

(19)
(12)

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(A)

(51) 。 Int. Cl.⁷
C09K 11/06

(11)
(43)

10-2004-0106236
2004 12 17

(21)

10-2004-0042587

(22)

2004 06 10

(30)

JP-P-2003-00167828 2003 06 12

(JP)

(71)

가 가

가 가 6 7 35

(72)

141-0001 - 가 - 가 6- 7-35 가 가

141-0001 - 가 - 가 6- 7-35 가 가

141-0001 - 가 - 가 6- 7-35 가 가

141-0001 - 가 - 가 6- 7-35 가 가

(74)

:

(54)

,

• EL

(13)

EL

(1)

가, (失活), (系間)가, (가, EL가 (1).

, (配位子)가 (2),

1 : Thompson et al. : J.Am.Chem.Soc.2001,123,4305.

2 : Thompson et al. : ICEL.2001,p.45

가
EL

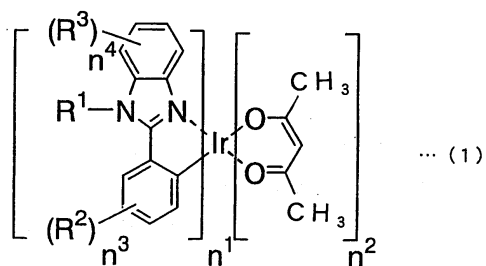
가

2

가

(1)

(5)

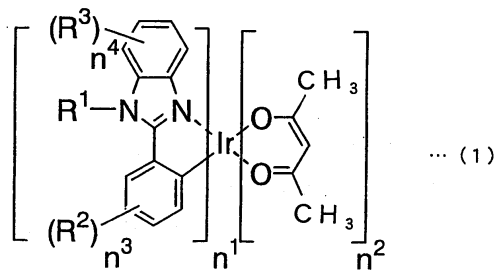


(, R^1 , n^1, n^2 , R^2, R^3 , n^3, n^4 , $[n^1=2, n^2=1], [n^1=3, n^2=0]$)

(1)

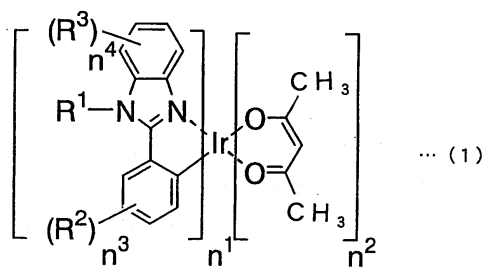
1

(6)



(, R^1 , , , n^1, n^2 , R^2, R^3 , , , n^3, n^4 , $n^1=2, n^2=1$, $n^1=3, n^2=0$) (1)

(7)



(, R^1 , , , n^1, n^2 , R^2, R^3 , , , n^3, n^4 , $n^1=2, n^2=1$, $n^1=3, n^2=0$)

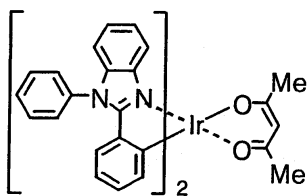
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(1)

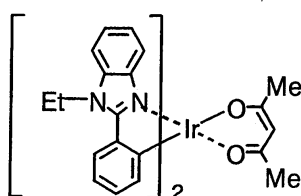
(2-1) (2-4) 가

(8)

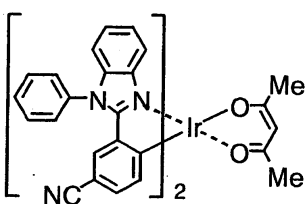
구조식 (2-1)



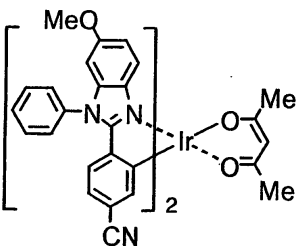
구조식 (2-2)



구조식 (2-3)



구조식 (2-4)



94,47,767.)), 1,4-
{Lamansky

2-
(Inorg.Chem.2001,40,1704.)).

(1)
{Nonoyama
가
(Bull.Chem.Soc.Jpn.17
,

가

가 .

