

Photovoltaic efficiency on DSSC assembled with a nanometer sized Y-TiO₂

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Dye-sensitized solar cells (DSSCs) have been considered one of the most promising candidates for renewable energy devices because of their high efficiency and low production cost. Nano-particles of pure TiO₂ consisting of a semiconductor thin film in DSSC are one of the most useful materials in use until now. however, pure TiO₂ has disadvantage, its electron transfer is not easy. A lot of works have been done to improve the photo kinesis of TiO₂ by doping with various metal ions. This study examined the photoelectric conversion efficiency of dye-sensitized solar cells when nanometer sized Y (0.1, 0.5, and 1.0 mol-%)-TiO₂ prepared using a solvothermal method was employed as a working electrode material.