

41. Studies On Nanocrystalline Chalcogenide Thin Films Deposited By Chemical Bath Technique

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ABSTRACT

We deposited CdS and ZnS chalcogenides thin films on different substrates by Chemical Bath Deposition Technique. Structural, Surface Morphology and Optical properties of as deposited CdS and ZnS films were investigated by XRD, SEM, FTIR and UV-VIS Spectrophotometer. It is found that, the average grain size of CdS and ZnS in the films is 08 to 130nm and 08 to 113nm. The band gap is also calculated from the equation relating absorption co-efficient to wavelength. The band gap indicates the film is transmitting within the visible range and the band gaps changes because of the grain size of the CdS and ZnS in the films. We also observed that, the change in preparative parameters affects the deposition rate of thin films. From the observation, it is clear that the growth rate increases as the deposition temperature, deposition time, molarities of the solution increases. It is also clear that the growth rate increases as the film thickness and grain sizes increases while band gap decreases.