, , UV , , 가 , ,

가 .

3 (12), (13), (14) . (11)

가 ,

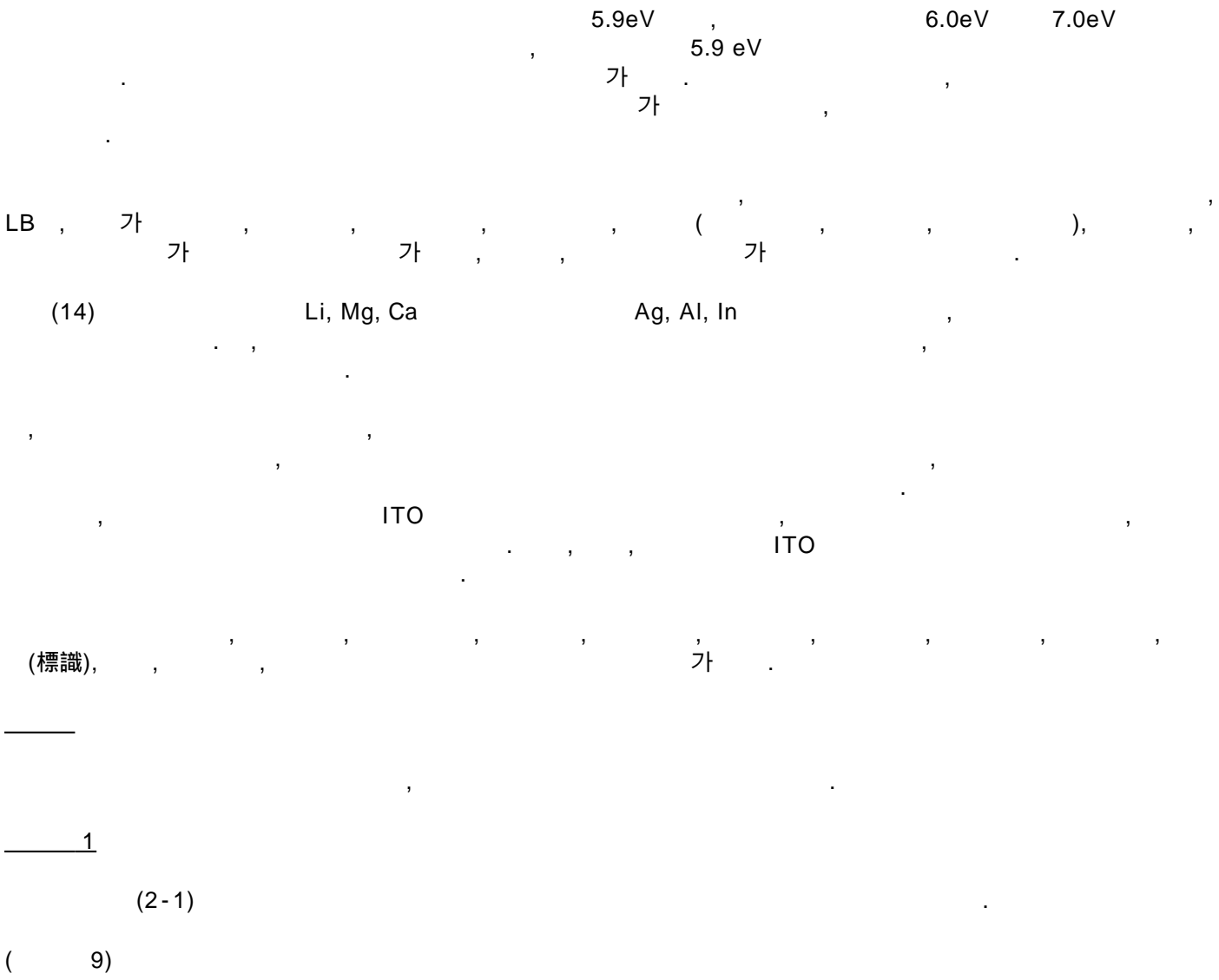
(11) 가 , 가
(12) Cr ITO Ag (11)

(13) (1)

