Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Large Second Harmonic Kerr rotation in GaFeO3 thin films on YSZ buffered Silicon ERNST KNOESEL, KEITH F. MCDONALD, TIM OSEDACH, SAMUEL E. LOFLAND, Dept of Physics and Astronomy, S.B. OGALE, SANKAR DHAR, SANJAY SHINDE, DARSHAN KUNDALIYA, T. VENKATESAN, Dept of Physics, University of Maryland College Park — $GaFeO_3$ (GFO) simultaneously exhibits ferromagnetic and pyroelectric properties. Recently, magnetization-induced second harmonic generation (MSHG) have been investigated in single crystal GFO (Y. Ogawa et al., Phys. Rev. Lett. 92, (2004) 047401), where a remarkably large Kerr rotation has been found. We report on MSHG measurements from GFO thin films on YSZ buffered Silicon at room temperature (above T_C) and at 100 K (below T_C), where a Kerr rotation of $\sim$15 degrees in the ferromagnetic state is observed.

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Date submitted: 01 Dec 2004 Electronic form version 1.4