

Photovoltaic Performance of Organic Photosensitizers based on Dendritic dyes for Dye Sensitized Solar Cells

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Since Grätzel *et al.* reported the first efficient dye-sensitized solar cells (DSSCs) in 1991, they have attracted much attention due to their relatively high power conversion efficiency and potentially low cost production. To date, high performance and good stability of DSSC based on Ru-dyes as a photosensitizer had been widely addressed in the literatures. However, the Ru-dyes are facing the problem of manufacturing costs and environmental issues. In order to obtain even cheaper photosensitizers for DSSC, the metal-free organic photosensitizers are strongly desired.

The metal-free organic dyes offer superior molar extinction coefficients, low cost, and diverse molecular structures as compared to the conventional Ru-dyes. In this work, we have studied on the synthesis and characterization of the organo dendritic dyes containing different number of electron acceptor moieties in a molecule. In particular, photovoltaic properties of the dye in DSSC are mainly discussed.

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