

## 77. Study of optical parameters of Chemical Bath deposited $\text{Cd}_x\text{Zn}_{1-x}\text{S}$ thin films

L.S. Ravangave, U.V. Biradar, S. D. Misal

### ABSTRACT

The  $\text{Cd}_{1-x}\text{Zn}_x\text{S}$  ( $x=0, .0, 0.2, 0.4, 0.6, 0.8, 1.0$ ) thin films are successively deposited by using Chemical Bath Deposition Method (CBD). The prepared thin films were characterized UV-Visible spectrophotometer for optical study. The absorption spectra recorded at room temperature shows blue shift of absorption edge. The percentage transmittance was observed maximum in the visible and near infrared region. The maximum transmittance 78% is obtained for  $x=0.8$  composition of the  $\text{Cd}_{1-x}\text{Zn}_x\text{S}$  thin film. The less reflectivity concluded that the prepared thin films obey antireflection properties. The statistical data shows tuning of band gap with Zn content. The effect of composition on refractive index, absorption index and other optical dispersion parameters are also investigated. The calculated values of average excitation energy  $E_o$  approximately obey the empirical relation obtained from single oscillator model.

**Key words:** Chemical Bath Deposition, structural parameters, band gap, optical constants.