Abstract Submitted for the 4CF11 Meeting of The American Physical Society

Scanning tunneling spectroscopy of graphene on boron nitride JIAMIN XUE, University of Arizona, JAVIER SANCHEZ-YAMAGISHI, DANNY BULMASH, MIT, PHILIPPE JACQUOD, APARNA DESHPANDE, University of Arizona, K. WATANABE, T. TANIGUCHI, National Institute for Materials Science, Japan, PABLO JARILLO-HERRERO, MIT, BRIAN LEROY, University of Arizona — We have performed low-temperature scanning tunneling microscopy and spectroscopy measurements of graphene on hexagonal boron nitride (hBN). We found that the topographic variations are reduced by one order of magnitude as compared to graphene on SiO2. We also performed scanning tunneling spectroscopy measurements to study the spatial variation of the Dirac point. We found that the electrochemical potential homogeneity is improved by one order of magnitude as compared to graphene on SiO2. These results provide a microscopic explanation for recent transport experiments of graphene on hBN showing improved mobility.

Jiamin Xue University of Arizona

Date submitted: 14 Sep 2011 Electronic form version 1.4