Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Measurement of the Transport Spin polarization of Ru Doped CrO2 Using Point-contact Andreev reflection MICHAEL OSOFSKY, Naval Research Laboratory, KEVIN WEST[1], STUART WOLF, JIWEI LU, University of Virginia — Point contact Andreev reflection (PCAR) has proven to be a versatile tool for evaluating the transport spin polarization of ferromagnetic materials for spintronics applications. I will review the principles behind PCAR and results from a variety of materials that verify its usefulness. It now well known that CrO2 is 100% spin polarized but very difficult to grow in thin film form. We recently demonstrated that high quality films of Ru doped CrO2 can be grown using reactive bias ion beam deposition. Some of these films have Curie temperatures above room temperature and exhibit unusual magnetic behavior including an intrinsic tunable exchange bias. PCAR results on these films will be presented that show that these films are also highly spin polarized compared to conventional metals like Fe.

[1]presently at University of Califirnia, San Diego

Michael Osofsky
Naval Research Laboratory

Date submitted: 18 Nov 2009 Electronic form version 1.4