BILKENT UNIVERSITY

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FACULTY OF SCIENCE

MATERIALS SCIENCE and NANOTECHNOLOGY
GRADUATE PROGRAM SEMINAR

"Applications of Micro/Nano Technologies to Intelligent Wireless Communications Systems"

Asst.Prof. Bedri Çetiner

Utah State University
Electrical and Computer Engineering Department

A new kind of antenna technology developed recently by Dr. Cetiner and his colleagues, referred to as nanoelectromechanical-system (NEMS) integrated multifunction reconfigurable antenna (MRA), for use in multi-band/mode intelligent wireless communications systems will be introduced. These new type of systems provide a spectrally efficient, low-cost, robust, and compact solution to the interoperability, adaptability, and reliability needs of next generation cognitive wireless communications systems. An MRA enables a single antenna element to perform multiple functions by dynamically changing its properties thereby introducing important additional degrees of freedom in adaptive system parameters. DC-contact RF-NEMS actuators are the main building blocks of MRAs. These actuators are 10-100 smaller than their MEMS counterparts. They require only 5-10 Volts actuation voltage and switch much faster (a few tens of nanosecond) than MEMS. Dr Cetiner's research involves the design, micro-fabrication, and characterization/testing of NEMS integrated MRAs for use in software-defined radio (SDR) and cognitive radio technologies.

Biodata:
Dr. Bedri Artug Cetiner has been at Utah State University, ECE department since August 2007. He received the PhD Degree in Electronics and Communications Engineering from the Yildiz Technical University, Istanbul, in 1999. From November 1999 to June 2000 he was with the University of California, Los Angeles as NATO science fellow. He then joined the Department of Electrical Engineering and Computer Science at University of California, Irvine, working as a postdoctoral researcher and specialist from June 2000 to June 2004. Morehead State University in the Department of Space Science and Engineering was his home base from July 2004 until July of 2007. His research interest is focused on the analysis and design of microwave circuits and radio frequency micro/nano-electromechanical systems (RF M/NEMS) with recent concentration on their applications to space science systems and new class of reconfigurable antennas for use in adaptive multi-input multi-output (MIMO) systems. Before starting his academic career, he was a professional basketball player in his native, Cyprus.

Date : June 4, 2009 (Thursday)
Time : 15:40
Place : Faculty of Science Building, A Block, Seminar Room (SA 240)
Tea and cookies will be served after the seminar