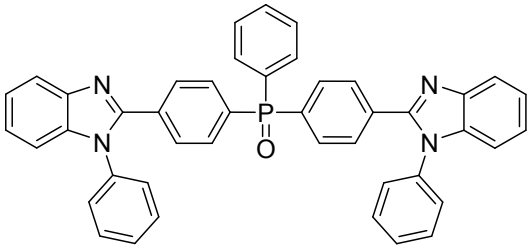
Lumtec Luminescence Technology Corp.

Novel Bipolar Electron Transporting Material in Highly Efficient Phosphorescent OLEDs

Product Specifications

LT-N885 BIPO

Formula	$C_{44}H_{31}F_4N_4OP$
Molecular Weight	662.72 g/mole
Absorption	311 nm (in $CHCl_3$)
Photoluminescence	373 nm (in $CHCl_3$)
HOMO (eV)	-7.07 eV
LUMO (eV)	-3.72 eV
E_T	3.48 eV



Reference : J. Mater. Chem. C, 2013, 1, 2217–2223

Features

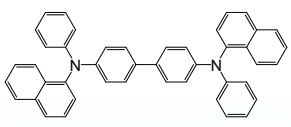
- BIPO shows a high thermal stability ($DT_{5\%}$) of 451 °C with a glass transition temperature of 129 °C from the thermogravimetric analysis and differential scanning calorimetry studies.
- The BIPO as electron transporting layer effectively blocks the holes and improves the charge balance in the EML of the device.
- Green phosphorescent device with high EQE of 22.19%, 68.37 cd A^{-1} and 24.44 lm W^{-1} is achieved by using BIPO as ETL, compared to those (17.03%, 52.02 cd A^{-1} and 20.97 lm W^{-1}) of a device using the widely used TmPyPB as ETL.

Device Application

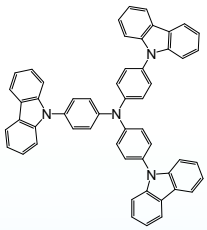
Green OLED device

ITO/NPB(30 nm)/TcTa(10 nm)/CBP: 5% Ir(ppy)3(30 nm)/BIPO(40 nm)/LiF(1 nm)/Al(100 nm)

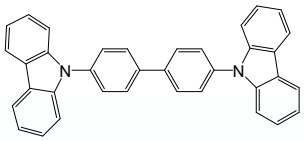
Related products from Lumtec :



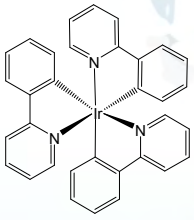
LT-E101 NPB



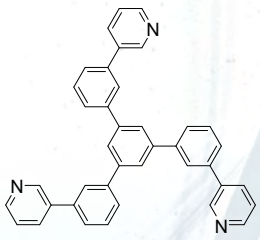
LT-E207 TcTa



LT-E409 CBP



LT-E504 $Ir(ppy)_3$



LT-N863 TmPyPB

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