

Weekly Calendar & News

November 6 - 10, 2017

Departmental Colloquium

New Possibilities for Understanding Complex Metal Hydrides via Synchrotron X-Ray and Neutron Scattering Studies

Tabbatha Dobbins Rowan University

Host: Juana Moreno

3:30 PM Thursday, November 9, 2017

109 Nicholson Hall

- **Refreshments served at 3:10 PM in 232 (Library) Nicholson Hall** •

This research seeks to understand the role that catalysts and nanostructuring play in structure and dynamics in hydrides. The talk will include results of X-ray absorption spectroscopy (XAS), Ultrasmall-angle X-ray scattering (USAXS) and Quasi-elastic neutron scattering (QENS) studies. XAS is used to examine the chemical interaction of catalysts (TiCl₃) with the host hydride powder (NaAlH₄). USAXS is used to examine the morphological changes in the hydrides both with and without catalysts. Finally, QENS provides information on hydrogen dynamics as a result of catalyst addition and also due to nanostructuring. Our research uses several specialized synchrotron X-ray and neutron techniques to elucidate the interactions of catalysts with the host hydride structures. This presentation will describe those techniques and their use in describing the physical and chemical processes occurring in the materials.

LSU Physics & Astronomy in the News

- **[CALET Makes First Direct Measurements of High Energy Electrons in Space](#)**: The CALET Cosmic Ray experiment, led by Professor Shoji Torii from Waseda University in Japan, along with collaborators from LSU and other researchers in the U.S. and abroad, have successfully carried out the high-precision measurement of cosmic-ray electron spectrum up to 3 tera electron volts (TeV) by using the CALorimetric Electron Telescope (CALET) on the Japanese Experimental Module, the Exposed Facility on the International Space Station (ISS). This experiment is the first to make direct measurements of such high energy electrons in space.

Events



Monday, November 13
3:00 PM
1008B Digital Media Center
Louisiana State University

Model Hamiltonians for Characterizing Excess Electrons Interacting with Fullerenes and Polyaromatic Hydrocarbons

It is well known that certain metals and graphene support Rydberg-type series of excess electron states, where the binding of the electron is due to the interaction with its image potential. Sufficiently, polarizable molecules and clusters possess very-extended non-valence anion states that can be viewed as finite system analogs to image potential states. In this talk, I discuss the development of one electron Hamiltonians for describing these excess electron species. These are generated by coupling the excess electron to a many-body polarizable force field.

SEMINAR SERIES 2017



Guest Speaker
**Dr. Kenneth
Jordan**

Richard King Mellon
Professor and
Distinguished
Professor of
Computational
Chemistry

University of
Pittsburgh

Free and open to the public



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