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Developing dye sensitizied solar cells with natural dyes and polymer electrolytes

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We have fabricated dye sensitized solar cells and improved the efficiency of the cells by doping aluminum (Al) in anodization process during synthesizing TiO2 nanotubes (Titania nanotubes). We have studied the microstructure of titania by X-ray diffraction (XRD), scanning electron microscopy (SEM) and Atomic Force Microscopy (AFM), optical property by UV-visible spectroscopy, and the effect of Al-doping on the efficiency of the solar cells. We also present the polymer electrolytes on the efficiency of the cells by comparing 2 polymers: the polyacrylonitrile-co-styrene and polyethylene oxide.

keyword: dye sensitized solar cells; polymer electrolytes;Titania nanotubes

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