

Abstract Submitted  
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**High resolution, temperature dependent Raman spectroscopy of graphene** SEBASTIAN RÉMI, CONSTANZE METZGER, BILLY HUBBARD, CLAIRE THOMAS, BENNETT B. GOLDBERG, Boston University, Department of Physics, ANNA SWAN, Boston University, ECE — Single and bi-layer graphene are studied with high resolution, temperature dependent Raman scattering. The electron-phonon coupling in graphene depends sensitively on both the concentration of charge carriers and the temperature. Raman spectroscopy directly probes electron-phonon coupling, and has been used to examine the stiffening of the G-band, phonon damping [1] and spatial inhomogeneities in the carrier density [2]. Our measurements are performed between room temperature and 4K in a confocal scanning Raman system. The samples are back-gated, allowing us to tune the carrier density and spectroscopically map the Raman response. We will discuss our recent measurements. [1] J. Yan, Y. Zhang, P. Kim, and A. Pinczuk, *Phys. Rev. Lett*, **98**, 166802 (2007) [2] C. Stampfer, et al. Arxiv, cond-mat 0709.4156v1

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