



THE ELECTRICAL & COMPUTER ENGINEERING PROGRAM PRESENTS

# RF IN WIRELESS COMMUNICATIONS AND SENSING

*Dr. Cam Nguyen, Texas A&M University, College Station*

Monday, March 2, 2009

12:00 – 1:00 p.m. followed by light lunch

Lecture Hall 238 / 2nd Floor

RF (including microwave and millimeter-wave) integrated circuits, systems and technologies are relevant not only to military, but also to various industries and national infrastructures. This importance is even more pronounced as the development of civilian technology becomes increasingly important to the national economic growth. New applications utilizing RF technologies continue to emerge - spanning across spectrums from ultra-wideband to millimeter-wave and submillimeter-wave ultra-highcapacity wireless communications; from sensing abnormal human body condition, diagnosing it and imaging the effect to early detection of cancer; and from detection and inspection of buried underground oil and gas pipes to wireless power transmission and data communications for smart wells. Research and development of new RF integrated circuits and systems are thus vital for both the commercial and defense sectors in a nation. They are particularly important for the development and advancement of wireless communications, sensing technologies, radar, sensors and sensor networks.

Our research group at Texas A&M University has been at the forefront of developing RF integrated circuits, subsystems and systems for various engineering applications including wireless communications, subsurface sensing, RFID, radar and sensors. In this talk, we will present some of the recent developments in these areas. We will particularly address some relevant applications utilizing RF wireless technologies.

Dr. Cam Nguyen is the Texas Instruments Endowed Professor of Electrical and Computer Engineering of Texas A&M University. He joined Texas A&M University in 1991 after working for more than 12 years in industry, where he led numerous microwave and millimeter-wave projects and developed many components, subsystems and systems up to 220 GHz for wireless communications, radar and sensing. He was also the Program Director at the National Science Foundation in Washington D.C. during 2003-2004, leading and managing research programs in RF and wireless technologies funded by the Foundation at US universities. Currently, he directs the Sensing, Imaging and Communication Systems Laboratory, conducting research in RF circuits, systems and technologies for communications, radar, sensors and subsurface sensing. He has published more than 180 papers, book chapters, 4 books, and given more than 100 conference presentations and numerous invited lectures. He is the Founding Editor-in-Chief of Sensing and Imaging: An International Journal and Founding Chairman of the International Conference on Subsurface and Surface Sensing Technologies and Applications. Professor Nguyen is a Fellow of the IEEE.



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