



# Northeastern University

## College of Engineering

Please join us for a

### SPECIAL SEMINAR

Wednesday, March 30, 2011  
114 Dana Research Center  
2:00 p.m. – 3:00 p.m.

## *“Graphene-based Materials, Energy, and Sustainability”*

**RODNEY S. RUOFF, PhD**

Professor, Cockrell Family Regents Chair  
The University of Texas at Austin

### ABSTRACT



Graphene-based materials hold promise due to their exceptional electronic and thermal transport, mechanical properties, high specific surface area, and that they can act as an atom thick layer, barrier, or membrane. Our micromechanical exfoliation approaches [1,2] conceived of in 1998 yielded multilayer graphene and one paper particularly clearly delineated how monolayer graphene could be obtained [1]. Two main research areas of our group are: (i) Growth of large area graphene on metal substrates, material characterization and properties, and use in various devices, and (ii) the generation, study, and use of colloids consisting of graphene-based platelets dispersed in liquids, and powders derived from such colloids. These two areas will be described in this lecture.

A history of experimental work on graphene (from discovery in 1969 to now) is provided at: <http://bucky-central.me.utexas.edu/RuoffsPDFs/Ruoff%20Graphene%20December%202010>. Other topics will include the potential for graphene-based (and other carbon-based) materials in ‘energy systems’ (for energy generation, transmission, and storage), and sustainability.

**Professor Rod Ruoff** joined The University of Texas at Austin as a Cockrell Family Regents endowed chair in September, 2007. He earned his Ph.D. in Chemical Physics from the University of Illinois-Urbana in 1988, and was a Fulbright Fellow in 1988-89 at the Max Planck Institute fuer Stroemungsforschung in Goettingen, Germany. Prior to joining UT-Austin, he was the John Evans Professor of Nanoengineering in the Department of Mechanical Engineering at Northwestern University and director of NU’s Biologically Inspired Materials Institute from 2002-2007. He has co-authored 250 peer-reviewed publications devoted to chemistry, physics, materials science, mechanics, engineering, and biomedical science, is co-founder of Graphene Energy, Inc. and the founder of Graphene Materials, LLC. and Nanode, Inc. Dr. Ruoff is on the editorial board of IEEE-Nano; Composites, Science, and Technology; Carbon; Journal of Nanoengineering and Nanosystems; and is a Managing Editor and Editorial Board Member of NANO. He was a Distinguished Chair Visiting Professor at Sungkyukwan University’s Advanced Institute of NanoTechnology (SAINT) for several years.

**Refreshments will be served**