 가 (RIE - 10NR) 3 1 .
 4Pa, 20SCCM) , 100W . 1040 가 CF₄ (5000
 , TiO₂ , , CM
 P 1 TiO₂ , TiO₂ Ra=2nm , TiO₂ /
 TiO₂ ITO 100nm ITO 20 /
 . ITO
 , ITO 2 , N,N' - (3-) - N,N' -
 - [1,1' -] - 4,4' - 50nm , (8-
) 70nm , - 9:1
 150nm 4mm²
 5mA/cm² 가 , 250cd/m² .
 , 가 ,
 가

(57)

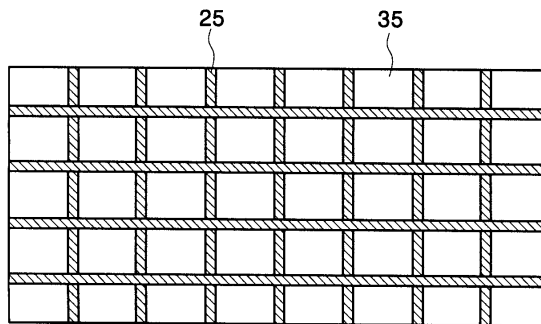
1.



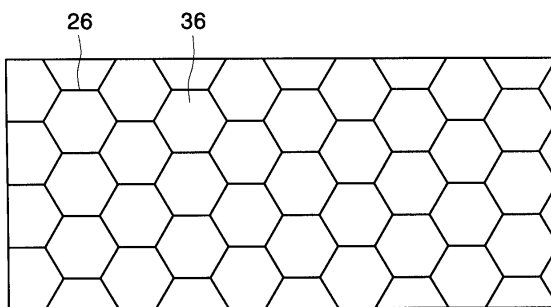
5



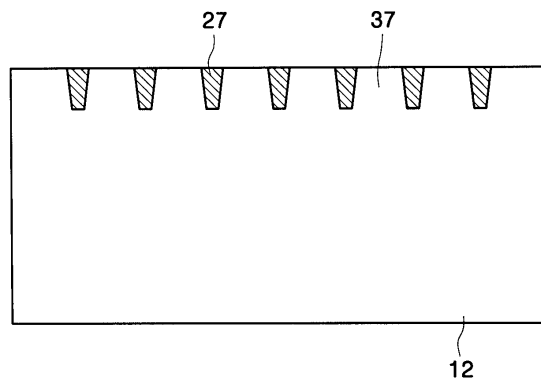
6



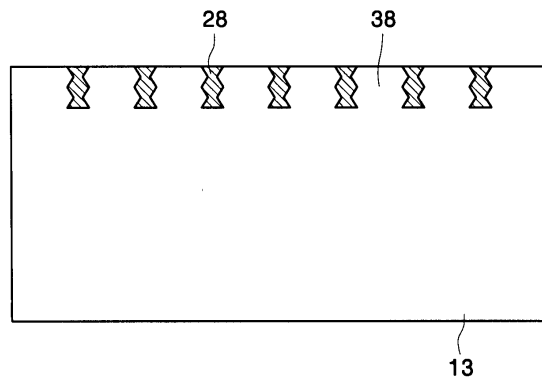
7



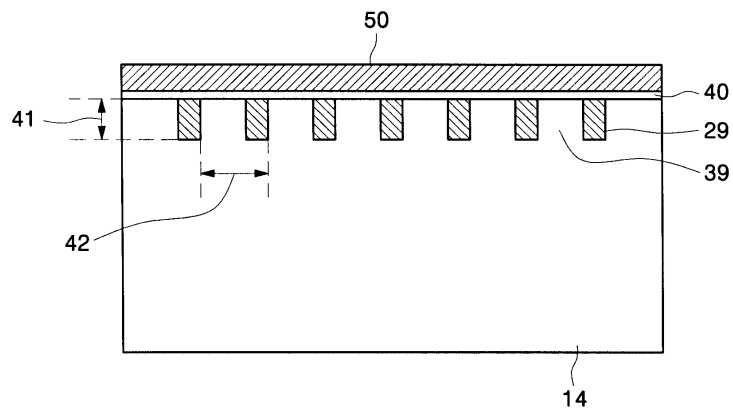
8



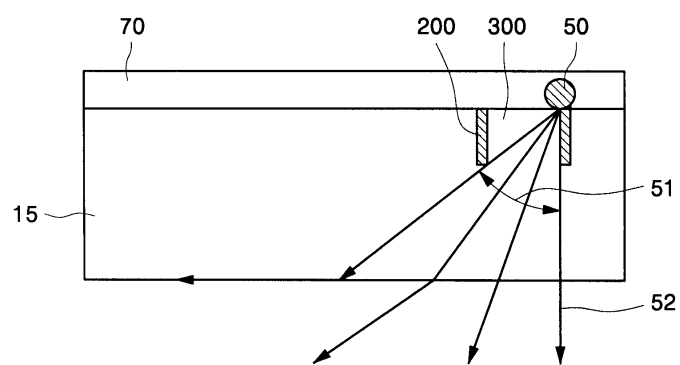
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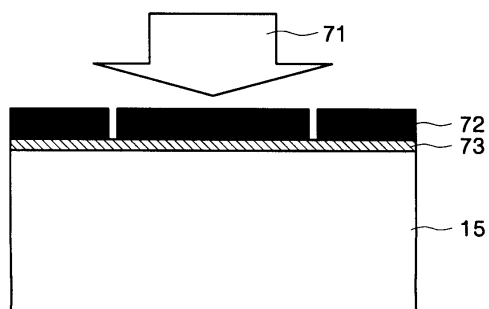
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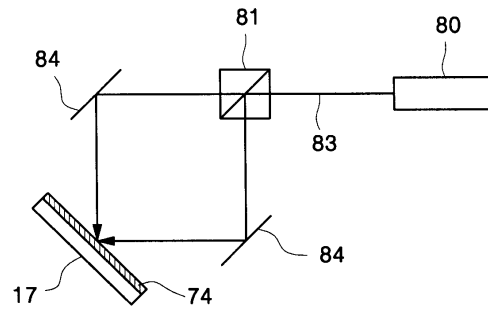
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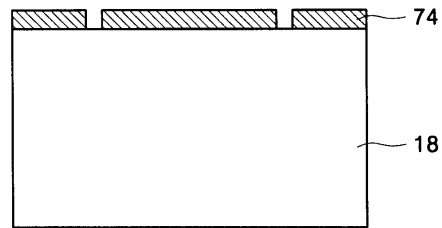
12



