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(57) Abstract :

ABSTRACT In the recent times, SnS thin films drew much attention for obvious reasons like abundancy, and lesser toxic nature. Researchers across the world proved the suitability of SnS thin films for Photovoltaic(PV) applications,as absorber layer in a solar cell.We made an attempt here to establish the suitability of Antimony (Sb) – doped SnS thin films for Photovoltaic applications. Chemical Bath Deposition (CBD) method was used to deposit the pristine and Antimony doped SnS thin films. The properties like structural, optical, and electrical were studied besides studying the composition of the grown films.The crystallinity of the deposited films showed an improving trend with the Sb-doping concentration till 5 atomic percentage. The optical band gap showed variation between1.147eV to1.25eV.The electrical resistivity and the charge carrier concentration marked opposite trends with the former decreasing significantly while the latter increasing with the Sb-doping concentration. Electrical resistivity as low as 2.72 x 10-2 ohm-cm and carrier concentration as high as 3.65 x 1019 cm -3 were exhibited by 5 atomic % Sb doped SnS films.

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