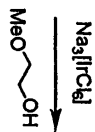
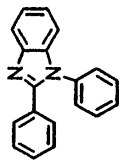
가 ,

가

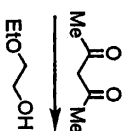
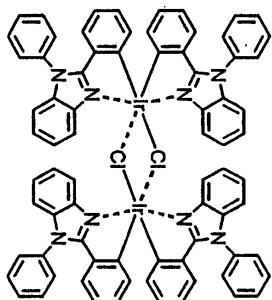
가 , 가 , 가



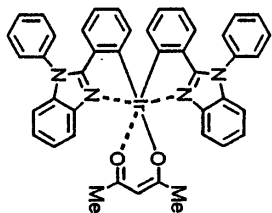
구조식 3



구조식 4



구조식 (2-1)



4
(Bull.Chem.Soc.Jpn.1794,47,767.)
4

Lamansky

3
(2-1)
(Inorg.Chem.2001,40,1704.)

Nonoyama

3 (2.7g, 9.9 mmol), (1.6g, 3.3mmol) 2- 24
(13mmol) 4 (6.7g, 66mmol), (1.4g
15 가
(410mg, 15% : (2-1)

(2-1) (同定)

(1) ^1H NMR (CD_2Cl_2 /ppm) ; 1.9 (s,6H), 5.3 (s,1H), 6.4-6.6 (8H), 7.1-7.2 (2H), 7.2-7.3 (4H), 7.6-7.7 (10H), 7.7-7.8 (2H)

(2) MS (FAB) $[\text{M}]^+ : 829$ (3) Abs (CH_2Cl_2) 410 nm(4) PL (CH_2Cl_2) 520 nm

2

1

3

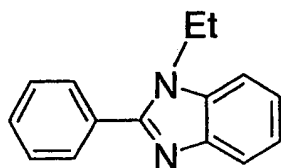
1

가

(2-2)

12%() .

(10)



(1) $^1\text{H NMR}$ (CD_2Cl_2 /ppm) ; 1.3 (t,6H), 1.9 (s,6H), 2.3 (q,4H), 5.2 (s,1H), 6.4-6.5 (4H), 7.1-7.2 (2H), 7.3-7.6 (8H), 7.7-7.8 (2H)

(2) MS (FAB) $[\text{M}]^+ : 733$

(3) Abs (CH_2Cl_2) 410 nm

(4) PL (CH_2Cl_2) 520 nm

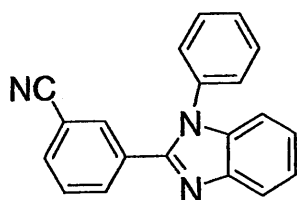
_____3

1 (2-3) 3

1 가
(CAS No. 175712-80-8).
() .

15%(

(11)



(1) $^1\text{H NMR}$ (CD_2Cl_2 /ppm) ; 1.8 (s,6H), 5.3 (s,1H), 6.4-7.2 (8H), 7.2-7.3(4H), 7.5-7.6 (10H), 7.7-8.0 (4H)

(2) MS (FAB) $[\text{M}]^+ : 879$

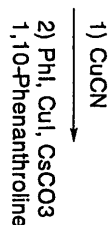
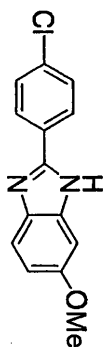
(3) Abs (CH_2Cl_2) 410 nm

(4) PL (CH_2Cl_2) 500 nm

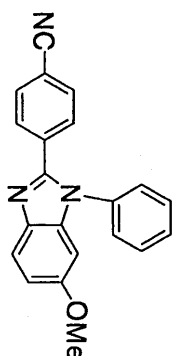
_____4

(12)

구조식 5



구조식 6



5 (Eur.J.Med.Chem.1996,31,635.) (5.0g, 19mmol) () (8.7g, 98
mmol) 500mL 12 가
(3.9g, 19mmol), (19g, 58mmol), () (370mg, 1.9mmol), 1,10- (700mg, 3.9mmol)
200mL 가 36 가
: -) , 6 1.5g
가 MS ,
([M] + : 326)가 .

