

2002 - 0003770
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- 1 -

4

, , , ,

1 가 가 .

2 .

3 2 - NMR .

4 2 - 2,7 - (DSC thermogram).

5 2 - 2,7 - .

6 2 - .

7 2,7 - .

8 2,7 - UV .

9 (4 -) NMR .

10 (4 -) (DSC thermogram).

11 (4 -) .

12 (4 -) .

13 (4 -) UV .

14 (4 -) .

15 ITO/ (4 -) /Alq₃/Al .

, , , ,

,

/

,

TFT - LCD, ()
 가 ,
 (dipping) , 1)
 , 2) 100nm
 , 3)

, 1)
 , 2) , 3) 가
 , 4) 가 , 5) 가
 , 가

가 가 .

(p -
)(poly(p - xylylene))(: A. Greiner, Trends in Polymer, 5(1997), 12), (: D. W.
 Smith et al., J. Am. Chem. Soc., 120(1998) 9078), (poly(benzocyclobutene) (
 p -)(poly(p - phenylenevinylene))(: K. M. Vaeth et al., Macromolecules, 31(1998) 6789)
 Teflon AF(: T. C. Nason et al., Appl. Phys. Lett., 60(1992), 1866) 가 가 .
 가 ,
 가

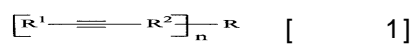
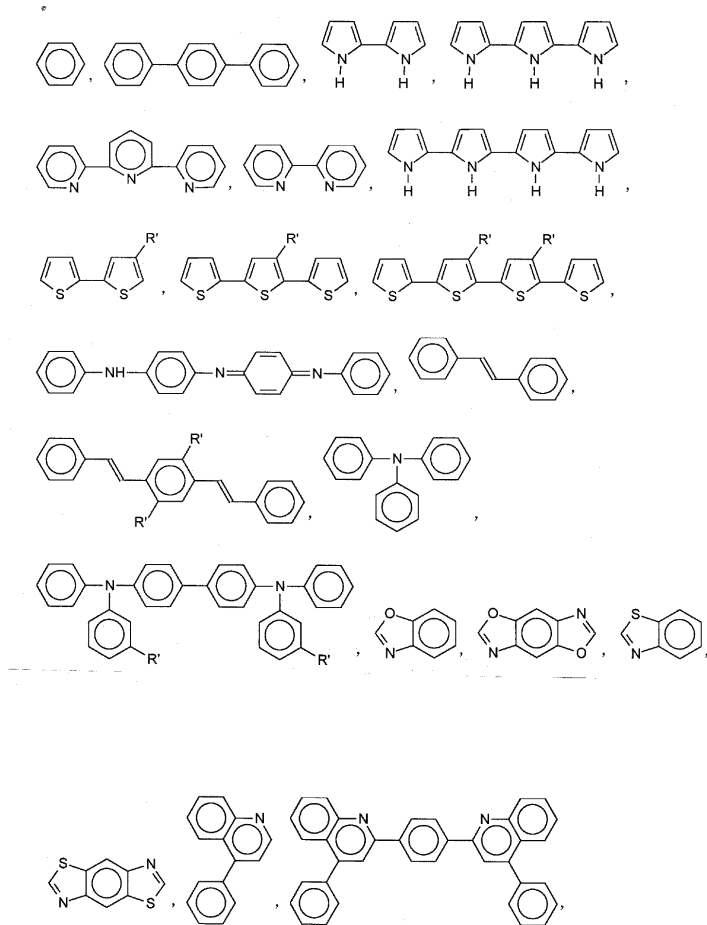
(: S. Ukishima et al., Thin Solid Films, 308 - 309(1997) 479), (: A.
 Kubono et al., Thin Solid Films, 289(1996) 107), (: F. Fukuda, Key Eng. Mater., 92 - 93(19
 94) 143), (: S. Tatsuura et al., Appl. Phys. Lett., 62(1993) 2182)
 가

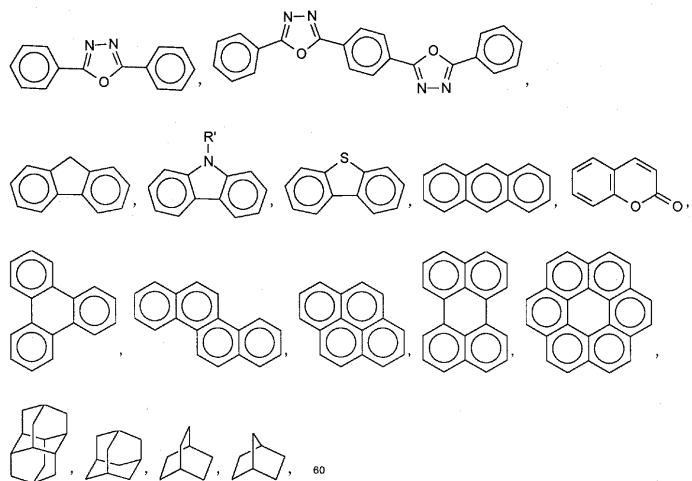
, 가
 400 ,

가

가

(1) :

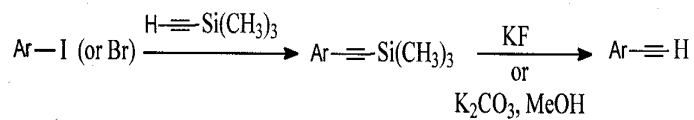

$$1, R^1, H, R^2, R, n-1.$$




, R' H 가 1 12

, (Arl) 가 (ArBr) (1)

[1]



(1) () (1)

가 (1) 가 ()

(1)

(1)

가

가

가

가

2

ITO

(1)

가

가

가

가

[1]



[1]

2 -

300ml (fluorene) 10g(0.06mol) 15.23g(0.06mol) 가 1.
 2ml 12ml 35 2 ,
 2L 가 100ml 가 5%
 100ml 5% (sodium thiosulfate) 100ml ,
 (petroleum ether) (soxhlet)
 7.89g(: 45%) 2 - (2 - iodofluorene)

150ml 7.89g 2 - []
 (bis(triphenylphosphine)palladium dichloride) 379mg(0.54mmol) 51mg(0.27mmol)
 가 (trimethylsilylacetylene) 4.2ml(29.7mmol)
 8 ,
 6.02g(: 85%) 2 -
 (2 - trimethylsilylethynylfluorene)

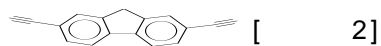
100ml 2 - 6.02g(22.9mmol) 가
 , 1N 25ml 3 ,

,
71g(: 87%) 2 - (sublimation) 60 /2torr (15/1)
3 (2 - ethynylfluorene) 2 - NMR
85

, 2 - (DSC thermogram) 4 . 4 ,
가 2 - 230
230 2 -

, 2 - 5 . 5
(TGA thermogram) , 2 - 230 , 30
260

[2]



2,7 -

100ml 10g(0.06mol) NBS (N - bromosuccinimide) 22.43g(0.126mol) 가
75 6 , 200ml 가
10.89g(: 56%) 2,7 - (2,7 - dibromofluorene)

, 150ml 2,7 - 10.89g(33.6mmol) [2
] 941mg(1.34mmol) 128mg(0.67mmol) , 8
10.45ml(73.9mmol) , 8
, 10.12g(: 85%) 2,7 - ()
(2,7 - di(trimethylsilylethynyl)fluorene)

, 150ml 2,7 - () 10.12g(28.2mmol) 가
, 1N 60ml 3
(15/1) , 60 /2torr
4.35g(: 72%) 2,7 - (2,7 - diethynylfluorene) . 2,7 -
125

, 2,7 - (DSC thermogram) 4 . 4 ,
가 2,7 - 198
200 2,7 -

5, 2,7 - 5
385, 2 - 198, 30
가, 가 가

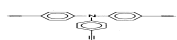
[1]

1 2 - 2 2,7 - 1
 2×10^{-4} torr, 1500 . 2 -
2,7 - 6 7 2 - 230 30, 2,7 -
198 30
6 7, 2 - 2,7 - 3283(cm^{-1})
1) - (stretching vibration) 가, 2099(cm^{-1})
- (stretching vibration) 가, 30
3283(cm^{-1}) 2099(cm^{-1}) 가, 1600 1700(cm^{-1})
가
2,7 - 2,7 -

[2]

2 2,7 - 1 UV
 2×10^{-4} torr, 300 UV
8 8, UV 340 nm
가 가 UV
2,7 -

[3]



[3]

(4 -)

150ml 10g(0.0408mol) 가, (19.54g, 0.
122mol) 2
400ml 가 15.54g(
: 79%) (4 -) (tri(4 - bromophenyl)amine)

200ml (4 -) 15.54g(0.032mol) [
1.35g(1.92mmol) 183mg(0.96mmol) 가,
9.43g(96mmol) 8

ethynylphenyl)amine) 13.84g(: 81%) (4 -) (tri(4 - trimethylsilyl)ethynylphenyl)amine)

(THF) 180ml 240ml (4 -)
13.84g(0.026mol) (KF) 4.53g(0.078mol) 가 , 50 5 .

