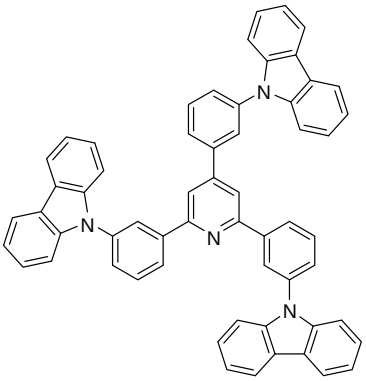
Luminescence Technology Corp.

Three-carbazole-armed host materials with various cores for RGB phosphorescent organic light-emitting diodes

Product Specifications

LT-N4165 TCPY

Name.	9,9',9''-(pyridine-2,4,6-triyltris(benzene-3,1-diyl))tris(9*H*-carbazole)
CAS No.	890148-62-6
Grade	Sublimed, >99 % (HPLC)
Formula	$C_{59}H_{38}N_4$
Molecular Weight	802.96 g/mole
ΔE_{ST}	0.39 eV
HOMO/LUMO	-6.19 eV/ -2.77 eV
T_d	393 °C (5% weight loss)



** Reference: J. Mater. Chem., **2012**, 22, 3447–3456*

Features

- In contrast to the slightly decreased triplet energy (ET), a significantly decreased DEST was achieved by introducing heterocycles of pyridine as the core, and the more nitrogen atoms in the central heterocycle, the smaller DEST is achieved. Reduced driving voltages were achieved for the green and red phosphorescent OLEDs by utilizing TCPY as the host due to its decreased DEST and lower-lying LUMO energy level.

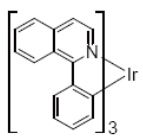
Device Application

The RGB Phosphorescent OLEDs Device:

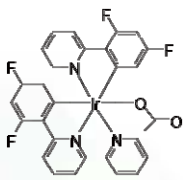
ITO/ TPDPES:TBPAH (20 nm)/ 3DTAPBP (30 nm)/ TCPY:FIrPic (11 wt%, 10 nm)/BP4mPy (40 nm)/LiF (0.5 nm)/Al(100 nm)

ITO/TPDPES:TBPAH (20 nm)/TAPC (30 nm)/ TCPY:$Ir(PPy)_3$ (8 wt%, 10 nm)/TmPyBPZ (50 nm)/LiF (0.5 nm)/Al (100 nm).

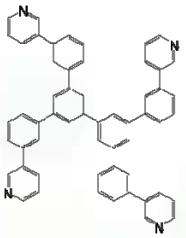
(c)ITO/TPDPES:TBPAH (20 nm)/TAPC (35 nm)/ TCPY:$Ir(piq)_3$ (4 wt%, 10 nm)/TmPyBPZ (65 nm)/LiF (0.5 nm)/Al (100 nm).



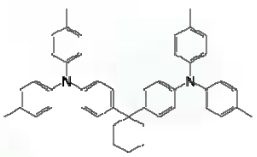
CS90054 $Ir(piq)_3$



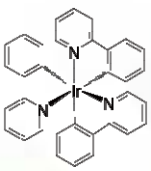
LT-E607 FIrPic



LT-N862 BP4mPy



LT-N137 TAPC



LT-E504 $Ir(PPy)_3$

LiF = LT-E001 Al = LT-E005

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