Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Electronic and chemical properties of epitaxial graphene intercalated with $FeCl_3$ KRISTIN SHEPPERD, FENG WANG, JEREMY HICKS, HOLLY TINKEY, EDWARD CONRAD, Georgia Institute of Technology — Epitaxial graphene has emerged as the platform for large-scale graphene-based electronics. To fully exploit the unique properties of graphene for electronic materials, a number of materials issues need to be resolved. One important challenge is being able to control the doping of graphene without altering its band structure and disrupting the sp2 graphene bonding. One approach to accomplish this is intercalation of atomic or molecular species between individual graphene layers. We report the intercalation of multilayers of epitaxial graphene (EG) with the electron-acceptor $FeCl_3$. We will present results on experiments focused on the intercalation of $FeCl_3$ into multilayers EG grown on the C-face of SiC(000-1). Intercalation with different staging was achieved by a standard two-zone vapor transport method. The chemical and electronic properties of the EG-$FeCl_3$ intercalation compounds were analyzed using Raman spectroscopy, X-ray photoelectron spectroscopy (XPS) and low energy electron diffraction (LEED).

Kristin Shepperd

Date submitted: 14 Dec 2010 Electronic form version 1.4