

ECE 793A/794 ECE GRADUATE SEMINAR
(Required for Electrophysics Area Graduate Students)
Everyone is invited to attend.

Dr. Nick E. Buris
Motorola Labs, Schaumburg, IL

***Title: Electromagnetic Design for Wireless Applications
and Multidisciplinary Optimization***

Date: Friday, November 3, 2006

Time: 3:30 p.m.

Place: Marston 132

Abstract:

This presentation starts with several specific electromagnetic design examples for wireless applications. These examples include antennas for cellular handsets, RFIDs as well as electromagnetic interference solution concepts. Various characteristics of advanced design methods are then examined. The case is made that multidisciplinary design methods need to be developed and employed for efficient solution of complex problems. At present, multidisciplinary issues encountered at the design of feature rich products are solved by intense communications between the design groups of interacting disciplines. The design of today's challenging products demands the same and higher degree of communications between the tools used by interacting disciplines. An electromagnetic and structural design example is used to elucidate the concepts discussed. Additionally, an outline of a framework capable of addressing concurrent optimization of multiple disciplines and of complex products is presented. The seminar ends with a list of proposed problems that need to be solved so that maximum efficiency can be achieved in solving the complex problems of the future.

Bio:

Nick Buris received the diploma of Electrical Engineering in 1982 from the National Technical University of Athens, Greece and the Ph.D. in Electrical Engineering from the North Carolina State University, Raleigh, NC in 1986. In 1986 he was a visiting professor at NCSU working on space reflector antennas for NASA. In 1987 he joined the faculty of the department of Electrical and Computer Engineering at the University of Massachusetts Amherst. His research work there spanned the areas of microwave magnetics, phased arrays printed on ferrite substrates and broadband antennas. In the summer of 1990 he was a faculty fellow at the NASA Langley Research Center working on calibration techniques for dielectric measurements and an ionization (plasma) sensor for an experimental reentry spacecraft. In 1992 he joined the Applied Technology organization of Motorola's Paging Product Group and in 1995 he moved to Corporate Research to start an advanced modeling effort. While at Motorola he has worked on several projects from product design to measurement systems and the development of proprietary software tools for electromagnetic design. He currently manages the Microwave Technologies Research Lab within Motorola Labs in Schaumburg, IL. Recent activities of the group include high frequency communications systems design, modeling and measurements of complex electromagnetic problems, RF Propagation, Smart Antennas/MIMO, RFID systems as well as TIA standards work on RF propagation and RF exposure. Nick is a senior member of the IEEE, and serves on a MTT Technical Program Committee. He recently served as chair of a TIA committee on RF exposure and is currently a member of its Research Division Committee.