ABSTRACT

Zinc Sulphide thin films are deposited on glass and silicon substrates using RF magnetron sputtering in argon atmosphere under various sputtering powers in the range of 100W to 160W and various substrate to target distances. Different characterization techniques are used for the analysis of samples. The influence of varying RF power and substrate to target distance on the electrical and optical properties was studied using FTIR, Raman, XRD, SEM, and UV-Vis. spectroscopy. The surface morphology of deposited films was studied using a scanning electron microscope. Raman analysis used to observe the phonon related to the prepared material. The crystalline nature of the prepared material was studied by x-ray diffraction. The microstructure of films are analysed by Fourier transform infrared spectroscopy. FTIR spectra show the various transmission peaks of c-ZnS phase. UV-Vis. spectra show the reflectance of the prepared material. Energy band gap is also calculated by using the the UV-Vis. Spectroscopy.