

FABRICATION OF CdS/Si HETEROJUNCTION SOLAR CELL

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ABSTRACT

To a make a low cost photovoltaic solar cell cadmium sulphide nanoparticles are prepared by a cost effective chemical method. The structure of synthesized nanoparticles is characterized by Transmission Electron Microscope and X-ray diffraction. Optical absorption and photoluminescence properties of as grown nanoparticles have been studied. The hetero junction of nanoCdS and p-Si has been fabricated from as prepared CdS nanoparticles. To prepare hetero junction device a film of CdS nanoparticles on p-Si has been grown by spin coating technique. The formation of CdS thin film on p-Si substrate is confirmed by AFM image. The current-voltage characteristics of the prepared hetero junction have been studied in dark and light condition. The measurement of efficiency and fill factor of the nanoCdS/p-Si hetero junction device are also performed.

KEYWORDS: CdS Nanoparticles, Structural Properties, Optical Properties, Hetero-Junction Solar Cell