

Abstract Submitted
for the SES15 Meeting of
The American Physical Society

Thermal Analysis of Bi/Ga Doped Germanium Chalcogenides¹

LEO SATURDAY, CAMERON JOHNSON, ROMAN HOLOVCHAK, Austin Peay State University Department of Physics and Astronomy, YAROSLAV SHPOTYUK, Laboratoire des Verres et et Ceramiques, Institute des Sciences chimiques de Rennes — Bi and Ga doped chalcogenide glasses (ChG) have several potential applications in modern photonics and optoelectronics. In addition, ChG can be used in phase-change memory material, since they possess rapid phase change between amorphous and crystalline states. In this work, we have investigated the glasses of $\text{Bi}_x\text{Ga}_y(\text{GeSe}_4)_{50-(x+y)/2}(\text{GeTe}_4)_{50-(x+y)/2}$ family with thermal analysis techniques in order to determine crystallization kinetics and Index of Crystallization Rapidity (ICR) for major phases. These ICR rates suggest further potential uses for this glass family in phase change memory storage. The X-Ray Diffraction (XRD) Spectroscopy also gives a look at the specifics of this material's crystalline compounds.

¹Financial support from NSF grant DMR-1409160 is acknowledged.

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Date submitted: 16 Oct 2015

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