6 (2-1) (2-4) 가

(1) ¹H NMR (CD₂Cl₂ /ppm) ; 1.8 (s,6H), 3.5(s,6H), 5.3 (s,1H), 6.4-7.2 (6H), 7.2-7.3(4H), 7.5-7.6 (10H)
, 7.7-8.0 (4H)

(2) MS (FAB) [M] + : 889

(3) Abs (CH₂Cl₂) 400 nm

(4) PL (CH₂Cl₂) 480 nm

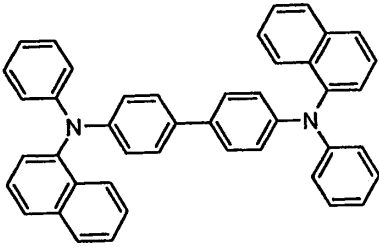
5

1 (2-1) 1 , 7 , 8
, 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8

, 9

100nm ITO 30mm×30mm
 2.0mm×2.0mm 가
 10^{-4} Pa CuPc() 10nm
 0.1nm/
 -NPD -NPD
 30nm 0.1nm/

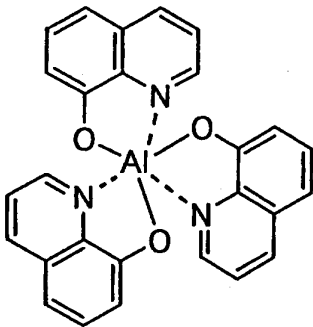
(13)

 α -NPD:

(2-1) CBP() 94:6
 40nm
 BCP(; Bathocuproin) BCP
 10nm 0.1nm/
 Alq3{ (8-) }
 30nm 0.2nm/

(14)

Alq3:



Mg Ag 1nm/ 200nm
 1
 5 가 , 505nm 가
 , 8V 800cd/m² 가
 500cd/m² 1 , 가 900
 1

6

(2-1)

2, 1

1 가 .

100nm

Cr

30mm×30mm

, 2

1 가 . , (1)

Mg/Ag

11nm

가 . 6 , , 505nm 가 가 .
 , 8V 570cd/m² 가 .

500cd/m² , 1 , , 가 . 7
 80 . 1 .

7

(2-2)

, 1 5 .

1 . , ,

8

(2-2)

, 2 6 .

1 . , ,

9

(2-3)

, 1 5 .

1 . , ,

10

(2-3)

, 2 6 .

. 1 . , ,

11

(2-4)

, 1 5 .

1 . , ,

12

(2-4)

, 2 6 .

1 . , ,

(1)

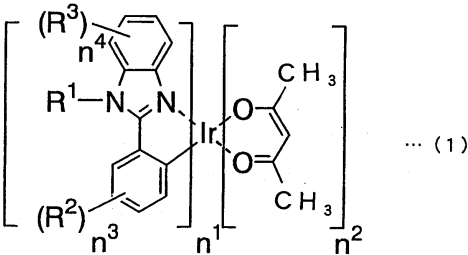
실시예	화합물	소자 구조	발광색	전압- 휘도특성	수명
1	구조식 (2-1)	도1	505nm (녹색)	800cd/m ² (8V)	900hr (500cd/m ²)
2		도2	505nm (녹색)	570cd/m ² (8V)	780hr (500cd/m ²)
3	구조식 (2-2)	도1	505nm (녹색)	780cd/m ² (8V)	910hr (500cd/m ²)
4		도2	505nm (녹색)	580cd/m ² (8V)	800hr (500cd/m ²)
5	구조식 (2-3)	도1	500nm (녹색)	850cd/m ² (8V)	830hr (500cd/m ²)
6		도2	500nm (녹색)	595cd/m ² (8V)	710hr (500cd/m ²)
7	구조식 (2-4)	도1	480nm (녹색)	900cd/m ² (8V)	600hr (500cd/m ²)
8		도2	480nm (녹색)	610cd/m ² (8V)	540hr (500cd/m ²)

(1) 가

가 EL

(57)

1.
(下記) (1) (含)
(1)



