

HYBRID CDS-POLYACETYLENE PHOTOSENSITIZER SOLID-STATE SOLAR CELLS

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Abstract : The polyacetylene photosensitizer with quaternary pyridinium salts were layered on CdS nanocrystalline film by in situ polymerization of 2-ethynylpyridine and 4-bromobutyric acid as in situ polymerization enhances an interfacial contact between inorganic semiconductors and conjugated polymers. The hydrophilicity of polymer photosensitizers was controlled by the anion exchange to deposit good quality P3HT layers by spin coating. The hybrid cell shows a power conversion efficiency of 2.19% under air mass (AM) 1.5 condition ($I = 30 \text{ mW/cm}^2$).