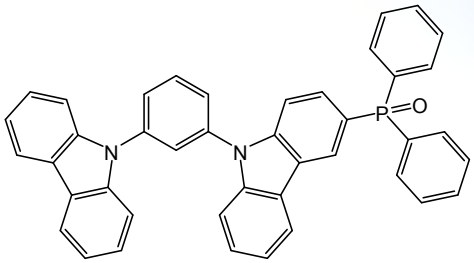
Lumtec Luminescence Technology Corp.

Novel Host Material for Solution Processed Deep Blue Phosphorescent Organic Light Emitting Diodes with Over 20% External Quantum Efficiency

Product Specifications

LT-N4047 ***m*CPPO1**

Formula	$C_{42}H_{29}N_2OP$
Grade	608.67 g/mole
Emission	361 nm
T_g (°C)	114.7 °C
HOMO (eV)	-6.21,-6.13 eV
LUMO (eV)	-2.64 eV
E_T (eV)	3.00 eV



Reference : 1. Adv. Mater. 2011, 23, 1436–1441

2. Organic Electronics 12 (2011) 1711–1715

Features

- *m*CPPO1 was designed by connecting a high triplet energy host material of N,N'-dicarbazolyl-3,5-benzene(MCP) with a diphenylphosphine oxide moiety to improve the electron transport properties.
- The maximum quantum efficiency of the device with 3% FCNIrpic doping was 22.3%, the color coordinate of device was (0.14, 0.17), and the quantum efficiencies at 100 and 500 cd/m^2 were 21.7% and 20.6%.
- High efficiency solution processed deep blue PHOLED with a deep blue color coordinate of (0.14,0.19) was developed using a soluble emitting layer of mCPPO1 and FCNIrpic. A maximum quantum efficiency of 22.1% and a quantum efficiency of 18.9% at 100 cd/m^2 were achieved in the soluble deep blue PHOLEDs.

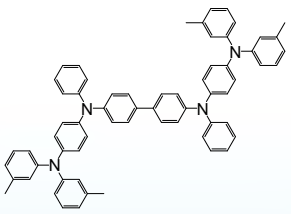
Device Application

ITO/DNTPD(60 nm)/NPB(20 nm)/MCP(10 nm)/*m*CPPO1:FCNIrpic(30 nm, 3%)/TSPO1(20 nm)/LiF(1 nm)/Al

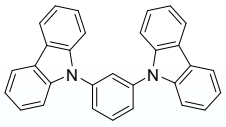
Solution-Processed OLED :

ITO/PEDOT:PSS (60 nm)/PVK(10 nm)/*m*CPPO1:FCNIrpic(20 nm, 3%)/TSPO1(35 nm)/LiF(1 nm)/Al

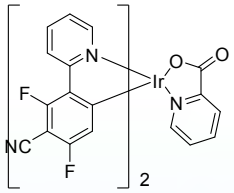
Related products from Lumtec :



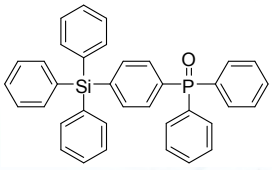
LT-N220 DNTPD



LT-E107 MCP



LT-N664 FCNIrPic



LT-N4048 TSPO1

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