

Chemical Bath Deposition Technique of CdS Used in Closed Space Sublimation of CdTe Solar Cell

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Abstract : Cadmium Sulphide (CdS) was deposited on a Tec 15 glass substrate with the help of CBD (chemical bath deposition process) and then cadmium telluride CdTe was deposited on CdS with the help of CSS (closed spaced sublimation technique) for the construction of a solar cell. The thicknesses of all the deposited materials were measured with the help of Ellipsometry. The IV graphs were drawn in order to observe the current voltage output. The efficiency of the cell was graphed with the fill factor as well (graphs not given here). The efficiency came out to be approximately 16.5 % and the CIGS (copper-indium-gallium-selenide) maximum efficiency is 20 %. The efficiency of a solar cell can further be enhanced by adapting quality materials, good experimental devices and proper procedures. The grain size was analyzed with the help of scanning electron microscope using RBS (Rutherford backscattering spectroscopy).

Keywords : Chemical Bath Deposition Technique (CBD), cadmium sulphide (CdS), CdTe, CSS (Closed Space Sublimation)

Conference Title : ICMSMP 2017 : International Conference on Materials Science and Materials Physics

Conference Location : London, United Kingdom

Conference Dates : July 24-25, 2017