

Abstract Submitted
for the SES05 Meeting of
The American Physical Society

Properties of $(\text{Ba}_x\text{Sr}_{1-x})\text{FeO}_3$ thin films and multilayers CHARLEE CALLENDER, DAVID NORTON, ARTHUR HEBARD, JOSH KELLY, RITESH DAS, University of Florida, MATERIALS SCIENCE & ENGINEERING COLLABORATION, PHYSICS COLLABORATION — $(\text{Ba}_x\text{Sr}_{1-x})\text{FeO}_3$ is an interesting perovskite solid solution. SrFeO_3 is antiferromagnetic, while BaFeO_3 is ferromagnetic with a Curie temperature of 160 K. The primary effect of Sr substitution into BaFeO_3 is a decrease in lattice parameter with no change in formal valence. Yet, the transport and magnetic properties of the two end compounds are significantly different. In this project, we are investigating the properties of the $(\text{Ba,Sr})\text{FeO}_3$ epitaxial thin films and multilayers. The $(\text{Ba}_x\text{Sr}_{1-x})\text{FeO}_3$ films were grown via pulsed laser deposition. The films were characterized by X-ray diffraction, Superconducting Quantum Interference Device (SQUID) magnetometry, and atomic force microscopy.

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Date submitted: 09 Aug 2005

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