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Observance of Rise and Decay of Photoconductivity in Ag doped Glassy Thin Film DIPTI SHARMA, WIT, RAJENDRA SHUKLA, ASHOK KUMAR, HBTI, Kanpur, India — In this study, the rise and decay of photoconductivity was observed as a function of exposure time and light intensity for glassy thin films of $\text{Se}_{75}\text{Te}_{20}\text{Ag}_5$. The thin films of $\text{Se}_{75}\text{Te}_{20}\text{Ag}_5$ chalcogenide glassy alloys were made by evaporation method within a vacuum of 10^{-5} Torr in the department of Physics at HBTI Kanpur, India. The photoconductivity increases initially, attains a maximum, and then decreases with time as exposure time increases from 15 min to 45 min as well as the light intensity increases from 140 lux to 1450 lux. Under the same experimental conditions, the decay of photocurrent shows a negative photoconductivity during the transient process, and then comes back to zero in many days. This anomalous behavior of photoconductivity can be explained in terms of interaction of photo-excited holes and Ag ions^{1, 2}. 1. D. Sharma, R.K. Shukla and A. Kumar, Thin Solid Films 357 (1999) 214-217 2. D. Sharma, R.K. Shukla, A. Singh, A. K. Nagpal and A. Kumar, Adv. Mater. Opt. Electron. 10 (2000) 251-259
Keywords: Rise and Decay, Photoconductivity; Glasses, Thin films, $\text{Se}_{75}\text{Te}_{20}\text{Ag}_5$, Vacuum, Evaporation method.

Dipti Sharma
WIT, Boston, MA, USA

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