## Novel Material of Promising Operational Stability and High-Efficiency OLEDs Based On TADF

### Product Specifications

#### LT-N883 Bpy-TP2

Formula	$C_{38}H_{24}N_4$
M.W.	536.62 g/mole
Absorption	283, 342 nm (in CH <sub>2</sub> Cl <sub>2</sub> )
НОМО	-5.7 eV
LUMO	-2.7 eV
T <sub>m</sub>	338 °C



*Reference : 1. Scientific Reports 3, Article number: 2127 2. J. Mater. Chem., 2012, 22, 20689–20695* 



### Features

- A novel molecule (Bpy-TP2) was developed by connecting two bipyridine moiety on an Triphenylene group; the OLED containing Bpy-TP2 showed a significantly lower driving voltage, achieving lower power consumption when compared with Alq3 and TPBi.
- The device containing Bpy-TP2 demonstrated highly efficient TADF-based OLEDs (*n*EQE of 13.9± 0.5% at 1,000 cd/m<sup>2</sup>) with excellent operational stability, showing LT50 of 2,800 h at 1,000 cd/m<sup>2</sup> and of over 10,000 h at 500 cd/m<sup>2</sup>, which is comparable to that predicted for a 6 wt.% Ir(ppy)<sub>3</sub>-doped device (4,500 h at 1,000 cd/m<sup>2</sup>).

# **Device** Application

ITO/ HAT-CN (10nm)/Tris-PCz (30nm)/ mCBP : 4CzIPN(15%,30nm)/T2T (10nm)/BPy-TP2 (40nm)/ LiF (0.8nm)/Al

Related products from Lumtec :



LT-N221 HAT-CN



LT-N1001 Tris-PCz



*m*CBP



T2T



4CzIPN

Our products are used for testing and research purpose; they are not guaranteed in patent contention by customer use. Address: 2F, No. 17, R&D Road II, Science-Based Industrial Park, Hsin-Chu 30076, Taiwan, R.O.C., TEL: +886-3-666-3188, FAX: +886-3-666-9288. E-mail : sales@lumtec.com.tw : Web : http://www.lumtec.com.tw