

(19) (KR)
(12) (A)

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(21) 10-2003-0021644
(22) 2003 04 07

(71) 416

(72) 1 112-508
108 303
102 504
9 905 1601
() 110 302
3 60-47

(74) :

(54)

4- 가 . , 1 4
1 , 2
3 , 4
가 , ,

2
4- , , , , ,

1a 1c

2 1 ,

3a 3c 4-

$$4 \quad 2 \quad ,$$

5 3 ,

6 4 ,

<
>

20, 22, 24, 46 : 36 :

30, 32, 34 : 40, 42, 44 :

112 : 114 :

116 : 120 :

125 : 127 :

130 : 135 :

145, 245, 345, 445 : 150, 250, 350, 450 :

360, 460 : 16R, 26R :

16G, 26G : 16B, 26B :

170, 370 : 280, 480 :

270, 470 :

4 -

(OELD; Organic Electro-Luminescent Display),
(AMOELD; Active Matrix Organic Electro-Luminescent Display) ITO

가
가
가
가
(Full Color)
3가 (20, 22, 24) 1a RGB
(10) RGB 3- (10) (36) (30, 32, 34)
1b (10) (10) (46) RGB
1c (40, 42, 44)

R, G, B

가 , EL 가

4-

가
1 4 ; 1 ;
; 2 ; 3
; 4

가

2 1

2 가 (105) (110) (105)

(110)
(110)

(110)

가
(SiOxNy

, x y)

(110) (112), (114), (116) (116)
 (120), (120), (120) (125), (125) (116)
 (127) (112) (116) 1 (127), 1
 (135) (130), 1 (127)
 (125)
 (130) 1 (135) 1
 2
 (125)
 (125)
 (130) , 1
 (127) 2 (140) (145) (135) , 1
 2 (140) (142)
 (135)
 (145) (150)
 (150) (150) (145) R R
 (16R), G G (16G), B B (16B) W W
 (16W) R (16R), G (16G), B (16B) W
 16W) (16R, 16G, 16B, 16W)
 (145)
 (170) R, G, B, W (16R, 16G, 16B, 16W) R,
 G, B, W (16R, 16G, 16B, 16W)
 R, G, B, W (170) (Mg), (Li), (Ca)
 R, G, B, W 가 ,
 1 R, G, B
 W
 1 R, G, B, W (105)
 R, G, B, W 2
 4- 3a 3c
 3a , 4- (R, G, B, W)
 RGB 3 RGB 가

RGBW ,
 RGBW
 3b , , , , (R, G, B, W) 2*2
 3c , , , , (R, G, B, W) (R1, R2)
 (G1, G2) 2 , 1 2*3
 2 2*3
 (R1, R2, G,1 G2)
 4 2 ,
 4 , (205) (210) (210)
 가 , (212), (214), (216)
 , (212) (216)
 220), (220) (225), (225) (220) (216)
 (212) (216) 1 (227), 1 (227)
 (235) (230), , 1 (227)
 (227) 2 (230) , (235) , 1
 (240) (240)
 (245) , (242) 2 (240)
 (235)
 (245) (250)
 (250) , (250) (245) R R
 (26R), G G (26G), B B (26B) W W
 (26W) R (26R), G (26G), B (26B) W
 26W) (26B)
 (270) R, G, B, W (26R, 26G, 26B, 26W)
 (280) (270)
 , (B) 2 , (W) (R), (G)
 , , , ,
 1 2 RGBW 4-
 RGBW
 3 4
 5 3

5
가 , (305) (310) , (310) (314), (316)
(312), (312) (316) (316) (316)
320), (320) (325), (325) (320) (327)
(312) (316) 1 (327), 1 (327)
(330), , 1 (327)
(335)
(327) (340) (330) , (340) R , G (335) , 1 , W
, 2 (342) , 2 , (342) BCB(
)
(345) , 2 (342) (340)
(335)
(345) R, G, B, W (350)
(350) (350) (345) EL (360),
(370) EL (360) , (360)
(360) (360) 가 , (Mg), (Li), (Ca)
5 W W W 2 , W (342)
가 3 EL , ,
6 4 ,
6 가 , (405) (410) , (410) (414), (416)
(412), (412) (412) (416) (416)
420), (420) (425), (425) (420) (427)
(412) (416) 1 (427), 1 (427)
(430), , 1 (427)
(435)
1 (427) (435) 2 (440) . 2
(440)
(445) , 2 (440)
(435)

(445) R, G, B, W (450) .

