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Optical Properties of ZnS Thin Films

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**Abstract:** Zinc sulfide (ZnS) thin films of different thickness were deposited on Corning 7059 glass substrate at room temperature and high vacuum using resistive heating technique. The film properties investigated include their absorbance / transmittance / reflectance spectra, band gap, refractive index, extinction coefficient, optical conductivity, complex dielectric constant and thickness. The films were found to exhibit high transmittance (60-99%), low absorbance and low reflectance in the visible / near infrared region up to 1100 nm. However, the absorbance of the films was found to be high in the ultra violet region with peak around 360 nm. The thickness (using quartz crystal) of various films ranges from 100 nm to 400 nm. The band gap measured was found to be in the range 3.51 eV to 3.84 eV.

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