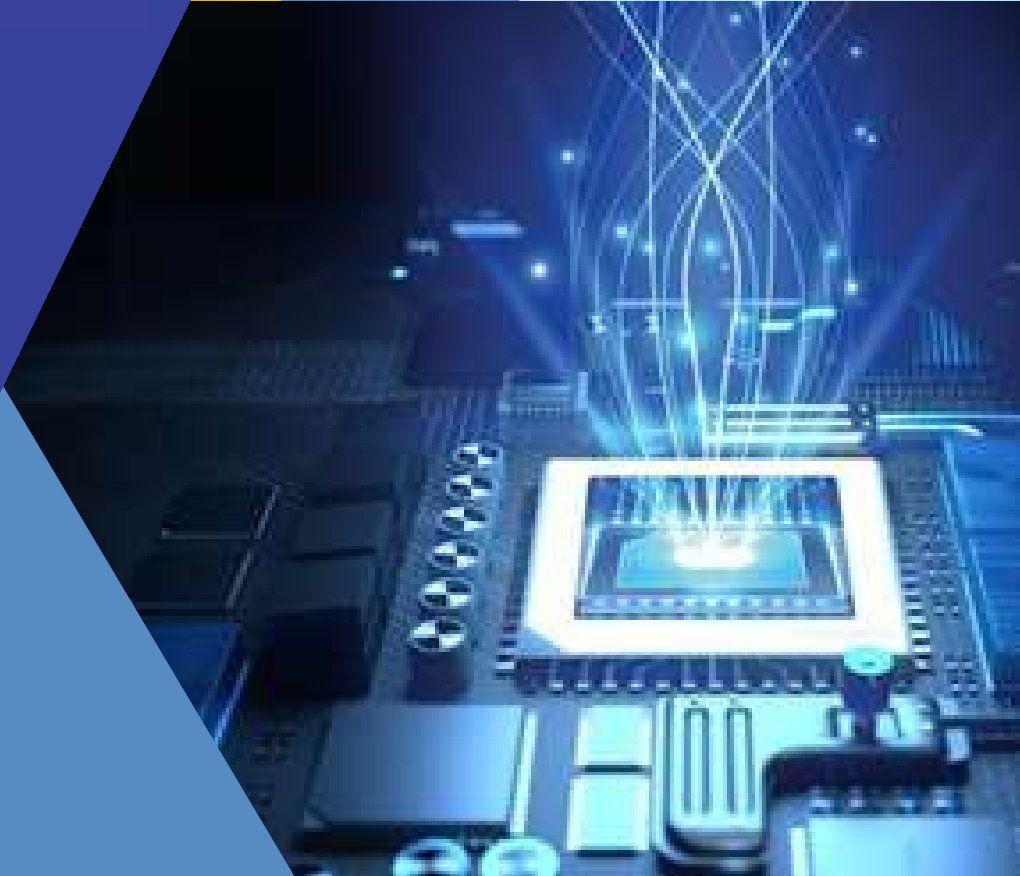




25 YEARS

**SRI MANAKULA VINAYAGAR**  
ENGINEERING COLLEGE  
(AN AUTONOMOUS INSTITUTION)



**AICTE Training and Learning (ATAL) Academy**

*Sponsored by*

Faculty Development Program (FDP) on  
**Innovation and Design Challenges in  
Antenna and RF Devices for Next Generation  
5G/6G Wireless Communication**

16-21, September 2024

*Organized by*

**Department of Electronics and Communication Engineering**



## ABOUT THE INSTITUTION

Sri Manakula Vinayagar Engineering College was established in the year 1999. The Institution has been approved by AICTE, New Delhi, and affiliated to Pondicherry University. It is the first Institution established the 'Nila Community Radio Station' with the approval of Government of India. The University Grants Commission (UGC) granted Autonomous status for the period of ten years (2019 - 2029). The Institute is accredited by NAAC with "A" grade and NBA - AICTE, New Delhi and also accredited by the IT giant Tata Consultancy Services (TCS). Within a short span of time, the Institution has attained an enviable reputation by possessing all the hall marks of a primer Institution in the pursuit of excellence. The Institution aims at equipping budding professionals with excellent theoretical and practical knowledge. It also pride in developing the students with leadership and interpersonal skills and thus shaping them as a strategic scholars with competitive spirit who will be capable of delivering their best in the technological world.

