MAR11-2010-000731

Abstract for an Invited Paper
for the MAR11 Meeting of
the American Physical Society

**Charge Trapping and Transport in Epitaxial Graphene**

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A thorough characterization of the electronic transport behavior of charge carriers in graphene that is epitaxially grown on the silicon face of 6H(0001) SiC is presented. A nonlinear temperature dependence of the carrier density is observed, and is attributed to the presence of charge traps in the material. Observation of this trapping effect has been previously unidentified, and gives critical information about the material properties of epitaxially grown graphene. The nature of the electrostatic screening associated with these traps is evaluated using zero screening, full screening, and RPA screening approximations, and it is found that the zero screening approximation best describes the measurements. Electrostatic homogeneity of this material allows for exceptionally low carrier densities to be attained, where the carrier mobility sharply increases. The entire mobility profile can be phenomenologically simulated assuming Coulomb and short-range scattering as the dominant scattering mechanisms at low temperatures. Based on this result, the temperature independent residual impurity concentration of this material can be directly extrapolated.