

Abstract Submitted
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Frequency Dependence of Dielectric Constant and Dielectric Loss in a-Se₉₀In₈Ag₂ CG glassy alloy DIPTI SHARMA, Wentworth Institute of Technology, Boston, MA 02115, USA, S.K. SHARMA, R.K. SHUKLA, A. KUMAR, HBTI Kanpur, India — Amorphous chalcogenide glasses (CG) form the basis of re-writable CD and DVD solid-state memory technology. They exhibit thermally driven amorphous crystalline phase change which make them useful for encoding binary information on thin films of CGs and forms the basis of rewritable optical discs and non-volatile memory devices such as PRAM. CGs also show significant ionic transport that can be useful for data storage in a solid CG electrolyte. The present study shows the effect of frequency on dielectric parameters of an ionic CG of Se₉₀In₈Ag₂. They were measured in the frequency ranged from 200 Hz to 500 kHz and found to be decreased with frequency. The frequency dependence of dielectric loss can be explained in terms of Elliott's model of correlated barrier hopping over a potential barrier [1-3].

- [1] D. Sharma et al., Thin Solid Films 357 (1999) 214-217;
- [2] D. Sharma et al., Adv. Mater. Opt. Electron. 10 (2000) 251-259;
- [3] D. Sharma et al., Materials and Manufacturing Process 18 (2003) 93-104

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