Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

AB-stacked multilayer graphene synthesized via chemical vapor deposition: a characterization by hot carrier transport DEBTANU DE, CARLOS DIAZ-PINTO, Department of Physics and the Texas Center for Superconductivity, University of Houston, Houston, Texas 77204, VIKTOR HADJIEV, The Texas Center for Superconductivity, University of Houston, Houston, Texas 77204, HAIBING PENG, Department of Physics and the Texas Center for Superconductivity, University of Houston, Houston, Texas 77204 — We report the synthesis of AB-stacked multilayer graphene via ambient pressure chemical vapor deposition on Cu foil. Four-terminal devices were fabricated from such graphene and characterized by hot carrier transport at temperatures down to 240 mK and in magnetic fields up to 14 T. The differential conductance (dI/dV) shows a characteristic dip at longitudinal voltage bias V=0 at low temperatures, indicating the presence of hot electron effect due to a weak electron-phonon coupling. Under magnetic fields, the magnitude of the dI/dV dip diminishes through the enhanced intra-Landau level cyclotron phonon scattering. Our results provide new perspectives in obtaining and understanding AB-stacked multilayer graphene, important for future graphene-based applications.

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Date submitted: 27 Nov 2011 Electronic form version 1.4