

2007-2008

# Graduate Seminar Series

## The Department of Mechanical Engineering – Engineering Mechanics

Proudly Presents

**Professor Tony Jun Huang**  
Pennsylvania State University



Dr. Huang received his Ph.D. degree in Mechanical and Aerospace Engineering from the University of California, Los Angeles (UCLA) in 2005, and his B.S. and M.S. degrees in Energy and Power Engineering from Xi'an Jiaotong University, Xi'an, China, in 1996 and 1999, respectively. Currently, he is the James Henderson Assistant Professor in the Department of Engineering Science and Mechanics at The Pennsylvania State University. His research interests include Biomedical NanoElectroMechanicalSystems (BioNEMS), Active Plasmonics, Molecular Mechanics, Nanomaterials/Nanodevices, and Micro fluidics. During his young career, he has received awards and honors such as the 2006 Rustum and Della Roy Innovation in Materials Research Award, by *The Pennsylvania State University*; "One of the five most intriguing articles in the third quarter of 2005", by *CAS Science Spotlight*; the James Henderson Endowed Professorship, by *The Pennsylvania State University*; Outstanding Ph.D. Award, by *UCLA School of Engineering*.

Thursday, Mar. 20, 2008 3:00 – 4:00 p.m. Room 112, ME-EM Bldg.

### Fluidics: Interfacing Biology, Mechanics, and Photonics in the Micro/Nano Scale

Microfluidics is a powerful tool that allows the precise control and manipulation of microliter to nanoliter fluid volumes. In the past two years, the Penn State Biofunctionalized NanoElectroMechanicalSystems (BioNEMS) laboratory has established microfluidic approaches as unique platforms to achieve a fundamental understanding of multiphysics (e.g., biology, fluidics, photonics, acoustics, mechanics) at micro/nano scale and the integration and automation of complex tasks that are difficult to achieve otherwise. This talk will summarize our progress along this line, including tunable optofluidic lens, three-dimensional (3-D) hydrodynamic focusing, and track-free dynamic patterning of biomolecules.