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143 - 21

462 - 4

103 - 1005

(72) 462 - 4 103 - 1005  
1 97 - 3 122 - 104  
203 - 303

(74)  
:

(54)

(OELD)

THC(5,6,11,12 - Tetrahydrochryscene)

THC  
30 V

456 nm

25 cd/m<sup>2</sup>

THC

1

- 1 .
- 2 THC(5,6,11,12 - Tetrahydrochryscene) - .
- 3 THC(5,6,11,12 - Tetrahydrochryscene) - .
- 4 THC(5,6,11,12 - Tetrahydrochryscene) .

(OELD) , THC

(OELD) 1983 Partidge , Tang Van Slyke 1987  
 10  
 가  
 가 (ELD) 가 , ,  
 가 가

azomethyn zinc complex 가  
 가 (exciplex)

가 가

THC가 5,6,11,12 - Tetrahydrochryscene( , THC ) 4 가 .  
 (Photoluminescence) , 2,8

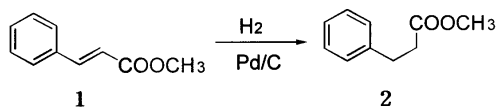
THC (Electroluminescent device, ELD) (Electroluminescence, EL) . THC 1 methyl cinnamate( 1)

## 1. Methyl - 3 - phenyl propionate

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Methyl cinnamate (15 g, 92.5 mmol) palladium hydroxide on carbon (Pearlman's catalyst, 1 g)  
 EtOH (100 ml) H<sub>2</sub> gas (1 atm) 가 . NMR  
 . Pd/C solid celite . Methyl - 3 - phe  
 nyl propionate (15.03 g, 99%) : <sup>1</sup>H - NMR (200MHz, CDCl<sub>3</sub>) 2.66 ppm (t, 2H, CH<sub>2</sub>COO), 2.94 (t, 2H,  
 benzylic H), 3.69 (s, 3H, OCH<sub>3</sub>), 7.20 7.31 (m, 5H, ArH).

1

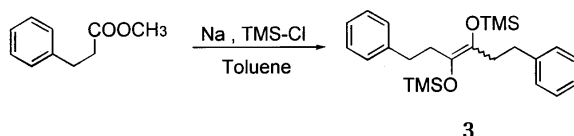


## 2. 3,4 - Bis[(trimethylsilyl)oxy] - 1,6 - bis(phenyl) - 3 - hexene

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Sodium (6.3 g, 274 mmol) Toluene (250 ml) sodiu  
 m sand 75 , Methyl - 3 - phenyl propionate (15 g, 91.4 mmol) chlorotrim  
 ethylsilane (TMSCl, 29.8 ml, 274 mmol) 가 . 110 9  
 (100 ml) (60 ml) sodium  
 0 ml) (60 ml) ethyl acetate (2 x 3  
 sodium  
 MgSO<sub>4</sub> ,  
 (ether:hexane = 1:20) 3,4 - B  
 is[(trimethylsilyl)oxy] - 1,6 - bis(phenyl) - 3 - hexene (5.61 g, 36%) : <sup>1</sup>H - NMR (200MHz, CDCl<sub>3</sub>)  
 0.23 0.34 ppm (m, 18H, SiCH<sub>3</sub>), 2.33 (t, 4H, CH<sub>2</sub>CO), 2.81 (t, 4H, benzylic H), 7.24 7.37 (m, 10H, Ar  
 H).