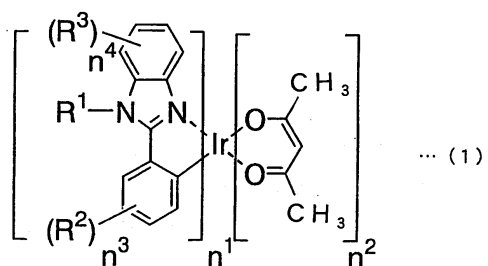
(, R 1 (基), , R 2 , R 3 , n 1 , n 2 [n 1 =2 , n 2 =1], [n 1 =3, n 2 =0] , n 3 , n 4 0 4)

2. 가

(1)

1

(2)

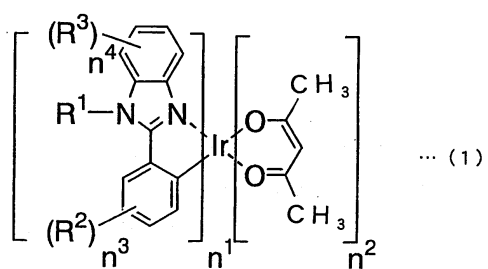


(, R^1 , , , n^1, n^2 , R^2, R^3 , , , n^3, n^4 , n^1, n^2 , $[n^1=2, n^2=1], [n^1=3, n^2=0]$)

3.

(1)

(3)



(, R^1 , , , n^1, n^2 , R^2, R^3 , , , n^3, n^4 , n^1, n^2 , $[n^1=2, n^2=1], [n^1=3, n^2=0]$)

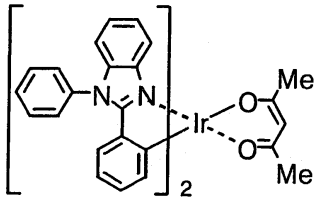
4.

3

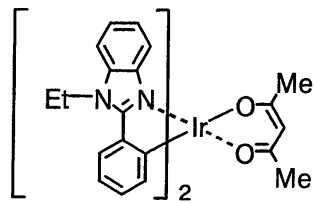
(2-1) (2-4)

(4)

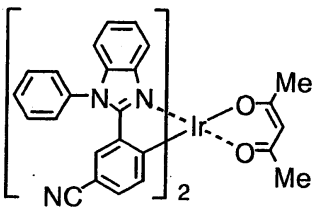
구조식 (2-1)



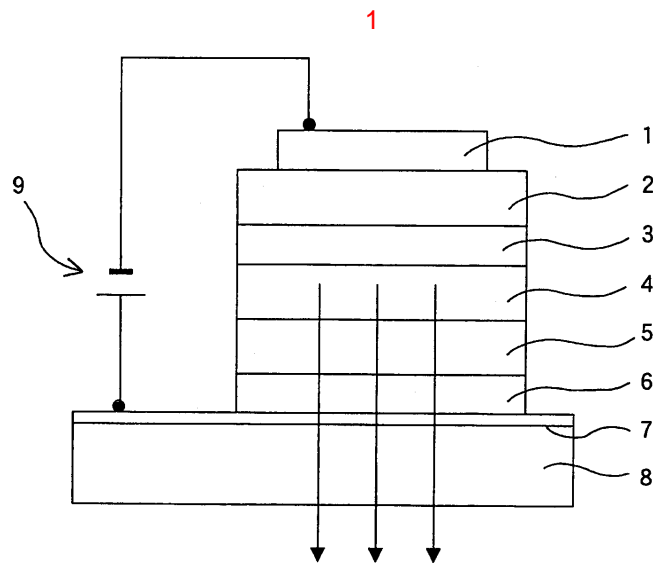
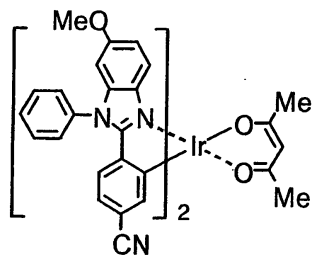
구조식 (2-2)



