T_CSUH Bi-Weekly Seminar

Texas Center for Superconductivity at the University of Houston

Prof. Eric R. Bittner

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"Electronic States and Dynamics at Semiconducting Polymer Heterojunction Interfaces"

Friday, September 5, 2008
Room 102, University of Houston Science Center
12:00 noon – 1:00 p.m.

Abstract

The optical-electronic properties of conjugated polymer-based electronic devices are acutely sensitive to the details of the intermolecular interactions and local environment. This is especially true at the interface between different semiconducting materials. In my talk I shall discuss our recent theoretical studies of OLEDS and solar cell materials based on polymer heterojunctions. Our theoretical approach combines modern quantum chemical methods based upon time-dependent density functional theory, projection operator techniques, and state of the art quantum dynamical methods for studying coupled electron/phonon systems. In my talk I shall discuss exciton breakup and recombination at interfaces as driven by phonons. I shall also talk about the possibility that interfacial triplet states may actually enhance the conversion efficiency of a heterojunction OLED device.

Bio

Prof. Eric Bittner received the B.S. degree in Chemistry and Physics from Valparaiso University in 1988, and the Ph.D. in Chemistry from the University of Chicago in 1994. He was an NSF Postdoctoral Fellow at the University of Texas at Austin and Stanford University. He joined the UH faculty in 1997 as Assistant Professor, and was promoted to tenure in 2003. He is currently Professor of Chemistry. He received an NSF Career Award in 1999 and was a 2007 Guggenheim Fellow.

Persons with disabilities who require special accommodations in attending this lecture should call (713) 743-8210 as soon as possible.

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