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Insights on Electric Polarization in E-type $R\mathbf{MnO_3}$ TAO WU, TREVOR A. TYSON, HAIYAN CHEN, New Jersey Institute of Technology, ZHIQIANG CHEN, Stony Brook University, RYAN TAPPERO, Brookhaven National Laboratory, KEUN H. AHN, New Jersey Institute of Technology, SUNG-BAEK KIM, SANG-WOOK CHEONG, Rutgers University — Orthorhombic perovskite E-type $R\mathrm{MnO_3}$ multiferroic systems were prepared by high pressure synthesis and solid state reaction. High pressure synchrotron x-ray diffraction and x-ray absorption spectroscopy measurements were performed to explore the structural changes. The influence of the pressure on the electrical polarization is discussed. Theoretical analysis is used to predict pressure dependence of the polarization from the structural data derived from the refinements. This work is supported by DOE Grant DE-FG02-07ER46402.

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