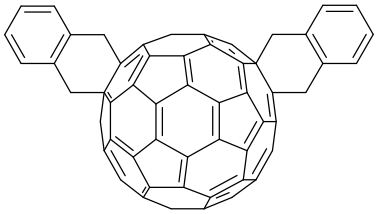
Luminescence Technology Corp.

Novel Fullerene Bis-Adducts for High Open Circuit Voltage and Efficient Polymer Solar Cells

Product Specifications

LT-S9069 OXCBA



Formula	$C_{76}H_{16}$
Molecular Weight	928.92 g/mole
LUMO (eV)	-3.66 eV

Reference : *Chem. Mater. 2011, 23, 5090–5095*
Chem. Mater. 2012, 24, 2373-2381
J. Mater. Chem. 2011, 21, 17345-17352

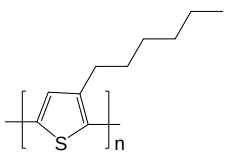
Information:

- A novel molecule OXCBA was developed as a electron acceptor in which an fullerene moiety was condensed with *o*-xylene moiety via [4+2] cycloaddition.
- The thermal properties of OXCBA were measured by thermal gravimetric analysis(TGA), showing high thermal stability. The electrochemical properties of OXCBA was measured using cyclic voltammetry(CV), the LUMO energy level of OXCBA is -3.66eV, which is higher than the level of PCBM (-3.83eV).
- Bulk heterojunction(BHJ) photovoltaic cells using an ITO/PEDOT:PSS/P3HT:OXCBA/LiF/Al structure were fabricated, the P3HT/OXCBA device showed high efficiency of 5.31% with V_{OC} of 0.83 V, which is nearly 50% higher than the P3HT:PCBM control device (3.68% with V_{OC} of 0.59 V).

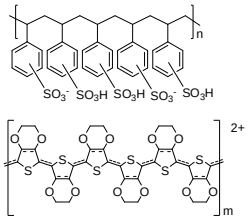
Device Application

ITO/PEDOT:PSS (40nm)/P3HT:OXCBA (120nm)/LiF(0.5nm)/Al (150nm)

Related products from Lumtec:



LT-S909 P3HT



LT-PS001 PEDOT:PSS

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