182g(: 75%) (4 -) (tri(4 - ethynylphenyl)amine) (4 -)
) NMR 9 , 115 . , 6.

(4 -) (DSC thermogram) 10 10
가 3 (4 -) 185 .

(4 -) 11 11
, (4 -) 185 , 30
375 .

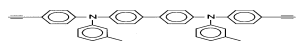
[3]

3 (4 -)
, (4 -) 1
 2×10^{-5} torr , 1500 .
12 12 가 , 2102(cm^{-1}) 3277(cm^{-1}) -
가 , 2102(cm^{-1}) 3277(cm^{-1}) 2102(cm^{-1}) 가 , 160
0 1700(cm^{-1}) 가 .

(4 -) UV
(4 -) 2×10^{-5} torr 300 UV
UV 가 , 13 13 , UV
(4 -)

(4 -) 254nm 320nm UV
, , 14
가 가
(photoresist) 가

[4]



[4]

N,N - (3 -) - N,N - (4 -)

50ml N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - bromophenyl)benzidine) 3.3g(4.89mmol), [] 137mg(0.196mmol) 18.7mg(0.098mmol) 가 , , 0.96mg(9.78mmol) 8 .

2.705g(: 78%) N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - trimethylsilyl - ethynylphenyl)benzidine) .

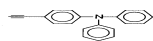
, 60ml THF 80ml N,N - (3 -) - N,N - (4 -) 2.705g(3.814mmol) KF 0.443g(7.628mmol) , 50 5 .

, 1.852g(: 86%) N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - ethynylphenyl)benzidine) . (9/1)

[1] N,N - (3 -) - N,N - (4 -)

	C	H	N
	89.27%	5.77%	4.94%
	89.33%	5.71%	4.96%

[5]



[5]

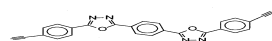
(4 -)

N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - bromophenyl)benzidine) (4 -) (4 - bromophenyl)diphenylamine) 3.0g(9.25mmol) 4 1.503g(: 71%) (4 -) ((4 - ethynylphenyl)diphenylamine) .

[2] (4 -)

	C	H	N
	89.16%	5.70%	5.14%
	89.19%	5.61%	5.20%

[6]



[6]

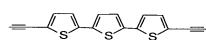
1,3 - (5 - (4 -) - 1,3,4 -)

N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - bromophenyl)benzidine) 1,3 - (5 - (4 -) - 1,3,4 -) (1,3 - di(5 - (4 - bromophenyl) - 1,3,4 - oxadiazole)benzene) 5.0g (9.54 mmol) , 4 1,3 - (5 - (4 -) - 1,3,4 -) (1,3 - di(5 - (4 - ethynylphenyl) - 1,3,4 - oxadiazole) benzene) 1.75g (: 65%) .

[3] 1,3 - (5 - (4 -) - 1,3,4 -)

	C	H	N
	75.29%	3.44%	13.49%
	75.65%	3.41%	13.52%

[7]



[7]

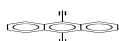
5,5 - - 2,2:5,2 -

N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - bromophenyl)benzidine) 5,5 - - 2,2:5,2 - (5,5 - dibromo - 2,2:5,2 - terthiophene) 5.0g(12.3mmol) , 4 2.37g(: 65%) 5,5 - - 2,2:5,2 , (5,5 - ethynyl - 2,2:5,2 - terthiophene) .

[4] 5,5 - - 2,2:5,2 ,

	C	H
	64.8%	2.76%
	64.83%	2.72%

[8]



[8]

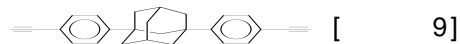
9,10 -

N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl) - N,N' - di(4 - bromophenyl)benzidine) 9,10 - (9,10 - dibromoanthracene) 5.0g(14.9mmol) , 4 2.42g(: 72%) 9,10 - (9,10 - diethynylantracene) .

[5] 9,10 -

	C	H
	95.53%	4.47%
	95.55%	4.45%

[9]



1,4 - (4 -)

1,4 - (1,4 - diphenyladamantane) 5.0g(21.9mmol) 5.86g(: 60%) 1,4 -
 (4 -) (1,4 - di(4 - bromophenyl)adamantane) . 1,4 - (4 -)
 (5g, 11.2mmol) N,N - (3 -) - N,N - (4 -) (N,N' - bis(3 - methylphenyl)
 - N,N' - di(4 - bromophenyl)benzidine) , 4 2.63g(
 : 70%) 1,4 - (4 -) (1,4 - di(4 - ethynylphenyl)adamantane) .

[6] 1,4 - (4 -)

	C	H
	92.78%	7.22%
	92.81%	7.19%

[10]

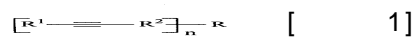
3 (4 -) , (8 -
) (tris(8 - hydroxyquinolino)aluminum, 'Alq₃')
 . , ITO
 . , ITO (4 -) 1 2.0 × 1
 0⁻⁵ torr 0.5 /sec 80 ,
 (4 -)
 Alq₃ 2.0 × 10⁻⁵ torr 2.0 /sec , 500
 , 2.0 × 10⁻⁵ torr
 -5 torr 5.0 /sec , 1500 IT
 O/ (4 -) /Alq₃/Al 15 , ITO
 , 3.5V 0.5mA .

(57)

1.

1 가

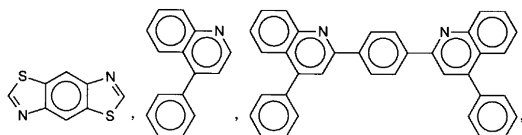
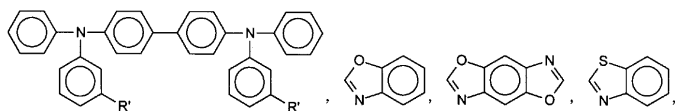
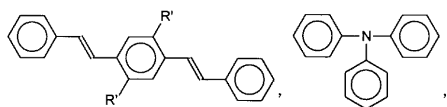
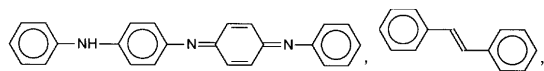
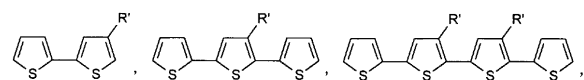
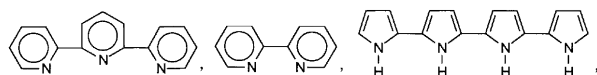
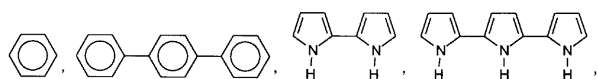
:

, R¹ H ;R² ;

R

; ,

n 1 :



ITO , , 1

.

8.

