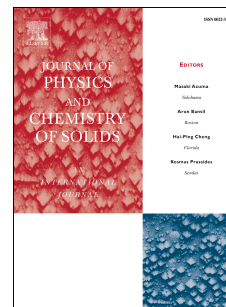


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**Universality of Meyer-Neldel Compensation Rule (MNCR): Case study of thermally assisted a.c. conduction after laser irradiation**

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**Abstract**

In the current article, the influence of four different cw-lasers on the thermally activated a.c. conduction of a novel quaternary chalcogenide glassy semiconductor  $\text{Se}_{72}\text{Te}_{20}\text{Sn}_2\text{Cd}_6$  has been reported at different audio frequencies. We have used four different laser sources of wavelengths lying in UV-Vis-IR region. The variation of a.c. conductivity with temperature obeys the Arrhenius relation for all the four laser light sources. Further analysis confirms that pre-exponential factor of thermally governed a.c. conduction and the activated energy involved in the phenomenon follows MNCR. It is also found that this correlation remains independent of laser wavelength.

**Keywords:** Amorphous materials; Laser processing; a.c. conductivity; Meyer-Neldel Compensation.

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