

Spectroscopic Analysis of Thermally Evaporated Polycrystalline ZnTe Thin Film Samples

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Polycrystalline films of Zinc Telluride (ZnTe) have been characterized by using spectroscopy (especially reflection, transmission and absorption spectroscopy). The studied ZnTe thin films have been deposited on a highly cleaned glass substrate and their optical properties have been studied on fresh and annealed films. The energy band gap (E_g) of the films has been calculated from the Tauc relation. The optical response of ZnTe thin films in different photon energy range at room temperature has been studied by spectroscopic analysis. In the present paper, the variation of absorption coefficients with wavelength has been studied. The direct and indirect energy band gaps have also been evaluated for the ZnTe thin film samples grown at different ambient conditions. As the present experiment also involves investigation of ZnTe thin films and measurement of absorption coefficient “a”, using the data of reflection coefficient “R” in the uv-visible range of energy, few information regarding the band structure of ZnTe thin films can be obtained by taking the help of the standard data, of ZnTe monocrystals.