Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Magneto Transport of Graphene Monolayer with Antidot Arrays
LEI WANG, University of South Carolina, MING YIN, Benedict College, TIMIR DATTA, University of South Carolina, GODWIN MBAMALU, Benedict College, DHEYAA ALAMERI, University of South Carolina — Graphene has a significant potential for electronics application as well as in high precision resistive metrological standard. Here we report magneto transport studies of monolayer graphene with antidot in hexagonal arrays on SiO2/Si substrate. The choice of antidot array was motivated by the potential to enhance quantum interference effect amongst charge carriers. The graphene-antidot arrays were fabricated by electron beam lithography followed by reactive ion etching. In our samples the dc magnetic field (B) was applied continuously up to 18 Tesla while the measurement temperature (T) was held steady at desired set points, ranging from 200 mK to 20 K. The effect of nanoarrays on the temperature and field dependence of the electrical properties (MR) and quantum hall effect with particular attention to Aharonov-Bohm oscillations will be reported.

Lei Wang
University of South Carolina

Date submitted: 05 Nov 2015 Electronic form version 1.4