



**Mechanical  
Engineering**

**SEMINAR**

## **Mechanical Engineering in Micro/Nano System Revolution**

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In the past decades, the application of microelectronic technology to the fabrication of mechanical devices stimulated emerging research in micro/nano sensors and actuators. The versatility of semiconductor materials and the miniaturization of VLSI patterning techniques promise new systems with better capabilities and improved performance-to-cost ratio over those of conventionally machined devices. This talk will discuss the role of Mechanical Engineering in the revolution of micro/nano systems using past and current project examples in my lab. These research results cover various major disciplines in Mechanical Engineering such as thermal, solid, dynamics, fluid, bio and optics. The key and common element in these projects is the design and manufacturing innovations to be explained via the development of various microfabrication processes including surface-micromachining, bulk-micromachining, and plastic molding of hot embossing and injection molding. Current research programs will be briefed in the following subjects: bionic power generation, nanocomposite MEMS, integrated mm-wave sensing system, plastically deformed micro-mirrors, navigation grade micro gyroscopes and integrated nanoelectromechanical systems. This talk will conclude with discussions on future research directions.



**Professor Liwei Lin** received his BS degree from National Tsing Hua University in 1986 (Taiwan) and M.S. and Ph.D. degrees from the University of California, Berkeley, in 1991 and 1993 respectively, all in Mechanical Engineering. He joined BEI Electronics Inc. USA from 1993 to 1994 in research and development of microsensors. From 1994 to 1996, he was an Associate Professor in National Taiwan University, Taiwan. From 1996 to 1999, he was an Assistant Professor at the University of Michigan. He joined the Mechanical Engineering Department at University of California at Berkeley in 1999 and is now Chancellor's Professor and Vice Chair of graduate study. He is also Co-Director at Berkeley Sensor and Actuator Center, an NSF/Industry/University research cooperative center. His research interests are in design, modeling and fabrication of micro/nano structures, sensors, actuators and mechanical issues in micro/nano systems including heat transfer, solid/fluid mechanics and dynamics.

**FRIDAY, April 18<sup>th</sup>, 2008**  
**10:00 am Seminar in 233 Mudd**  
**11:00 am Lunch in ME Lobby**