



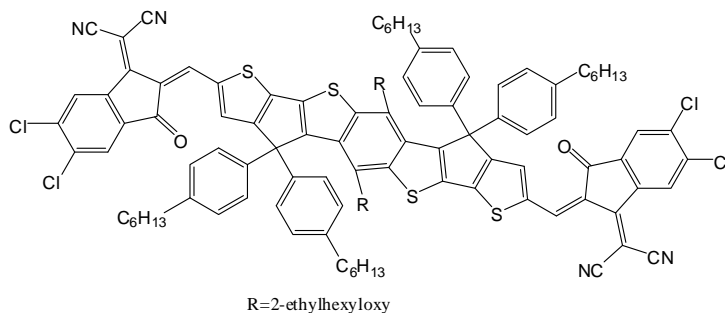
High Efficiency Near-Infrared and Semitransparent Non-Fullerene Acceptor Organic Photovoltaic Cells

Product Specifications

BT-CIC LT-S9293

Name. (4,4,10,10-tetrakis(4-hexylphenyl)-5,11-(2-ethylhexyloxy)-4,10-dihydro-dithienyl [1,2-b:4,5b']benzodi-thiophene-2,8-diyl)bis-(2-(3-oxo-2,3-dihydroinden-5,6-dichloro-1-ylidene)-malononitrile)

Grade >98 % (HPLC)
Formula C₁₁₀H₁₁₀Cl₄N₄O₄S₄
Molecular Weight 1822.15 g/mole
Absorption 820 nm
HOMO/LUMO -5.49 eV/ -4.09 eV



* Reference: *J. Am. Chem. Soc.* **2017**, *139*, 17114–17119

Features

- The BT-CIC single-junction solar cells achieve PCE=11.2±0.4%, J_{sc}=22.5±0.6 mA/cm², V_{oc}=0.70±0.01 V, and FF=0.71±0.02. This performance was achieved only by selectively harvesting the photons from the near-infrared (NIR) region.
- The EQE of the BT-CIC-based device reaches 75%, between 650 and 850 nm while leaving a transparency window between 400 and 650 nm. The BT-CIC with Cl-based molecules are effective for use in NIR solar cells with applications to semitransparent and tandem solar cells for building integrated photovoltaics (BIPV).

Device Application

The Best OPV Device:

ITO/ ZnO (25 nm)/ PCE-10 mixed with BT-CIC (130 nm)/ MoO₃ (15 nm)/ Ag (100 nm).

MoO₃ = LT-E003

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

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