Chuleeporn Suwattanaphiboon 2009: Study of CdS Thin Film Coated on CdTe polycrystalline Substrate by Chemical Bath Deposition Method for Solar Cell Application. Master of Science (Physics), Major Field: Physics, Department of Physics. Thesis Advisor: Assistant Professor Cherdsak Kunsombat, Ph.D. 62 pages.

Cadmium Sulphide (CdS) thin films have been deposited by chemical bath deposition method (CBD) on CdTe substrates. The temperature of the deposition was varied from 40 ^{o}C to 80^{o}C under stirring, pH of complexing agent about 10-11.5 and doping by $CdCl_2$.The doping sample was sensitive with visible light and sensitivity increases when compared with undoping sample. The morphology was composed of small columnar crystals, characterized by TEM. The crystallographic structure contains a mixture of hexagonal and cubic structures, the grain size between 15-33 nm observed study by XRD. The energy gap of 2.21 eV for undoping sample were calculated by reflectance spectra using UV-VIS spectrometer. This study showed the correlation of deposition temperature, grain size and sensitivity which indicated that some properties of high efficiency CdS/CdTe Solar Cells

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