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C09K 11/07

(11)
(43)

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2003 01 23

(21) 10 - 2001 - 0042555
(22) 2001 07 14

(71) 557 - 6

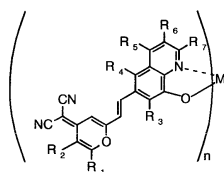
(72) () 66404 904

(74)

:

(54)

, 가 1 , 가 2 ,
, 1 2



, R₁ 1 - 10 , (aryl), (heteroaryl) , R₂ ,
1 - 10 , R₁ 5 6 , R₃ R₇ ,
, 1 - 10 , (aryl) , (heteroaryl) , M 1, 2 3가
, n 1, 2 3 .

1

, , DCM,

1

2

가

(Organic Electroluminescence device; O

ELD)

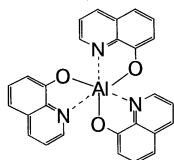
EL (Electroluminescence device) (Liquid Crystal Displa
y; LCD), (Plasma Display Panel; PDP), (Field Emission Display
; FED) , LCD 가 , 가
가 ITO 가 Mg 가 , , 가 , 가
가 , , 가 , 가
, 가 , 가 (conjugated)
(host) 가 (anthracene), (phenanthrene), (pyrene), (benzopyrene), (naphth
alene), (picene), (carbazole), (fluorene), (biphenyl), (terphenyl), (ch
risene), (quarterphenyl), (triphenylene oxide), (dihalobiphenyl), (trans
stilbene), 1,4 - (diphenyl butadiene) , 가 1 μ m ,

가 ,

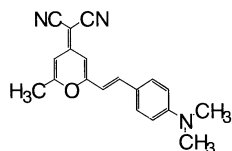
(550nm) (Alq3), BeBq2, Almq, (460nm)
 ZnPBO, Balq , 590nm 4 - () - 2 -
 - 6 - (p -) - 4H - (4 - (dicyanomethylene) - 2 - methyl - 6 - (p - dimethyl aminostyryl) -
 4H - pyran: DCM), 630nm DCM DCJTБ .
 가 - (guest - host)

4,769,292 1
 - (8 -) (tris - (8 - hydroxy quinolinato) aluminum: Alq3)
 2 4 - () - 2 - - 6 - (p -) - 4H - (4 - (dicyanome
 thylene) - 2 - methyl - 6 - (p - dimethylaminostyryl) - 4H - pyran: DCM) , Alq3
 DCM

1

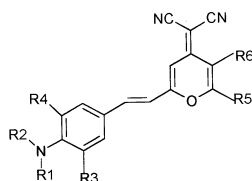


2



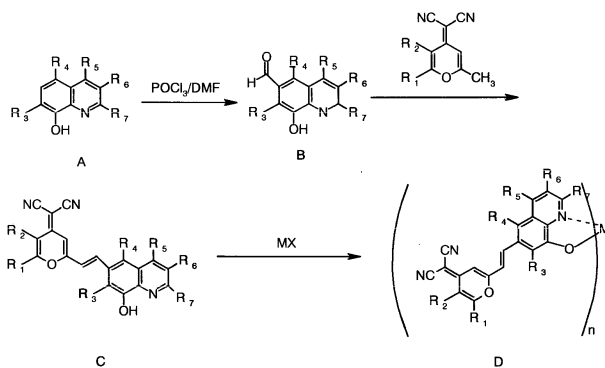
2 DCM 590nm 가 , 5,935,720 DCM
 , 3 .

3



, R₁ 1 - 10, (aryl), (heteroaryl), t -
 , R₂ 1 - 10, R₁ 5, 6
 , R₃ R₇ (heteroaryl) . M 1, 2 3가, 1 - 10, (aryl), Li, Na, K, Be, Mg, Zn, A
 , n 1, 2 3 .
 4 R₁ , M Li, Be, Zn, Al , n 1, 2, 3
 DCM M 가

1



1 (DMF), POCl₃ 가 (vilsmeier reagent), 8 - (ice bath)
 가 B , C AICI₃, MgCl₂ - 4H - C
 D .

1 (10) 가 1 (12) , 1 (hole injection,)
 , 1 (12) (14) 가 2 (16) (electron inj
 14)) 가 1 2 (12, 16) 가 (14) , 1
 (12, 16) 가 , 1 2 (12, 16) 가 (14) , 1
 (14) ,
 (12) (10) .
 1 2 (12, 16) (14)
 , - (14)
 (guest) (dopant) . (14)
 (14)

3) 가 HOMO LUMO
 - (8 -) (Alq)
 (14)
 1 10 % 10 %

(10) 1 (12)
 (12) (hole injection,)
 dium Tin Oxide; ITO), (Ag) 가 (In
 on injection,) 가 Al, Mg, Ca 2 (16) (electr
 LiAl, Mg - Ag

