Electronic transport experiments on adatom-decorated graphene

E.A. HENRIKSEN, J.P. EISENSTEIN, California Institute of Technology — Single-layer graphene is expected to exhibit a wide range of novel behaviors when decorated with a disperse coating of various adatom species. Toward conducting experiments on these systems, we are developing a cryogenic ultra-high vacuum probe with the capability to explore the electronic transport of graphene and other materials that have been cleaned and annealed in situ, followed by coating via the controlled deposition of sub-monolayer coverages of a range of elements. We will report our progress on the fabrication of such thin layers, and on the characterization of surface-modified graphene devices. This work is supported by the DOE under grant No. DE-FG03-99ER45766 and the Gordon and Betty Moore Foundation.