

TRZ-*m*-Phen (Electron-Transport Material)



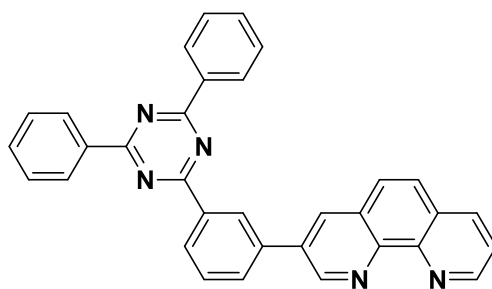
1-Material Inc

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

TECHNICAL DATA SHEET

1M Code: CIM5127
Common Name: TRZ-*m*-Phen
Chemical Formula: C₃₃H₂₁N₅
Chemical Name: 3-(3-(4,6-diphenyl-1,3,5-triazin-2-yl)phenyl)-1,10-phenanthroline
CAS No. 2244035-12-7
Molecular Weight: 487.55
Chemical Structure



TRZ-*m*-Phen

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.

$T_g \approx 112$ °C; HOMO = -6.5 eV, LUMO = -3.0 eV, $E_{\text{triplet}} \approx 2.36$ eV (solid at 77 K)

$\mu_e = 1.01 \times 10^{-5} - 1.25 \times 10^{-4}$ cm² V⁻¹ s⁻¹ at $E = (2-5) \times 10^5$ V cm⁻¹

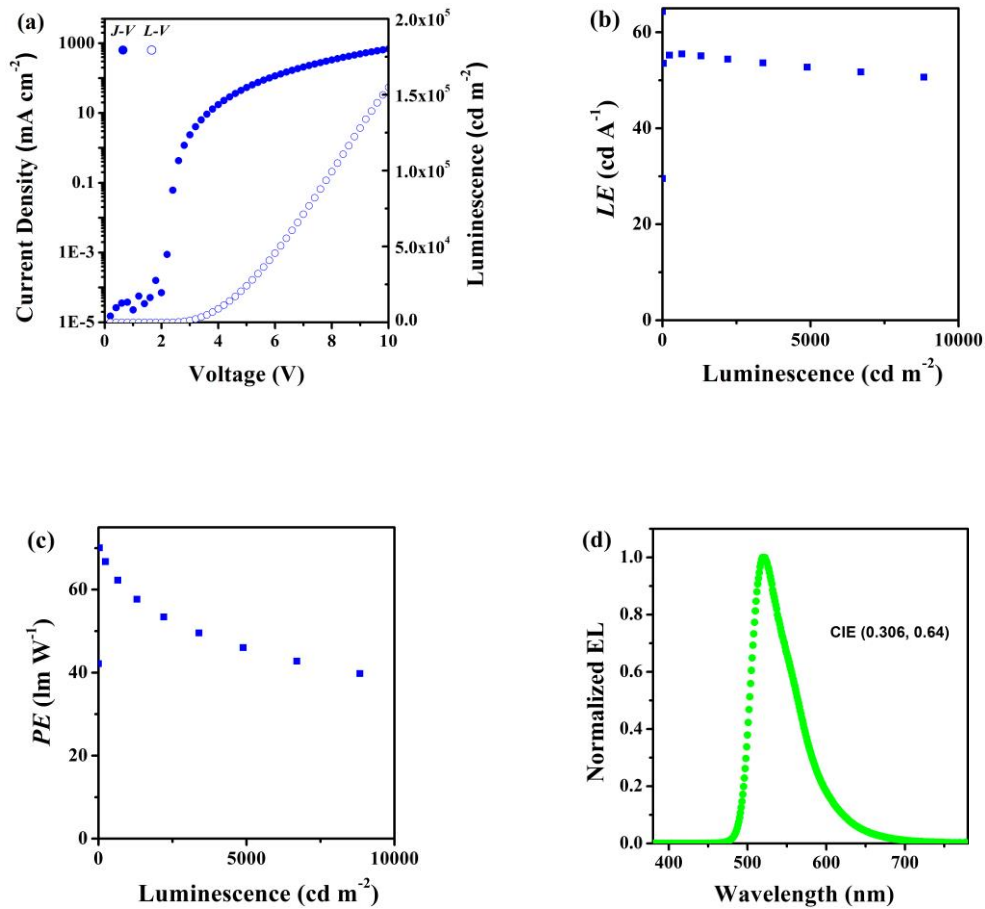


Fig. 1: (a) J - V - L , (b) LE - L , (c) PE - L curves and (d) EL spectrum of the OLED (ITO/p-doped HIL(100 nm)/HTL (15 nm)/EBL(5 nm)/EML(30 nm)/TRZ-*m*-Phen:Liq(30 nm, 1:1 wt/wt)/Al),

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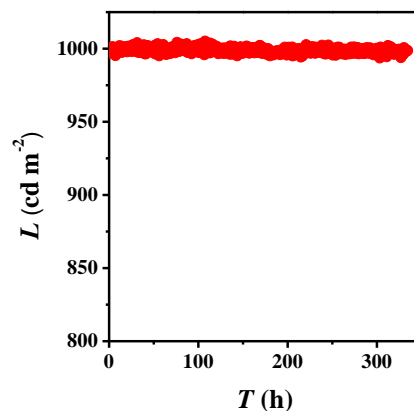


Fig. 2. Luminance decay characteristics of the encapsulated OLED (ITO/p-doped HIL (100 nm)/HTL (15 nm)/EBL(5 nm)/EML(30 nm)/TRZ-*m*-Phen:Liq(30 nm, 1:1 wt/wt)/Al), driven under a constant current. The initial luminance was set as $\sim 1000 \text{ cd m}^{-2}$. Prior to testing, the devices aged at a current density of 20 mA cm^{-2} for 24 h.

Jin, Guang; Liu, Jun-Zhe; Zou, Jian-Hua; Huang, Xiao-Lan; He, Meng-Jiao; Peng, Ling; Chen, Ling-Ling; Zhu, Xu-Hui; Peng, Junbiao; Cao, Yong. Appending triphenyltriazine to 1,10-phenanthroline: a robust electron-transport material for stable organic light-emitting diodes. *Science Bulletin* (2018), 63(7), 446-451.