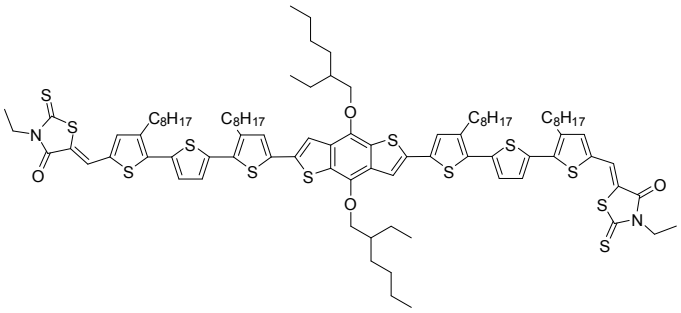
Lumtec Luminescence Technology Corp.

Novel Benzo[1,2-b:4,5-b']dithiophene Based Material for Solution-Processed High Efficient Organic Solar Cells

Product Specifications

LT-S9073 DR3TBDT

Formula	$C_{94}H_{124}N_2O_4S_{12}$
Molecular Weight	1730.78 g/mole
Absorption	583 nm (film)
HOMO (eV)	-5.02 eV
LUMO (eV)	-3.27 eV
Soluble in	$CHCl_3$



Reference : J. Am. Chem. Soc. 2012, 134, 16345−16351

Features

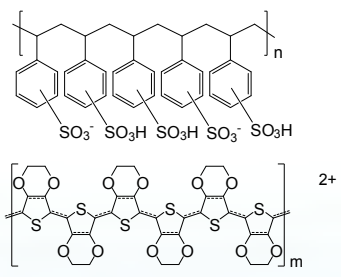
- A novel molecules DR3TBDT comprising of two 3-ethylrhodanine moiety and a BDT as the central building block have been designed and synthesized.
- The DR3TBDT film shows a broader absorption from 350 to 800 nm and a red-shifted absorption peak at 583 nm with the maximal coefficient increasing to 6.3 × 104 cm^{-1}.
- The solution-processed solar cell devices based on DR3TBDT/ $PC_{71}BM$ as active layer possesses very high PCE of 7.38% with J_{SC} of 12.21 mA cm^{-2}, V_{OC} of 0.93 V, and FF of 65.0%.

Device Application

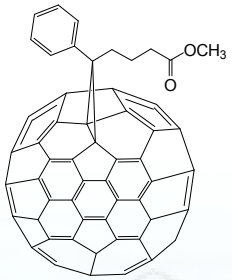
Single-cell photovoltaic devices:

ITO / PEDOT−PSS (40nm) / DR3TBDT : $PC_{71}BM$ (1:0.8, 100 nm) / LiF (0.8 nm) / Al (80nm)

Related products from Lumtec :



LT-PS001 PEDOT:PSS



LT-S923 $PC_{71}BM$

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