



**Friday, May 16<sup>th</sup>, 2008**

**11 am**

**Fung Auditorium  
Powell-Focht BioEngineering Hall**

## **LIGHT MANIPULATION AT NANOSCALE FOR NANOMANUFACTURING & NANOMEDICINE**

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### **Abstract**

Lasers and optics are becoming important tools for scientific research and industrial applications. However, the diffraction limit of light has been a bottleneck for laser/light materials processing and imaging in a nanoscale. The goal of our laboratory is to investigate light-matter interactions at extremely short time and length scales and develop advanced micro/nano-systems for applications in biomedical engineering and the life sciences. In this talk, I will discuss my laboratory's recent research efforts in nanophotonics that use plasmonic effects for nanoscale optical manipulation and nanomanufacturing. I will also present several on-going projects in using such advanced micro/nano-fabrication methods for the development of biomedical micro/nano-devices like 3-D scaffolds for tissue growth and advanced tool kits with nanoscale control of growth factors and topography for nerve regeneration.

### **Biographical Sketch**

Dr. Chen is a Henderson Centennial Endowed Associate Professor in the Mechanical Engineering Department at The University of Texas at Austin. He received a Ph.D. from the University of California at Berkeley in 1999. His current research interest includes nanophotonics, nanomanufacturing, biomaterials and nanomedicine, and energy nanotechnology.

Dr. Chen received a CAREER Award from the National Science Foundation in 2001, an Outstanding Young Manufacturing Engineer Award from the Society of Manufacturing Engineers in 2002, and a Young Investigator Award from the Office of Naval Research in 2004. He received AIAA Best Paper award in 2006. He is a committee member of the ASME Nanotechnology Institute and IEEE Nanotechnology Council. Dr. Chen is an Associate Editor of ASME *Journal of Manufacturing Science and Engineering* and *Journal of Biomedical Nanotechnology*. He is an editor of a book – "Nanomanufacturing" (American Scientific Publishers, 2008) and serves on the Editorial Board of *Nanomedicine and The Open Materials Science Journal*. He was a Guest Editor in 2003 for *IEEE Transactions on Advanced Packaging: Special Issue on NEMS/MEMS Packaging*. Dr. Chen is a Fellow of ASME.

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