北京大学量子材料科学中心

International Center for Quantum Materials, PKU

中心系列讲座 ICQM Weekly Seminar Series

"Electronic Structure and Optical Response of Low-dimensional Structures"

Dr. Li Yang

Washington University

Time: 4:00pm, June. 8, 2011 (Wednesday)

时间：2011年6月8日 （周三）下午4:00

Venue: Room 607, Conference Room A , Science Building 5

地点：理科五号楼607会议室

Abstract

Low-dimensional structures have attracted significant interests because of their unique electrical and optical properties. In this talk, I will give a brief review about our first-principles simulations on the electronic structure and optical response of a few typical reduced dimensional structures, from one-dimensional nanowires and nanoribbons to two-dimensional graphene and fluorinated graphene. Beyond the usual density functional theory, an ab-initio approach based on the many-body perturbation theory is introduced to calculate the quasiparticle energy and optical absorption spectra of solids. I will also show how this state-of-art calculation explains available experimental measurements of nanostructures and, more importantly, predicts novel features of new materials in a quantitative way.

About the Speaker

Li Yang obtained his Bachelor and Master degrees in physics from Beijing Normal University (1997, 2000) and PhD from Georgia Institute of Technology (2006). He received a post-doctoral fellow from the University of California at Berkeley and Berkeley National Lab (2006 to 2009). Now he works as an assistant professor in the Washington University in St. Louis. His research interests are mainly about electronic excited states in nanostructures and their interfaces.