E2-48 Photosensitisation effects of organic dyes on nanostructured titanium dioxide films

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Dye sensitization of nano crystalline porous titanium dioxide films with several dyes have been widely investigated in photoelectrochemical cells for solar energy conversion. High quantum efficiencies of these cells with Ruthenium bipyridine complexes as dyes have been reported.

However since these dyes are expensive, photounstable and also relatively time consuming to synthesize, attempts were made to search for relatively inexpensive organic dyes with good quantum efficiencies. We reported the observation of anodic photocurrents when most of these dyes are adsorbed on TiO_2 films. However, in certain instances small cathodic photocurrents were observed when some dyes are adsorbed on TiO_2 films.