

300 : 310 : ITO

320 : 330 :

331 : CrOx 333 : Cr

333 : CrNy

Electro Luminescence Display Element : (Organic EL Element)

(FPD : Flat Panel Display) ,

PL (Photo Luminescence)

(PDP : Plasma Display Panel) , CE(Cathode Luminescence)

FED : Field Emission Display)

(LCD : Liquid Crystal Display element) EL .

EL LCD 30,000 가

가 ,

EL

EL , EL 가

1a 1b EL 100

ITO (110) (120) (100) ITO(Indium Tin Oxide) (110) ,

(120) , HTL(Hole Transporting Layer)(121), EML(EMitting Layer)(123) ETL(Electron Transporting Layer)(125)

HTL(121) , EML(123)

가

EML(123) , HTL(121) ETL(125)

EML(123) , EML(123) ETL(125) , EML(123)

가

가 , EML(123)

(120) (separator)

(120) , Al, Cr MoW

(130)

(130) (140) , 가

(150)

EL ITO (110) 가 , (130)

가 , 가 HTL(121) ETL(125)

EML(123) ITO (110)

(100)

EL (130) 가 2

가 40 60%가

(130)

EL , EL (black)

EL

EL (130) (100)

(clave) 가

가가

40% 가

EML(123)

가

가 EL

CrNy (, y 1, 2, 3,...), CrOx (, x 1, 2, 3, ...) (, x 1, 2, 3,...) Cr 2

.

3 8 가 EL .

3 가 EL . 300
EML ETL (300) ITO (310) , ITO (310) HTL,

(320) (330)가 .

(330) , , CrOx (331) Cr (333) .

O (310) ITO (310) (330) 가 (320) 가 IT ,

4 가 EL .

λ 가 S가 (300) (330) CrOx (331) Cr (333)
(External Complex Fresnel) r 1 .

1

$$r = \frac{r_{12} + r_{23} \exp(2i\beta)}{1 + r_{12} r_{23} \exp(2i\beta)}$$

1) $\beta = \frac{2\pi n_2 h \cos \theta_2}{\lambda}$, h CrOx (331) , n₂ CrOx (331) , θ_2 CrOx (331)
rOx (331) Cr (333) , r₁₂ (300) CrOx (331) , r₂₃ C

(Snell) CrOx (331) Cr (333) θ_2 θ_3 S θ_1
2 3 .

2

$$\cos \theta_2 = \left(1 - \sin^2 \theta_1 \frac{n_1^2}{n_2^2} \right)^{1/2}$$

3

$$\cos \theta_2 = \left(1 - \sin^2 \theta_1 \frac{n_1^2}{n_3^2} \right)^{1/2}$$

, n_1 1, n_3 Cr (333) .
(330) R 4 .

4

$$R = |r|^2 \equiv R(\theta_1, h, n_1, n_2, n_3)$$

, n_2 , n_3 , CrOx (331) θ_1 0. 가 , (330) R CrOx (331) Cr (333)
h 가 , $2\pi n_2 / \lambda$ 가
CrOx (331) Cr (333) (330)
333) $2.0 \pm 1.5i$ CrOx (331) 0 1500 가 , 3.5 , Cr (333)
589nm 가 5
5 CrOx (331) 가 0 1500 CrOx (331)
150 , 980
6 가 EL
(330) CrNy (335), CrOx (331) Cr (333)
rOx (331) Cr (333) 가 (330) CrNy (335), C
(330)
CrNy (335), CrOx (331) Cr (333) 3 (330)
가 7 5.2
6.9 가 .

8 (330) CrNy (335), CrOx (331) Cr (333) 3
 2,8 CrNy (335) 200 , 250 , 300 , 350 , 400 , 450 500
 3.5 CrOx (331) 0 1000 589nm

8 CrOx (331) CrNy (335) 680 860
 CrOx (331)

가

EL

(57)

1.

가 ITO , 가 가 ,

가 ;

2.

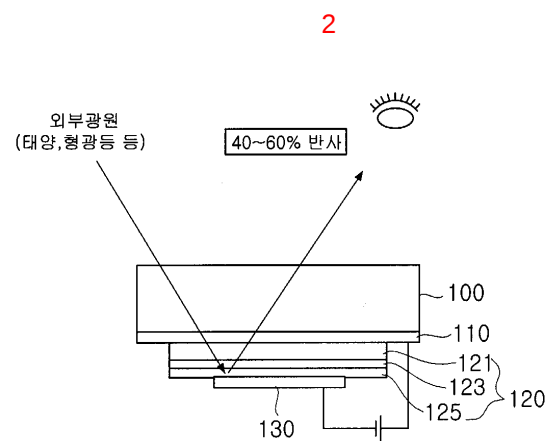
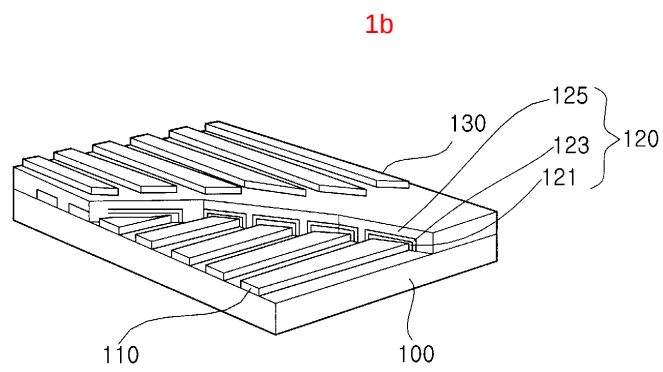
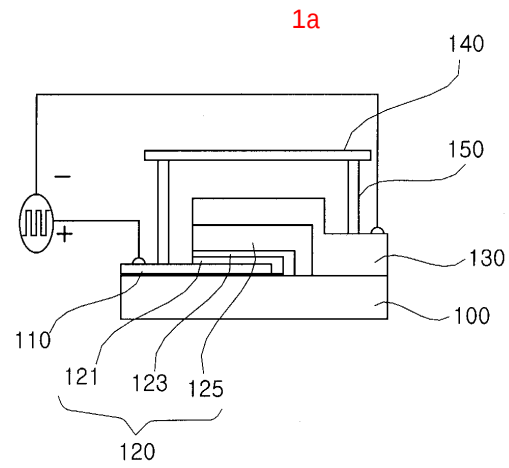
1 , ;
 CrOx Cr 가 .

