Light polarization effects on the optical properties of Se

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Abstract

Here in this work, the reflection/transmission of selenium thin film was studied using UV-VIS Spectroscopy. The spectral reflection and transmission were recorded at various wavelengths and variable angle of incidence. In addition, the polarization effects on optical reflectance and transmittance of Se film had been discussed as function of the angle of incidence in range of 30-80°. Moreover, the absorption spectral analysis as function of polarization angle revealed an anisotropic behavior of the Se films. Particularly, the dependence of direct energy band gap on the polarization angle was explored and found to exhibit an increasing trend with increasing angle of polarization. The dynamics of the dielectric constant spectra as function of polarization angle also studied.