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Local Structural Changes at Low Temperature in Hexagonal InMnO₃ TIAN YU, PENG GAO, TAO WU, TREVOR TYSON, New Jersey Institute of Technology, XINGGUO HONG, Stony Brook University, YUSHENG CHEN, The University of Chicago, ROGER LALANCETTE, Rutgers University, Newark — Single crystal structural, electric polarization and heat capacity measurements on the hexagonal InMnO₃ have revealed that this small R ion material is ferroelectric at room temperature. In addition, temperature dependent electrical polarization measurements down to ~ 10 K were conducted. In parallel, structural measurements on single crystal and powders were carried out. Evidence is found for local distortions which are strongly enhanced as temperature decreases. The connection between the structural changes and the bulk polarization is explored. Strong spin lattice coupling is evidenced in two temperature regions (near ~ 120 and 40 K). This work is supported by DOE Grant DE-FG02-07ER46402.

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