ITO , ,
1

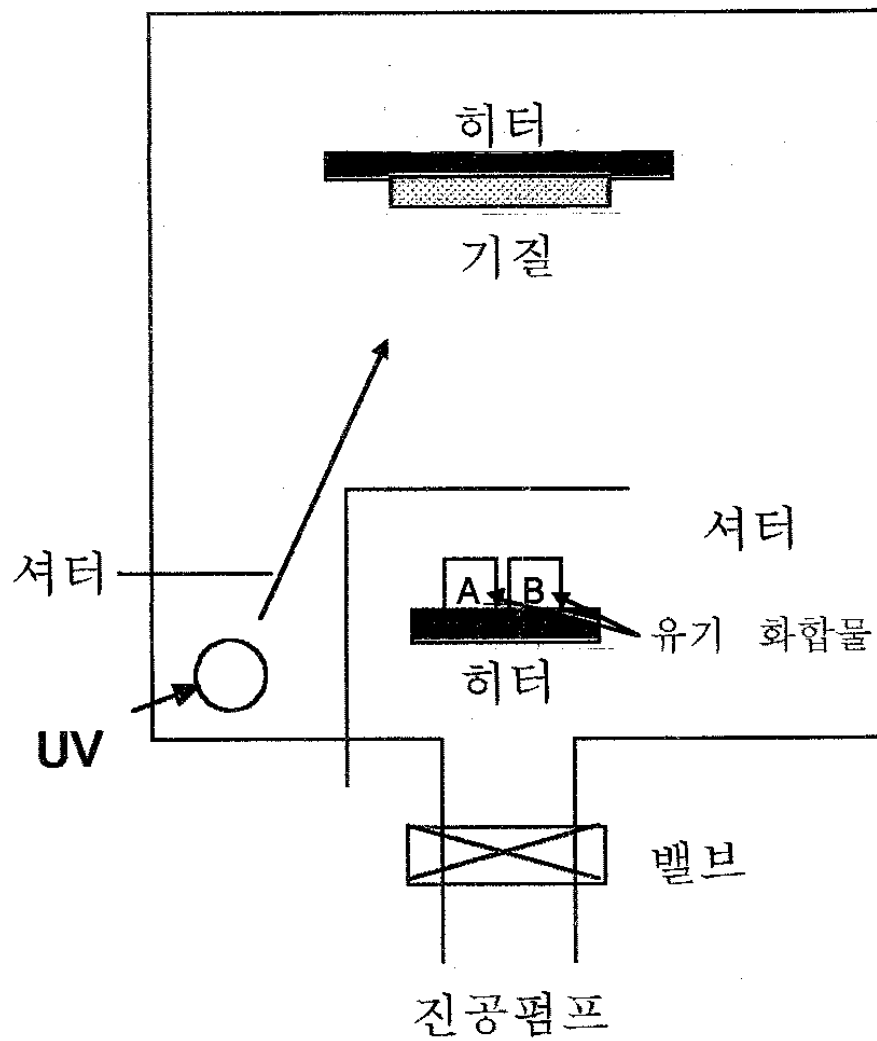
.

9.

ITO , , , 1 , ,

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1



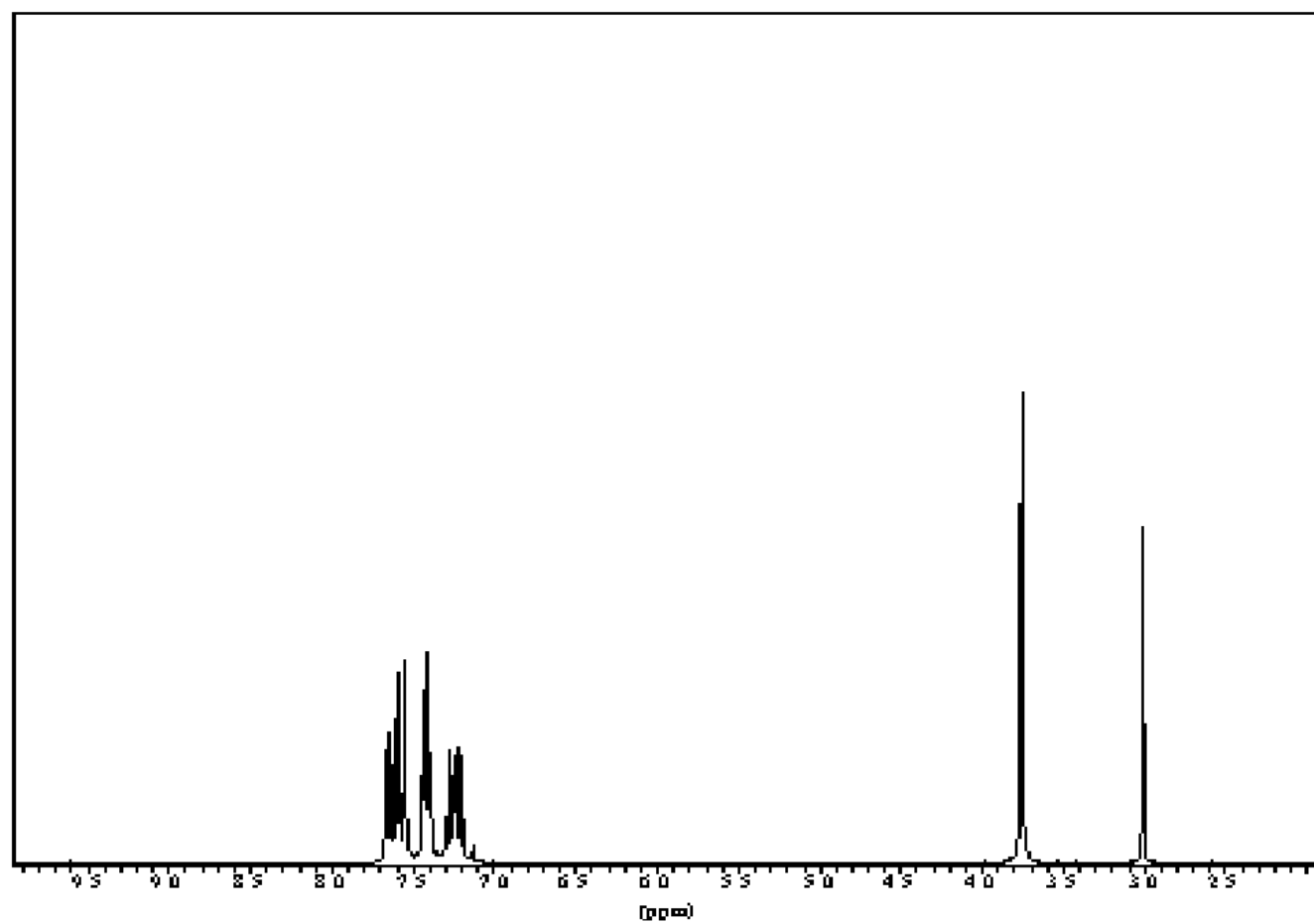
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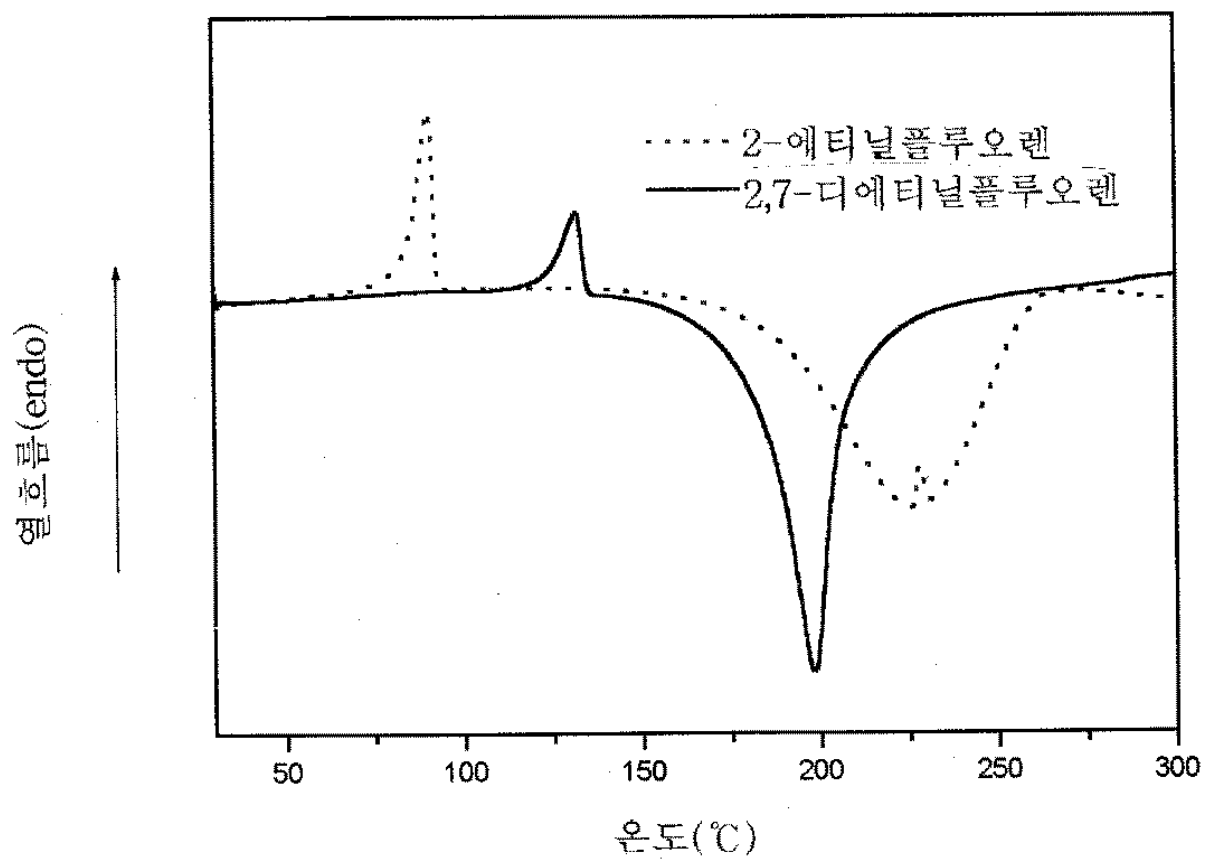
금속 전극
전기 발광층
ITO전극

