

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Effect of adsorbed gases on the G and D' peaks of the Raman spectrum of graphene¹ GINA GREENIDGE, JOSHUA HALPERN, Department of Chemistry, Howard University, Washington, DC 20059 — The ability of graphene to function as a gas sensor for polar molecules has been widely investigated by monitoring the conductivity of graphene near the Dirac point. Here we demonstrate that Raman spectroscopy can also monitor the interaction of these molecules with graphene. Using a Raman microscope we observe measureable changes in the width and position of the G peak, and the intensity of the D' prime peak upon exposure to water vapor (H₂O and D₂O). The changes are reversible. Baking the material at 350 °C restores the graphene spectrum to its original state. We are investigating the effects of additional gases as well as the relationship of these shifts to the conductivity and the gas-graphene interaction.

¹Funding for this research was provided by the Partnership for Reduced Dimensional Materials (PRDM), an NSF Partnership for Research and Education in Materials (PREM) (Award Number DMR-1205608).

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Date submitted: 14 Nov 2014

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