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IMPORTANCE AND SCOPE

The design of efficient, miniaturized and wideband antennas have a dominant role in modern wireless communication systems. While the antenna performance is severely and adversely affected with reduction in antenna size, realization of size-reduced and low-profile antennas which maintain their radiation performance or outperform traditional antenna designs are imperative in order to make most use of the available real estate in current wireless configurations. This assumes more significance from the fact that antennas systems typically demand the maximum space requirement in wireless integrated systems. This, combined with the rapidly growing need for increased bandwidth within a highly compact topology make contemporary antenna designs fundamentally different from traditional antenna structures. As such, research and development efforts have been increasingly focused on the design of multifunctional, compact and broadband antennas incorporating self-complementarity with stable radiation characteristics across their impedance bandwidths. Similarly, development of low-loss devices are crucial for successful operation at the Ka and Ku-bands and beyond. It might be mentioned that traditional technologies like the microstrip are prohibitively lossy at 20-30 GHz frequencies and beyond. The rectangular waveguide based designs, though satisfying the loss requirements, are comparatively bulky and difficult to effectively integrate with planar components.

Keeping the above in view, the design and analysis of efficient modern systems will be addressed with particular emphasis on efficient, compact and broadband antennas and low-loss guided structures. Wideband and conformal antennas for mobile and wireless communication and current antenna miniaturization techniques for the realization of sub-wavelength radiating structures would be discussed.

In addition, metamaterials and their role in the design of systems with enhanced performance would be addressed. These include the design and realization of metamaterials, the design of electrically small antennas based on metamaterials and

miniaturization of radiating structures based on the zeroth order resonance.

KEY TOPICS TO BE ADDRESSED

- Basic electromagnetic theory
- Low loss Antennas and Guided Structures
- Green's Function Analysis of Antennas
- Conformal Antennas
- Dielectric Resonator Antenna & Topologies
- Metamaterials & Antenna Miniaturization
- EMI/EMC
- Microwave components

SPEAKERS

Faculty / domain experts from IIT, Kharagpur

Registration for TEQIP Sponsored

There is no registration fee. However, a Demand Draft of Rs.2,000/- (drawn in Favour of "CEP-STC, IIT Kharagpur") should be enclosed with the application form which will be refunded to the participants attending the course.

Short term course on 'Low Loss & Efficient Antennas' September 12-16, 2016

Registration Form

Name: _____

Designation: _____

Sex (M/F): _____

ORGANISATION: _____

Highest academic Qualification: _____

Address: _____

Phone / Fax: _____

Email (Compulsory): _____

Accommodation required Yes/No: _____

Details of bank draft: Amount Rs _____

Draft No. _____ Dated: _____

Issuing Bank: _____

Date:

Signature

Place:

Recommendation from the organization:

Signature with seal of the
Head of the Organization

How to reach the campus at IIT Kharagpur:

Situated about 120 km west of Kolkata, Kharagpur can be reached in about 2 hrs. by train from Kolkata or 2 hrs. by car from Kolkata airport. Kharagpur is also connected by direct train services to most major cities of the country. The institute is about 10 minutes drive from the Kharagpur railway station. Private taxi, auto rickshaw or cycle rickshaw are readily available for transport from the station. The transport can also be arranged as per request on personal payment basis.

Accommodation & food:

Outstation participants would be provided single or shared accommodation at the Institute Guest Houses as per availability. The accommodation charges are included in the registration fees (for Category-2). The accommodation fees would be waived for teachers / students from TEQIP approved Colleges / Institutions / Universities. Course fees also include breakfast/lunch/dinner/snacks.

COURSE COORDINATOR

Prof. Bratin Ghosh,
Department of Electronics & Electrical
Communication Engineering,
Indian Institute of Technology,
Kharagpur – 721 302

bghosh@ece.iitkgp.ernet.in,
pandaarabinda@gmail.com
Phone : +91-3222-283534
Mobile No. +91-9831064495

Mailing address:
Prof. Bratin Ghosh,
Department of Electronics & Electrical
Communication Engineering,
Indian Institute of Technology,
Kharagpur-721302,
West Bengal
Fax: +91-3222-255303/283534

Eligibility for Participation:

Category-1 (TEQIP Sponsored):

Teachers / students from TEQIP approved Colleges / Institutions / Universities. Participants should bring a letter of nomination from their Principal stating that they are being deputed for the course.

Category-2 (Teachers/Students/Industry/Others):

B. E. / B. Tech. / AMIE / Diploma in Engineering and B. Sc. / M. Sc. or any higher qualification in relevant field.

Participants from the Industry or Govt. Organizations working in related fields are also eligible.

How to apply:

Interested persons may apply in the form given herewith alongwith the registration fee in the form of demand draft drawn in favour of 'CEP-STC, IIT Kharagpur', payable at Kharagpur. The application should be sent to the mailing address of the Course Coordinator latest by 2nd September, 2016. Teachers/students of colleges under TEQIP should send the completed registration form together with the letter of nomination from their organization. The total number of seats for the course is restricted to 50 including 40 seats for TEQIP colleges and 10 for other candidates. In view of the limited seats, selection will be made on first come first serve basis.

Course fee:

Category-1:

Course fees would be waived for teachers / students from TEQIP approved Colleges / Institutions / Universities.

Category-2:

Course fees for Teachers/
Students/Others: **Rs. 15000.00**
Course fees for Industry: **Rs. 25000.00**

Course fee includes lecture notes and refreshments.

Certificate

A certificate of participation would be issued to all the participants from the Office of "Dean, Continuing Education, IIT Kharagpur".

Short term course
On
'Low Loss & Efficient Antennas'
September 12 -16, 2016

*A Continuing Education Programme of
Indian Institute of Technology*

*Kharagpur
Prof. Bratin Ghosh*



Organized by
Department of Electronics and Electrical
Communication Engineering
Indian Institute of Technology
Kharagpur – 721 302, India

