

Abstract

Small conjugated molecules comprising of heterocyclic units have gained popularity in organic electronic appliances. The benzotriazole building block has distinctive tunable attributes that make it suitable for usage in organic electronics. Conjugated materials having alkyl group on C-2 of benzotriazole have improved solubility as compared to the benzothiadiazole counterpart. Two small conjugated molecules 4,7-bis(5-(3,5-bis(trifluoromethyl)phenyl)thiophen-2-yl)-2-octyl-2H-benzotriazole and 4,7-bis(5-(3,5-dimethylphenyl)thiophen-2-yl)-2-octyl-2H-benzotriazole having electron acceptor and electron donor on the periphery of benzene ring respectively were synthesized from 4,7-bis(5-bromothiophen-2-yl)-2-octyl-2H-benzotriazole by employing Suzuki coupling. Their purity and characterization were confirmed FT-IR as well as Nuclear Magnetic Resonance (NMR) spectroscopy. UV-VIS spectroscopy was used for Photophysical studies of synthesized conjugated molecules.