

BPTRZ-Py-TPO (Electron-Transport Material)



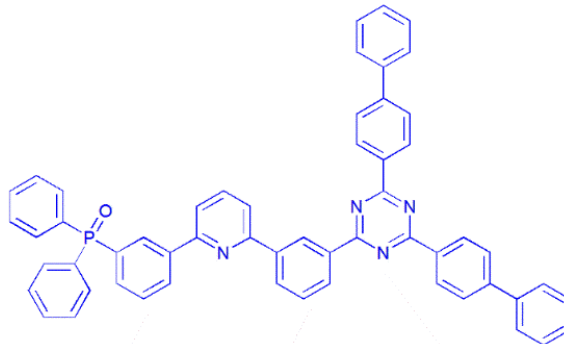
1-Material Inc

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Organic Nano Electronic(ONE=1)materials for these who understand quality

TECHNICAL DATA SHEET

1M Code: CIM4156
Common Name: **BPTRZ-Py-TPO**
Chemical Formula: $C_{56}H_{39}N_4OP$
Chemical Name: 3-(6-(3-(4,6-di(biphenyl-4-yl)-1,3,5-triazin-2-yl)phenyl)pyridin-2-yl)phenyldiphenylphosphine oxide
CAS No. 2366141-56
Molecular Weight: 814.91
Chemical Structure



BPTRZ-Py-TPO

Specifications:

Physical appearance: White

Assay: 99.5+%

NMR: Structure conformation

Application: Electron-transport material; cathode interfacial material

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Reference:

A simple electron-transport material, alternative to BPhen and BCP for OLED & OPV.

$T_g \approx 123$ °C; HOMO = -6.45 eV, LUMO = -3.06 eV, $E_{\text{triplet}} \approx 2.88$ eV (solid at 77 K)

$\mu_e = 4.66 \times 10^{-5}$ – 3.21×10^{-4} cm² V⁻¹ s⁻¹ cm² V⁻¹ s⁻¹ at $E = (2-5) \times 10^5$ V cm⁻¹

