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Composition dependent of dielectric properties in  $\text{Se}_{100-x}\text{Pb}_x$  glassy alloys

Jyoti SHARMA and Santosh KUMAR

Department of Physics, Christ Church College, Kanpur, 208001, INDIA

e-mail: dr\_santosh\_kr@yahoo.com

**Abstract:** In this paper we report the composition dependent of dielectric properties in  $\text{Se}_{100-x}\text{Pb}_x$  ( $x = 0, 2, 4, 6$  and  $10$ ) glassy alloys. The temperature and frequency dependence of the dielectric constants and the dielectric losses in the above glassy systems in the frequency range  $1 \text{ kHz}$ - $5 \text{ MHz}$  and temperature range  $300$ - $340 \text{ K}$  have been measured. It has been found that dielectric constant and the dielectric loss both are highly dependent on frequency and temperature and also found to be increased with increasing concentration of Pb in pure amorphous Se. The results have been interpreted in terms of increase in the density of defect states in the incorporation of Pb as a metallic additive in the aforesaid glassy system. Apart from this, the results have been also correlated in terms of a dipolar model which considers the hopping of charge carriers over a potential barrier between charged defect states.

 [Keywords](#)  
 [Authors](#)



[phys@tubitak.gov.tr](mailto:phys@tubitak.gov.tr)

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