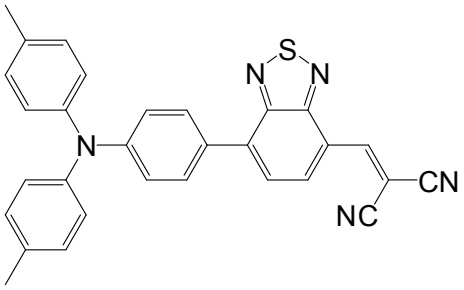
Lumtec Luminescence Technology Corp.

Vacuum-Deposited Small-Molecule Organic Solar Cells with High Power Conversion Efficiencies

Product Specifications

LT-S9122 DTDCPB

CAS No.	1393343-58-2
Grade	> 99% (NMR)
Formula	$C_{30}H_{21}N_5S$
Molecular Weight	483.59 g/mole
Absorption	306, 568 nm (in CH_2Cl_2)



Reference : 1. J. Am. Chem. Soc. 2012, 134, 13616-13623
2. J. Mater. Chem. A, 2014, 2, 3709

Features

- The compound possess a donor-acceptor-acceptor molecular architecture, in which various electron-donating moieties are connected to an electron withdrawing dicyanovinylene moiety through another electron-accepting 2,1,3-benzothiadiazole block.
- By device optimization, which included fine-tuning the layer thicknesses and the donor:acceptor blended ratio in the bulk heterojunction layer, vacuum-deposited hybrid planar-mixed heterojunction devices utilizing DTDCPB as the donor and C_{70} as the acceptor.
- Showed the best performance with a PCE of 6.6% (the highest PCE of 6.8%), along with a V_{oc} of 0.93V, a J_{sc} of 13.48 mA/cm^2, and a FF of 0.53.

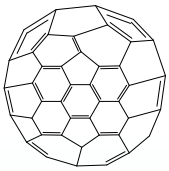
Device Application

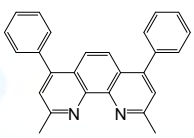
The Best Device :

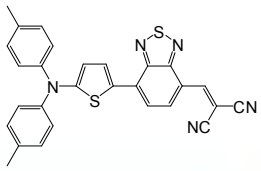
ITO/MoO_3(5 nm)/DTDCPB(7 nm)/DTDCPB : C_{70}(1:1.6, 40 nm)/C_{70}(7 nm)/BCP(10 nm)/Ag(150 nm)

Related products from Lumtec :

MoO_3







LT-E003 MoO_3 | LT-S967 C_{70} | LT-E304 BCP | LT-S9046 DTDDTB | LT-S903 C_{60}

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