NEBRASKA CENTER FOR MATERIALS AND NANOSCIENCE
2016 SEMINAR SERIES PRESENTS

Cosponsored with the Department of Physics & Astronomy

Professor Ruihua Cheng

Physics Department
Indiana University-Purdue University Indianapolis

Fabrication and Characterization of Magnetic Heteronanostructures – Knowing the world at the nanoscale

The fact that graphene's 2D electron system is unprotected from the environment is often detrimental: while the electron mobility is high compared to most semiconductors, it is generally far lower than it could be due to scattering from extrinsic disorder. However, perhaps the interactions between graphene's quasi-relativistic electrons and the various surface contaminants can be turned to advantage. For instance, can the electronic structure of graphene be controllably altered? We are starting to explore the possibility of adatom-induced spin-orbit couplings in graphene in order to realize the original topological insulator predicted by Kane and Mele in 2005. Initial experiments on dilute coatings of indium atoms on graphene will be presented, as well as our current efforts with osmium.


Prof. Ruihua Cheng

Ruihua Cheng is currently working at the Department of Physics of Indiana University-Purdue University Indianapolis as an Associate Professor. From 2005-2013, she was an Assistant Professor at IUPUI, and she was promoted to Associate Professor in 2013. During 2002-2005, she performed her postdoc research in magnetic thin film group of Argonne National Laboratory, and before that she received her Ph.D. in Physics at University of Nebraska–Lincoln, under the direction of Dr. Peter Dowben. Her research is focused on the study of nanomagnetism through the fabrication and characterization of magnetic nanostructure materials with the goal of understanding the new materials' phenomena and exploring and potential technological applications.

Thursday, November 3, 4:00 pm | 136 Jorgensen Hall

Refreshments at 3:30 in Jorgensen Atrium

Host:
Professor Peter Dowben

Department of Physics and Astronomy

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