금속 전극
전기 발광층
전공 수송층
ITO전극

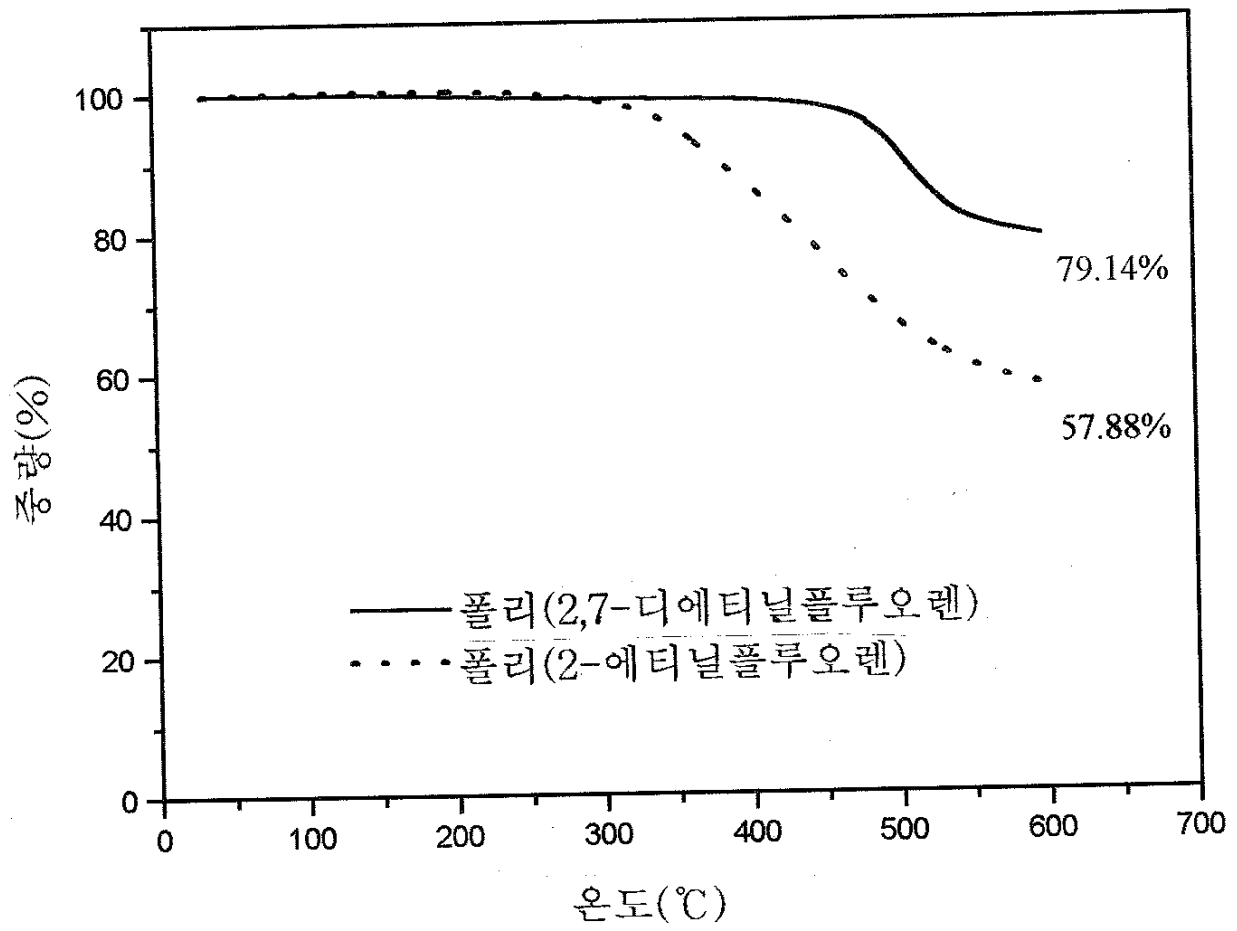
금속 전극
전자 수송층
전기 발광층
전공 수송층
ITO전극

3

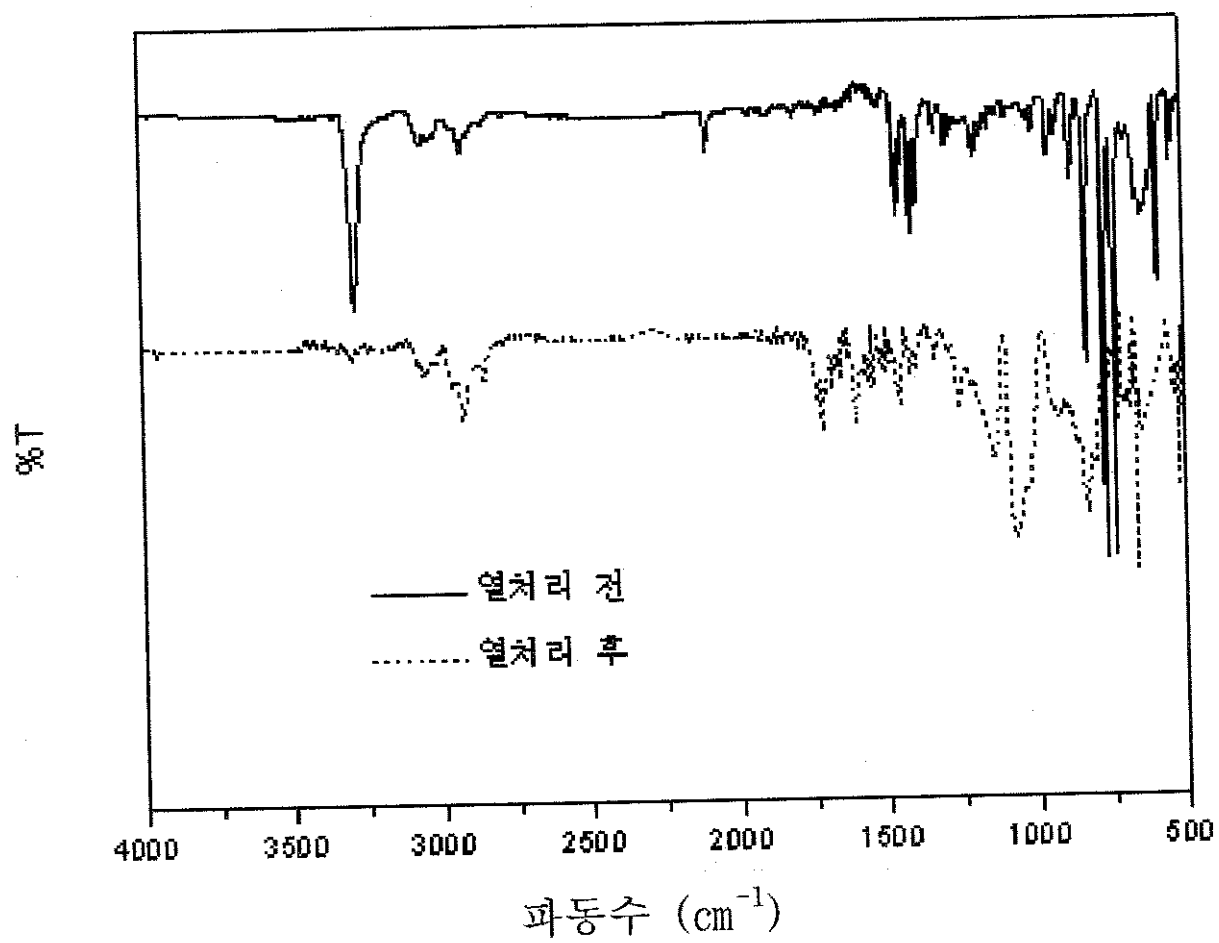