(450) (450) (460) (445) EL (460), .

(470) (460) , , (Encapsulation)(480)
(270) .

(490) R , G , B , W , .

가 4 , , , , , .

EL , EL 가 가 .

3- 4-

RGB 3- 1 .

$$E [cd/A] = \frac{L}{(\frac{I}{B})} = \frac{(Lr+Lg+Lb)}{(\frac{Ir+Ig+Ib}{B})}$$

, L
 , B
 , B
 , Lr, Lg, Lb
 , Ir, Ig, Ib
 1
 2 4

$$Lr = L \cdot Xr$$

$$= \Phi \left(r \cdot \frac{Ir}{B} \right)$$

$$Lg = L \cdot Xg$$

$$= \phi(g) \cdot \frac{Ig}{B}$$

$$Lb = L \cdot Xb^4$$

$$= \phi_b \cdot \frac{Ib}{B}$$

, X_r, X_g, X_b , , , ϕ_r, ϕ_g, ϕ_b , , 가
[cd/ampere] , .

2 4 1 RGB 3-
5 .

$$E[cd/A] = \frac{(\phi_r \cdot Ir + \phi_g \cdot Ig + \phi_b \cdot Ib)^5}{(Ir + Ig + Ib)}$$

$$= \frac{1}{\left(\frac{Xr}{\phi_r} + \frac{Xg}{\phi_g} + \frac{Xb}{\phi_b} \right)}$$

, RGBW 4- 6 .

$$E[cd/A] = \frac{L^6}{\left(\frac{I}{B} \right)}$$

$$= \frac{\left(\frac{Lr + Lg + Lb + Lw}{Ir + Ig + Ib + Iw} \right)}{B}$$

, L 가 , Lw .

$$Lw = L/S^7$$

$$= a/4 \cdot lw$$

$$= \phi_w \cdot Iw/B$$

, S .

$$Lr = (L - \frac{L}{S}) \cdot Xr$$

$$= \phi_r \cdot \frac{Ir}{B}$$

$$E[cd/A] = \frac{(\phi_r \cdot Ir + \phi_g \cdot Ig + \phi_b \cdot Ib + \phi_w \cdot Iw)}{(Ir + Ig + Ib + Iw)}$$

$$= \frac{S}{(S-1)(\frac{Xr}{\phi_r} + \frac{Xg}{\phi_g} + \frac{Xb}{\phi_b}) + \frac{1}{\phi_w}}$$

가 63 .

3- 가 CIE R, G B
(0.63,0.35), (0.28,0.67) (0.15,0.15) , 71% (0.29,0.32)
Xr:Xg:Xb=0.25:0.50:0.25 , , ,
re] $\phi_r=3.0$, $\phi_g=7.0$, $\phi_b=6.0$ (E) 5.1[cd/A] . 가 [cd/ampere]

3- 가 CIE R, G B
(0.63,0.35), (0.27,0.60) (0.15,0.19) , 56% (0.29,0.32)
Xr:Xg:Xb=0.26:0.42:0.32 , , ,
re] $\phi_r=1.8$, $\phi_g=5.7$, $\phi_b=5.7$ (E) 3.7[cd/A] . 가 [cd/ampere]

3- 73% 가 .

3 4 4- 가 CIE
R, G B (0.63,0.35), (0.27,0.60) (0.15,0.19) (0.29,0.32)
Xr:Xg:Xb=0.26:0.42:0.32 , , , 가
[cd/ampere] $\phi_r=1.8$, $\phi_g=5.7$, $\phi_b=5.7$, $\phi_w=15$, 2 , (E) 5.9[cd/A] .

3- 4-
159% 가 .

3- 4-
116% 가 .

RGB TFT가 가 3/4 .

3 4 가 가 가
가 가 .

W 가 R, G, B 가
4- 가 가 4- 가

(57)

1.

가

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1

4

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1

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2

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3

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4

2.

1

3.

1

2*2

4.

1

2*3

5.

1

6.

