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Title:

Tuning Graphene 's Electronic Structures and Transport Properties via Heavy metal deposition

Abstract:

Due to the 2D structure of graphene, modification of graphene properties by metal adatom adsorption easily exhibits itself in transport measurements [1]. One of these proposed modifications is enhancing spin orbit coupling. This poster will describe an experimental investigation of the effect of deposition of a dilute concentration of heavy metal adatoms on graphene transport properties, especially inducing spin orbit interaction. Specifically, we will be investigating effects that fall into two different categories: (1) Spin-orbit coupling, which is manifested in transport measurements by: (a) Broadening of the Dirac peak due to a spinorbit gap opening (b) Weak-localization and weak-antilocalization effects in magneto-conductance (2) Doping effects and impurity scattering