

MAR13-2012-000441

Abstract for an Invited Paper
for the MAR13 Meeting of
the American Physical Society

Defect engineering of graphene

LIN HE, Department of physics, Beijing Normal University

One of the most fascinating aspects of graphene is that its topological features of the electronic states can be fundamentally changed by modifying its local lattice structure. In this talk, I will show how to tune the electronic structures of graphene by defect engineering: (1) we observed superlattice Dirac points and space-dependent Fermi velocity in a corrugated graphene monolayer; (2) we reported angle dependent van Hove singularities (VHSs) of slightly twisted graphene bilayer; (3) we studied the evolution of local electronic properties of twisted graphene bilayer induced by a strain; The strain results in pseudo-Landau levels, which mimic the quantization of massive Dirac fermions in a magnetic field of about 100 T, and valley polarization along a strained graphene wrinkle.