Abstract Submitted
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Development of All Oxide Exchange Bias Systems[1] DAVID KIRKWOOD, Department of Materials Science and Engineering, University of Virginia, Charlottsville, VA 22904, YONGHANG PEI, Department of Physics, University of Virginia, Charlottesville, VA 22904, NAM DAO, JIWEI LU, STUART WOLF, Department of Materials Science and Engineering, University of Virginia, Charlottsville, VA 22904 — Multiferroic materials exhibit multiply states of order which are often coupled. Bizmuth Ferrite (BFO_3) is a room temperature antiferromagnetic, ferroelectric materials, where electrical control of magnetism and vice versa has been established. Combining BFO_3 with ferromagnetic oxides such as Magnetite (Fe_3O_4) or Lanthanum Strontium Manganate ($L_{.7}S_{.3}MO$) could yield interesting system with electrically controllable exchange bias. We have used a novel deposition tool employing two pulsed electron beam sources (PEBS) to deposit epitaxial layers of BFO_3, LSMO, and Fe_3O_4 onto STO, LAO, and MgO substrates. We are in the process of making bilayers of these materials and examining the quality and influence of the oxide interface on the development and system control of the exchange bias.

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