Effect of sulfur on dielectric properties of Cd-Se Glassy system

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Abstract

Cd4Se96-xSx with x = 0, 4, 8, 12 amorphous semiconductor has been prepared by melt-quenching technique. Bulk samples in the form of powder were characterized by XRD which shows the amorphous nature of the prepared samples. The dielectric parameters were studied in the temperature range of 300-350 K and in the frequency range of 20 Hz-1 MHz. Dielectric dispersion are observed in the Cd-Se-S system, these results are explained on the basis of dipolar type of dielectric dispersion. It is also observed that DC conductivity increases and activation energy decrease with increase of sulfur concentration, which is mainly due to increase in the density of localized state in the mobility gap or decrease in the band gap.

Keywords

KeyWords Plus: HOT-PRESSED AIN; THIN-FILMS; CHALCOGENIDE GLASSES; ELECTRICAL-CONDUCTIVITY; AC CONDUCTIVITY; ALLOYS; RELAXATION; BEHAVIOR; MECHANISM

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