Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Enhancement of Curie temperature in thin-films of $SrRuO_3$[1]
SEAN THOMAS, University of California, Irvine, BOUWE KUIPER, University of Twente, JUN HU, University of California, Irvine, ZHICHENG ZONG, Vienna University of Technology, RUQIAN WU, University of California, Irvine, GUUS RINDJERS, GERTJAN KOSTER, University of Twente, JING XIA, University of California, Irvine — $SrRuO_3$ (SRO) is an itinerant ferromagnet that has generated a large amount of interest due to its potential use as an electrode layer in complex oxide heterostructures. We present the results of our ongoing study of the ferromagnetic properties of thin-films of SRO, which have been measured using a scanning Sagnac microscope. By varying the thickness of the a non-ferromagnetic capping-layer, we have observed enhancement of the Curie temperature of over 20 K as compared to uncapped films of the same thickness. The amount of enhancement can be tuned by varying the thickness of the capping-layer. Further, we have performed density functional theory calculations that suggest the enhancement may be due to rotations of the oxygen octahedrons in the SRO near the interface between the SRO and capping-layer.

[1]This work is supported by the Sloan fellowship.

Sean Thomas
Univ of California - Irvine

Date submitted: 04 Nov 2013 Electronic form version 1.4