

(19)
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(B1)

(51) 。 Int. Cl. ⁷
C09K 11/06

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(11)
(24)

2003 03 26
10 - 0377573
2003 03 12

(21)
(22)

10 - 2000 - 0060967
2000 10 17

(65)
(43)

2002 - 0030370
2002 04 25

(73)

575

(72)

APT106 - 1602
APT206 - 905
APT110 1301
APT110 1301
1405
939

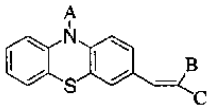
(74)

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(54)

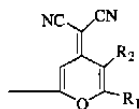
1

[1]



가 1, A 1 20 가 , 1 20 가 ,
 가 1 20 , 가 1 20 ,
 1 , B C
 (-CN) B가 C 2 , 2 R₁ 1 20
 , 1 20 가 ,
 R₂ 1 10 5 6 R₁ ,
 .

[2]



EL, ,

[]

,
 (Organic Elec
 tro luminescence Divece; OELD) .

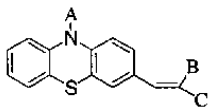
[]

가 가
 .
 (Cathode Ray Tube: CRT), (Electroluminescence Display: ELD), (,
 Light Emitting Diode: LED), (Plazma Display Panel: PDP) . ,
 (Liquid Crystal Display: LCD) .

가 , , , , , ,
 , 가
 , 가 , (back light) , 가
 가 가

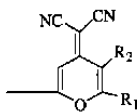
가 200 V , 가 가 .
, 1987 (Eastman Kodak) (alumina quinone) π -
가 (electroluminescence device: EL device) (emitter layer) EL
EL
가 가 가 EL
가 가 , , , ,
EL 가
EL (anode)가 , , , ,
가 EL
가 (exciton) , 가
, 1987 (Eastman Kodak) (Appl. Phys. Lett. 51, 913, 1987).
4 - () - 2 - - 6 - (p -) - 4H - (4 - (dicyanome
thlene) - 2 - methyl - 6 - (p - dimethylaminostyryl) - 4H - pyran) (DCM), DCJT, DCJTb, Eu() (co
mplex) (Chem. Lett. 1267, 1991)
(dopant) Alq3 . DCM
가 (selfquenching) , 가
, .
(pheno-thiazine)

1

$$[\quad 1]$$


가 1, A 1, 20 가 , 1 20 가
가 1 20 , 가 1 20 가 1 20 ,
CN) B가 C 2 , 1 , B C (-
R₂ , 1 20 가 R₁ 1 20 ,
R₂ 1 10 5 6 R₁

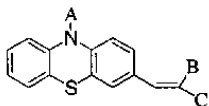
[2]



(phenothiazine)

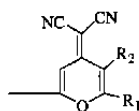
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[1]



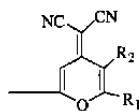
가 1, A 1 20 가 1 20 가 1 20, 1 20 가 1 20, 가 1 20, 가 1 20, CN) B가 C 2, 2 R₁ 1 20, R₂ 1 10 5 6 R₁.

[2]

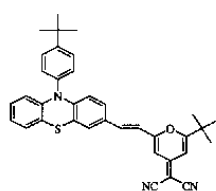


1, 2 R₁ t- A t- R₂가, B, C가 2, R₂가.

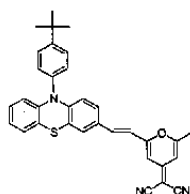
[2]



[3]



[4]



3 4 t- 가 , (band gap) (phenothiazine unit) 가 .

, t- π - . , π -

, 가 Alq3 가

가 .

EL

(ITO), (SnO₂), (ZnO)

(TPD), N,N' - (- 1 -) - N,N' - , N,N' - (3 -) - N,N' - - [1,1' -] - 4,4' -
enzidine; α - NPD) (N,N' - di(naphthalene - 1 - yl) - N,N' - diphenyl - b

1

EL 가

Li, Mg, Al, Al - Li, Ca, Mg - In, Mg - Ag

ion layer : HIL) 가 (: α - NPD) (hole inject (ITO)

CuPc, m - MTDATA, I - TNATA

4

t - (t - butylbenzene) (30 : 1) 가
(periodic acid) 가 60 8 1 A
95 %

(A) 0.5 (phenothiazine) NMP , 1
 (K₂CO₃) 가 , 2 1 B . 40 %

ous oxychloride) 가 2 (DMF) (phosphr
 가 80 10 1 C , (B) DMF
 80 % .

