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(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
C09K 11/06

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(43)

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(22)

10 - 2000 - 0060968
2000 10 17

(71)

575

(72)

APT106 - 1602

APT206 - 905

APT110 1301

APT110 1301

1405

1033

1002

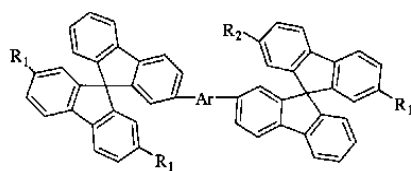
(74)

:

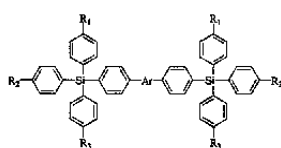
(54)

1 4

[1]


$$R_2 = \begin{pmatrix} 1 & 20 & 6 \\ 20 & 1 & 6 \\ 6 & 6 & 20 \end{pmatrix}, \quad R_1 = \begin{pmatrix} 1 & 20 & 6 \\ 20 & 1 & 6 \\ 6 & 6 & 20 \end{pmatrix}$$

[4]



$\frac{1}{20} \text{ Ar} + \frac{6}{20} \text{ 가} + \frac{1}{20} \text{ 가} + \frac{6}{20} \text{ R}_1, \text{ R}_2, \text{ R}_3$

EL, _____, _____,

[]

organic Electroluminescence Diode; OLED) . (Or

$$[\quad]$$

가 가

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

(back light)

가
200 V, 가
(Eastman Kodak) (alumina quinone) π -
가
(electroluminescence device: EL device) (emmitter layer) EL
EL

가 가 가 .

가 , , ,

가 가 .

EL 가

EL (anode)가 , , ,
가 , , ,

EL

가

(exiton) . 가

, 1987 (Eastman Kodak) (Appl. Phys. Lett. 51, 913, 1987).

(Idemitsu: 出光興山) 가 가

[H. Tokilin, H. Higashi, C. Hosokawa, EP 388, 768(1990)],

가

[Pro. SPIE, 1910, 180(1

9930)].

가

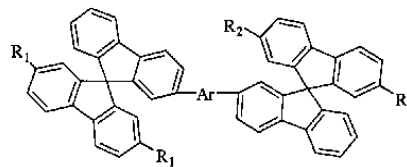
(spirobifluorene)

(triarylsilylphenyl)

1

(spirobifluorene)

[1]

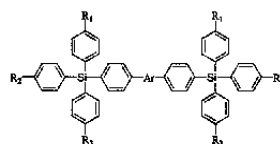


, Ar 6 20 , 1 20 가 6 20 , 6 20 , R₁
R₂ 1 20 , 1 20 , 1 20 가 6 20
, 1 20 가 6 20 .

4

(triarylsilylphenyl)

[4]

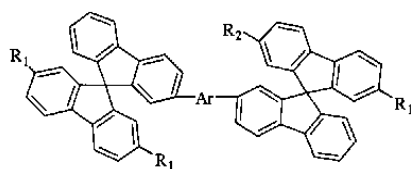


3, Ar 6 20, 1 20 가 6 20, R₁, R₂, R
1 20 가 6 20, 1 20 가 6 20
1 20 가 6 20

1 4

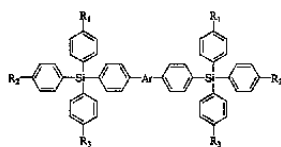
1 4

[1]



3, Ar 6 20, 1 20 가 6 20, R₁
R₂ 1 20 가 6 20, 1 20 가 6 20
1 20 가 6 20

[4]



3, Ar 6 20, 1 20 가 6 20, R₁, R₂, R
1 20 가 6 20, 1 20 가 6 20
1 20 가 6 20

1

(spirobifluorene)

π -

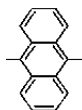
π -

1 Ar

2

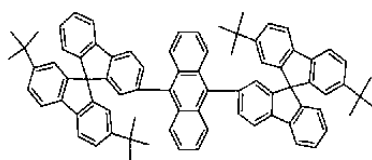
, R₁ R₂ t -

[2]



3

[3]



4

(triarylsilylphenyl)