1

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7.
1 ,

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8.
1 ,

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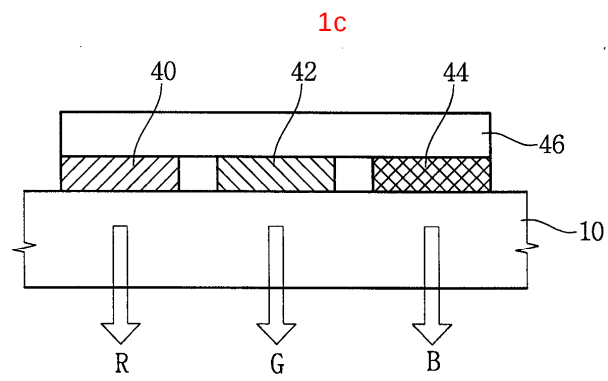
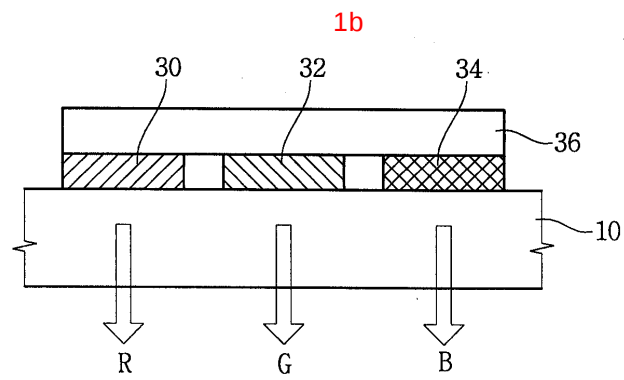
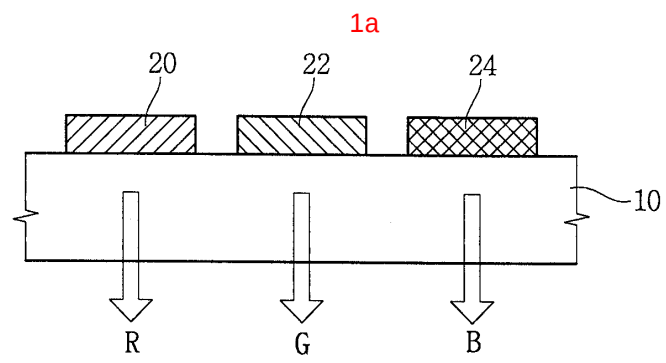
9.
8 ,

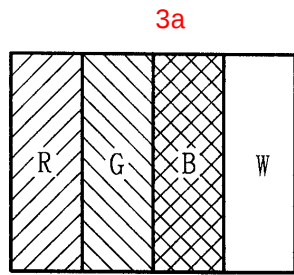
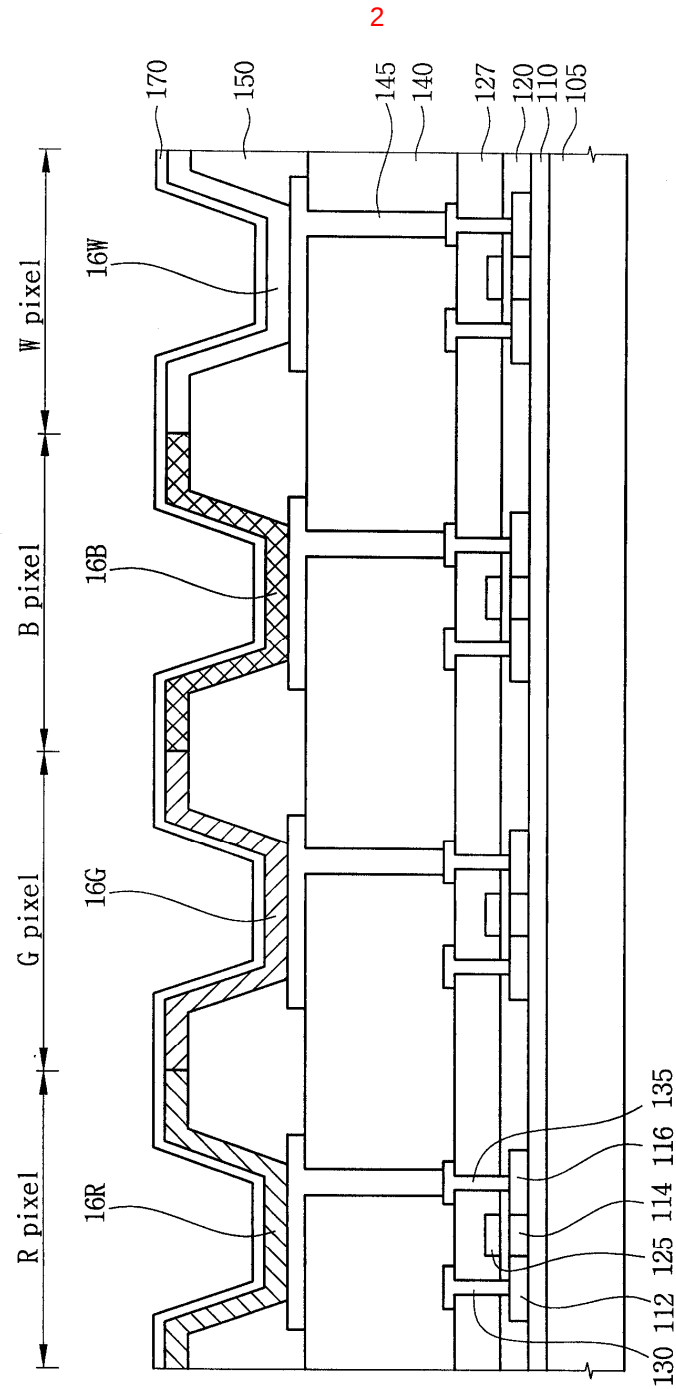
10.
9 ,

