

Abstract

Thin films of InSe were obtained by thermal and flash evaporation techniques on glass substrates maintained at various temperatures ($T_s=30, 100, 160, 200^\circ\text{C}$). The best films were obtained for a substrate temperature of 160°C followed by annealing at 200°C for 6 h. Analysis of the films showed strong decomposition of films obtained by thermal evaporation. Structural studies showed the presence of In_4Se_3 with InSe. The chemical formula of the composite is $\text{In}_x\text{Se}_{1-x}$. The values of x found by the microprobe analysis vary between 0.52 and 0.56. Optical absorption data are also explained in terms of composition variation.