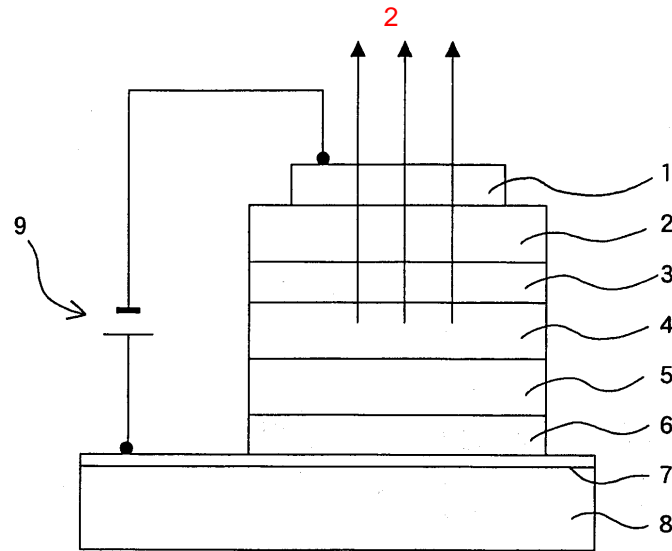
구조식 (2-3)



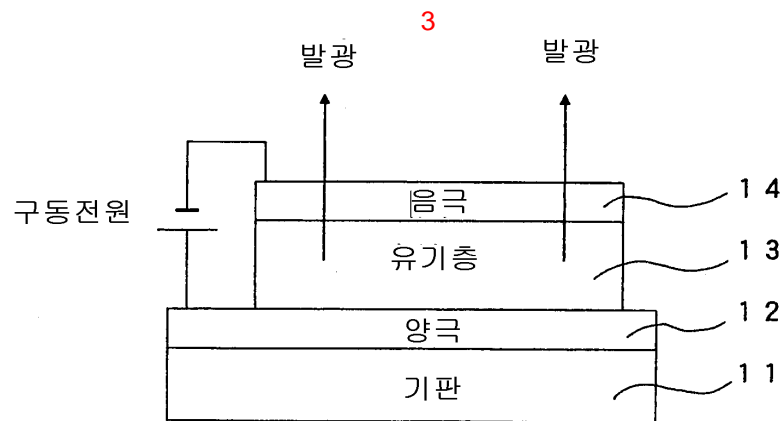
구조식 (2-4)



1 음극, 2 전자수송층, 3 정공블로킹층, 4 발광층
5 정공수송층, 6 정공주입층, 7 양극, 8 기판, 9 전원



1 음극, 2 전자수송층, 3 정공블로킹층, 4 발광층
5 정공수송층, 6 정공주입층, 7 양극, 8 기판, 9 전원



专利名称(译)	有机电致发光材料，有机电致发光元件和无定形铌络合物		
公开(公告)号	KR1020040106236A	公开(公告)日	2004-12-17
申请号	KR1020040042587	申请日	2004-06-10
[标]申请(专利权)人(译)	索尼公司		
申请(专利权)人(译)	索尼有限公司		
当前申请(专利权)人(译)	索尼有限公司		
[标]发明人	TAKADA ICHINORI 타카다이치노리 ISHIBASHI TADASHI 이시바시타다시 YAMADA JIRO 야마다지로 TAMURA SHINICHIRO 타무라신이치로		
发明人	타카다이치노리 이시바시타다시 야마다지로 타무라신이치로		
IPC分类号	H01L51/50 C07C49/92 H01L51/30 H05B33/14 C07F15/00 C07D235/18 C09K11/06 H01L51/00		
CPC分类号	C07F15/0033 H01L51/0059 H05B33/14 C09K11/06 C09K2211/1044 H01L51/0085 H01L51/0081 C09K2211/185 H01L51/5016		
代理人(译)	MOON , KYOUNG 金 KIM , HAK SOO		
优先权	2003167828 2003-06-12 JP		
外部链接	Espacenet		

摘要(译)

发明内容本发明的目的是提供一种新的大体积再循环铌络合物化合物，其在绿色至蓝色区域发光，以及使用该铌络合物的高效且持久的有机EL发光装置。作为解决该问题的手段，本发明的EL发光装置包括含有由下列结构式表示的糖 - 致密铌络合物的有机层13。（公式1）3

