

Abstract Submitted
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High Pressure XRD Structural Study of Intermetallic Hydrogen Storage Material ZrFe₂¹ DANIEL ANTONIO, RAVHI KUMAR, ANDREW CORNELIUS, HiPSEC, Physics Dep. University of Nevada, Las Vegas — Intermetallic compounds show high hydrogen sorption capacities when pressurized with hydrogen. Further, they are also used in hydride compressors [1]. The structure of intermetallic ZrFe₂, which can contain about 1.7 wt/GPa, was studied using XRD at high pressures up to 47 GPa using a diamond anvil cell and synchrotron x-rays. The cubic Fd3m Laves phase is found to be stable and the bulk modulus was found to be 163.5 GPa which compares well with other intermetallics. The variation of unit structural parameters and the equation of state are discussed.

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