

Abstract Submitted  
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**Effects of heat-treatment and hydrogen adsorption on Graphene grown on Cu foil** JONGWEON CHO, LI GAO, Center for Nanoscale Materials, Argonne National Laboratory, JIFA TIAN, HELIN CAO, Department of Physics, Purdue University, QINGKAI YU, Center for Advanced Materials, University of Houston, JEFFREY GUEST, Center for Nanoscale Materials, Argonne National Laboratory, YONG CHEN, Department of Physics, Purdue University, NATHAN GUISENGER, Center for Nanoscale Materials, Argonne National Laboratory — Graphene has recently been a subject of intense research efforts due to its remarkable physical properties as an ideal two-dimensional material. While numerous different methods for graphene synthesis are being explored, CVD-grown graphene on Cu foil presents the possibility of a large-scale and high-quality synthesis of graphene. [1] To improve the quality of graphene films on Cu foil prepared by CVD and better understand its microscopic growth, atomic-scale characterization becomes of great importance. We have investigated the effects of thermal annealing and hydrogen adsorption/desorption on *ex-situ* CVD-grown monolayer graphene on polycrystalline Cu foil at the atomic-scale using ultrahigh vacuum scanning tunneling microscopy, and we will report on these studies.

[1] Li et al, Science **324**, 1312 (2009).

Jongweon Cho  
Center for Nanoscale Materials, Argonne National Laboratory

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