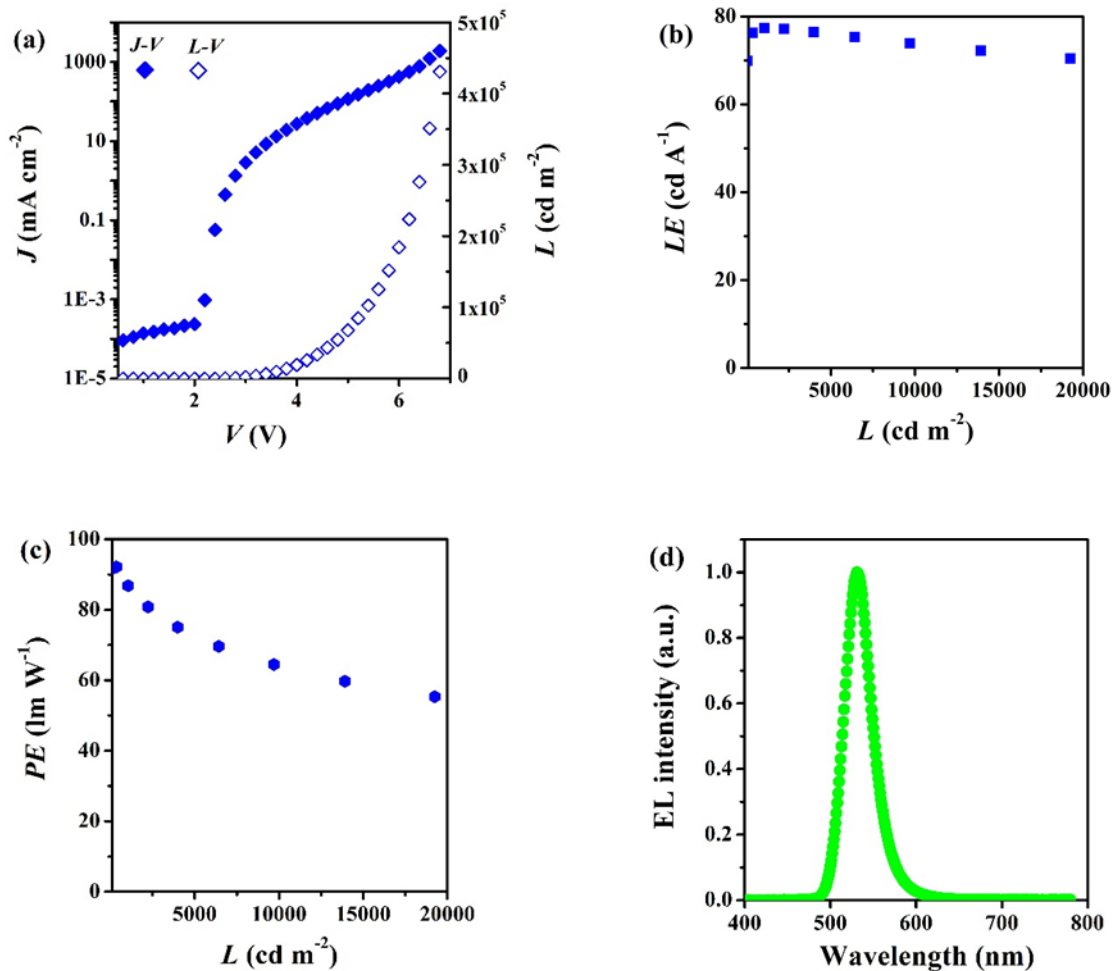


Fig. 1: (a) $J-V-L$, (b) $LE-L$, (c) $PE-L$ curves and (d) EL spectrum of the top-emission green phosphorescent OLED (Ag/ITO/p-doped HIL(147 nm)/HTL(15 nm)/EBL(5 nm)/EML(30 nm)/BPTRZ-Py-TPO:Liq(1:1 wt/wt)/Mg:Ag/Light extraction layer)

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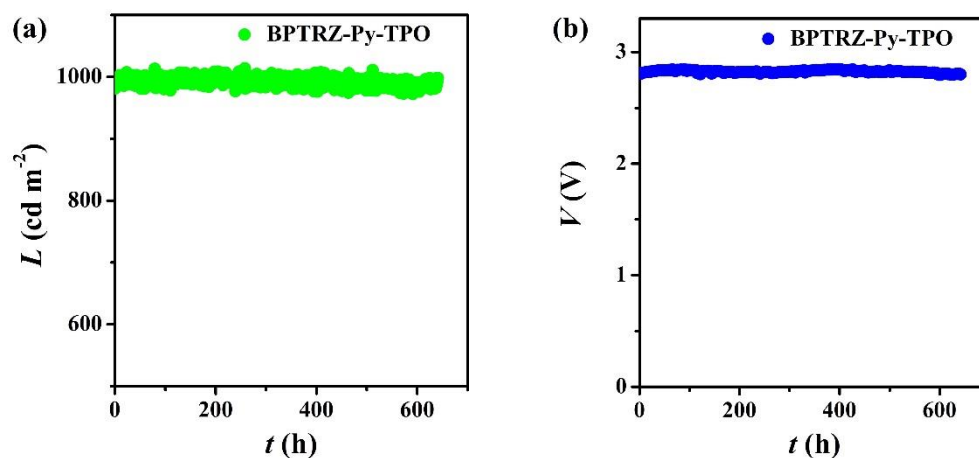


Fig. 2. (a) L - t and (b) V - t of the encapsulated top-emission green phosphorescent OLED (Ag/ITO/p-doped HIL(147 nm)/HTL(15 nm)/EBL(5 nm)/EML(30 nm)/BPTRZ-Py-TPO:Liq(1:1 wt/wt)/Mg:Ag/Light extraction layer), driven under a constant current. The initial luminance was set as $\sim 1000 \text{ cd m}^{-2}$. Prior to testing, the devices aged at a current density of 20 mA cm^{-2} for 24 h.

Chen, Ling-Ling; Peng, Ling; Wang, Lin-Ye; Zhu, Xu-Hui; Zou, Jian-Hua; Peng, Junbiao. Molecular engineering of an electron-transport triarylphosphine oxide-triazine conjugate toward high-performance phosphorescent organic light-emitting diodes with remarkable stability. SCIENCE CHINA-CHEMISTRY, 2020. DOI: 10.1007/s11426-020-9714-0