

The Study of MEH-PPV Films Morphology and Its Application for Hybrid Solar Cell

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Polymer solar cell has become one of the most imperative issues for many researchers because of its low cost, simple processing, and promising technology application. The performances of the devices have been developed by the combination of inorganic semiconductors to form hybrid organic - inorganic solar cells. Trichloro ethylene (TCE), acetone and methanol have been used as solvents in spin coating for the making ITO-glass substrate.

The poly[2-methoxy-5-(2-ethylhexyloxy-p-phenylene-vinylene)] (MEH-PPV) thin films were deposited on indium tin oxide (ITO) coated glass. The effect of spin-coating speed on the electrical and morphological properties of MEH-PPV film was studied. The surface roughness would be controlled by thermal annealing treatment at different temperatures. I-V characteristics of ITO/MEH-PPV/Al structure have measured by solar simulator at the optimum condition. The UV-Vis absorption characteristics of MEH-PPV films were also studied in this report.