11.
1 ,

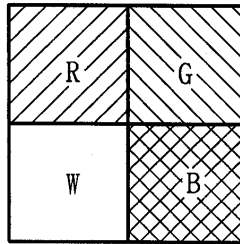
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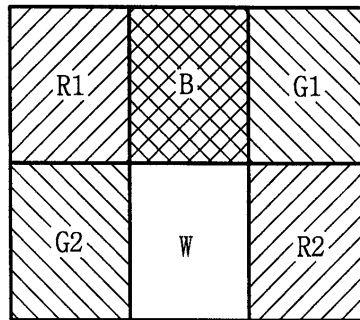


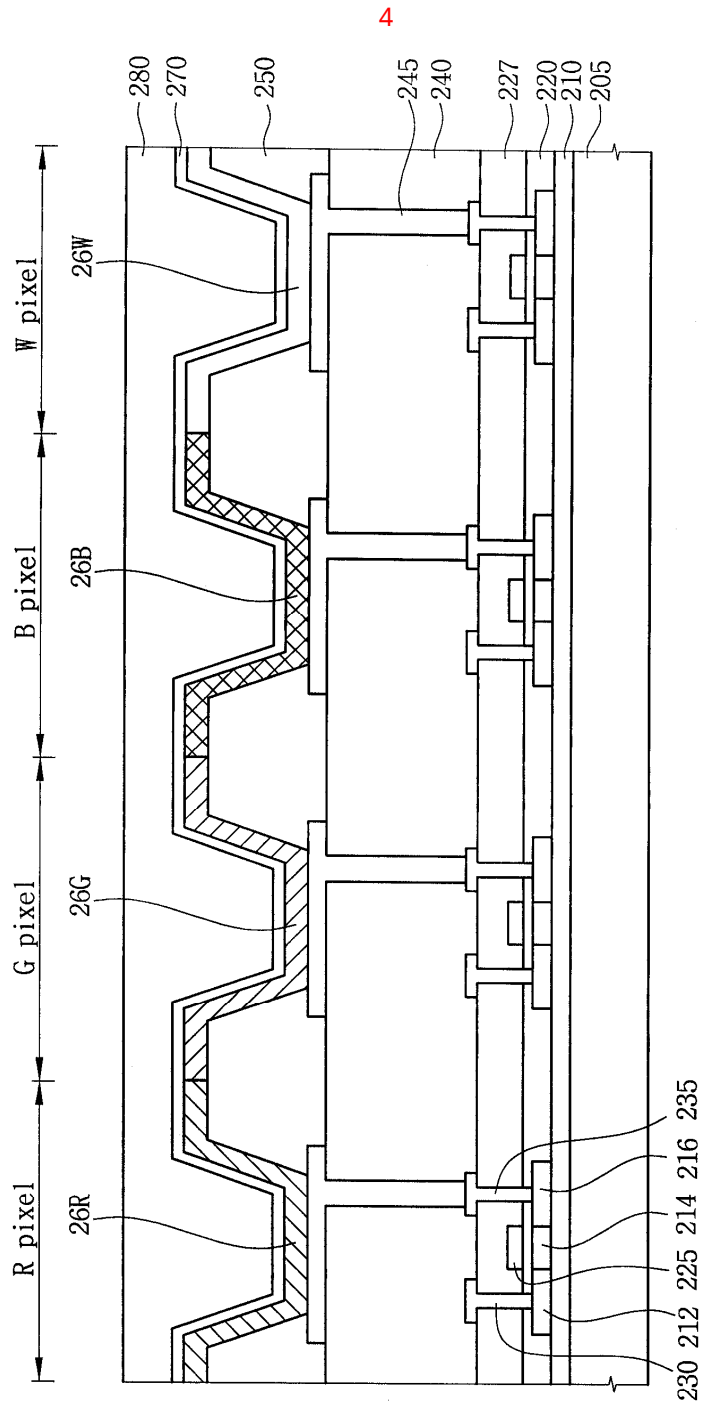


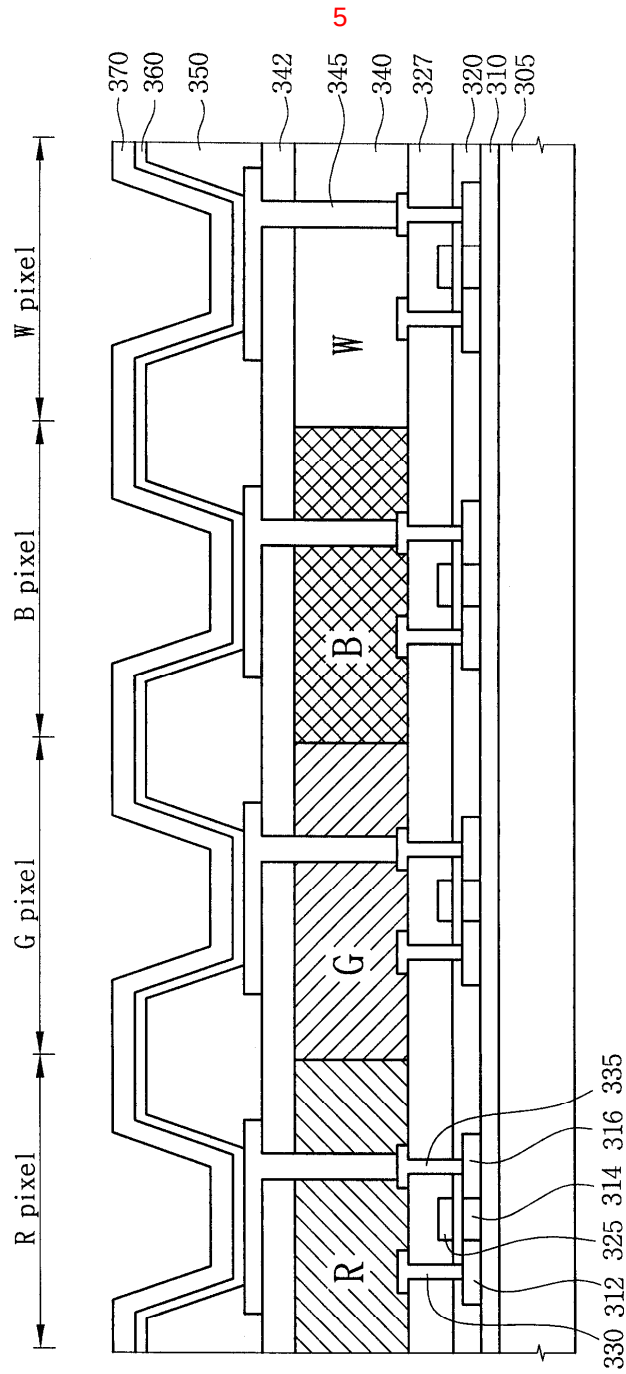
3b

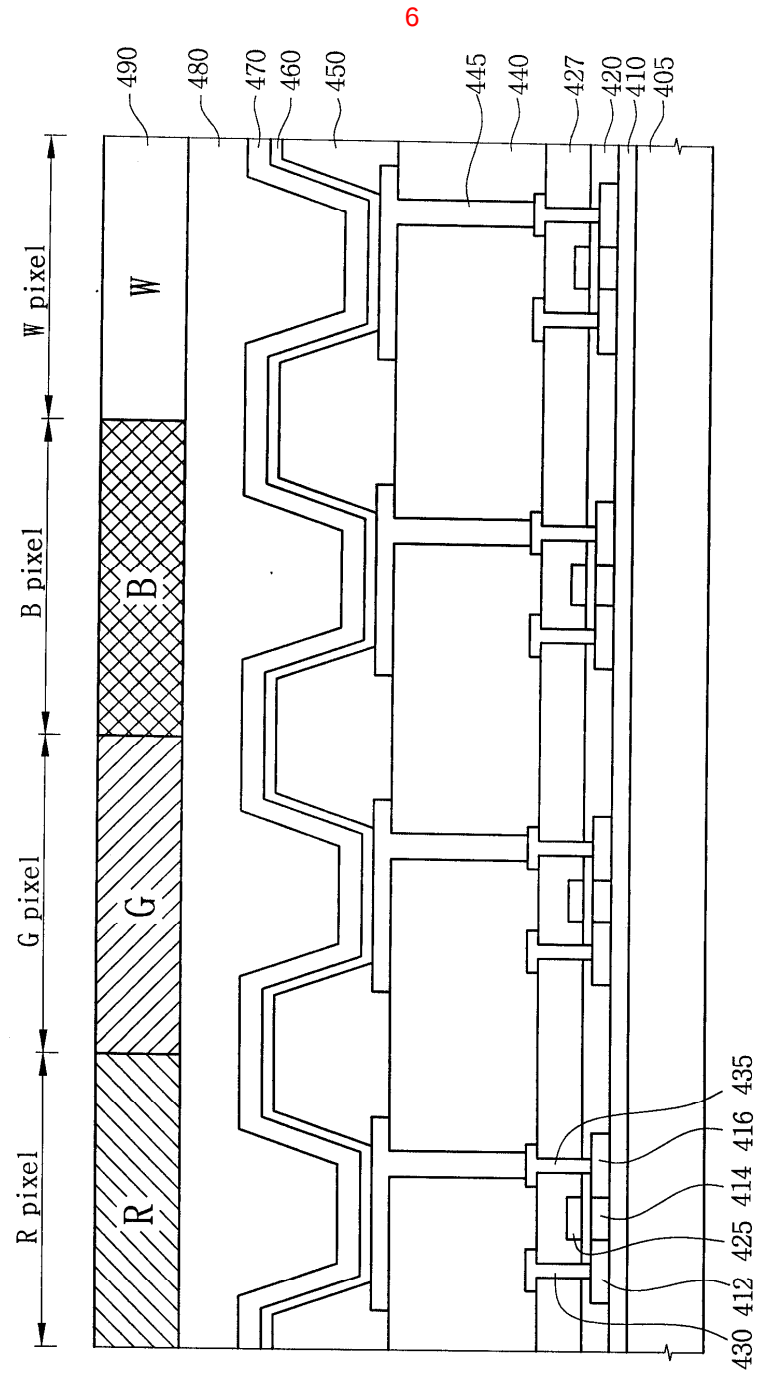


3c









专利名称(译)	有机电致发光显示装置		
公开(公告)号	KR1020040087429A	公开(公告)日	2004-10-14