## Programs Offered

### UG Programs

- B.Tech - Electrical and Electronics Engineering
- B.Tech - Electronics and Communication Engineering
- B.Tech - Computer Science and Engineering
- B.Tech - Information Technology
- B.Tech - Instrumentation and Control Engineering
- B.Tech - Mechanical Engineering
- B.Tech - Civil Engineering
- B.Tech - Biomedical Engineering
- B.Tech - Mechatronics
- B.Tech - Artificial Intelligence and Data Science
- B.Tech - Computer and Communication Engineering
- B.Tech - Computer Science and Engineering and Business System
- B.Arch - Bachelor of Architecture

### PG Programs

- M.Tech - Electronics and Communication Engineering
- M.Tech -Computer Science and Engineering
- M.Tech -Manufacturing Engineering
- M.Tech -VLSI and Embedded Systems
- M.Tech -Artificial Intelligence and Data Science
- M.Tech -Computer Science Engineering (Big Data Analytics)
- MBA - Master of Business Administration
- MCA- Master in Computer Applications

### Ph.D Programs

- Ph.D - Mechanical Engineering
- Ph.D - Electrical and Electronics Engineering
- Ph.D - Electronics and Communication Engineering
- Ph.D - Computer Science and Engineering
- Ph.D - Information Technology
- Ph.D - Civil Engineering
- Ph.D - Management Studies
- Ph.D – Mathematics
- Ph.D – Physics
- Ph.D – Chemistry
- Ph.D – English

## ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering (ECE) was established in the year 1999 for imparting a state-of-the-art and quality education, training and research in the field of Electronics and Communication Engineering and allied areas. Well Equipped labs and the infrastructure are regularly upgraded not only to serve the purpose of the curriculum prescribed but also facilitate to carry out innovative projects to challenge the fast-changing needs of the society besides undertaking R&D activities in various fields. Right from its inception, the department has been moving forward in achieving academic excellence with a strong commitment and dedicated approach. The department offers the following programmes,

- B.Tech - Electronics and Communication Engineering
- M.Tech - Electronics and Communication Engineering
- M.Tech - VLSI and Embedded Systems
- Ph.D - Electronics and Communication Engineering

## ABOUT THE FDP

The objective of this Faculty Development Program (FDP) on "Innovations and Design Challenges in Antenna and RF Devices for Next Generation 5G/6G Wireless Communication" is to provide participants with a deep understanding of the latest advancements in antenna and RF technology and their impact on 5G and 6G communication. Participants will learn key concepts, principles, and challenges of next-generation antennas and RF devices and their role in advanced wireless communication systems. After completing the FDP, participants will be equipped to contribute to the research, development, and implementation of cutting-edge technologies in 5G and IoT convergence for future mobile communication.

## TOPICS TO BE COVERED

- Advancement and Perspective of Antennas & RF Devices in Future Communication
- Technologies Design Challenges and Research Opportunities in High-Frequency RF Devices
- Hands-on Training in Advanced Electromagnetic Modelling Software
- Recent Progress in the Filter Techniques for 5G and 6G Communication
- Theoretical Modelling of High-Frequency Front End Devices
- Design and development of microwave filters and couplers using CAD tool
- Theoretical modelling Approach of Printed Antennas for Microwave Systems
- Phased array antenna techniques for 5G beam forming
- Microstrip patch antenna modeling and characteristics analysis
- Emerging MIMO/Massive MIMO antennas for next-generation wireless devices
- Intelligent Reflecting surface for massive MIMO applications
- Implementation and evaluation of phased array antenna for 5G applications
- Metamaterial Antenna: A New Paradigm in Antenna Technology
- Hands-on training for antenna fabrication and testing using Vector Network Analyzer
- Terahertz and millimeter wave antennas for high-speed On-chip application

## EXPECTED OUTCOME

Upon completion of the Faculty Development Program (FDP), participants emerge with enriched capabilities and insights:

- Gain a deeper understanding of antenna technology and its role in 5G/6G wireless communication.
- Stay updated on the latest advancements and research trends in antennas and RF devices.
- Acquire skills to design and produce advanced antennas locally, boosting India's wireless technology industry.
- Integrate new concepts into curriculums, develop courses, and lead innovative research, supporting the Make in India mission.
- Strengthen partnerships among academia, industry, and government to advance 5G/6G technologies and enhance India's global leadership in wireless communication.