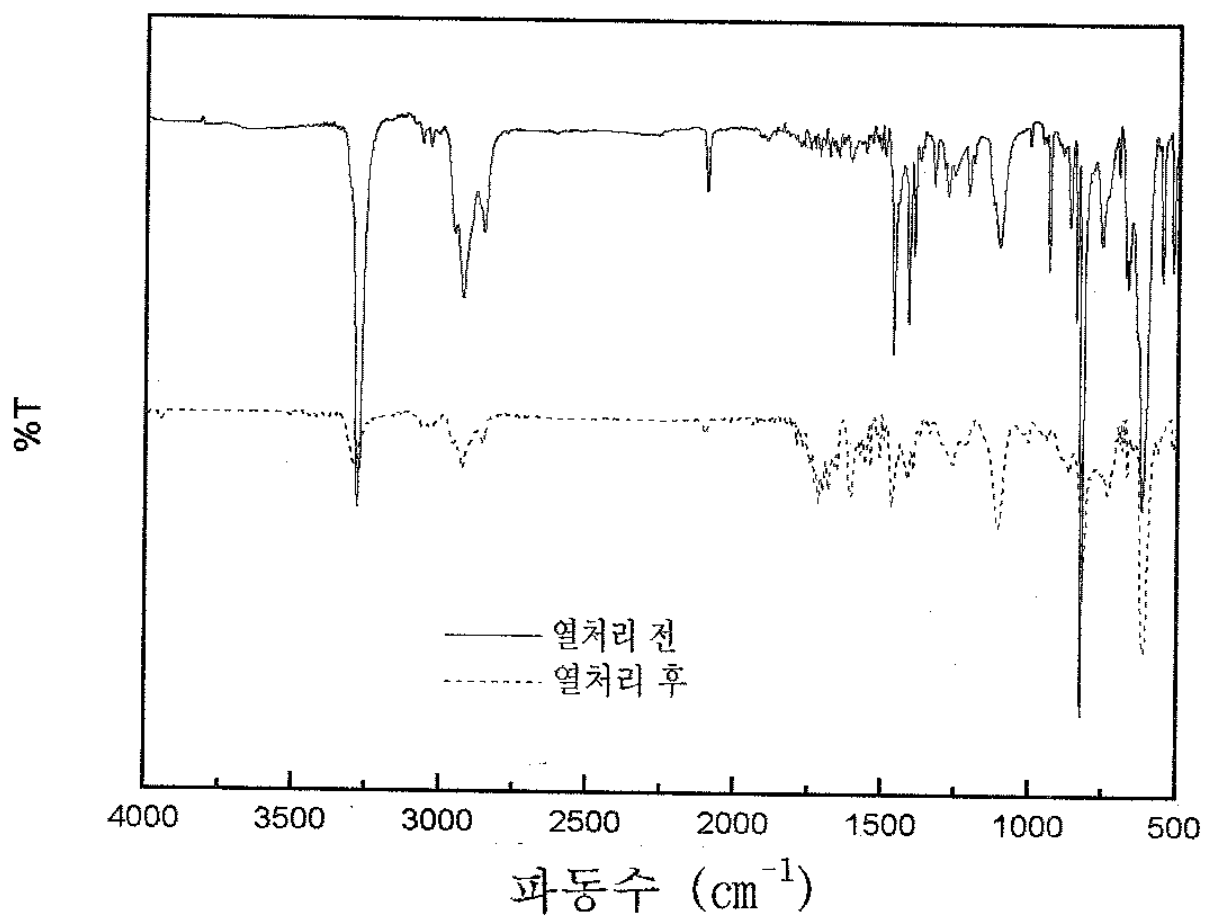
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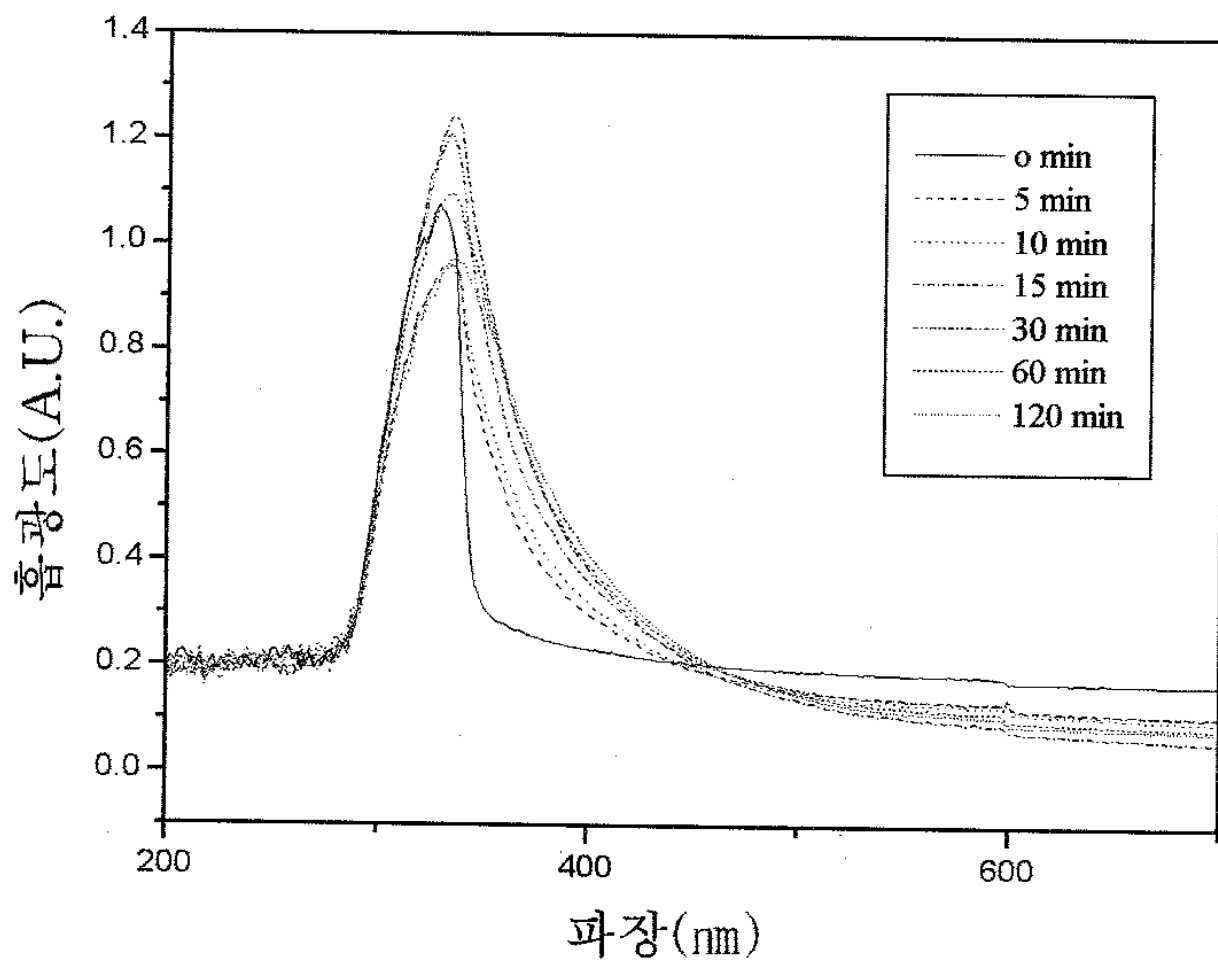


