

Abstract Submitted
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Raman Studies of Electron-Phonon Coupling in Graphene and Graphite Intercalated Compounds¹ J. CAMACHO, M. Y. SFEIR, A. T. BOLLINGER, Brookhaven National Laboratory, A. C. WALTERS, C. A. HOWARD, M. ELLERBY, University College London, J. A. MISEWICH, T. VALLA, Brookhaven National Laboratory — Effects of the electron-phonon interaction in carbon-based materials can be seen in many physical properties, ranging from relatively high-T_c superconductivity in doped fullerenes and graphite intercalated compounds to being a limiting factor on the mobility of carriers in carbon nanotubes. Despite the intensive research, these effects are not completely understood. Here we present Raman scattering studies of several long wavelength optical phonons in different graphene-based materials. We find that the frequency and line-width of some modes are very sensitive to electric field doping and to chemical doping of graphene sheets, reflecting the changes in interactions of these modes with charge carriers in the system.

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