Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Theory of electrically-tunable coupling between magnetic nanoparticles on graphene HUA CHEN, University of Tennessee at Knoxville, University of Texas at Austin, QIAN NIU, University of Texas at Austin, ZHENYU ZHANG, University of Science and Technology of China, Harvard University, University of Texas at Austin, ALLAN H. MACDONALD, University of Texas at Austin
— We will present a study of the dependence on graphene carrier density of the coupling between magnetic nanoparticles adsorbed on a graphene sheet. Small system *ab initio* coupling strength results will be compared with semi-analytic results based on a phenomenological Dirac-band model for graphene's π-bands. The model calculation uses kinetic exchange coupling parameters for the interaction between a magnetic nanoparticle and the graphene π-bands that are extracted from *ab initio* results for graphene/ferromagnetic metal interfaces.

Yang Gao
University of Texas at Austin

Date submitted: 29 Nov 2011 Electronic form version 1.4