Abstract Submitted
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**Ferroelectric properties of lanthanum and praseodymium doped bismuth titanate thin films** MENKA JAIN, BOSOO KANG, QUANXI JIA, Superconductivity Technology Center, Materials Physics and Applications Division, Los Alamos National Laboratory, Los Alamos, NM 87545 — Ferroelectric thin films have received considerable attention recently due to their potential applications in the nonvolatile random access memory. Bi-layered ferroelectrics materials such as $Bi_{3.25}La_{0.75}Ti_3O_{12}$ (BLT) and $SrBi_2Ta_2O_9$ are particularly attractive for such applications due to their lower operating voltage and improved fatigue behavior compared to lead zirconium titanate. We have used a chemical solution deposition technique to grow thin films of BLT and $Bi_{4-x}Pr_xTi_3O_{12}$ (BPT) on Pt/Si substrates with and without conductive $LaNiO_3$ layer. The remanent polarization ($2P_r$) of BLT film on Pt/Si, under an applied field of 396 kV/cm, was found to increase from 26 $\mu C/cm^2$ to 43.14 $\mu C/cm^2$ if the BLT film was deposited on $LaNiO_3$/Pt/Si substrate. Importantly, BLT films on $LaNiO_3$/Pt/Si showed no degradation in the switchable polarization ($P_{sw}-P_{ns}$) after $10^{10}$ switching cycles. Ferroelectric and leakage current characteristics of BLT and BPT will be discussed as well in this presentation.

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