

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

A Graphene-Based Biosensor AMAL KASRY, Visiting Scientist at IBM T. J. Watson Research Center, ALI AFZALI, GEORGE TULEVSKI, Research Staff Member, BERNHARD MENGES, Project Leader, SATOSHI OIDA, Postdoc, MATTHEW COPEL, LIBOR VYKLICKY, Research Staff Member, EGYPT NANOTECHNOLOGY CENTER COLLABORATION, IBM RESEARCH COLLABORATION, MAX PLANCK INSTITUTE FOR POLYMER RESEARCH COLLABORATION — Graphene, a single layer of carbon atoms, has attracted significant interest in several applications including biosensors. In this work graphene was grown by the CVD method. Optical parameters of graphene such as refractive index and extinction coefficient were measure by a mix of techniques including ellipsometer, XPS, Raman Spectroscopy, SPR and MEIS. Determining the optical properties of graphene allowed for study of its ability to sense biomolecular interactions. We also examined graphene modification by electrostatic interaction utilizing a molecule synthesized by IBM Research. Successful modification was proven by XPS, Raman Spectroscopy, and SPR. Studies of the chemical modification, along measurement of electrical and optical properties of graphene are components of our work to develop highly sensitive graphene-based sensors.

Amal Kasry
Visiting Scientist

Date submitted: 04 Nov 2010

Electronic form version 1.4