

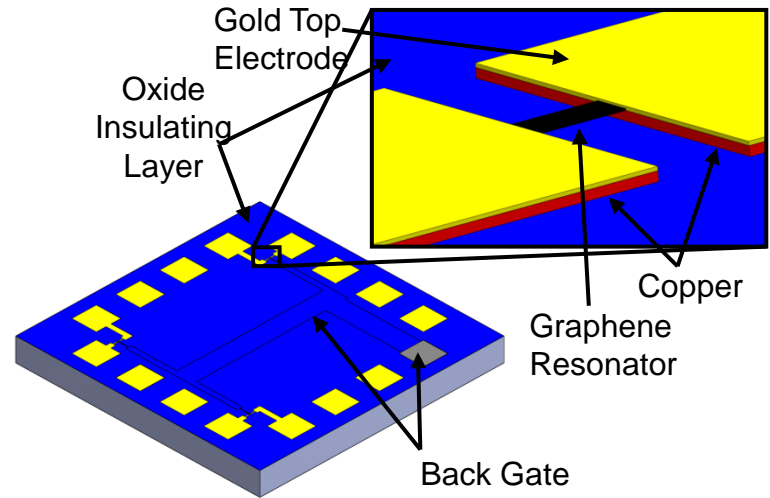
Transfer-free, Wafer-Scale Manufacturing of Graphene-Based Nanoelectromechanical Resonant Devices

Michael Cullinan and Jason Gorman

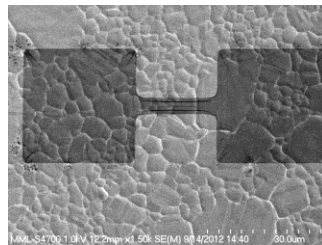
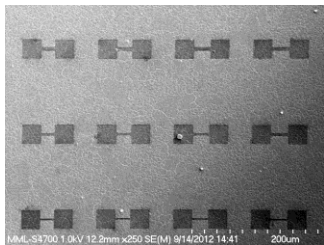
National Institute of Standards and Technology



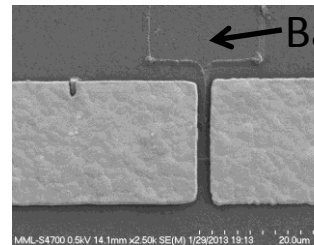
- Purpose:** To develop a method for manufacturing graphene-based NEMS at the wafer scale that is compatible with conventional microfabrication techniques



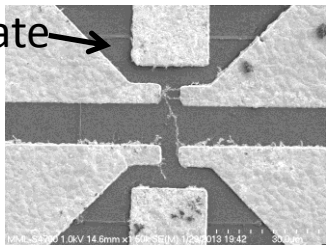
Patterned Graphene Structures



Resonator Chip



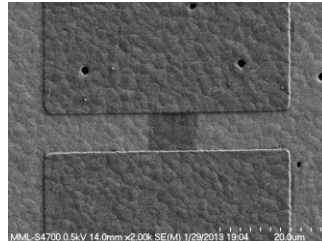
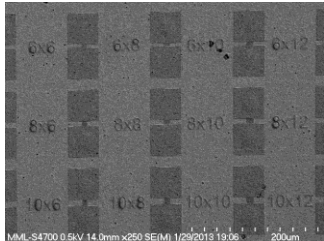
Hall Effect Chip



Etch
Copper



Gold Pads on Graphene Structures



Released Graphene Structures

