

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Electrical and structural Characterization of $\text{Ba}(\text{Sc}^{3+}, \text{Sb}^{5+})_y\text{Ti}_{0.90}\text{O}_3$ with $y = 0.05$ and 0.10 ¹ JULIO CANTU, JERRY CONTRERAS, University of Texas-Pan American, DANIEL POTREPKA, FRANK CROWNE, U.S. Army Research Laboratory, ARTHUR TAUBER², GeoCenters Inc, STEVEN TIDROW, University of Texas-Pan American — $\text{Ba}(\text{Sc}^{3+}, \text{Sb}^{5+})_y\text{Ti}_{0.90}\text{O}_3$, with $y = 0.05$ and 0.10 , is investigated through temperature dependent electrical and structural characterization. The material is electrically characterized from 10 Hz to 2MHz for dielectric constant, tunability, dissipation factor and figure of merit over the temperature range of -50 °C to 125 °C. In addition, lattice parameters and structural changes of the material are reported as a function of temperature as obtained using x-ray diffraction and Rietveld refinement. Properties of these electric-field tunable materials are discussed in terms of ferroelectrics, non-relaxor versus relaxor behavior, and a ferroelectric dipole-like glass state.

¹This material is based upon work supported by, or in part by, the U.S. Army Research Laboratory and the U.S. Army Research Office under contract/grant number W911NF-08-1-0353.

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Date submitted: 14 Nov 2013

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