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Spectroscopical study of amorphous AsSe films containing tin impurity

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Abstract

Optical absorption of thermally deposited AsSe films doped with Sn impurity (1 to 10 at.%) is studied in a wide energy interval from 0.8 to 6.2 eV by combination of reflection, absorption, photoresponse and photocapacitance spectroscopies. The effect of tin impurity on both extended and localized electronic states is revealed. Over the fundamental edge absorption region a correlation between the band tail width and optical gap is demonstrated for various tin concentrations.