Physics Colloquium

Michigan Technological University

February 27, 2015

11:00 AM Fisher Hall 130

Electronic Structure of Solids and Novel 2D materials

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ABSTRACT:

We present the recent results obtained to explore the possibility of applications of graphene for hydrogen storage. As pristine graphene does not meet the requirement of the target set to store hydrogen, metal decorated graphene is considered. We find that that Pt and Pd decorated graphene can be used to store molecular hydrogen. Additionally we will present the results of a study to determine the spin glass behavior of certain alloys like PtMn, PdMn and NiMn. Finally, we will describe the efforts by our group for performing such complex and computationally intensive investigations using the modest resources available at Tribhuvan University, Nepal.

BIO:

Prof. Adhikari's research group has been working on a wide-range of materials including polymers and graphene using atomistic and first-principles methods. Prof. Adhikari has received his PhD from Martin-Luther University, Halle/Saale, Germany in 2001, and worked as a postdoctoral fellow at Rice, RPI and Max-Planck Institute for Polymer Research, Mainz. His research profile of "Developing world: Far-flung physics" has recently been appeared in Nature (http://www.nature.com/news/developing-world-far-flung-physics-1.16361).

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