Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Influence of ferroelectric polarization on magnetic anisotropy A. MARDANA, S. DUCHARME, S. ADENWALLA, Department of Physics & Astronomy & Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE-68588 — Thin film heterostructures of transition metal ferromagnets (FM) and polymer ferroelectrics (FE) are investigated to look for changes in the magnetic anisotropy of the FM layer that occur on switching the FE polarization (with an ensuing change in the electric field direction).[1] Samples of [Glass/ Pd (50 nm)/Co wedge (0.9-2.6nm)/ferroelectric P(VDF-TrFE) (53 nm)/Al (30nm)] are deposited via sputtering or evaporation for the metallic layers and via Langmuir-Schaefer deposition for the polymer ferroelectric. [2] Magnetic and FE properties have been characterized using the Magneto-Optical Kerr Effect (MOKE) and the pyroelectric effect. Polar and longitudinal MOKE loops are measured across the Co wedge for both positive and negative FE polarization and the difference in the two MOKE loops is ascribed to the changes in the magnetic anisotropy of the FM layer. [3] These changes are most apparent in the region where the Co undergoes a transition from in-plane to out-of-plane anisotropy. This research is supported by the NSF MRSEC through Grant No. DMR- 0820521 1. Chun-Gang Duan et al, Appl. Phys. Lett. **92**, 122905 (2008) 2. A. V. Bune, et al, Nature *(London)* **391**, 874 (1998) 3. P. F. Carcia, J.Appl. Phys. 63, 5066 (1988)

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Date submitted: 23 Nov 2009 Electronic form version 1.4