

Abstract Submitted  
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**Raman Spectrum of Strained Single Layer Graphene<sup>1</sup>** MINSHENG WANG, SONG HAN, KANG L. WANG, UCLA — Two-dimensional single layer graphene (SLG) films are very attractive due to their unique electrical and optical properties. In this work, silicon nitride, silicon oxide and polyimide are used to induce strain in SLG sheets. Micro-Raman spectra reveal the evolution of graphene feature peaks under various stress conditions. Different peak position, width and shape are observed due to different stress type, level and direction. Changes of the second order D peaks show that strain affects not only the phonon spectrum but also the electron band through a double resonant Raman process. Relative intensity changes between D and G bands indicate that defects are introduced into graphene during some of the deposition processes, which usually are not observed in spin-coated SLG samples. Strain effects also can be utilized to further modify the electron band structure of graphene.

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