

## ABOUT THE INSTITUTE

National Institute of Technology (formerly known as Regional Engineering College) Tiruchirappalli is one among the premier Institutions of India and is well known for its high standards in teaching and research. It offers 10 undergraduate and 23 postgraduate programs in disciplines spanning engineering, science, architecture, and management. It has been declared as an Institute of National Importance by the Government of India under NIT Act. NIT Tiruchirappalli retained its No. 1 position among all NITs, 6th year in a row in the "India Rankings 2021" released by NIRF. The Institute has signed MoUs with various Industries and Institutions both in India as well as in abroad to promote collaborative research and consultancy.

## ABOUT THE DEPARTMENT

The Electronics and Communication Engineering (ECE) Department was established in the year 1968. The department offers Undergraduate (UG), Post Graduate (PG), M.S. (By Research) and Ph.D. degree programs that provide students with the knowledge and tools they need to succeed in the Electronics and Communication Engineering. Research in the department focuses on high-impact various disciplines: Communication systems, Wireless networks, Signal and Image Processing, RF MEMS and MIC, Microwave antennas, Optical communication and Photonics, VLSI technologies. Our faculty brings state-of-the-art research, development, and design experience into the classroom, ensuring that our students and alumni are able to apply for registration as professional engineers in all areas. In all courses the Department has built an excellent reputation for its graduates in terms of placements. Many of our Ph.D. graduates have taken up faculty positions in other NITs and IITs.

## AICTE TRAINING AND LEARNING (ATAL)

AICTE Training and Learning (ATAL) Academy is established to empower faculty to achieve goals of Higher Education such as access, equity, and quality. AICTE is committed for the development of quality technical education in the country by initiating various schemes launched by Govt. of India, Ministry of Human Resource Development e.g. SWAYAM, MOOCs, Start-up Initiatives, Prime Minister Kaushal Vikas Yojana, Sansad Adarsh Gram Yojana (SAGY), Swachh Bharat/ Unnat Bharat Abhiyan, Yoga Activities etc. AICTE understands that there is a need of the day to train the young generation in the skill sector and having faculty & technicians to be trained in their respective disciplines. It was felt that training with the latest tools and technologies is vital to keeping an institute competitive and more productive. Training is required for increasing the knowledge and skills of students to make them more employable to acquire global competencies. It also transforms them to harmonize with society and most importantly to make them a good citizen of the country.

## CONTENTS TO BE COVERED IN FDP:

- Phased Array Antenna Systems for 6G applications
- Beam steering Antennas v/s Reconfigurable Intelligent Surfaces
- 6G Wireless Technologies
- EM analysis of metamaterial structures
- Future Research of RIS for 6G Communications
- RIS for Advanced Wireless Communication Applications
- Intelligent Software-defined Radios for 6G and Beyond
- RIS and their applications in real life
- RIS for 6G
- RIS assisted full duplex communication
- Optimal Deployment of RIS in Blockage-Prone Environments
- Opportunities in Next Gen Wireless Systems



## ATAL (AICTE Training And Learning) Academy One Week National Level Faculty Development Program

on

### Reconfigurable Intelligent Surfaces for 6G Wireless Communication: Fundamentals to Future Research Directions

[Online Mode]

23<sup>rd</sup> to 28<sup>th</sup> Dec 2024

#### CO-ORDINATOR

**Dr. S. S. Karthikeyan, Associate Professor**

#### CO-COORDINATOR

**Dr. P. Sudharsan, Assistant Professor**

#### Organized by:

**Department of Electronics and Communication Engineering,  
National Institute of Technology  
Tiruchirappalli,  
Tiruchirappalli, Tamil Nadu - 620015.**

## ELIGIBILITY

This course is open to all the PG Scholars, Research Scholars and Faculty members from AICTE approved institutions and Industry Personnel.

## GUIDELINES

- **No Charge for Registration, Course and Certification.**
- Eligible participants will be selected based on first come first serve basis and will be intimated by e-mail only.
- On the last day of the program an assessment test will be conducted for all participants.
- E-certificate will be awarded only to those participants having minimum 80% attendance and scored minimum 70 % marks in the test conducted by the coordinator on the last day.

## REGISTRATION LINK

Registration has to be done compulsorily through ATAL portal

[www.aicte-india.org/atal](http://www.aicte-india.org/atal)

## IMPORTANT DATES

**Last date of registration: 05/12/2024**

**Date of Intimation of selection: 10/12/2024**

*(Selected candidates will be intimated through mail.)*

## OBJECTIVE OF ATAL FDP SCHEME

The objective of ATAL scheme is “To plan and help imparting quality technical education in the country and to support technical institutions in fostering research, innovation and entrepreneurship through training in various emerging fields.”

