

Thickness Dependent Properties of Sulfurized SnS Films

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Tin monosulfide films grown via two-stage process with different thickness that varied in the range 100 nm to 1200 nm. The physical and chemical properties were studied by XPS, XRD, Raman, SEM, Hall effect and UV-Vis-NIR measurements. All the layers exhibited polycrystalline nature related to orthorhombic structure with (111) and (040) as preferred orientations. SEM analysis revealed that all the films were pin-hole and crack free. The electrical resistivity and band gap of films decreased with the increase of film thickness. The thickness dependent other optical constants were also estimated from reflectance and transmittance spectrum.