MECHANICAL ENGINEERING
M.S. DEFENSE

The Department of Mechanical Engineering presents:

The M.S. Defense of Dan Qing Zhu

Department of Mechanical Engineering
Advisor: Professor Cengiz Ozkan

Friday, June 11, 2010
1:00pm-2:00pm
EBU II 202

Surface Potential Imaging of Chemical Vapor Deposition Graphene by Electrical Force Microscopy

Abstract: Recently, graphene-derived nanomaterials are heated studied as future replacement of silicon. In this study, electrical force miscroscopy (EFM) and surface potential imaging (SPI) are utilized to characterize the electrical properties of chemical vapor deposition graphene and micromechanical exfoliated graphene. A comparison of graphene came from both of these methods is investigated in terms of phase shifts and distinct tip bias. The presented results show that the phase shifts of graphene by these two methods share the same trend, and defects of CVD graphene as well as the micromechanical exfoliate ones, follow certain directions, which will trace back to the formation of defects in graphene. It is shown in this study that the similarity of both of these plots and the cause of the difference is further discussed. These results will encourage future studies regarding graphene-based electronics and applications of material defects manipulations.