



ESE Seminar Announcement

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**Tuesday, May 19, 2015
Green Hall, Room 0120
10:10AM**

NANOMECHANICAL PROBING OF PHYSICAL AND BIOLOGICAL PHENOMENA

Abstract: Mechanical devices have been used for sensitive measurements of physical quantities, such as mass, charge, and fluid pressure, for several centuries now. With the emergence of nanotechnology, the trend is to push the linear dimensions of mechanical devices into the submicron. These resulting micro- and nano-scale mechanical devices are being used in current research as tools for observing quantum effects, for probing biological entities, and for measuring molecular-scale forces. In this talk, I will provide an introduction to nanoscale mechanical devices and subsequently discuss some of the recent results from my group. In particular, I will focus on the physics of a mechanical device vibrating in a fluid. I will also discuss the possibility of biosensing based on mechanical fluctuations.

Bio: Kamil Ekinci is a Professor of Mechanical Engineering at Boston University. He completed his undergraduate degrees in Physics and Electrical Engineering at Bogazici University in Turkey. He subsequently obtained his Ph.D. in Experimental Condensed Matter Physics from Brown University. His Ph.D. thesis was on low temperature phenomena, investigating superconductivity with the scanning tunneling microscope (STM). After his Ph.D., Ekinci performed postdoctoral research at the California Institute of Technology. In 2002, he joined the faculty of the Mechanical Engineering Department at Boston University. From 2008-2009, Ekinci was a Visiting Fellow at the National Institute of Standards and Technology (NIST), Gaithersburg, at the Center for Nanoscale Science and Technology (CNST). Ekinci's research focuses on physical phenomena at the nanoscale; he is also interested in developing nanoscale devices and ultrasensitive measurement techniques for a variety of applications. He has published over 40 papers on topics ranging from low temperature physics to turbulence to biomaterials, and has received an NSF CAREER award. He currently serves on the editorial board of the Review of Scientific Instruments (RSI).

Host: Dr. Lan Yang