

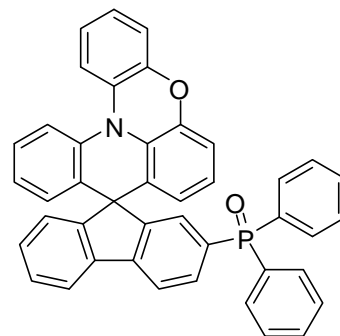


TADF Material as Host with Novel Spiro-Based Skeleton for High Power Efficiency and Low Roll-Off Blue and White Phosphorescent Devices

Product Specifications

LT-N4146 Tri-o-2PO

Name.	2-(diphenylphosphinyl)-spiro[9H-fluorene-9,9'-quino[3,2,1-k]phenoxazine]
CAS No.	2055589-19-8
Grade	Sublimed, >99 % (HPLC)
Formula	C ₄₃ H ₂₈ NO ₂ P
Molecular Weight	621.66 g/mole
Absorption	312, 350 nm (in CH ₂ Cl ₂)
Emission	450 nm (in CH ₂ Cl ₂)
HOMO/LUMO	-5.28 eV/ -2.10 eV
ΔE _{ST}	0.25 eV



* Reference: *Adv. Funct. Mater.* **2016**, 26, 7929–7936

Features

- Efficiency roll-off based on Tri-o-2PO is ultralow with EQE just dropping by around 2% in the high luminance range from 1000 cd/m² to 10000 cd/m². Super-high power efficiency (~60 lm/W) and EQE (>22%) are also achieved when utilizing Tri-o-2PO as host.
- Two-color warm-white light with CIE of (0.45,0.43) and correlated color temperature of 2921K is also fabricated and a champion EQE of 21% is delivered.

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

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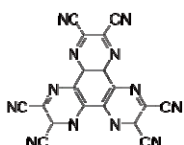
Device Application

The White TADF Device:

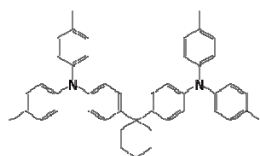
ITO/ HAT-CN (10 nm)/ TAPC (40 nm)/ TcTa (10 nm)/ Tri-o-2PO:15 wt% Ir-817: (X) Ir(MDQ)₂(acac) (20 nm)/ TmPyPB (45 nm)/ Liq (2 nm)/ Al (120 nm)

The Blue TADF Device:

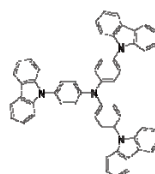
ITO/ HAT-CN (10 nm)/ TAPC (40 nm)/ TcTa (10 nm)/ Tri-o-2PO:15 wt% Ir-817/ TmPyPB (45 nm)/ Liq (2 nm)/ Al (120 nm)



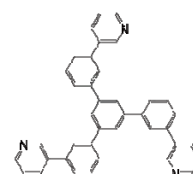
LT-N221 HAT-CN



LT-N137 TAPC



LT-E207 TcTa

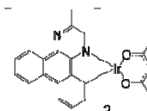


LT-N863 TmPyPB

Al = LT-E005



LT-E301 Liq



LT-N753 Ir(MDQ)₂(acac)

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