Abstract Submitted
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Magnetic properties of $BiMnO_3$ thin films[1] KRISTEN VOIGT, Department of Physics, Colorado State University, Fort Collins, CO 80523, HYOUNG JEEN JEEN, GUNEETA SINGH-BHALLA, SEFAATTIN TONGAY, PATRICK MICKEL, ARTHUR HEBARD, AMLAN BISWAS, Department of Physics, University of Florida, Gainesville, FL 32611 — The growth conditions for growing $BiMnO_3$, with pulsed laser deposition, are optimized. The optimal oxygen pressure was found to be near 32 mTorr, and the optimal substrate temperature was found to be between 630 $^\circ$ C and 635 $^\circ$ C. The quality of the films was checked using x-ray diffraction, Auger electron spectroscopy, and atomic force microscopy. Magnetic properties of two thin films were measured and showed that there is no clear 2^{nd} order transition in ferromagnetic $BiMnO_3$ at the Curie temperature. A pronounced ferroelectric polarization loop was also obtained in these thin films.

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Kristen Voigt
Department of Physics, Colorado State University, Fort Collins, CO 80523

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