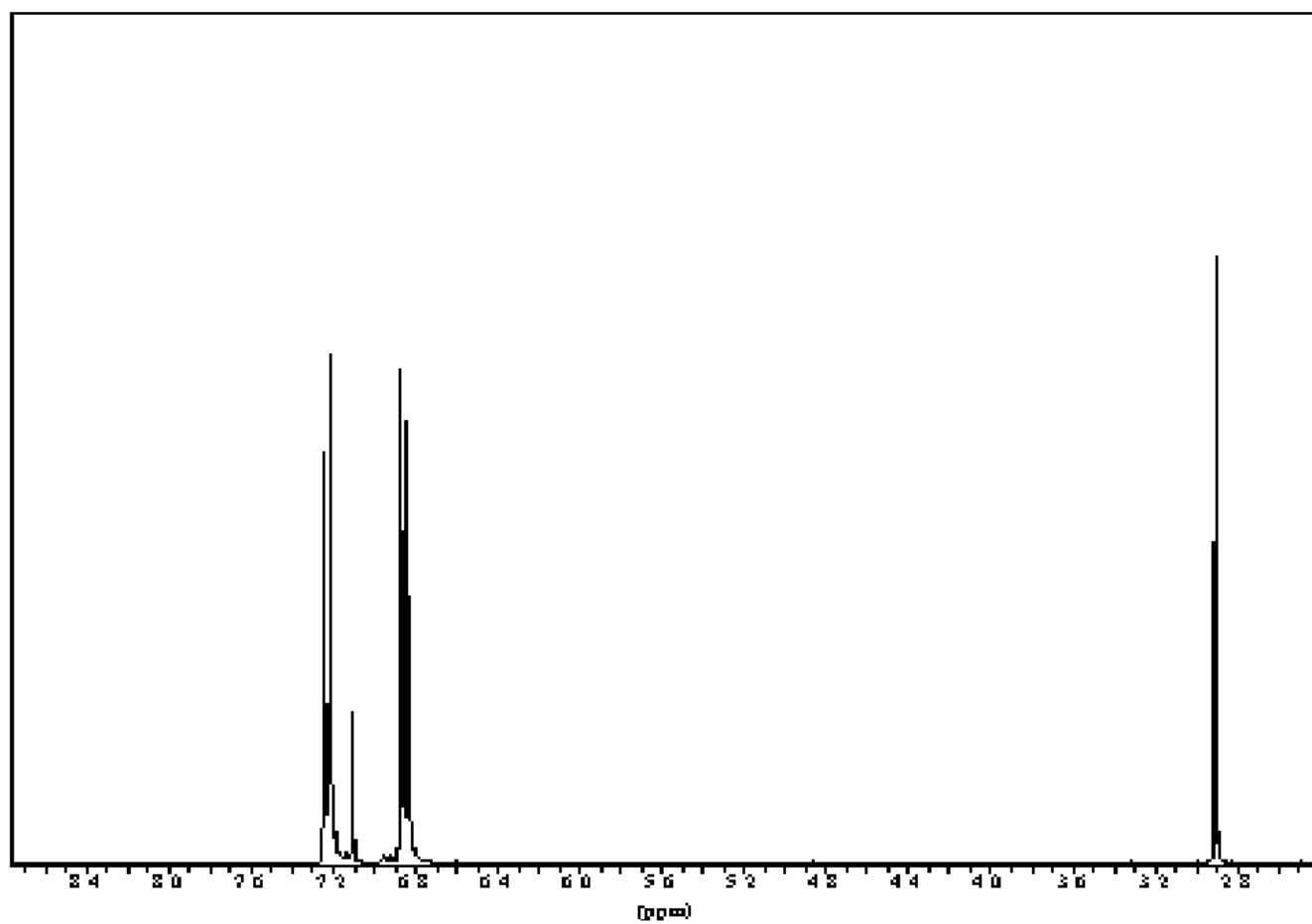
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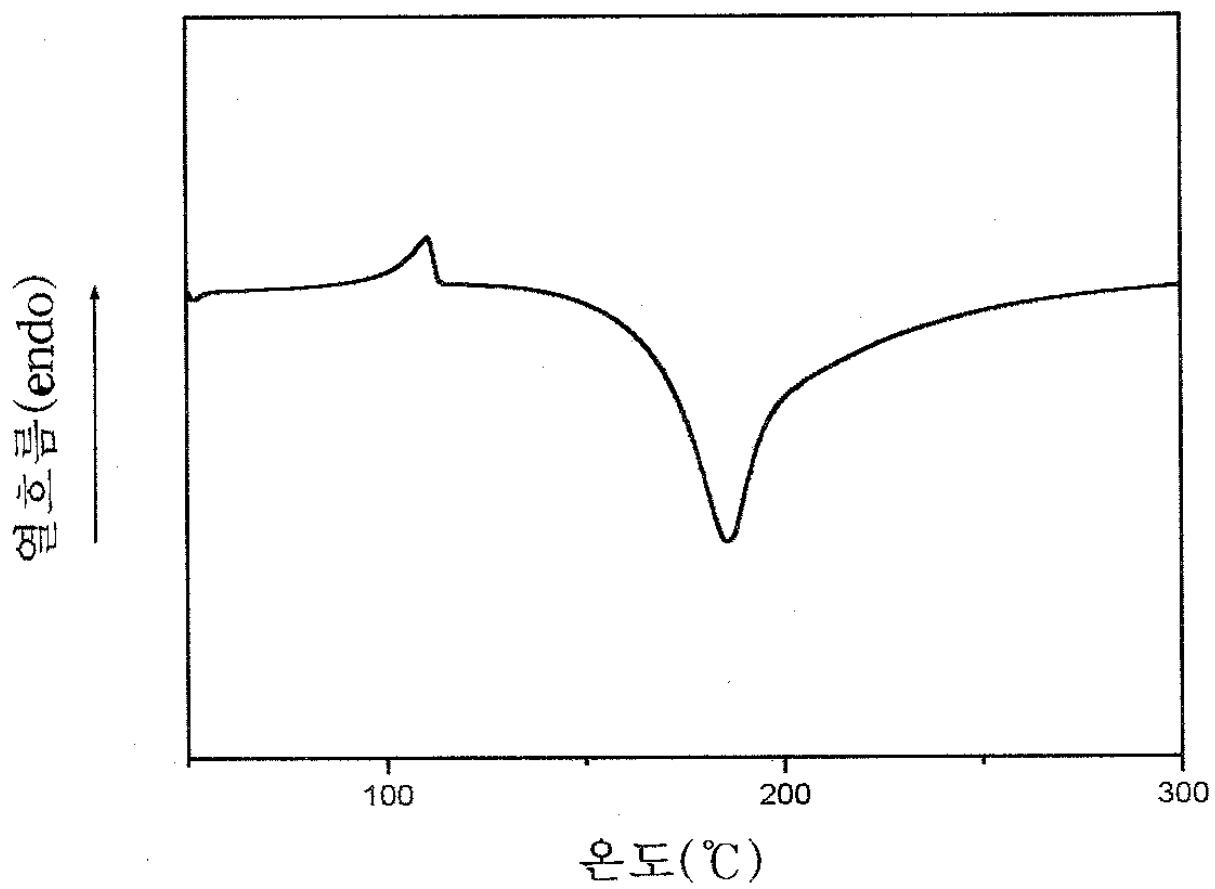
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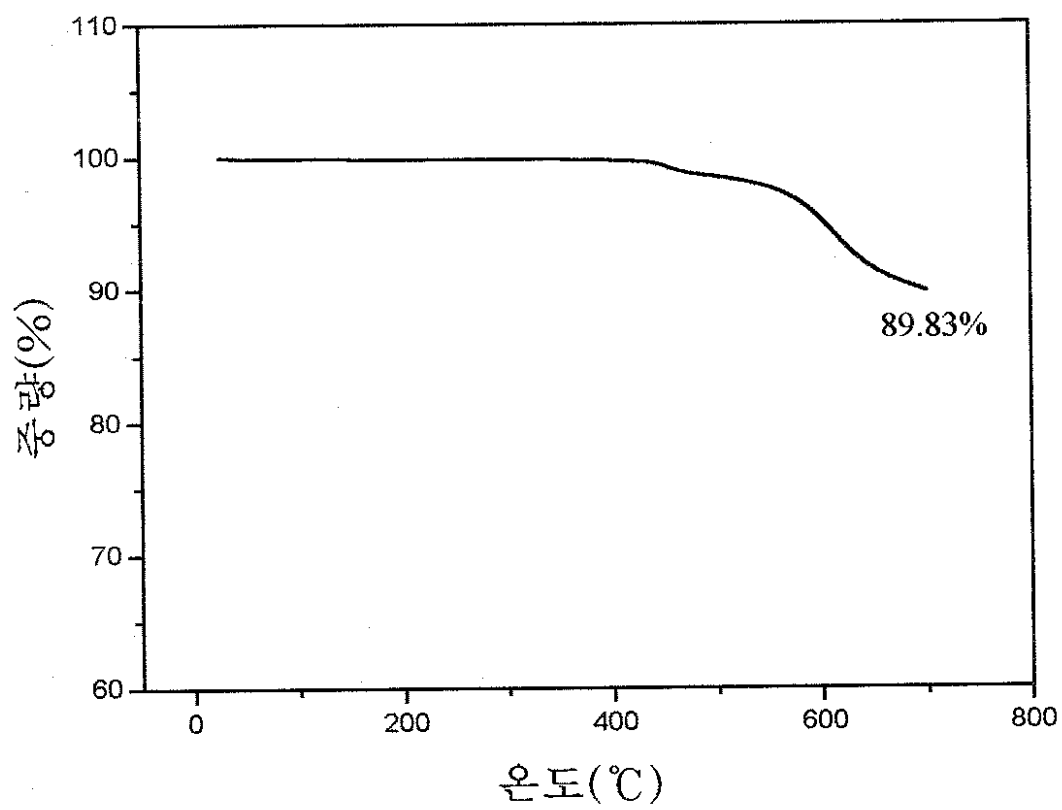




