

Abstract Submitted  
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**Structural, electrical and magnetic properties of  $\text{Bi}(\text{Fe}_x\text{Ti}_{1-x})\text{O}_3$  thin films** N.M. MURARI, R. MELGAREJO, R. THOMAS, R.S. KATIYAR, Department of Physics and Institute for Functional Nanomaterials, University of Puerto Rico, San Juan, P.O. Box 23343, PR 00931 — Multiferroic materials have recently seen a surge of research activities due to its applications in the memory, spintronics, sensors devices and micro mechanical systems (MEMS).  $\text{BiFeO}_3$  is a naturally occurring multiferroics. However, the large leakage current is a concern for practical applications and substitution at Bi and Fe is commonly employed to circumvent this problem. Here, Fe substitution by Ti is considered for this purpose. Thin films on Pt/Ti/SiO<sub>2</sub> /Si were grown by chemical solution deposition (CSD) and characterized for structure and symmetry by XRD and Raman scattering, surface morphology by AFM, dielectric properties by impedance analyzer, and the leakage current by I-V measurements. Magnetic (M-H) and electric (P-V) hysteresis loops were also studied. Variation of dielectric constant ( $\epsilon_r$ ) and loss tangent ( $\tan\delta$ ) with temperature, frequency and temperature were systematically studied. Further, the effect of Ti substitution on the electrical properties will be presented.

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