Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Voltage Control of Magnetic Anisotropy GUANHUA HAO, SHI CAO, University of Nebraska-Lincoln, NICK NOVIASKY, CAROLINA ILIE, S.U.N.Y.-Oswego, ANDRE SOKOLOV, YUEWEI YIN, XIAOSHAN XU, PETER DOWBEN, University of Nebraska-Lincoln — Pd/Co/Gd_2O_3/Si heterostructures were fabricated via pulsed laser deposition and e-beam evaporation. Hysteresis loops, obtained by longitudinal magneto-optical Kerr-effect (MOKE) measurements, indicates an initial in-plane magnetic anisotropy. Applying a perpendicular voltage on the sample, the differences between the polar and longitudinal MOKE and anomalous Hall effect data indicates there is a reversible change in magnetic anisotropy, from in-plane to out-of-plane, with applied voltage. Prior work by others suggests that the change in magnetic anisotropy is due to redox reactions at the Co/Gd_2O_3 interference. Voltage controlled magnetism can result from changing interfacial chemistry and does not always require a magneto-electric coupling tensor.

Guanhua Hao
University of Nebraska-Lincoln

Date submitted: 10 Nov 2016 Electronic form version 1.4