Electronics & ICT Academy IIT Roorkee

An Initiative of
Ministry of Electronics & Information Technology (MeitY)
Government of India

A Faculty Development Program
on

Recent Trends in Dielectric Resonator Hybrid Antennas for 6G and Beyond Application

In association with

ABV-IIITM, Gwalior

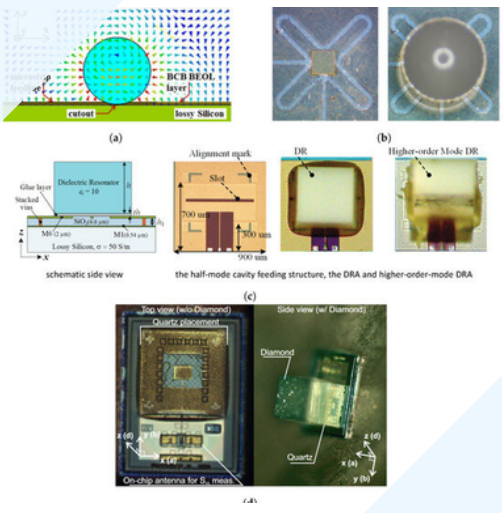
Jul 09th – Jul 22nd , 2025

Register Before: Jul 07, 2025

Venue: Hybrid Mode at ABV-IIITM, Gwalior

Objectives of the Course

- To explore fundamental and advanced concepts of dielectric resonator antennas (DRAs)
- To understand hybrid antenna structures for 6G and future communication systems
- To discuss materials, design techniques, and fabrication processes
- To review simulation tools and software for antenna modeling
- To examine performance metrics and optimization strategies
- To bridge theoretical knowledge with real-world applications
- To enhance research and innovation capabilities in high-frequency antenna systems



Why this course ?

As the world moves toward 6G and beyond, antenna design plays a crucial role in meeting speed, latency, and efficiency demands. Dielectric Resonator Antennas (DRAs) offer a promising solution due to their compactness, high bandwidth, and thermal stability. This course equips faculty and researchers with the necessary skills to design, simulate, and evaluate hybrid antennas tailored for emerging wireless technologies. By bridging theoretical foundations with practical tools and applications, it fosters innovation and research readiness in high-frequency communication domains.

Prerequisites

No experience is required, but fundamental knowledge of any programming language would be helpful.

Experts from Academia/Industry

Who Should Register?

Any Interested Faculty/PhD-Scholars
UG/PG/ & Industry Persons can register

Registration Fee

Fees: ₹ 250/- Faculty/Research Scholar/ Students
₹ 500/- Industry/Others
Note: Refund will be done in case of course cancellation only, with in 20 working days

FDP Kits & Refreshment will be provided

How to make Payment

Please make the payment first using the below link upload the payment receipt when filling out the Google registration form

https://eict.iitr.ac.in/instruction-for-payment/

EICT Course Code: EICTIITR-FDP-5H6-10

Registration Link

https://forms.gle/92QW6fi8fEetN4jG7

Scan QR for registration

Register before:
July 07 , 2025

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Course Outcomes

- Understand the working principles of dielectric resonator and hybrid antennas
- Design antennas suitable for high-frequency 6G applications
- Analyze key antenna parameters and simulation results
- Utilize simulation tools for advanced antenna modeling
- Apply learned concepts to research and development
- Gain insights into real-world deployment and testing of DRAs
- Foster innovation in antenna design for next-gen wireless communication

Focus Areas

- Fundamentals and evolution of DRAs
- Hybrid antenna designs and topologies
- Antenna miniaturization and performance tuning
- Integration with 6G technologies and IoT
- Simulation tools (e.g., HFSS, CST) and design methods
- Fabrication techniques and measurement setups
- Applications in mmWave, THz, and future wireless systems

Course Features

- 40 Hours of Lectures, hands-on, and Pedagogy/Industry sessions.
- Lectures from Expert Speakers, Hands-on from industry/Academia experts.
- Access to learning material and video lectures
- Certificate by E&ICT Academy IIT Roorkee

Who may benifits

- Academic Faculty and Students(UG/PG)
- Government Officials.
- Working Professionals in the Industry and Startups.
- Research Scientists and Technical Staff.

This certificate can be considered in alignment with other Quality Improvement Programs (QIP) as well as NBA and NAAC for recognition/credit.

Principal Investigator

- Prof. Sanjeev Manhas ECE Department, IIT Roorkee

Course Coordinators

- Prof. Sanjeev Manhas, IIT Roorkee
- Dr. Pinku Ranjan, ABV-IIITM Gwalior
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