申请号	KR1020030021644	申请日	2003-04-07
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	三星电子有限公司		
[标]发明人	CHOI BEOHMROCK 최범락 CHOI JOONHOO 최준후 CHUNG JAEHOON 정재훈 CHUNG JINKOO 정진구 LEE DONGWON 이동원 LEE SANGPIL 이상필		
发明人	최범락 최준후 정재훈 정진구 이동원 이상필		
IPC分类号	H05B33/22 H01L51/50 H01L27/32 H05B33/12 H05B33/14 H05B33/26		
CPC分类号	H01L27/3244 H01L27/322 H01L27/3213		
代理人(译)	PARK , YOUNG WOO		
其他公开文献	KR100490322B1		
外部链接	Espacenet		

摘要(译)

公开了一种用于四色驱动的有机电致发光显示装置。在多个开关元件具有源电极以及漏电极和栅电极之后，在基板上形成栅电极。多个像素电极连接到漏电极，并且限定第一到第四子像素。红色子像素对应于第一子像素，并且红色光被照射。绘制的子像素对应于第二子像素，并且绿光被照射。并且蓝色子像素对应于第三子像素，并且蓝光被照射。白色子像素对应于第四子像素，并且白光被照射。因此，在有机电致发光显示装置中，通过在红色之外添加白色子像素，定义一个像素绿色和蓝色子像素，可以增强有机电致发光显示装置的亮度。有机电致发光，亮度，4-色，白色，红色，绿色，蓝色，白色。