(C) 4 - () - 2 - t - - 6 - - 4H - (4 - (dicyanomethylene) - 2 - t - bytyl -
 6 - methyl - 4H - pyran) 가 3 4
 50 % .

5

(C) 4 - () - 2,6 - - 4H - (4 - (dicyanomethylene) - 2,6 - dimethyl - 4H -
 pyran) 가 3 5
 20 % .

1

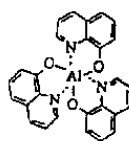
ITO , ITO N,N' - (3 -) - N,N' - - [1,1' -] - 4,
 4' - (TPD) 500 .

4 280 .

5 350 .

Al : Li 1500 .

[5]



2

ITO , ITO 2 - TNATA 400
 . α - NPD 75 . ,
 4 350 .

6 350 .

Al : Li 1500 .

3

4

5

1

4

4

5

2

3 cd/A

- (turn - on)

5 V

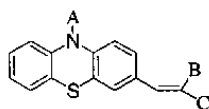
(0.64, 0.34)

(57)

1.

1

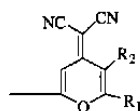
[1]



가 1, A 1 20 가 1, 1 20 가 1 20

CN) B가 C 2, 2 R₁ C 1 20 (- R₂ 1 10 5 6 R₁

[2]



2.

1 ,

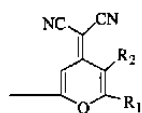
A가 t -
:

B

, C가

2

[2]

, R₁ t -, R₂

.

3.

1 ,

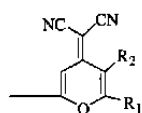
A t -
:

, B

, C가

2

[2]

, R₁, R₂

.

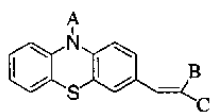
4.

,

1

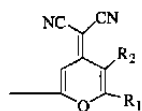
:

[1]



가 1, A 1 20 가 , 1 20 가 ,
 가 1 20 , 가 1 20
 1
 (-CN) B가 C 2 , 2 R₁ 1 20
 , R₂ 1 10 5 6 R₁
 .

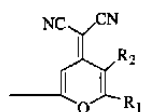
[2]



5.

4 ,
 A가 t - B , C가 2 :

[2]

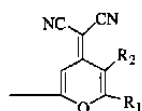


, R₁ t - , R₂ .

6.

4 ,
 A t - , B , C가 2 :

[2]



, R₁ , R₂ .

专利名称(译)	用于有机电致发光器件的红色发光化合物和使用其的有机电致发光器件		
公开(公告)号	KR100377573B1	公开(公告)日	2003-03-26
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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	KIM SUNGHAN 김성한 YU HANSUNG 유한성 KWON SOONKI 권순기 KIM YUNHI 김윤희 SHIN DONGCHEOL 신동철 AHN BONGGYUN 안봉균		
发明人	김성한 유한성 권순기 김윤희 신동철 안봉균		
IPC分类号	C09K11/06		
CPC分类号	C09K11/06 C09K2211/1037 C09K2211/1088 H01L51/0062 H01L51/0065 H01L51/0071 H01L51/5012 H05B33/14 Y10S428/917		
代理人(译)	PARK, 常树		
其他公开文献	KR1020020030370A		
外部链接	Espacenet		

摘要(译)

本发明是一种高亮度通过提供，使用它同时提供红色发射使用红色发光化合物的有机电致发光器件由有机EL器件的下述通式(1)表示的有机电致发光器件的化合物的有机EL器件，它并且可以提供具有改善的发光效率的有机电致发光器件。[化学式1] - 1 - 其中，A为具有1至取代的芳基20烷基的含三烷基胺的烷基，杂芳基被取代的具有1至20个碳原子的基，碳原子数为1~20的烷基是从1到20甲硅烷基芳基和一种由含有烷基的1~20的三芳基的芳基的选自下组的取代基的碳原子数，B和C均为氰基(-CN)基团，或当B是氢的C到由下面式的式(2)表示的取代基(2) R1是从烷基中的取代基，具有烷基被选自由取代的芳基和1至20个碳原子的杂环芳基的1~20个碳原子的基团，R2是一个C1 R10至10个碳原子和与R1结合的环，具有5或6个碳原子。[式2] 指数方面 有机EL，红光发光化合物，吩噻嗪

