Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

**Bottom-up fabrication and characterization of boron doped N=7 armchair graphene nanoribbons** GIANG D. NGUYEN, ARASH A. OMRANI, HSIN-ZON TSAI, DANIEL J. RIZZO, TRINITY JOSHI, CHRISTOPHER BRONNER, RYAN R. CLOKE, TOMAS MARANGONI, TING CAO, GRIFFIN F. RODGERS, WON-WOO CHOI, Univ of California - Berkeley, STEVEN G. LOUIE, Univ of California - Berkeley and Lawrence Berkeley National Laboratory, FELIX R. FISCHER, MICHAEL F. CROMMIE, Univ of California - Berkeley and Kavli Energy NanoSciences Institute, and Lawrence Berkeley National Laboratory — Graphene nanoribbons (GNRs) have recently attracted great interest because of their novel electronic and magnetic properties, as well as the significant potential they have for device applications. Although several top-down techniques exist for fabricating GNRs, only bottom-up synthesis of GNRs from molecular precursors yields nanoribbons with atomic-scale structural control. Here we report the successful bottom-up fabrication boron doped N=7 armchair graphene nanoribbons. Substitutional boron atoms were incorporated into the GNRs' central backbone, thus placing boron's empty p-orbital in conjugation with the extended pi system of the GNR. Topographic and local electronic structure characterization was performed via STM and CO-tip-functionalized nc-AFM, and compared to DFT simulations.

Giang D. Nguyen
Univ of California - Berkeley

Date submitted: 05 Nov 2015 Electronic form version 1.4