REGISTRATION FORM

Workshop on MIMO OFDM and Physical Layer Aspects of LTE
(December 18-20, 2014)

Participants:
This workshop is addressed to Engineering Faculty, Research scholars and students from Engineering colleges who are working in the areas of Signal Processing and Wireless Communications. The workshop is designed in such a way that the theoretical concepts would be supplemented by simulations/problem solving during the practice sessions.

Details of Registration:
Filled in application form should be accompanied by a Demand Draft of Rs.2,000/- (Rupees Two Thousands only) for faculty from Engineering colleges, Rs.1,500/- (Rupees One Thousand only) for students, drawn in favor of “The Principal, Thiagarajar College of Engineering, Madurai”, payable at Madurai. The registration fee includes the course material, working lunch and snacks. The number of seats is limited to 25.

Last Date for Registration: 08.12.2014
Intimation through e-mail: 11.12.2014

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Organized by
TIFAC CORE in Wireless Technologies and
Department of Electronics & Communication Engg.
Thiagarajar College of Engineering.
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TCE:
Thiagarajar College of Engineering (TCE), Madurai, an ISO 9001:2000 certified institution, affiliated to Anna University, Tirunelveli, is one among the several educational and philanthropic institutions founded by Late. Shri Karumuttu Thiagarajan Chettiar, established in 1957. This Govt. aided institution was granted autonomy in 1987 and is accredited by National Board of Accreditation (NBA). TCE offers 8 undergraduate (UG), 13 postgraduate (PG) and Doctoral programmes in Engineering and Science.

ECE Department:
Department of Electronics and Communication Engineering offers an UG programme in Electronics and Communication Engineering and PG programmes on Communication Systems and Wireless Technologies. This DST FIST supported department has completed 24 research projects with research organizations like DRDL, RCI, DEAL, BrahMos Aerospace and ISRO and consultancy works for companies like Motorola, Honeywell, Texas Instruments, TVSICS, Amphenol Antel, in Wireless Communication system. The department has also established National Instruments Electronics system Design lab using Educational Laboratory Virtual Instrumentation suite. The laboratory facilities in this department include vector network analyzer, vector signal analyzer, NI IF RIO boards, NI RF and Communications platform, Speedy 33 DSP kits, ASIC prototyping boards and OMAP 1510 kit code compose studio.

TIFAC CORE:
Mission REACH launched by TIFAC, DST, Govt. of India aims to create a constellation of world class COREs (Centre of Relevance and Excellence) in diverse disciplines across the country. The objective of TIFAC CORE at TCE is to generate trained manpower in emerging Wireless Technologies, to carryout collaborative research and product development in the allied areas of Wireless technologies. In TIFAC CORE, laboratories have been set up in the areas of RF Systems, Baseband Processing and Antennas.

About the Workshop
High data rate wireless systems with very small symbol periods usually face unacceptable Inter-symbol interference (ISI) originated from multipath propagation and inherent delay spread. Orthogonal frequency division multiplexing (OFDM) is a multicarrier based technique for mitigating ISI to improve capacity in the wireless system with spectral efficiency. On the other hand, MIMO systems have rising attention of the wireless academic community and industry because their promise to increase the capacity and performance with acceptable bit error rate (BER) proportionally with the number of antennas. MIMO OFDM is an attractive air interface solution for next generation wireless local area networks and wireless metropolitan area networks and fourth generation mobile cellular wireless systems. The objective of this workshop is to present the techniques that have been developed over the past decade in the physical layer aspects of MIMO OFDM and LTE standard.

Workshop Outline:

At the end of the workshop, participants will be able to
- Describe the concept of MIMO OFDM Wireless Communication System.
- Obtain impulse response coefficients from the power delay profiles of the SISO, SIMO, MISO and MIMO channels.
- Determine the capacity and bit error rate of MIMO OFDM system for a given power delay profile of the MIMO channel.
- Estimate the MIMO channel impulse response using least square, MMSE and robust MMSE estimation algorithms.
- Estimate and correct the frequency offset in the signal received at the MIMO OFDM receiver.
- Estimate and correct the timing offset in the signal received at the MIMO OFDM receiver.
- Analyze the performance of MIMO OFDM physical channel in LTE standards.