

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Tuning magnetic proximity effect inside CoFe₂O₄/Pt bilayers by controlling the interface structure IGOR PINCHUK, WALID AMAMOU, Department of Physics, Ohio State University , ADAM GOAD, Department of Physics, University of Maryland Baltimore County, DANTE O'HARA, Department of Physics and Astronomy, University of California Riverside, ROLAND KAWAKAMI, Department of Physics, Ohio State University — Magnetic proximity effect (MPE) allows magnetic order to be introduced into an intrinsically non-magnetic system by placing it adjacent to a ferromagnet. Thus, using MPE from a ferromagnetic insulator is a promising approach to manipulate spin currents inside adjacent 2D materials. In this study, we demonstrate the influence of interface structure on MPE inside ferrimagnetic insulator CoFe₂O₄/non-magnet Pt bilayers. Molecular beam epitaxy was used to grow high quality CoFe₂O₄ thin films and control the termination layer which came into contact with Pt. Subsequent resistivity and Hall measurements show that the strength of MPE inside Pt depends on which if the two possible termination layers of CoFe₂O₄ comes into contact with the Pt atoms.

Igor Pinchuk
Ohio State University Department of Physics

Date submitted: 11 Nov 2016

Electronic form version 1.4