

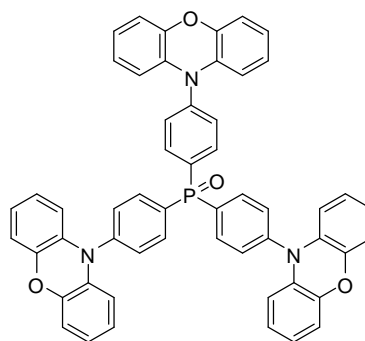


Highly Multi-dipolar Chromophores Featuring Phosphine Oxide as Joint Acceptor: A New Strategy toward High-Efficiency Blue TADF Dyes

Product Specifications

LT-N6007 TPXZPO

Name.	10,10',10''-(4,4',4''-phosphoryltris(benzene-4,1-diyl))tris(10H-phenoxazine)
CAS No.	2001115-35-9
Grade	Sublimed, >99 % (HPLC)
Formula	C ₅₄ H ₃₆ N ₃ O ₄ P
Molecular Weight	821.86 g/mole
Absorption	239,322,371 nm (in Toluene)
Emission	474 nm (in CH ₂ Cl ₂)
HOMO/LUMO	-5.57 eV/ -2.66 eV
Δ E_{ST}	0.11 eV



* Reference: *Chem. Mater.* **2016**, *28*, 5667–5679

Features

- The multi-dipolar characteristics of TPXZPO enhance the intramolecular charge transfer (ICT), facilitating reverse intersystem crossing for higher TADF efficiency and shorter lifetime. As a consequence, TPXZPO realized the desired pure-blue electroluminescence peak at 464 nm, accompanied by a favorable external quantum efficiency (η_{ext}) up to 15.3%, 100% exciton utilization, and reduced efficiency roll-offs. Its complementary full-TADF white organic light-emitting diodes also achieved η_{ext} as high as 16.3%.

Device Application

The Blue TADF Device:

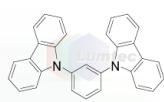
ITO/ MoO₃ (6 nm)/ NPB (70 nm)/ MCP (5 nm)/ DPEPO:TPXZPO (20 nm, 10 wt%)/ DPEPO (5 nm)/ Bphen (30 nm)/ LiF (1 nm)/ Al.

The White TADF Device:

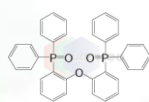
ITO/ MoO₃ (6 nm)/ NPB (70 nm)/ MCP (5 nm)/ SFXSPO:4CzPNPh (20 nm, 5 wt%)/ SFXSPO:TPXZPO (20 nm, 10 wt%)/ SFXSPO (5 nm)/ Bphen (30 nm)/ LiF (1 nm)/ Al.



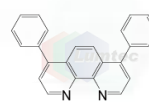
LT-E101 NPB



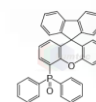
LT-E107 MCP
MoO₃ = LT-E003



LT-N4060 DPEPO
LiF = LT-E001



LT-E305 Bphen
Al = LT-E005



LT-N4123 SFXSPO

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

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