

Abstract Submitted
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Switching of Ferroelectric Domains in Multiferroic BiFeO₃ Thin Films¹ JOON-HYUK YANG, LOURDES SALAMANCA-RIBA, University of Maryland, MRSEC TEAM — We are investigating the switching of ferroelectric domains under different residual strains. We are investigating the role of strain in BiFeO₃ films on their ferroelectric properties and on the formation of polymorph phases within the films. We are also investigating the role of grain boundaries on the switching mechanism in these films. In addition, we are investigating if there is a gradient in the concentration of Fe³⁺/Fe²⁺ across grain boundaries and domain boundaries that could affect the switching behavior of these multiferroic materials. The BiFeO₃ films are grown using pulsed laser deposition, and characterized by X-ray diffraction and TEM. The strain is correlated to the ferroelectric properties of the films, These results will be related to the ferroelectric and ferromagnetic properties of the films in an attempt to understand the switching mechanism of ferroelectric domains under different amounts of strain.

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