

Abstract Submitted  
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**Dual Gating of Suspended Graphene Devices via Contactless Gates** JAIRO VELASCO JR., LEI JING, GANG LIU, PHILIP KRATZ, YONGJIN LEE, WENZHONG BAO, JEANIE LAU — Monolayer and Bilayer graphene devices with local electrostatic gates present a rich platform for both academic and application driven inquiry. Realization of the veselago lensing effect and band gap engineering are a few of the most dazzling and promising physical phenomena that these systems are predicted to host. However, a major roadblock in this quest is the strict requirement of exceedingly clean samples. We have developed a method to fabricate suspended top gates above a freestanding graphene flake to address this challenge. Using this technique we demonstrate dual gating of a suspended graphene flake. We will discuss the latest experimental progress towards the electrical transport of such a device in the zero-magnetic field regime, as well as in the quantum Hall regime.

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