Abstract Submitted
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Pressure induced structural changes in AgPb18SbTe20[1] RAVHI KUMAR, HiPSEC and Department of Physics, University of Nevada Las Vegas, Las Vegas, Nevada, ANDREW CORNELIUS, MATHEW JACOBSEN, MALCOLM NICOL, HiPSEC and Dep.Physics, University of Nevada Las Vegas, Las Vegas, Nevada, SEIJI YONEDA, Kanagawa University, Yokohama, Japan — The cubic chalcogenide AgPbmSbTe2+m type compounds are an important class of thermoelectric materials for which figures of merit as high as 2.2 at 800 K have been reported recently [1]. The structures of these compounds have been investigated under pressures up to 30 GPa using a diamond-anvil cell and an imaging plate with synchrotron radiation at HPCAT. Various runs were performed with different pressure media such as 4:1 methanol-ethanol and silicone fluid. The results show pressure induced structural transitions in AgPb18SbTe20. The NaCl-type cubic phase transforms to an orthorhombic phase at 6.4 GPa and then to a CsCl-type cubic structure at 14 GPa. The high pressure CsCl-type phase is stable up to 30 GPa. The ambient structure is recovered on releasing the pressure from the cell. The results will be presented in detail. [1]. K.F. Hsu etal., Science, 303, 818 (2004)

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