

Abstract Submitted
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Ferroelectric Phase Transition Study of Coupling KTN Perovskites Oxide by Scanning Microwave Microscope. SHUOGANG HUANG¹, MARK REEVES², Department of Physics, George Washington University, JENNIFER SIGMAN³, DAVID NORTON⁴, Department of Materials Science and Engineering, University of Florida, HANS CHRISTEN⁵, Solid State Division, Oak Ridge National Laboratory — We used a scanning near field microwave microscope to determine the thin film dielectric properties of KTN near transition temperature. For solid solution $K(Nb_xTa_{1-x})O_3$ thin film deposited on $MgAl_2O_3$ substrate a 1st order phase transition was observed and for KTN 1x1 super lattice two 2nd order phase transitions were observed. Then a finite element method simulation was applied to numerically calculate the dielectric constant of the samples in difference phases. The results show a strong consistent with the previous x-ray and capacitance measurements.

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