

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Biochemical Sensing in Solution Gated Graphene Field Effect Transistors¹ MAURICIO D. BEDOYA, JAN SCRIMGEOUR, School of Physics and Petit Institute for Bioengineering and Bioscience, Georgia Institute of Technology Atlanta, GA 30332 (USA), JAMES PALMER, W.A. DEHEER, School of Physics, Georgia Institute of Technology Atlanta, GA 30332 (USA), C. BERGER, School of Physics, Georgia Institute of Technology Atlanta, GA 30332 (USA) and CNRS-Institut Neel, BP 166, 38042 Grenoble, Cedex 9, France, J.E. CURTIS, School of Physics and Petit Institute for Bioengineering and Bioscience, Georgia Institute of Technology Atlanta, GA 30332 (USA) — Epitaxial graphene is a promising material for the construction of label-free chemical and biochemical sensors. In this work, graphene of few-layers is used as a sensor for pH and ionic strength in a solution gated field effect transistor (SGFET). In order to improve the sensitivity of the SGFET to pH and ionic changes the transistor is connected in a four-point (van der Pauw) configuration. Results for the shift in the Dirac point when the pH or ionic strength is changed are shown.

¹This work is supported by the National Science Foundation under Grant No. DMR-0820382

Mauricio Bedoya
School of Physics and Petit Institute for Bioengineering and Bioscience,
Georgia Institute of Technology Atlanta, GA 30332 (USA)

Date submitted: 16 Nov 2011

Electronic form version 1.4