3.

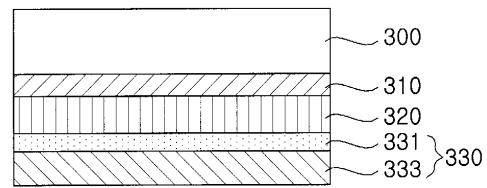
1 , ;
 CrNy , CrOx Cr 가 .

4.

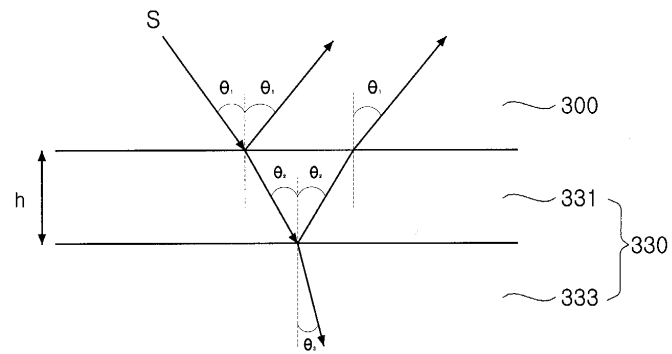
1 4 , ;
 가 / 가 .



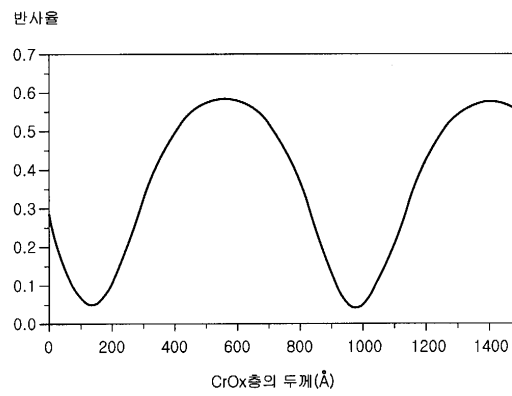
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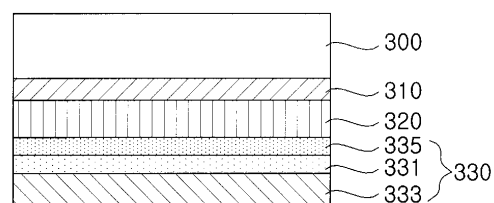
4



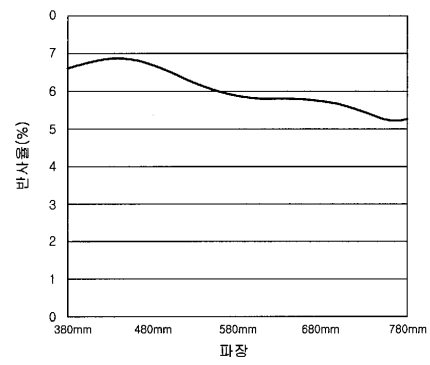
5



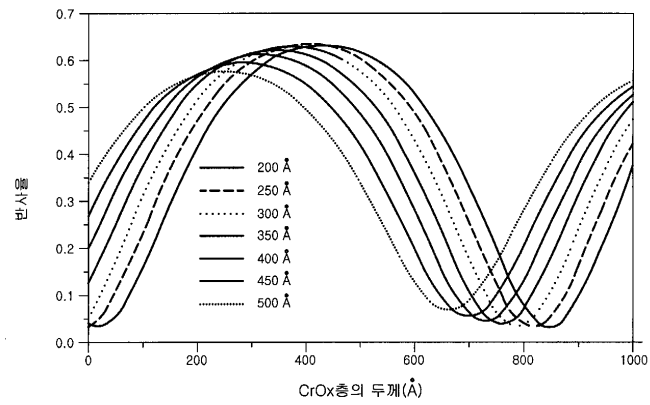
6



7



8



专利名称(译)	一种具有低反射率的有机电致发光显示装置		
公开(公告)号	KR1020020069319A	公开(公告)日	2002-08-30
申请号	KR1020010009516	申请日	2001-02-24
[标]申请(专利权)人(译)	ELIATECH		
申请(专利权)人(译)	电梯技术有限公司.		
当前申请(专利权)人(译)	电梯技术有限公司.		
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IPC分类号	H05B33/26		
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代理人(译)	CHO , TARM PARK MI SOOK		
其他公开文献	KR100384291B1		
外部链接	Espacenet		

摘要(译)

提供了能够实现高清晰度和高清晰度的外部光束的反射率的有机电致发光显示装置。被称为阴极电极的阴极形成为光学反射减少层，降低了来自外部的入射光的反射率。它形成光学反射还原层，形成多层薄膜，包括2层薄膜，CrOx层和Cr层或CrNy层，3层Cr层和CrOx层薄膜等。每层多层形成的层状薄膜控制厚度和折射率，并且相消干涉减少了入射光中反射光的量和从外部产生的量。能见度得到改善。有机电致发光显示器件，有机EL，平板显示器，反射，破坏性干涉。

