Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Magnetism in neutron irradiated graphene samples YANCEN LI, JOEL THERRIEN, ECE U. Mass Lowell — Recent work in our lab has shown that graphene can become ferromagnetic by way of the addition of hydrogen. The graphene shows a weak but distinct magnetization loop at room temperature. Magnetic force microscopy shows that the magnetic effect can be added and subsequently removed by exposure to a cold hydrogen plasma followed by annealing at 400 Deg C. An outstanding question has been whether the effect observed is due to the interaction of the hydrogen with the graphene, or the addition of defects from the hydrogen. The role of the hydrogen vs. defects was studied using raman microscopy and magnetic force microscopy on graphene samples exposed to neutron irradiation for comparison of a sample containing defects without adatoms.

Joel Therrien
ECE U. Mass Lowell

Date submitted: 11 Nov 2011 Electronic form version 1.4