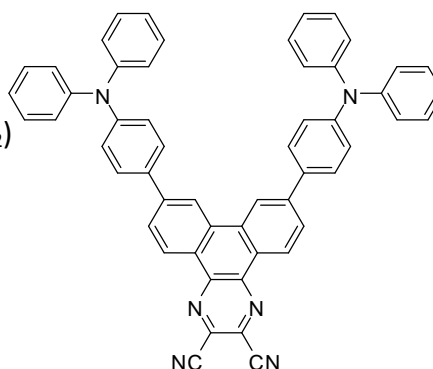


Highly Efficient Near-Infrared Delayed Fluorescence OLEDs Using a Phenanthrene-Based Charge-Transfer

Product Specifications

LT-N782 TPA-DCPP

Name	7,10-Bis(4-(diphenylamino)phenyl)-2,3-dicyanopyrazino phenanthrene
CAS No.	1803287-94-6
Grade	Sublimed, >99 % (HPLC)
Formula	C ₅₄ H ₃₄ N ₆
Molecular Weight	766.89 g/mole
absorption	308, 368, 405, 458 nm (in CH ₂ Cl ₂)
Photoluminescence	810 nm (in CH ₂ Cl ₂)
HOMO/LUMO	-5.30 eV/ -3.52 eV
TGA	>508 °C (0.5 % weight loss)
Δ E_{ST}	0.13 eV



* Reference: *Angew. Chem.* **2015**, *127*, 13260–13264

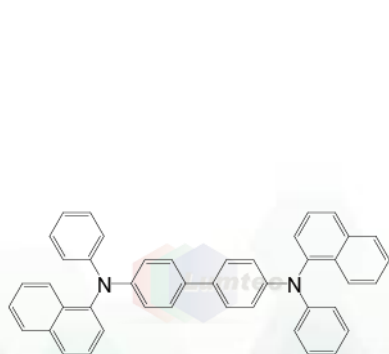
Features

- The OLED device employing TPA-DCPP as a nondoped emitter exhibits a maximum EQE of 2.1% with CIE coordinates of (0.70, 0.29), which is among the highest values reported in non-doped NIR FOLEDs.
- The doped device achieves an extremely high EQE of 9.8% with an emission band maximum at $\lambda = 668$ nm, which the values reported for most efficient deep-red/NIR PhOLEDs with similar EL spectra.
- TPA-DCPP is the first NIR TADF material applied to highly efficient deep-red/NIR OLEDs.

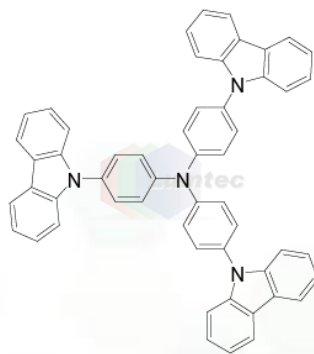
Device Application

The Device:

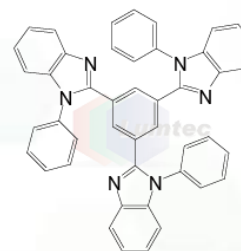
ITO/ NPB (60 nm)/ TcTa (5 nm)/ EML (20 nm)/ TPBi (30 nm)/ LiF (0.5 nm)/ Al.



LT-E101 NPB



LT-E207 TcTa



LT-E302 TPBi

Materials are used by qualified for testing and research only, there are not guaranteed in patent contention by customer use.

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