

## **Dual Gating of Suspended Graphene Devices via Contactless Gates**

**Jairo Velasco Jr.**, Lei Jing, Gang Liu, Philip Kratz, Yongjin Lee, Wenzhong Bao, Jeanie Lau  
Department of Physics and Astronomy, University of California, Riverside  
900 University Ave, Riverside Ca, USA  
[jvela004@ucr.edu](mailto:jvela004@ucr.edu)

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 for exceedingly clean samples. We have developed a method to fabricate suspended top gates above a suspended 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.