Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

X-ray reflectivity of ruthenium nano-oxide layer in a CoFe-Ru-CoFe trilayer system SAEID ASGHARI ZADEH, MARK SUTTON, ZAVEN ALTONIAN, Physics Department and Centre for the Physics of Materials, McGill University, 3600 University street, Montreal, Quebec, MING MAO, CHIH-LING LEE, Veeco Instruments Fremont, Fremont, CA 94538 — A grazing incidence X-ray reflectivity technique is used to determine electron density profile(EDP) as a function of depth in CoFe-Ru-CoFe and CoFe-Ru nano oxide layer(NOL)-CoFe trilayers. Four trilayers with ruthenium thicknesses of 8,8.5 and 9 Å and one with Ru8.5 Å NOL, prepared by a dc planetary sputtering system, were investigated. For all samples, EDP shows a central peak which is related to the Ru layer. Natural oxidation in all samples introduces a graded EDP of the top CoFe layer that decreases gradually to zero. The large surface resistivity of Ru8.5 Å NOL compared to Ru 8.5Å can be related to the remarkable difference between their EDP.

Saeid Asghari Zadeh
McGill University

Date submitted: 03 Dec 2005 Electronic form version 1.4