

Modification of Fermi Velocity in Epitaxial Graphene

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Abstract

Graphene is a unique low-dimensional system with fascinating electrical properties including linear electron energy dispersion and high room-temperature mobility, which has been considered a prospective candidate for post silicon electronics. To fully characterize the electron-electron interaction in the epitaxial graphene system, the angle-resolved photoemission spectroscopy (ARPES) was used here to *in-situ* illustrate the electronic structure modulation of graphene covered by transition metal. The significant change of graphene Fermi velocity, which can be monitored by ARPES, was found for the first time. The Fermi velocity change in graphene can be attributed to the excess charge carriers screening, which causes the renormalization of the Dirac cone across the measurable energy interval.

Keywords – *Graphene, Fermi velocity, transition metal.*