2

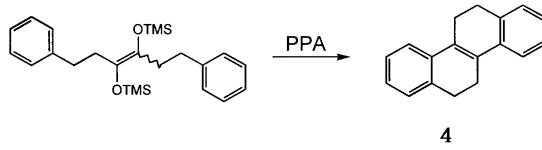


## 3. 5,6,11,12 - Tetrahydrochrysen

## 3. 5,6,11,12 - Tetrahydrochrysen

3,4 - Bis[(trimethylsilyl)oxy] - 1,6 - bis(phenyl) - 3 - hexene (4 g, 11.78 mmol) polyphosphoric a  
 cid (PPA, 35 g) 가 5  
 (50 ml) ethyl acetate (100 ml)  
 NaHCO<sub>3</sub> (2 x 30 ml)  
 (2 x 30 ml) .  
 MgSO<sub>4</sub> . Hex  
 ane 5,6,11,12 - Tetra hydrochrysen (600 mg, 22%) : <sup>1</sup>H - NMR (  
 200MHz, CDCl<sub>3</sub>) 2.69 ppm (t, 4H, allylic protons), 2.91 (t, 4H, ArCH<sub>2</sub>), 7.16 7.35 (m, 8H, ArH).

3



ELD 1 ELD (Indium - Tin oxide)  
 [THC + PVK (poly(N - vinylcarbazole)], [PBD; (2 - (4 - biphenyl) - 5 - (4 - t - butylpheny  
 l) - 1,3,4 - oxadiazole)], (Al) ELD 가  
 THC가 ELD THC

: THC : THC

PVK THC 70 100 nm - step 200 profilom  
 eter ellipsometer . PBD 300 nm 10  
<sup>-6</sup> torr 9 mm<sup>2</sup> . ELD - ( 2) - ( 3), -  
 ( 4) Keithley 238 electrometer, Minolta chromameter cs 100

THC가 ELD THC 가 THC  
 가 가 . THC 가 70 nm 30 V  
 0.01 mA/cm<sup>2</sup> 가 ( 2).

THC 가 70 nm 30 V 25 cd/m<sup>2</sup> THC 가 가  
 ( 3).

THC (PL) 428 nm THC EL 4 456 nm  
 1/2 100 nm

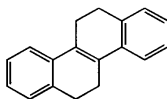
THC ELD THC , ,

, THC

(57)

1.

4 5,6,11,12 - Tetrahydrochryscene(THC)



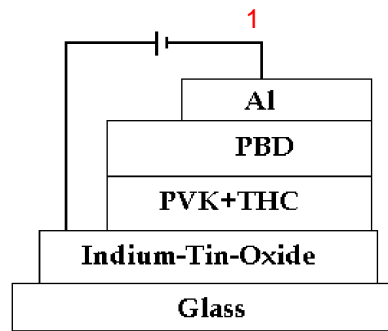
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2.

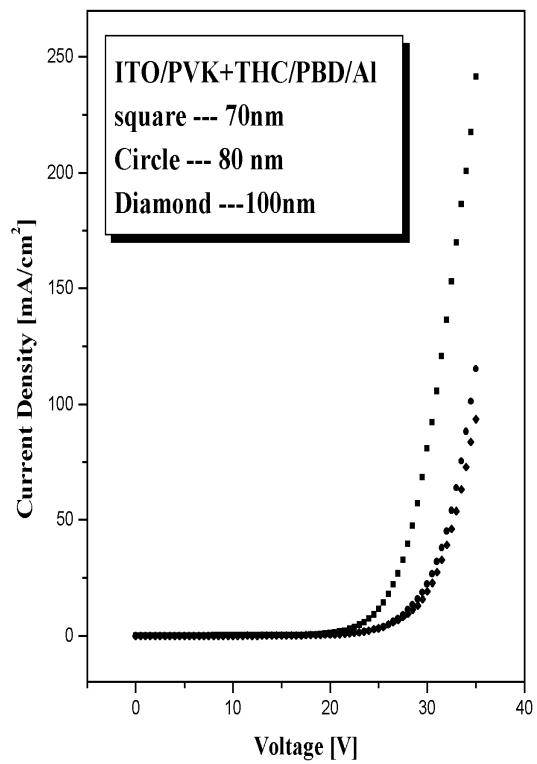
5,6,11,12 - Tetrahydrochrycene(THC)

3.

