

Abstract Submitted
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Raman scattering of IrTe₂¹ ALEXANDER LEE, VERNER THORSMOLLE, SERGEY ARTYUKHIN, Rutgers, The State University of New Jersey, JUN YANG, Pohang University of Science and Technology, SANG-WOOK CHEONG, GIRSH BLUMBERG, Rutgers, The State University of New Jersey — IrTe₂ presents a layered compound with a triangular lattice. It is known to exhibit a first order structural phase transition at approximately 260 K which is of a first order, corresponding to a formation of a superstructure with a period of five unit cells. Using polarized Raman spectroscopy we have studied the temperature dependence of 14 observed Raman allowed phononic modes. These phonons couple strongly to this transition and one additional first order transition at approximately 170 K. In the high-temperature phase only 3 modes are observed, while below approximately 280 K all 14 modes become visible. Below approximately 170 K only 11 modes are observed. Our results shed light on the possible mechanism driving the transitions.

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