

Abstract Submitted
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Atomic-scale studies of nanometer-sized graphene on III-V semiconductors using scanning tunneling microscopy. KEVIN HE, JUSTIN KOEPKE, JOSEPH LYDING, University of Illinois - Urbana — We utilize the Dry Contact Transfer (DCT) method [1] to deposit nanometer-sized, monolayer graphene flakes, *in situ*, onto cleaved GaAs (110) and InAs (110) surfaces. The flakes were characterized using a homebuilt, room temperature, ultrahigh-vacuum scanning tunneling microscope. We report on the apparent electronic semi-transparency of the monolayer graphene flakes, such that the underlying III-V semiconductor lattice is revealed in our topographic images. This transparency is strongly dependent on the applied sample bias, similar to results seen on SiC (1000) for large sheets of graphene grown via thermal desorption [2].

[1] P.M. Albrecht and J.W. Lyding, APL 83, 5029 (2003).

[2] G.M. Rutter et al, Phys. Rev. B 76, 235416 (2007).

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