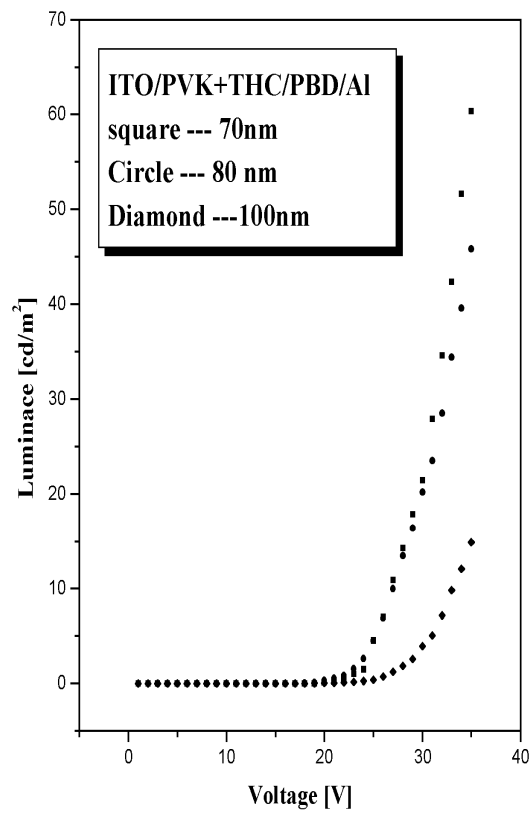
2 , 5,6,11,12 - Tetrahydrochrycene(THC) PVK(poly(N - vinylcarbazole))  
70 - 100 nm



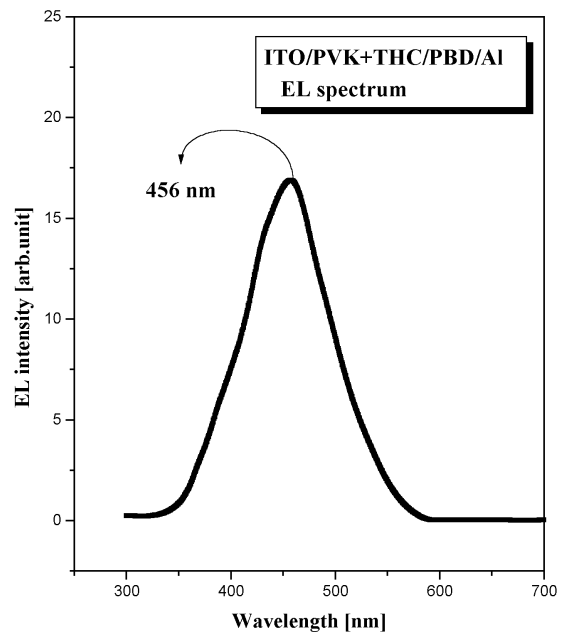
2



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4



专利名称(译)	一种用于高效发射蓝光的有机电致发光器件		
公开(公告)号	<a href="#">KR1020020045185A</a>	公开(公告)日	2002-06-19
申请号	KR1020000074541	申请日	2000-12-08
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发明人	황광진 김영관 김진국		
IPC分类号	C09K11/06		
CPC分类号	C09K11/06 C09K2211/1011 H01L51/005 H01L51/5012 H05B33/14 Y10S428/917		
代理人(译)	李秉宪HYUN		
其他公开文献	KR100389195B1		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

本发明的目的是提供一种发光有机电致发光器件，它提供发光有机电致发光器件(OELD)，并且特别是在发光材料中通过高效率发射蓝光。本发明的THC(5,6,11,12-四氢四氢咪喃)具有在30V下辐射456nm的光线至25/m<sup>2</sup>的强度的性质。本发明通过使用THC提供在低电压下高效地发射蓝光的性质的波长，并且发射带是窄发光有机电致发光器件。发光有机电致发光器件，发光材料和蓝光。

