Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Scanning Tunneling Microscope (STM) Study of B-doped Monolayer Graphene LIUYAN ZHAO, Columbia University, MARK LEVENDORF, Cornell University, CHRISTOPHER GUTIERREZ, THEANNE SCHIROS, GEORGE FLYNN, Columbia University, JIWOONG PARK, Cornell University, ABHAY PASUPATHY, Columbia University, COLUMBIA UNIVERSITY COLLABORATION, CORNELL UNIVERSITY COLLABORATION — Chemical doping is a promising technique to tailor the electronic properties of graphene. Here we focus on an atomic scale characterization of Boron-doped monolayer graphene sheets using primarily STM, assisted by Raman Spectroscopy and X-ray Absorption Spectroscopy (XAS). We will show in topography that there are two major structures that result from B-doping, and in spectroscopy that each of these structures plays different roles in modifying the electronic properties of graphene. Raman Spectroscopy and XAS provide complementary information about the nature of the B-C bonds in the sample.

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Date submitted: 11 Nov 2011 Electronic form version 1.4