Abstract Submitted
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An Analysis of Structural Changes of Glassy Arsenic Selenides due to Ga and Te Incorporation[1] CAITHLEANN THOMAS, ROMAN GOLOVCHAK, Austin Peay State University, HIMANSHU JAIN, Lehigh University, YAROSLAV SHPOTYUK, Universit de Rennes — Structural changes of As2Se3 due to the incorporation of Ga and Te are studied using X-ray photo-electron spectroscopy(XPS), extended X-ray absorption fine structure (EXAFS) and Raman techniques. Mostof the As, Se and Te atoms build a covalent network according to their main valences. Three-fold coordinated As atoms form pyramidal structural units, which are connected via bridges of two-fold coordinated chalcogen atoms (Se, Te).On the other hand, coordination of Ga in glassy samples is found to be greater than three, as expected from its valence, increasing with Te content. Some of the As atoms appear to be converted into four-fold coordinated state at low Te concentration, while a fraction of Te and, possibly, Se atoms are thought to exist in a singly-coordinated (terminal) state in the vicinity of Ga in the samples with higher Te concentration.

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