

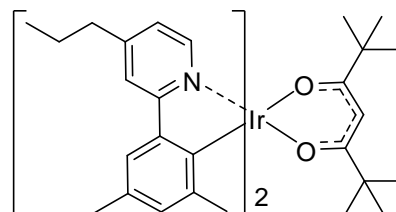


Luminescence Technology Corp.

Design of Heteroleptic Ir Complexes with Horizontal Emitting Dipoles for Highly Efficient Organic Light-Emitting Diodes with an External Quantum Efficiency of 38%

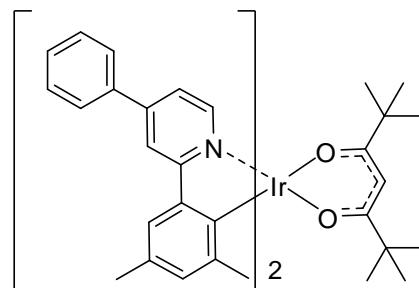
LT-N562 Ir(dmppy-pro)₂tmd

Name.	Bis(2-(3,5-dimethylphenyl)-4-propylpyridine)(2,2,6,6-tetramethylheptane-3,5-diketonate)iridium(III)
CAS No.	2050041-60-4
Grade	Sublimed, >99 % (HPLC)
Formula	C ₄₃ H ₅₅ IrN ₂ O ₂
Molecular Weight	824.14 g/mole
Absorption	263,373,441 nm (in CHCl ₃)
HOMO/LUMO	-5.10 eV/ -2.77 eV



LT-N792 Ir(dmppy-ph)₂tmd

Name.	Bis(2-(3,5-dimethylphenyl)-4-phenylpyridine)(2,2,6,6-tetramethylheptane-3,5-diketonate)iridium(III)
CAS No.	2050041-61-5
Grade	Sublimed, >99 % (HPLC)
Formula	C ₄₉ H ₅₁ IrN ₂ O ₂
Molecular Weight	892.18 g/mole
Absorption	276,398,481 nm (in CHCl ₃)
HOMO/LUMO	-5.18 eV/ -2.97 eV



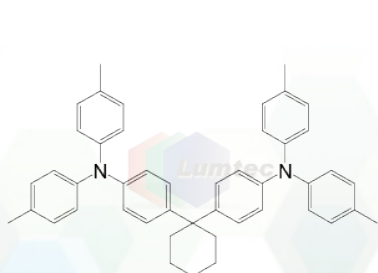
* Reference: *Chem. Mater.* **2016**, *28*, 7505–7510

Features

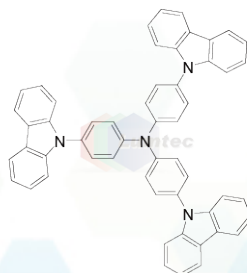
The substituents at the para-position of the pyridine in the main ligands of Ir complexes play a pivotal role. Substitution of aliphatic and aromatic functional moieties at the position leads to high horizontal emitting dipole orientation with the horizontal dipole ratio up to 86.5% to realize unprecedentedly high-efficiency yellow OLEDs [Ir(dmppy-ph)₂tmd] and green OLEDs [Ir(dmppy-pro)₂tmd], with EQEs of 38% and 36%.

Device Application

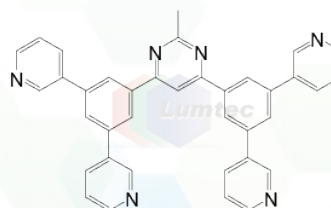
The Blue TADF-OLEDs Device: ITO (70 nm)/ TAPC (75 nm)/ TcTa (10 nm)/ TcTa:B3PYMPM: 4 wt% green dyes (or yellow dyes) (30 nm)/ B3PYMPM (45 or 55 nm)/ LiF (0.7 nm)/ Al (100 nm)



LT-N137 TAPC



LT-E207 TcTa



LT-N876 B3PYMPM

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