 π -, π -

4

가

4

가

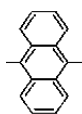
가

4 Ar

2

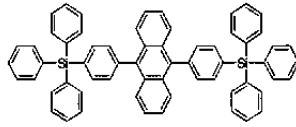
, R₁, R₂ R₃

[2]



5

[5]



1 4

EL

(ITO), (SnO₂), (ZnO)

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

1 4

EL 가

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

ion layer : HIL)

가

2

(hole inject (ITO)

CuPc, m - MTDATA, I - TNATA

3

1, t - (t - butylbenzene) 가 , 80 %
가 4 - t - (4 - t - butylbenzene) (A)

4 - t - (A) THF 가 8 4,4' - - t -
(4,4' - di - t - butyl - diphenyl) (B) (NiCl₂) 가 80 %

(B) 가 , 가 4,4' - - t - - 2 -
(4,4' - di - t - butyl = diphenyl) (C) 80 %

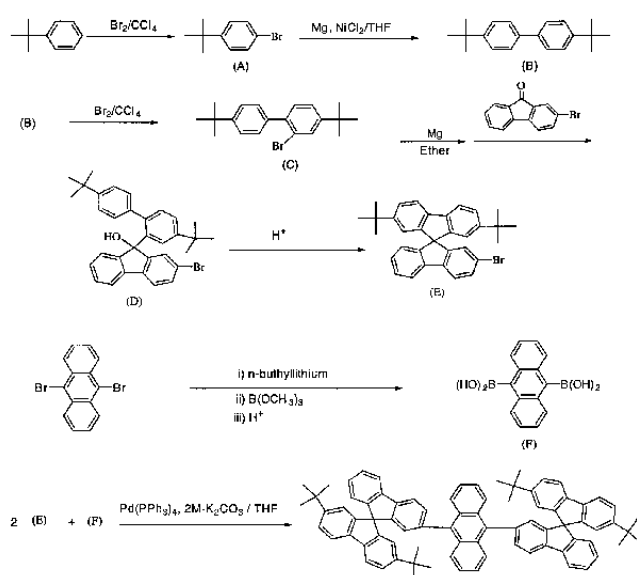
(C) 가 가
2 - (2 - bromofluorene) 가 4 (D)
60 %

(D) 가 3 (E) 90 %

9,10 - (9,10 - dibromoanthracene) (diethylether)
, 2 (n - butyllithium) - 40 가 1
, - 70 5 (trimethylborate) 가
, 10 (4 N H₂SO₄) 2
(F) 20 %

(F) 2 (E) THF , () 0.6 1
mol% 2M K₂CO₃ 2.5 가 24 3
40 %

[1]



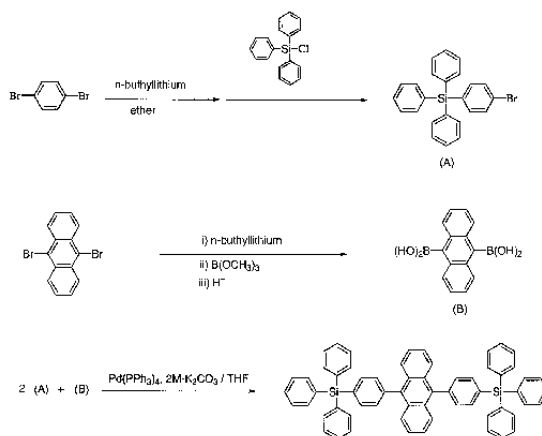
5

2, 1,4 - (1,4 - bromobenzene)
 (diethylether), 1 (n - butyllithium) - 40 가
 1 (triphenylsilylchloride) 가 4 (A) 95 %

9,10 - (9,10 - dibromoanthracene) (diethylether)
 , 2 (n - butyllithium) - 40 가
 , 10 - 70 5 (trimethylborate) 1 가
 , 10 (4N H₂SO₄) 2
 (B) 20 %

(B) 2 (A) THF , () (0.6
 1 mol%) 2M K₂CO₃ 2,5 가 24 5
 80 %

[2]



1

ITO , ITO N,N' - (3 -) - N,N' - - [1,1' -] - 4,
 4' - (TPD) 500
 , 3 280
 , 3 350
 Al : Li 1500

2

ITO

, ITO

2 - TNATA

400

 α - NPD

75

3

350

3

350

Al : Li

1500

3

3

6

1

4

3

6

2

5

ITO
(TPD)