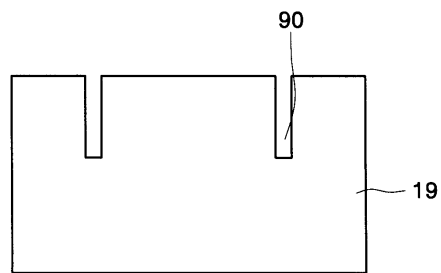
13



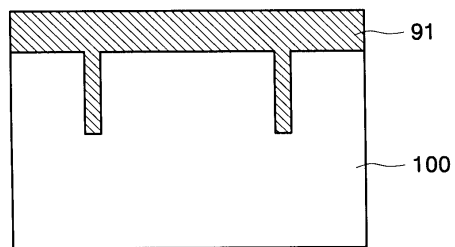
14



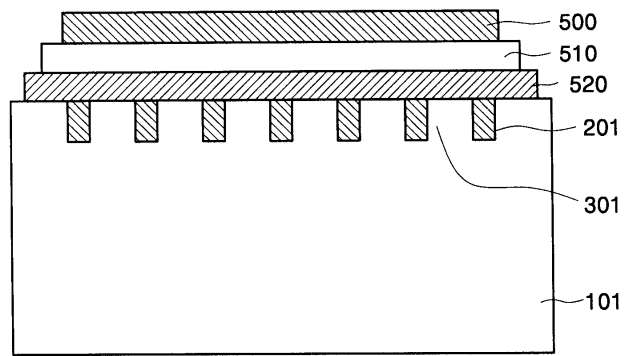
15



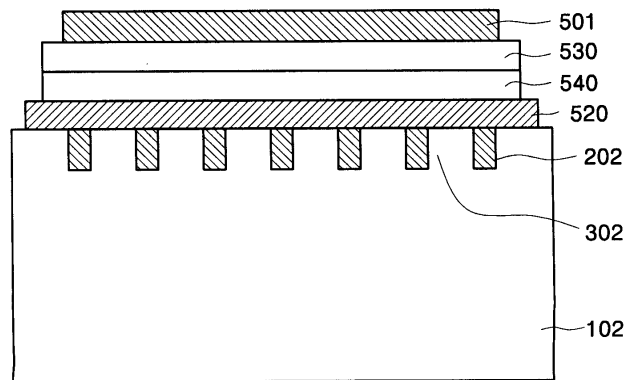
16



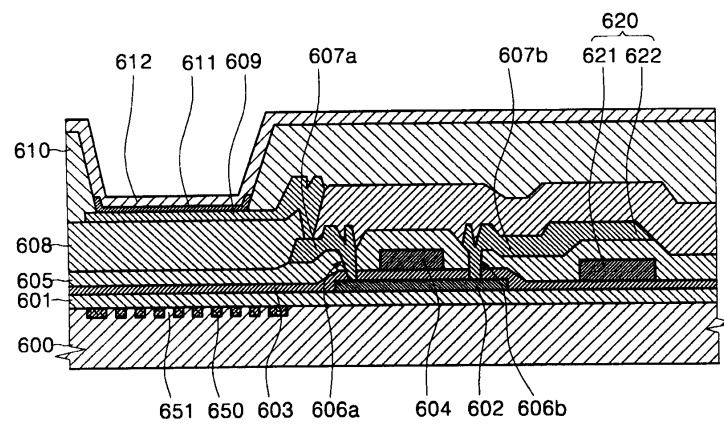
17



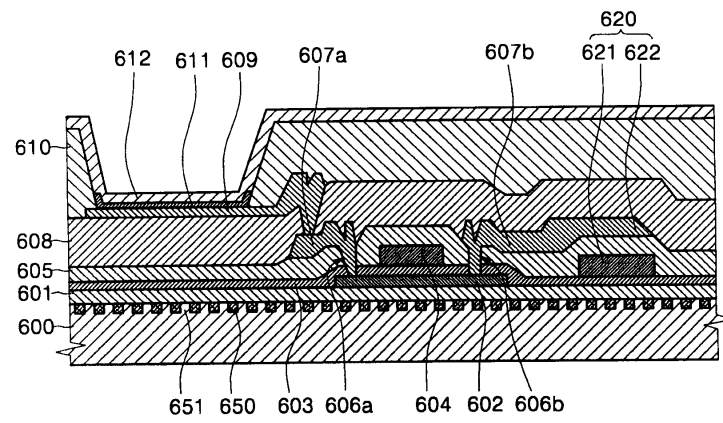
18



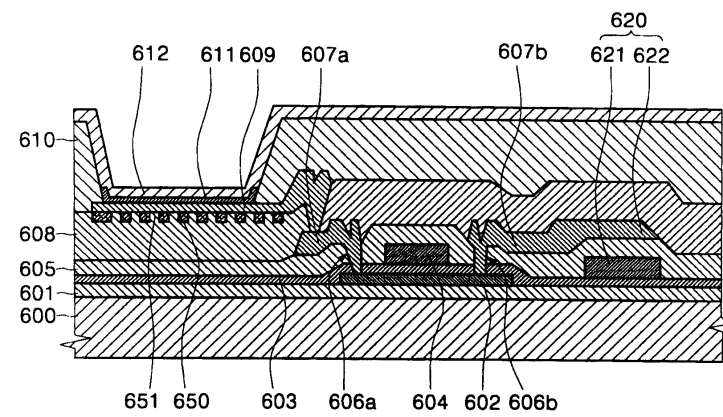
19



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21



专利名称(译)	用于光学元件，有机电致发光元件和有机电致发光显示器的基板		
公开(公告)号	KR1020050013918A	公开(公告)日	2005-02-05
申请号	KR1020040033224	申请日	2004-05-11
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	GOTOH TOMOHISA 고토토모히사 TOGUCHI SATORU 토구찌사토루 KAMIJO ATSUSHI 카미조아쯔시 OHNISHI YASUHARU 오니시아스하루 ISHIKAWA HITOSHI 이시카와히토시 YAMANARI JUNICHI 야마나리주니찌		
发明人	고토토모히사 토구찌사토루 카미조아쯔시 오니시아스하루 이시카와히토시 야마나리주니찌		
IPC分类号	H05B33/02 H01J63/04 H01L51/50 H01L51/00 H05B33/22 H05B33/12 H01J1/62 H05B33/14 G09F9/30 H01L51/52 H01L27/32 H01L33/00		
CPC分类号	H01L51/5262 H01L27/3244 H01L51/5268 H01L51/0096 Y02E10/50 Y02E10/549		
代理人(译)	PARK, 常树		
优先权	2003282202 2003-07-29 JP		
其他公开文献	KR100623685B1		
外部链接	Espacenet		

摘要(译)

本发明使用具有用于散射可见光的光散射部分的光学元件基板和用于透射可见光的透光基板中的可见光的透光开口部分，作为有机电致发光元件的光输出基板。结果，提高了向基板外部的光提取效率，并且可以获得具有高亮度和高亮度的有机EL器件，以提高有机电致发光器件的光提取效率。从而提供一种设备。 1 指数方面 有机电致发光元件，光提取效率，光散射部分，光 -

