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Pressure Induced Phase Transition and Elastic Properties of Cerium Mononitride

Authors : Namrata Yaduvanshi, Shilpa Kapoor, Pooja Pawar, Sadhna Singh

Abstract : In the present paper, we have investigated the high-pressure structural phase transition and elastic properties of cerium mononitride. We studied theoretically the structural properties of this compound (CeN) by using the Improved Interaction Potential Model (IIPM) approach. This compound exhibits first order crystallographic phase transition from NaCl (B1) to tetragonal (BCT) phase at 37 GPa. The phase transition pressures and associated volume collapse obtained from present potential model (IIPM) show a good agreement with available theoretical data.

Keywords : phase transition, volume collapse, elastic constants, three body interaction
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