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**Electrical and Structural Characterization of Ba(Y, Ta)$_x$ Ti$_{1-2x}$O$_3$ With x = 0.025 and 0.05**[1] JERRY CONTRERAS, STEVEN C. TIDROW, The University of Texas-Pan American, DANIEL POTREPKA, FRANK CROWNE, U.S. Army Research Laboratory, ARTHUR TAUBER[2], Retired — Ba(Y, Ta)$_x$ Ti$_{1-2x}$O$_3$, with x = 0.025 and 0.05, is investigated through temperature dependent electrical and structural characterization. The material is electrically characterized from 10Hz to 2 MHz for dielectric constant, tunability, dissipation factor and figure of merit over the temperature range -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.

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[2]Contracted by the U.S. Army Research Laboratory from Geo-Centers Inc.

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