

Abstract Submitted
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Spatially resolved tunneling spectroscopy of graphene B.J. LEROY, A. DESHPANDE, D. CORMODE, University of Arizona, W. BAO, Z. ZHAO, C.N. LAU, University of California-Riverside — We have performed spatially resolved scanning tunneling spectroscopy measurements on single layer graphene. The graphene was prepared on SiO₂ by the mechanical exfoliation technique. Electrodes were deposited using a shadow mask technique to eliminate the use of PMMA. This fabrication procedure produced significantly cleaner devices. Atomic resolution topography images were obtained without any cleaning procedure unlike previous STM studies of graphene devices on SiO₂ which required high temperature cleaning. Low temperature tunneling spectroscopy measurements showed strong variations in the local density of states as a function of position and energy. These measurements indicated localized regions in the graphene with varying charge density. Possible origins of this charge localization will be discussed.

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