## HANDS ON TRAINING TOOLS

- Microwave CAD Tools
- Antenna Fabrication Tools

## RESOURCE PERSONS

### Dr. Sandeep Joshi

Assistant Professor, Birla Institute of Technology and Science (BIT), Pilani

### Mr. V. Karthikeyan

RF/Antenna Design Engineer, Kaizenat Technologies Pvt Ltd, Bangalore

### Dr. G. Nagarajan

Professor, Department of ECE  
Puducherry Technological University,  
Pudcherry

### Mr. G. Sathish

Design Engineering, Entuple Technologies Pvt Ltd, Tamilnadu

### Dr. R. Ramesh

Associate Professor Senior, School of Electronics Engineering, Vellore Institute of Technology, Chennai

### Dr. D. Sugumar

Associate Professor Senior, Karunya Institute of Science and Technology, Coimbatore

### Dr .R. Nakkeeran

Professor, School of Engineering & Technology, Pondicherry University, Puducherry

## ELIGIBILITY TO ATTEND THE FDP

Faculty, Research Scholar and PG students from AICTE approved engineering colleges and institutions, and R&D organizations with basic degree in Electronics and Communication Engineering, Electrical and Electronics Engineering, Electronics and Instrumentation Engineering, Electronics and Computer Engineering and those who are associated with Antenna and microwave Engineering and related fields.

## IMPORTANT DATES

Last date for online registration : 02.09.2024  
Intimation of selection through E-mail : 04.09.2024

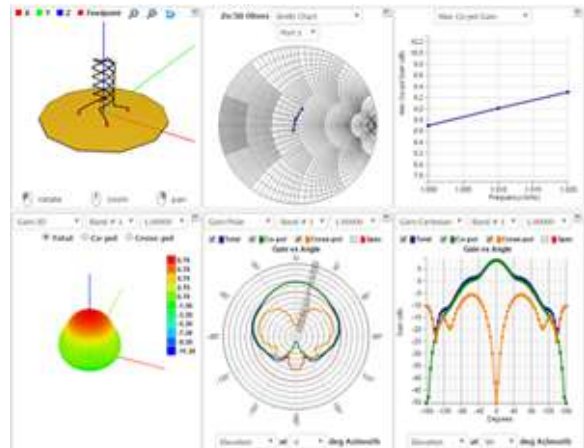
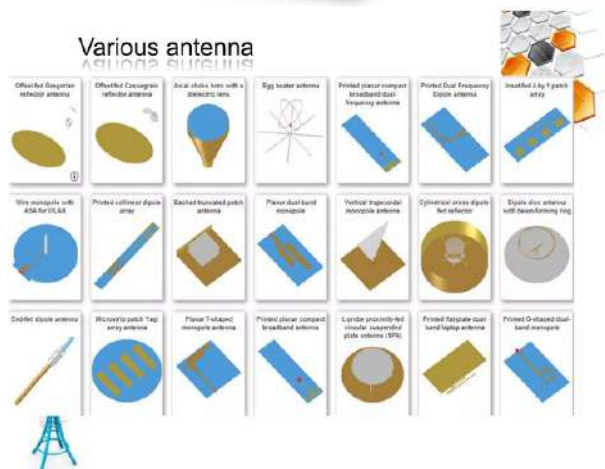


