

# Spring 2008 SEMINAR SERIES

## F21C Bioprocessing & Biosensing Center

• DIVISION OF FOOD SYSTEMS & BIOENGINEERING •

**PRESENTER:**        **Dr. Babak Ziaie**  
School of Electrical and Computer Engineering  
Purdue University

**TITLE:**                **Biomedical Microsystems: Challenges and Opportunities**

**ABSTRACT:**

Recent advances in MEMS transducers, microfluidics, advanced functional materials, and low-power wireless communication have provided a unique opportunity to fabricate high performance microsystems with increased performance and functionality. My laboratory at Purdue University has been involved in research and development in this area with a particular emphasis on implantable wireless microsystems for a variety of diagnostic, therapeutic, and rehabilitative applications. In this seminar, I will describe our efforts in three areas: 1) hydrogel-based microsystems for physiological sensing and active flow control, 2) implantable microsystems for diagnosis and management of glaucoma, and 3) implantable wireless dosimeters for radiation oncology. Using these specific examples, I will describe opportunities and challenges facing successful implementation and ultimate clinical utilization of such microsystems.

**BIOGRAPHY:**

Dr Babak Ziaie is currently an Associate Professor of Electrical and Computer Engineering at Purdue University - where he conducts and directs research in the broad area of Biomedical Microelectronic and Microelectromechanical Systems.

He graduated with a BS in Electrical Engineering from the University of Teheran, Iran in 1986 and subsequently obtained his MS and PhD from the University of Michigan in 1992 and 1994, respectively. After working as a research scientist for a few years at the Universities of Alabama and Michigan, he joined the faculty of the University of Minnesota in 1999 as an assistant professor. In 2005, he moved to Purdue University - where he pursues his research at Purdue's state of the art Birck Nanotechnology Center.

In this presentation, he will talk about his latest efforts in developing implantable wireless microsystems for a variety of diagnostic, therapeutic and rehabilitative applications.

**DATE • TIME • LOCATION:**

**Tuesday, March 18, 4:00 pm**  
**Ag Eng Bldg 105 • Refreshments**