

Abstract Submitted
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Temperature Dependent Atomic Structure of LuFe₂O₄ SIZHAN LIU, HAN ZHANG, New Jersey Institute of Technology, SANJIT GHOSE, Brookhaven National Laboratory, THOMAS EMGE, Rutgers University, CHERNO JAYE, DANIEL FISHER, NIST, SANG-WOOK CHEONG, Rutgers University, TREVOR TYSON, New Jersey Institute of Technology — The LuFe₂O₄ system has been studied intensively as a novel material with charge ordered driven ferroelectricity. However, the existence and origin of electric polarization and its coupling to the magnetic structure are open questions still to be addressed. We have studied the structure on LuFe₂O₄ on multiple length scales using X-ray diffraction, temperature and orientation dependent Raman spectroscopy, temperature dependent X-ray and neutron pair distribution function measurements and DFT modeling. The stable space groups on different length scales are being determined. This work is supported by DOE Grant DE-FG02-07ER46402.

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