2
 1 2 (12, 16) 가 (14) 2 (12, 16)
 16) (14) (21, 22) (25, 26) 1 2 (12, 16)
 1 (21, 22) (12)

(21) 4,356,429 (porphyrinic)
 (22) , N,N' - - (1 -)
) - N,N' - 가 (16) (8 -) (25, 26)
 , Alq3) (14), (21, 22) 가
 (14), 5 500nm

(21, 22) / (25, 26)

1 2

[1]

(R₁ = CH₃, R₂ R₇ , M = Al, n = 3 4)

1: (DMF) (Ice - bath) 10 , 3mmol (0.458g) POCl₃ (drop) , 2mmol (0.29g) 8 - , 40 45 12 (sodium acetate) pH < 8

2: 1 0.173g (1mmol) 4,4 - -2,6 - -4H - 0.172g (1mmol)
 ol) 5ml 가 , 0.12g , 5 - 6 , ,
 , 가 .

3: 2 0.327g (1mmol) AlCl₃ 0.044g (0.33mmol) , ,
 , , 가 .

[2]

(R₁ = , R₂ R₇ , M=Li, n=1 4)

4,4 - -2,6 - -4H - 0.234g (1mmol) 4,4 - -2 -
 -6 - -4H - 1 2 , AlCl₃
 0.389g (1mmol) LiOH 0.023g (1mmol)

1 3

[3]

(ITO)가 , ,

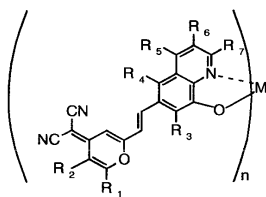
ITO 150
 N,N' - - (1 -) - N,N' - 600
 Alq3 95 % 1 5
 380 Alq3
 (Ag) 2000

(57)

1.

- , 4 .

[4]



1-10, R₁, 1-10, (aryl), (heteroaryl), R₂,
 1-10, R₁, 5, 6, R₃, R₇, (heteroaryl), M, 1, 2, 3가
 , n, 1, 2, 3 .

2.

1, R₁ t-, , M Al, n 3

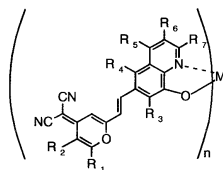
3.

가 1 ;

가 2 ;

1 2 , 4

[4]



1-10, R₁, 1-10, (aryl), (heteroaryl), R₂,
 1-10, R₁, 5, 6, R₃, R₇, (heteroaryl), M, 1, 2, 3가
 , n, 1, 2, 3 .

4.

3, 1, ,

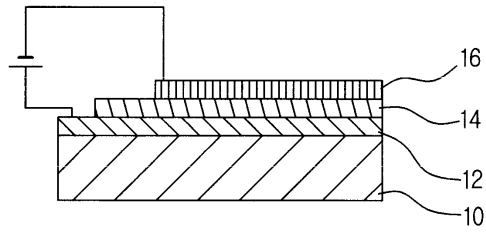
5.

3, 2, ,

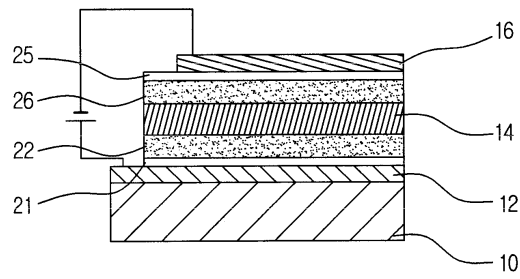
6.

3, ,

1



2



专利名称(译)	有机发光化合物和使用其的有机电致发光器件		
公开(公告)号	KR1020030006682A	公开(公告)日	2003-01-23
申请号	KR1020010042555	申请日	2001-07-14
[标]申请(专利权)人(译)	娜我比可隆株式会社		
申请(专利权)人(译)	Neoview的隆有限公司		
[标]发明人	SEOK JAI HAN 석재한		
发明人	석재한		
IPC分类号	C09K11/07		
CPC分类号	C09K11/06 H01L51/0061 H01L51/5012 C09K2211/1029 C09K2211/1088 Y10S428/917		
代理人(译)	이상헌 Gimyongdong		
其他公开文献	KR100406185B1		
外部链接	Espacenet		

摘要(译)

用途：提供一种有机发光化合物和使用该化合物的有机电致发光器件，以改善耐热性并使发光颜色易于控制。组成：有机发光化合物由式4表示，其中R1是烷基C1-C10基团，芳基或杂芳基；R2为H，C1-C10的烷基或与R1连接的五元或六元碳环；R3，R4，R5，R6和R7彼此独立，并且是H，C1-C10的烷基或烷氧基，芳基或杂芳基；M是单价，二价或三价金属；有机电致发光器件包括具有高功函数的第一电极；以及n为1,2或3。具有低功函数的第二电极；和至少一个含有式4的有机发光化合物的有机电致发光层。©KIPO 2003

