QIP Short Term Course On Fundamentals of Signal Processing for Antenna Arrays

A Continuing Education Programme of
Indian Institute of Technology,
Kharagpur

July 15 –July 20, 2013

Coordinator
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Organized by

Dept. of Electronics and Electrical Comm. Engg.
Indian Institute of Technology
Kharagpur – 721 302

OBJECTIVES AND INTRODUCTION

The broad area of Array Processing has played an important role in many diverse application areas. Most modern radar and sonar systems rely on antenna arrays or hydrophone arrays as an essential part of their system. Seismic arrays are widely used for oil exploration. Radio Astronomy uses very large arrays with advanced processing to obtain high resolution imaging of distant objects. Recent advances in communication emphasizes on smart antennas and MIMO to increase the channel capacity. Further, various medical devices employs ultrasound transducer arrays to perform efficient diagnosis.

Basic knowledge of Digital Signal Processing and Antenna are essential to RF and Microwave and also to Communication and Radar Engineers. This course attempts to provide refreshing of the fundamentals of Antenna Arrays and applications of Signal Processing Techniques to antenna arrays. Effort is also made to provide recent and relevant applications of the techniques to various real world problems.

SCOPE

The aim of this course is to focus on the fundamentals of signal processing for antenna array applications. This will include lectures, tutorials and practice sessions. Broad topics will be:

(a) Phased Array Antenna
(b) Beam Shaping
(c) Spectral Estimation
(d) Adaptive Filter Design
(e) Smart Antennas & Digital Beamforming
(f) Adaptive Beam-forming and MIMO
(g) Applications of Array Processing and recent trends in the area of Radar, Satellite and Wireless Communication.

COURSE FACULTY

The entire course will be covered by the reputed faculty members of IIT Kharagpur.

WHO SHOULD ATTEND

Faculty members of University and AICTE approved engineering colleges who want a thorough guided tour on Fundamentals and design of microwave components.
Practicing RF and microwave Engineers, Professionals and functional managers, administrators in the mobile phone, satellite communication and radar industry.

ELIGIBILITY

B.E. / B.Tech/ M.E / M.Tech or equivalent degree in Electronics/ Telecommunication / Electrical Engineering.

REGISTRATION

Category:

(a) Teachers from AICTE Approved Engineering Colleges – No registration fee, boarding & lodging to be provided by the institute. However, a Demand Draft of Rs. '1,000/-' should be enclosed with the application which will be refunded to the participants attending the course (Application should reach at " Prof. Arijit De, Dept. of E & ECE, I.I.T. Kharagpur, Kharagpur - 721 302" , by **22nd June, 2013**; total participants limited to 30: selection of participants is first come first serve basis). For participants not getting selected, the draft will be returned to the respective office address.

(b) Scientists / Technologists / Engineers : From Industry may also attend (limited no. of seats on first come first serve basis) : **should apply by 22nd June, 2013 course fee of Rs. 12,000/-.** Self sponsored candidates will be provided course materials, working lunch, tea & snacks during the course hours. Traveling, boarding & lodging expenses should be borne by participants.

The registration fees in Bank Draft should be in favour of ***'CEP - STC, IIT, Kharagpur'*** payable at Kharagpur along with completed registration form to be sent to "Prof. Arijit De, Dept. of E & ECE, I.I.T. Kharagpur – 721 302, West Bengal, INDIA".

LOCATION

Kharagpur is an important Railway junction station about 116 Km. west of Kolkata. There are frequent train services from Howrah Rly. Stn. and it is well connected to almost all parts of the country. The Institute is about 5 Kms. away from Kharagpur Railway Station. Taxis, Auto-rickshaws, cycle rickshaws are available as transport.

ACCOMMODATION

Limited shared accommodation in the guest house is available. However, efforts will be made to book accommodation in the guest houses on receipt of request from the participants by 30th June, 2013.

Enquires should be addressed to :

Prof. Arijit De,
Dept. of E & ECE,
IIT Kharagpur,
Kharagpur – 721 302

E-mail : arijit@ece.iitkgp.ernet.in

Phone : 91-3222-281478
Telefax : 91-3222-282264
Fax : 91-3222-255303

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REGISTRATION FORM

Please complete the details below & mail it to the address overleaf along with the registration fee.

1. Name :……

2. Designation :……

3.Address (Office):……

:……

4. Phone (Mob.) :……...
Phone (Res.) :…….

E-mail (compulsory) :……

5. Male/Female:……..…

6. Highest academic qualification:……...

7. Accommodation Required (Y/N):……

8. Bank Draft No…….. Date……..

Amounting Rs……drawn on…….Bank

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For QIP Sponsored Candidates [Category-(a)]
Recommended and forwarded

Date: Signature and Seal of the Head of the Organization

_____

For others [Category-(b)]

1. Draft No. _____ dt. _____ amounting Rs. _____ drawn on _____ Bank.
2. Recommendation and forwarding letter from the organization where working.

Date : Signature of the Applicant

Place :