

University of Pittsburgh

Petersen Institute of NanoScience and Engineering Seminar

Speaker: Professor David Ginger

Department of Chemistry, University of Washington

Title: *Scanning Probe Microscopy of Charge Dynamics in Nanostructured Photovoltaic Materials*

Time/Date: 12:00 noon, Friday, May 16, 2008
(refreshments at 12:00noon - 12:15pm)

Place: 307 Eberly Hall

Organic semiconductors are attractive materials for use in low-cost solar cells and energy efficient solid-state lighting. However, we lack a fundamental understanding of many basic physical processes in these heterogeneous materials. This talk will discuss our work ranging from the development and application of new scanning-probe microscopy techniques for mapping charge generation and recombination in polymer photovoltaics, to the study of near-field optical phenomena and the absorption and emission from chromophores coupled to plasmon resonant metal particles. In particular we will discuss the application of time-resolved electrostatic force microscopy (trEFM) and photoconductive atomic force microscopy (pcAFM) to image photocurrent distributions in donor/acceptor blend solar cells to better understand how changes in local film morphology lead to changes in device performance.

Biographical Sketch

Dr. David S. Ginger earned dual B.S. degrees in chemistry and physics at Indiana University in 1997. He received a British Marshall Scholarship and an NSF Graduate Fellowship and completed his Ph.D. in physics with Neil Greenham in the Optoelectronics group at the University of Cambridge (UK) in 2001. After a joint NIH and DuPont Postdoctoral Fellowship at Northwestern University in Chad Mirkin's lab, he joined the faculty at the University of Washington in Seattle where he is currently an Assistant Professor of Chemistry and an Adjunct Assistant Professor of Physics. He is a Research Corporation Cottrell Scholar, an Alfred P. Sloan Foundation Research Fellow, a Camille Dreyfus Teacher-Scholar, and a recipient of the Presidential Early Career Award for Scientists and Engineers. He is the recipient of the 2008 ACS Unilever Award in Colloid and Surfactant Science. His research centers on the physical chemistry of nanostructured materials with applications in optoelectronics--especially thin film solar cells--and sensing. Ginger can be reached at the University of Washington, Department of Chemistry, Box 351700, Seattle, WA 98195-1700, USA; tel. 206-685-2331; fax. 206-685-8665; email ginger@chem.washington.edu and URL <http://faculty.washington.edu/dginger/>.