

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Impact of substrate-graphene interaction on transport properties of graphene**<sup>1</sup> JIANHAO CHEN, Physics Department and the Material Research Science and Engineering Center, University of Maryland, College Park, MD 20742, MASA ISHIGAMI, ELBA-GOMAR NADAL, Physics Department and the Material Research Science and Engineering Center, University of Maryland, College Park, MD 20742, ELLEN WILLIAMS, Physics Department and the Material Research Science and Engineering Center, University of Maryland, College Park, MD 20742 — The silicon oxide substrate has nanoscale corrugations and charge traps, which influence the electronic properties of graphene. We modify the substrate-graphene interaction by functionalizing the oxide. We are able to modify the chemical adhesive force as demonstrated by changes in the yield of graphene with different self-assembled monolayers prior to mechanical cleavage of graphite. We will discuss the impact of oxide functionalization on the transport properties of graphene.

<sup>1</sup>This work is partially supported by the Laboratory for Physical Sciences at University of Maryland and the DCI postdoctoral fellowship.

Jianhao Chen  
Physics Department and the Material Research Science and  
Engineering Center, University of Maryland, College Park, MD 20742

Date submitted: 22 Nov 2006

Electronic form version 1.4