

BII 10 A preliminary study on the optimization of electrochemically deposited CdS layers for application in CdS/CdTe solar cells.

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Cadmium Sulphide (CdS) thin films were electrochemically deposited successfully on indium tin oxide (ITO) coated glass substrates using an aqueous solution containing 0.3M CdCl₂ and 0.03M Na₂S₂O₃. Current-voltage characteristics of CdS thin films, as deposited as well as after annealed, were investigated for films prepared under different conditions of deposition voltage and period, and at different temperatures and pH values of the solution. It was found that the best quality CdS layers were formed under the deposition conditions of -1.13V for a period of 45 minutes in a solution at 46^o C and pH value of 1.4. The performance was improved significantly after annealing the sample at 400^o C for a period of 20mn. The procedure of preparation of the sample and the results of the preliminary study are presented here. Further investigations based on XRD, SEM and AFM measurements are in progress to confirm the above results.

Keywords: annealing, Cadmium sulphide, electrode position, electrolyte