## GUIDELINE FOR REGISTRATION

- Participants can sign up and register for the program through the AICTE ATAL website using the following links: <https://www.aicte-india.org/atal> or <https://atalacademy.aicte-india.org/signup>.
- Registration for the FDP must be done exclusively through the official ATAL website. After registering, navigate to the FDP section, choose the month of September, select the Thrust Area "Engineering and Management," and apply for the FDP using the application number **1715245737**.
- Candidates would be eligible to receive a certificate up on achieving at least 70% cumulative weightage in the following aspects in the weightage mentioned. Attendance – minimum 80% attendance is mandatory. 100 & attendance - (individual)- weightage 10%. 3-4 Page Article Summary/per Team - (Team & Individual) - - weightage 10%. Project/ Live industry problem solving - (Team & Individual)- weightage 40%. Report/outcome of Industrial visit- (Team) at the last session -weightage25%. Reflection Journal - (Individual) - at the last session -weightage15%

## REGISTRATION FEE/ACCOMMODATION/SELECTION CRITERIA

- No registration fee for participation.
- However, refreshments & lunch would be provided free of cost. External Participants will also get a lump sum Travelling allowance subject to travelling more than 20 Km one side and attending at least 90% of the sessions.
- Selection will be done based on first-cum-first serve basis and the confirmed candidates will be notified immediately.
- The maximum number of participants will be 50 (Fifty).



# ORGANIZING COMMITTEE

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Chairman and Managing Director

**Dr. K. Narayanasamy**  
Secretary

**Shri. D. Rajarajan**  
Treasurer

## PATRON

**Dr. V. S. K. Venkatachalapathy**  
Director cum Principal

## FDP COORDINATORS

**Dr. P. Raja**  
HoD - ECE  
Coordinator

**Dr. N. Saranya**  
Assistant Professor - ECE  
Co-Coordinator

## ADVISORY BOARD

### Deans

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Controller of Examinations

**Dr. K. Velmurugan**  
Dean Research

**Dr. S. Anbumalar**  
Dean Academics

**Dr.A.A. Arivalagar**  
Dean Academics

**Dr. N.S.N. Caillasame**  
Dean Placement

### Head of the Departments

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HoD-CSE

**Dr. R. Raju**  
HoD-IT

**Dr. L. M. Varalakshmi**  
HoD-ICE

**Dr. G.G. Sozhamannan**  
HoD-Mechanical

**Dr. S. Sundararaman**  
HoD-Civil

**Dr.A. Vijayalakshmi**  
HoD-BME

**Dr. G. Balamurugamohanraj**  
HoD-Mechatronics

**Dr. J. Madhusudanan**  
HoD-AI&DS

**Dr. N. Danabaquame**  
HoD-CSBS

**Dr. P. Jamuna**  
HoD-EEE

**Dr. R. Ramya**  
HoD-CCE

## ORGANIZING COMMITTEE

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Associate Professor

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Assistant Professor

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Assistant Professor

**Mr.M. Harikrishnan**  
Assistant Professor

**Mr.K. Jambulingam**  
Assistant Professor

**Mr. P. Suseendhar**  
Assistant Professor

**Dr.A. Jayachitra**  
Professor

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Associate Professor

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Assistant Professor

**Mr.S. Mohanram**  
Assistant Professor

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Assistant Professor

**Ms. R. Priya**  
Assistant Professor

**Mrs. S. Anbarasi**  
Assistant Professor

**Dr.C. A. Sathyamoorthy**  
Professor

**Dr. S. Dhivya**  
Assistant Professor

**Dr. T. Deepa**  
Assistant Professor

**Mr. J. Soundararajan**  
Assistant Professor

**Mr. S. Ganesan**  
Assistant Professor

**Ms. K. Archana**  
Assistant Professor

**Mr. Sundarmohan**  
Assistant Professor

**Dr. J. Pradeep**  
Associate Professor

**Dr. R. Vijayarani**  
Assistant Professor

**Mrs. S. Jayanthi**  
Assistant Professor

**Mrs. R. Gayathiri**  
Assistant Professor

**Mr. V. M. NaveethaKrishnan**  
Assistant Professor

**Mr. P. Mahendra Peruman**  
Assistant Professor

**Mr. J. Dhanapathi**  
Assistant Professor