

(19)  
(12)

(KR)  
(B1)

(51) 。 Int. Cl.<sup>7</sup>  
C09K 11/06

(45)  
(11)  
(24)

2003 06 27  
10-0389195  
2003 06 16

(21) 10-2000-0074541  
(22) 2000 12 08

(65)  
(43)

2002-0045185  
2002 06 19

(73) ( )

143-21

462-4

103-1005

(72)

462-4

103-1005

1 97-3

122-104

203-303

(74)

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(54)

25 cd/m<sup>2</sup> (OELD) THC(5,6,11,12-Tetrahydrochrycene) THC 30 V 456 nm  
THC

1

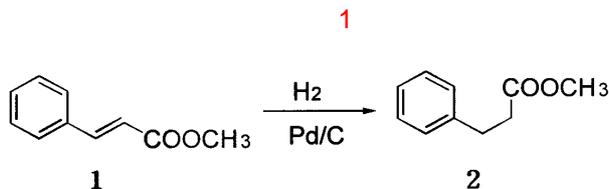
- 1
- 2 THC(5,6,11,12- Tetrahydrochryscene)
- 3 THC(5,6,11,12- Tetrahydrochryscene)
- 4 THC(5,6,11,12- Tetrahydrochryscene)

(OELD) , THC  
 1983 Partidge , Tang Van Slyke 1987  
 (OELD) 10  
 가 가 가 , ,  
 가 (ELD) 가 , ,  
 azomethyn zinc complex 가 가  
 가 (exciplex)  
 가 .  
 가 가

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**

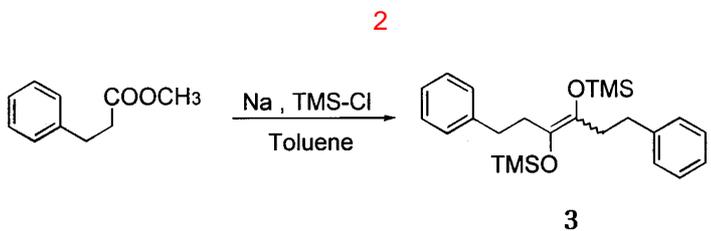
Methyl cinnamate(15 g, 92.5 mmol) palladium hydroxide on carbon(Pearlman's catalyst, 1 g) Et  
 OH (100 ml) H<sub>2</sub> gas(1 atm) 가 . NMR  
 . Pd/C solid celite . Methyl-3-phen  
 yl propionate(15.03 g, 99%) : <sup>1</sup>H-NMR (200MHz, CDCl<sub>3</sub>) 2.66 ppm (t, 2H, CH<sub>2</sub> COO), 2.94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



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

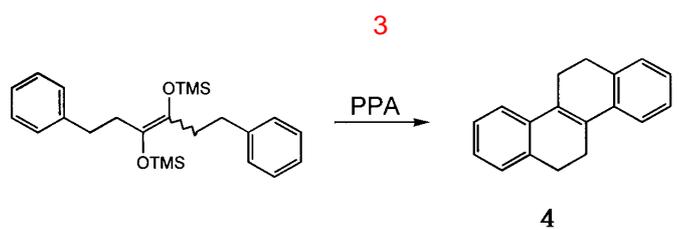
Sodium(6.3 g, 274 mmol) Toluene(250 ml) sodium  
 sand 75 , Methyl-3-phenyl propionate(15 g, 91.4 mmol) chlorotrimethyl

silane(TMSCI, 29.8 ml, 274 mmol) 가 . 110 9  
 (100 ml) sodium ethyl acetate (2 x 30 ml)  
 ) (60 ml) sodium  
 MgSO<sub>4</sub> (ether:hexane = 1:20) 3,4-  
 Bis[(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, ArH).



**3. 5,6,11,12-Tetrahydrochrysene**

3,4-Bis[(trimethylsilyl)oxy]-1,6-bis(phenyl)-3-hexene(4 g, 11.78 mmol) polyphosphoric acid(PP  
 A, 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> Hexane  
 5,6,11,12-Tetra hydrochrysene (600 mg, 22%) : <sup>1</sup>H-NMR (200  
 MHz, 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).



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

**: THC**

PVK THC 70 100 nm -step 200 profilo  
 meter ellipsometer PBD 300 nm 1  
 0<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).  
 가  
 THC 가 70 nm 30 V 25 cd/m<sup>2</sup> THC 가 가  
 THC (PL) 428 nm THC EL 4 456 nm  
 1/2 100 nm  
 THC ELD THC

, THC

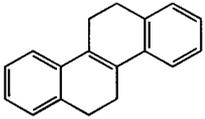
(57)

1.

2.

3.

4      5,6,11,12-tetrahydrochryscene(THC)가 PVK(poly(-vinylcarbazole))  
 70-100 nm      , 40 V      456 nm ± 50 nm  
 25 cd/m<sup>2</sup>



4

