

Abstract Submitted
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Structural and Electronic Properties of Graphene on Cu(111) and SiC(0001) LI GAO, PAOLO SESSI, JONGWEON CHO, JEFFREY R. GUEST, NATHAN P. GUISSINGER, Center for Nanoscale Materials, Argonne National Laboratory — Graphene has shown attractive physical properties and is a promising new material. The structural and electronic properties of graphene on Cu(111) and SiC(0001) have been investigated by scanning tunneling microscopy and spectroscopy and Raman spectroscopy. The growth of graphene on these two substrates was achieved by thermal decomposition of ethylene on Cu(111) and thermal decomposition of SiC(0001) surface, respectively, in an ultra high vacuum chamber. On Cu(111), the nucleation of monolayer islands and two predominant domain orientations have been observed, which leads to the formation of numerous domain boundaries with increasing coverage [1]. Raman spectroscopy verifies the single layer thickness and shows the defect-induced bands for graphene on Cu(111). On SiC(0001), the electronic structure of the first two carbon layers on top of the $6\sqrt{3}$ surface reconstruction has been studied by scanning tunneling spectroscopy.

[1] L. Gao, J. R. Guest, and N. P. Guisinger, *Nano Lett.* 10, 3512 (2010).

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