

ABSTRACT

In the context of need for clean Solar Energy Resources, the use of heterocyclic conjugated small molecules in organic solar cells has been adapted with which PCE as high as 21% has been achieved till now and it still has great potential to replace other energy resources. Benzotriazole, famously known for their solar and medicinal use, are a class of heterocyclic organic compounds that have recently gained considerable attention as promising conjugated materials for emerging energy applications. In this research, a series of benzotriazole based conjugated materials were synthesized using facile and economic synthetic routes. The successful formation of the compounds was confirmed by physical characterization techniques. The photophysical properties of the compounds were studied using UV-Visible and Photoluminescence spectroscopy. NMR and GC-MS was used for characterization of synthetic compounds.