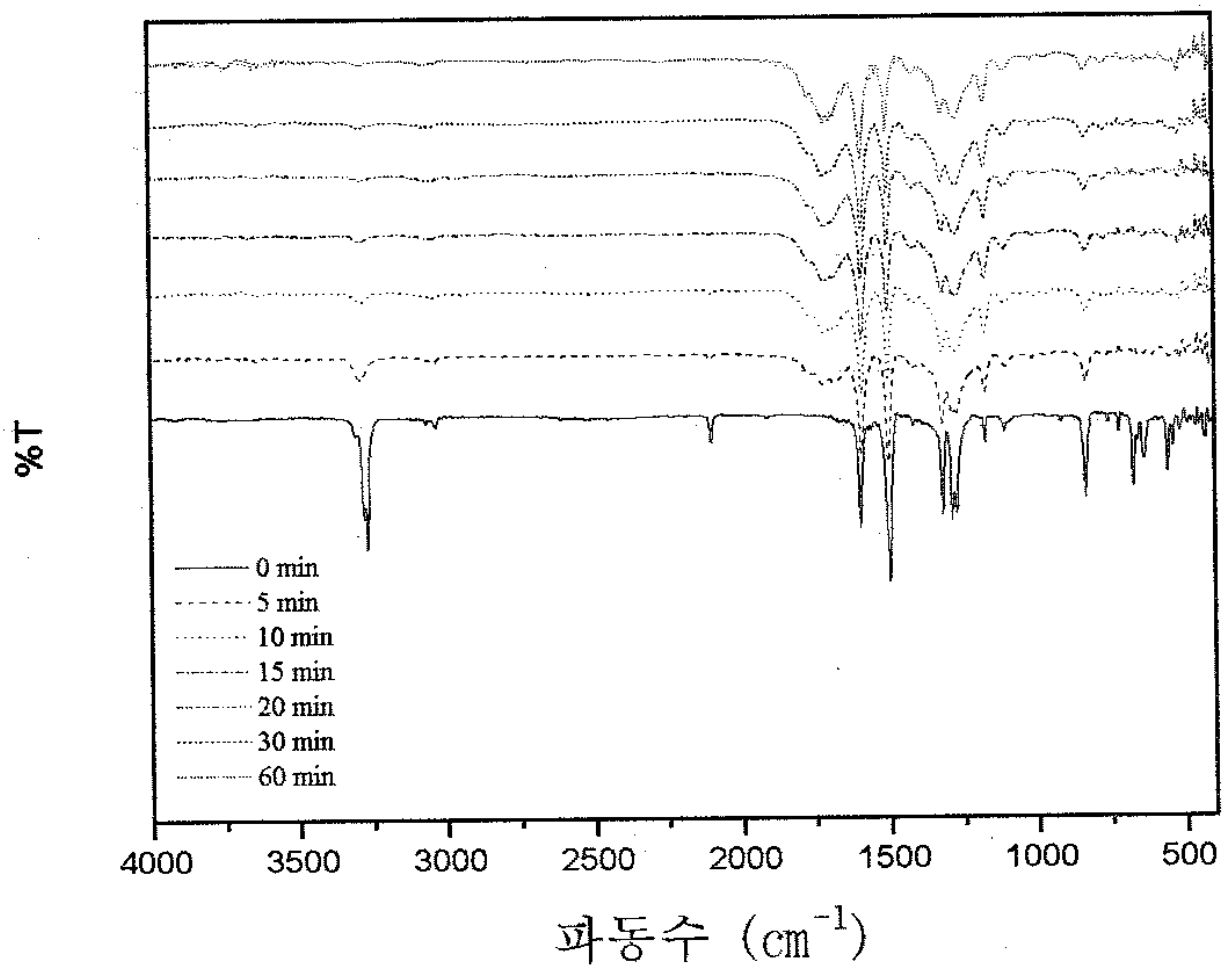
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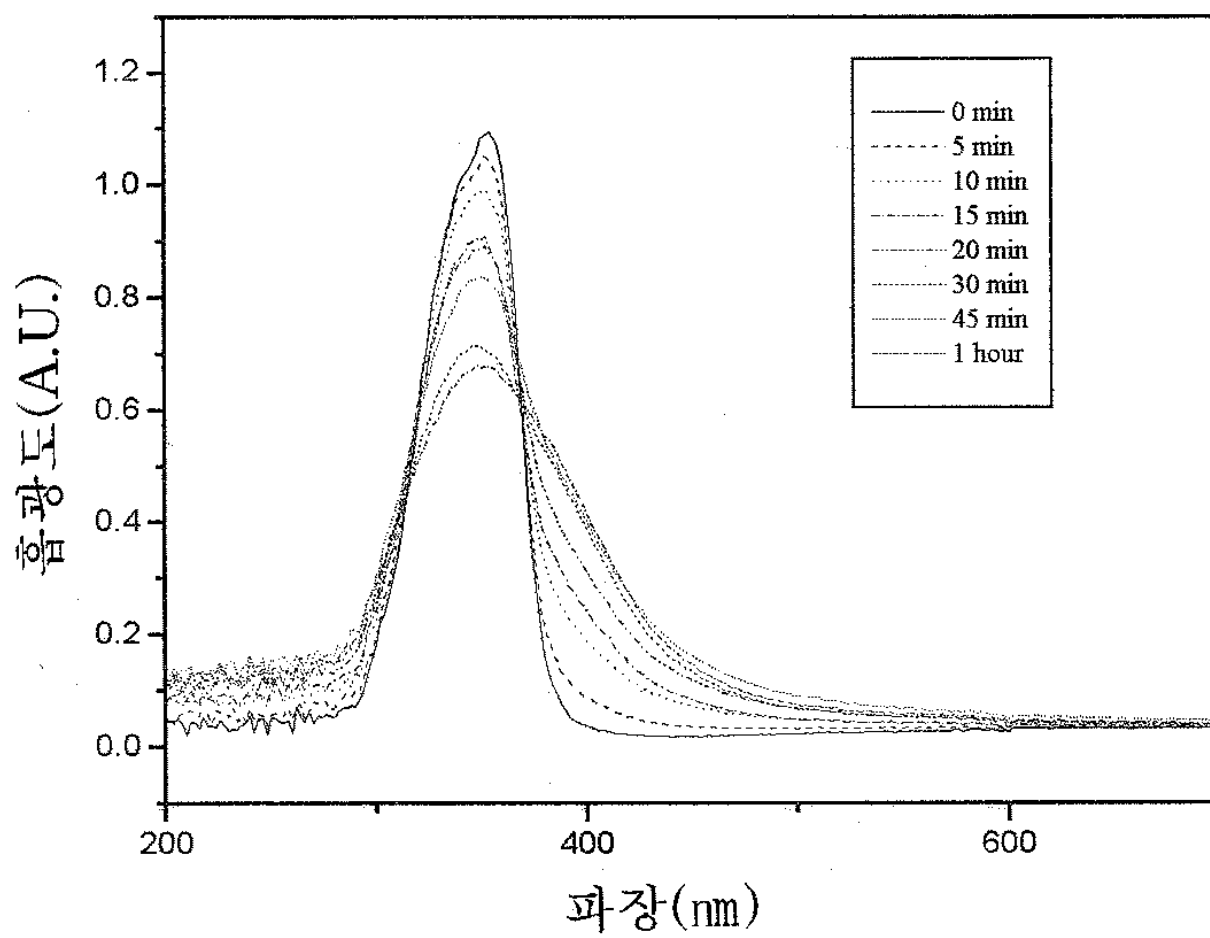
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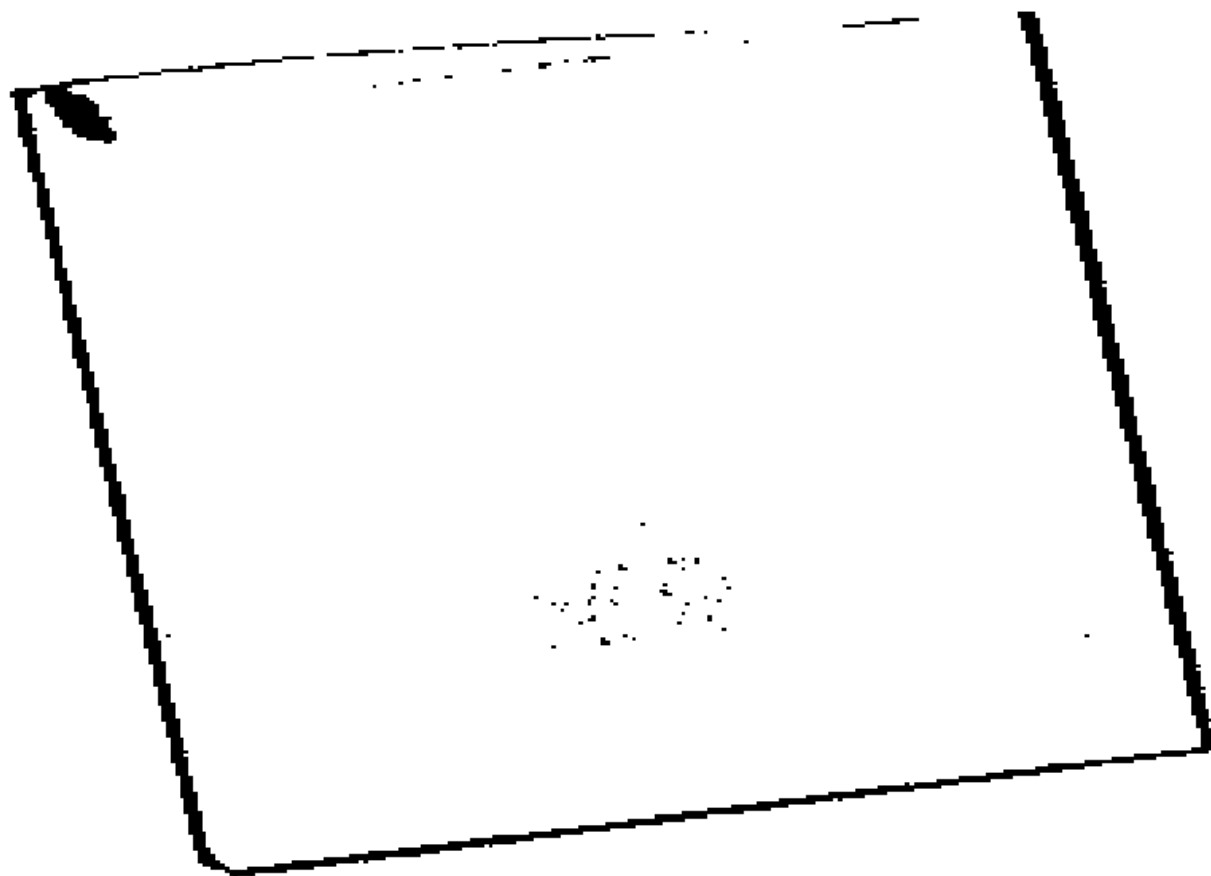
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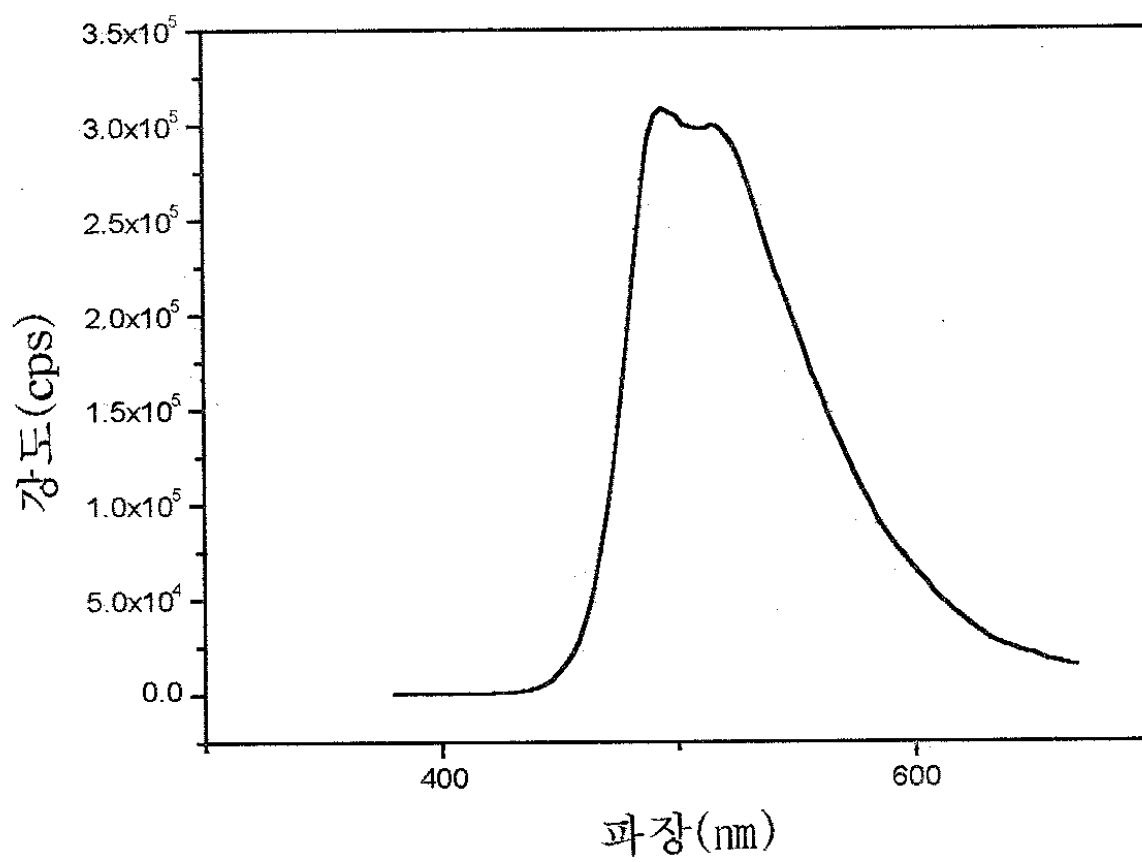
13



