

Abstract Submitted
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Observation of electronic structure of silicene by scanning tunneling microscopy YOUNGTEK OH¹, WONHEE KO, INSU JEON, HYO WON KIM, HYEOKSHIN KWON, JIYEON KU, SUNG WOO HWANG, HWANSOO SUH, Samsung Advanced Institute of Technology — Silicene, an atomic monolayer of silicon atoms, has a hexagonal symmetry and is expected to have Dirac fermions. Recently, silicene has been intensively investigated in various substrates such as Ag(111), ZrB₂ (0001), and Ir(111). We grew a monolayer of silicene on the Ag(111) surface by ultrahigh vacuum deposition and annealing of silicon atoms. The geometric and electronic properties of silicene grown on the Ag(111) were investigated by scanning tunneling microscopy (STM) and low energy electron diffraction (LEED). The (4x4) structures of silicene were observed in LEED patterns and STM images. We observed domains formed inside the silicene. The electronic properties of silicene were measured by scanning tunneling spectroscopy (STS).

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