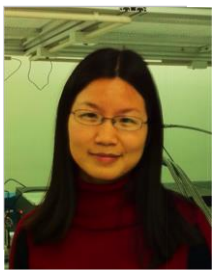
7th International Workshop on 2D Materials

Title of the Presentation: Plasmaron dispersion and effective fine-structure constant in graphene/BN heterostructure



First Name: Shuyun

Last Name: Zhou

Affiliation: Department of Physics, Tsinghua University

Email: syzhou@mail.tsinghua.edu.cn

Short Biography:

Shuyun Zhou received her B.S. from Tsinghua University in 2002 and Ph.D. in Physics from University of California at Berkeley in 2007. She was a postdoc fellow and a project scientist of the Lawrence Berkeley National Laboratory before joining the Department of Physics at Tsinghua University in 2012. Zhou group research focuses on the electronic structure and ultrafast dynamics of of novel two-dimensional materials and heterostructures using advanced electron spectroscopies, including angle-resolved photoemission spectroscopy (ARPES), Spin-resolved ARPES, Nano-ARPES and ultrafast time-resolved ARPES.

Abstract:

Electron-electron interaction is fundamental in condensed matter physics and its relative strength can be quantified by the effective fine structure constant. Such effective fine structure constant is usually difficult to extract. Here we report direct experimental observation of characteristic diamond-shaped plasmaron dispersion in a graphene/BN heterostructure near the Dirac cone of graphene, which is formed by interaction of electrons with plasmons. Such plasmaron dispersion allows to extract the effective fine structure constant, which is found to be largest among all graphene samples reported so far. Our work highlights the important role of electron-electron interaction in graphene/BN heterostructure.