MIMO Wireless

Overview

Multi-Input Multi-Output (MIMO) technology is a key technology in modern wireless systems. MIMO uses multiple antennas at both transmitter and receiver along with transmit encoding and receiver decoding to improve data throughput and range without any penalty of bandwidth or transmitted power. MIMO technology is currently used in 4G mobile systems and WiFi and is essential to all future broadband wireless systems. MIMO is a rapidly developing technology with well over 10,000 papers as well as patents and vast global product development activities.

This course on MIMO technology is aimed at graduate and research students, faculty members and R&D engineers in industry. The primary objective of this course is to condense the key concepts of MIMO technology with emphasis on fundamental concepts, to develop a grasp of the basic mathematics underlying MIMO and to bring understanding to the usage of MIMO in current and future wireless systems.

Course participants will learn these topics through lectures, simulation assignments and tutorials.

Dates for the Course	**8th August, 2016 to 12th August, 2016**
Host Institute	**College of Engineering Guindy, Anna University**
No. of Credits	**1**
Maximum No. of Participants	**60**
You Should Attend If…	▪ You are an electronics and communication engineer, researcher scholar or faculty from academia, research scientist from industry or a Government research organization interested in the processing, design and implementation of Wireless Communication systems. ▪ You are a student or faculty from an academic institution interested in learning how to do research on MIMO technology and its applications.
Course Registration Fees	The participation fees for taking the course is as follows: **Student Participants :** Rs.2000 **Faculty Participants :** Rs.5000 **Government/Industry/Research Organization Participants** : Rs.10000 The above fee is towards participation in the course, the course material, computer use for tutorials and assignments, and laboratory equipment, internet usage charges. **Mode of payment: Demand draft in favour of "The Director CTDT, Anna University" payable at Chennai**.
Accommodation	The participants will be provided with hostel accommodation, depending on availability, on payment basis.

Course Faculty

Prof. Arogyaswami J. Paulraj is an Emeritus Professor at Stanford University. He earned his Ph.D. from the Indian Institute of Technology, New Delhi, India, in 1973. After 25 years of service in the Indian Navy, Paulraj joined Stanford University in 1991.

He proposed the MIMO (Multiple Input Multiple Output) concept in 1992, which is the key to today's 4G cellular and WiFi wireless networks. Paulraj is an ISI Thomson most highly cited researcher with two textbooks on MIMO. He has published over 350 archival papers and is a co-inventor in over 63 patents. He has graduated over 50 doctoral and post-doctoral students at Stanford. He has received 3 journal paper awards from IEEE. In 1999, Paulraj founded Iospan Wireless Inc. and the company was acquired by Intel Corp in 2003. Iospan pioneered MIMO-OFDMA used in 4G technology. In 2003, Paulraj co-founded Beceem Communications Inc. which became the leader in 4G / WIMAX chip sets. Beceem was acquired by Broadcom Corp. in 2010. Paulraj has over 30 recognitions which include the 2014 Marconi Prize and the 2011 IEEE Alexander Graham Bell medal. He has received a number of recognitions in India including the Padma Bhushan.

Dr. M. Meenakshi is a Professor in the Department of Electronics and Communication Engineering at College of Engineering Guindy, Anna University, Chennai. She has been awarded the Commonwealth Academic Staff Fellowship for carrying post-doctoral research at UK in the year 2004 and had worked on Optical CDMA networking at University of Strathclyde, Glasgow under the mentorship of Professor Ivan Andonovic. Her research interests include Wireless Communication-Resource Optimization and Energy Efficiency Aspects, Radio over Fiber Technologies, Wireless Body Area Networks, Ultra-Wideband Communication and Optical Switching.

Dr. K. Gunaseelan is an Assistant Professor in the Department of Electronics and Communication Engineering at College of Engineering Guindy, Anna University, Chennai. His research interests include wireless communication, Digital Signal processing and Communication Network Security.

Course Co-ordinators

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