, ITO

500

N,N' -

(3 -

) - N,N' -

- [1,1' -

] - 4,

4' -

5

280

6

350

Al : Li

1500

6

ITO

, ITO

2 - TNATA

400

 α - NPD

75

5

350

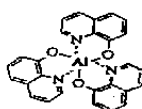
5

350

Al : Li

1500

[6]



3 cd/A . (turn - on) 5 V , (0.14, 0.09) . ,

(57)

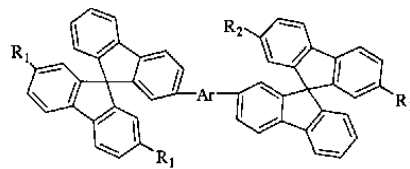
1.

1

(spirobifulorene)

:

[1]



, Ar 6 20 , 1 20 가 6 20 , R₁
 R₂ 1 20 , 1 20 , 1 20 가 6 20 .
 , 1 20 가 6 20

2.

1 ,

1 Ar , ,
 .

3.

1 ,

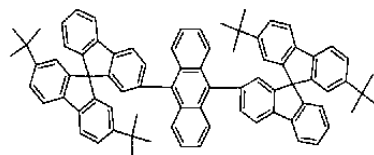
1 R₁ R₂ t - .

4.

1 ,

3 :

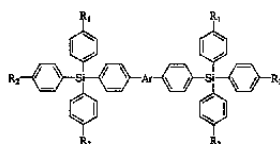
[3]



5.

4 (triarylsilylphenyl) :

[4]



1 , Ar 6 20 , 1 20 가 6 20 , R₁, R₂ R
3 1 20 , 1 20 가 6 20 가 6 20 .

6.

5 ,

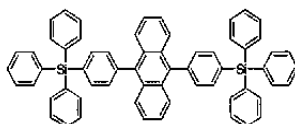
4 Ar .

7.

5 ,

5 :

[5]



8.

1 5

9.

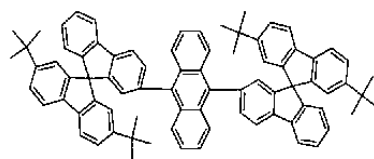
8 ,

1

3

:

[3]



10.

8 ,

5

5

:

[5]



专利名称(译)	用于有机电致发光器件的蓝色发光化合物和使用其的有机电致发光器件		
公开(公告)号	KR1020020030371A	公开(公告)日	2002-04-25
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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 LEE HYUNWOOK 이현욱 JEONG HYUNCHEOL 정현철		
发明人	김성한 유한성 권순기 김윤희 신동철 이현욱 정현철		
IPC分类号	H01L51/00 H01L51/50 H01L51/30 C09K11/06		
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代理人(译)	PARK, 常树		
其他公开文献	KR100377575B1		
外部链接	Espacenet		

摘要(译)

本发明提供了用作有机电致发光装置中，同时提供由通式机电致发光元件的蓝色发光的化合物 (1) 或4本发明涉及一种有机电致发光装置的蓝色发光化合物和使用该用于有机电致发光器件可以提供具有高亮度和改善的发光效率的有机电致发光器件。 [化学式 1] - 1 - 式中，Ar是选自具有同时具有具有芳基，具有同时具有碳原子数1~20的烷基，及碳原子数1~20的碳原子数6~20的芳基的6-20个碳原子的烷氧基的碳原子数为6~20的芳基组成的组将被选择，R 1和R 2是氢，无论彼此，C 1个烷基的1至20中，而具有具有同时具有碳原子数6~20的芳基的烷氧基的碳原子数为1~20，具有6至碳原子数为1~20个碳原子的烷基或具有1至20个碳原子的芳基。 [化学式4] 其中，Ar选自具有同时具有具有芳基，具有同时具有碳原子数为1~20的烷基碳原子数6~20的芳基的6-20个碳原子的烷氧基的碳原子数6~20的芳基组成的组中，碳原子数1~20的将中，R 1，R 2和R 3同时具有氢，烷基碳原子数为1~20的烷基的，碳原子数1~20，而与每个其他的而具有碳原子数为6~20的芳基的烷氧基，具有含的碳原子数6碳原子数为1~20的至20个芳基。 指数方面 有机EL，蓝色发光化合物，螺二苌，三芳基甲硅烷基苯基