14



15



专利名称(译)	含有乙炔基的有机化合物，使用该化合物的气相沉积聚合方法，通过该方法制备的气相沉积法		
公开(公告)号	KR1020020003770A	公开(公告)日	2002-01-15
申请号	KR1020000037784	申请日	2000-07-03
[标]申请(专利权)人(译)	韩国化学研究所		
申请(专利权)人(译)	韩国化工研究院技术		
当前申请(专利权)人(译)	韩国化工研究院技术		
[标]发明人	JUNG SANGHYUN 정상현 LEE CHANGJIN 이창진 KANG YONGKU 강영구 LEE SUNGKOO 이성구 KIM HEEJUNG 김희정		
发明人	정상현 이창진 강영구 이성구 김희정		
IPC分类号	H01L51/50 C07D263/56 C07C15/48 C07D311/08 C07D207/335 H01L51/40 C07D333/76 C07C211/54 C07D215/04 C07D271/10 C07D209/86 H01L51/00 C07C13/567 C07D498/04 H05B33/10 C07C15/28 C07D213/22 C07D271/107 C07C13/70 C08F38/00 C23C14/58 C07D513/04 H01L51/30 C23C14/12 C08F2/00 C07D277/64 C07D333/18 C07C15/60		
CPC分类号	H01L51/5012 H01L51/0059 C07D333/18 H01L51/0008 C07C211/54 H01L51/007 H01L51/0041 H01L51/ /0052 H01L51/0068 C07D271/107 C07C13/567 C08F38/00 H01L2251/308 Y02E10/50 H01L51/0081 C07C15/28 Y02E10/549 Y02P70/521 Y10T428/31504 Y10T428/31855		
代理人(译)	李，洪KIL		
其他公开文献	KR100360308B1		
外部链接	Espacenet		

摘要(译)

用途：提供包含一个或多个乙炔基的有机化合物，使用该化合物进行的沉积聚合，通过该沉积聚合而具有相同厚度和优异的热稳定性的沉积聚合薄膜以及使用该薄膜的电致发光元件。 组成：有机化合物包含乙炔基，薄膜是通过在真空下将至少一种有机化合物沉积在基板上，并在沉积的同时或之后通过热处理或紫外线照射进行聚合而制得的 沉积物。 并且沉积沉积的薄膜用作电致发光元件的空穴传输层和/或电致发光层和/或电子传输层。