### CHIEF PATRON

**Dr. G. Aghila, Director,**  
NIT Tiruchirappalli

### VICE PATRON

**Dr. V. Sankaranarayanan**  
Dean (R&C), NIT Tiruchirappalli

### CHAIRMAN

**Dr. M. Bhaskar, Professor & HoD,**  
NIT Tiruchirappalli

### CO-CHAIRMAN

**Dr. D. Sriram Kumar, Professor,**  
Department of ECE, NIT Tiruchirappalli

### COORDINATOR

**Dr. S. S. Karthikeyan, Associate Professor,**  
Department of ECE, NIT Tiruchirappalli  
Email: sskarthikeyan@nitt.edu

### CO-COORDINATOR

**Dr. P. Sudharsan, Assistant Professor,**  
Department of ECE, NIT Tiruchirappalli  
Email: sudharsan@nitt.edu

### STUDENT COORDINATOR:

Mr. M. Goutham Reddy (+91-9581313454)

## RESOURCE PERSONS:

The sessions of the FDP will be conducted by the domain experts from different IITs, NITs and relevant industries and research organisations in India and abroad. Possible speakers for the FDP are:

- Dr. Sungjoon Lim, Chung-Aug University
- Dr. Qammer H. Abbasi, University of Glasgow
- Dr. Ashutosh Kedar, LRDE-DRDO
- Dr. Shiv Narayan, CSIR-NAL
- Dr. Swetha Amit, Entuple Technologies Pvt Ltd.
- Dr. Prabhu Chandhar, Chandhar Research Labs
- Dr. Akhilesh Mohan, IIT Roorkee
- Dr. A. Chockalingam, IISc Bangalore
- Dr. Sudhan Majhi, IISc Bangalore
- Dr. M. D. Selvaraj, IIITDM Kancheepuram
- Dr. Prabhat K sharma, VNIT Nagpur
- Dr. Abhishek Gupta, IIT Kanpur

**Inaugural Session on Dec 23, 2024 – 6:00 PM to 6:30 PM**

**Phased Array Antenna Systems**

**Day 1: 6:30 PM to 8:00 PM**

**Dr. Ashutosh Kedar,  
Scientist,  
LRDE, DRDO.**



**EM analysis of metamaterial structures**

**Day 1: 8:00 PM to 9:30 PM**

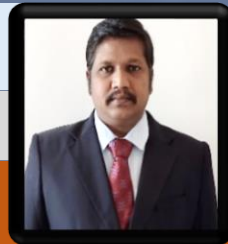
**Dr. Shiv Narayan,  
Senior Scientist,  
CSIR-NAL, Bangalore.**



**6G Wireless Technologies**

**Day 2: 6:00 PM to 7:30 PM**

**Prof. M D Selvaraj,  
Professor,  
IITDM, Kancheepuram.**



**Beam steering Antennas v/s RIS**

**Day 2: 7:30 PM to 9:00 PM**

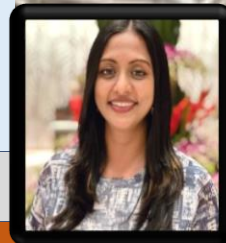
**Dr. Akhilesh Mohan,  
Professor,  
IIT Roorkee.**



**Future research of RIS for 6G communications**

**Day 3: 6:00 PM to 7:30 PM**

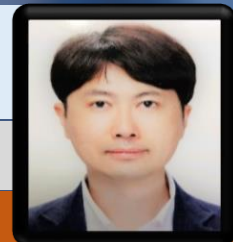
**Dr. Swetha Amit,  
Senior Application Engineer,  
Entuple Technologies Pvt Ltd, Bangalore.**



**RIS for Advanced Wireless Communication Applications**

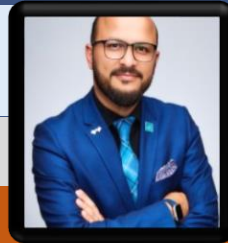
**Day 3: 7:30 PM to 9:00 PM**

**Dr. Sungjoon Lim,  
Professor,  
Chung-Ang University.**





**RIS and their applications in real life**



**Day 4: 6:00 PM to 7:30 PM**

**Dr. Qammer H. Abbasi,**  
Professor,  
University of Glasgow.

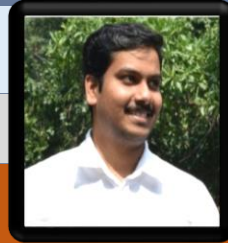
**Intelligent Software-defined Radios for 6G and Beyond**



**Day 4: 7:30 PM to 9:00 PM**

**Dr. Sudhan Majhi,**  
Associate Professor,  
IISc, Bangalore.

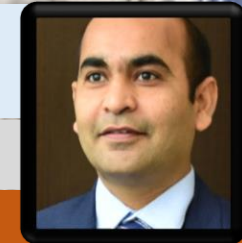
**RIS for 6G**



**Day 5: 6:00 PM to 9:00 PM**

**Dr. Prabhu Chandhar**  
Director,  
Chandhar Research Labs Pvt Ltd, Chennai.

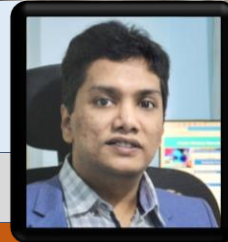
**RIS assisted full duplex communication**



**Day 6: 2:00 PM to 3:30 PM**

**Dr. Prabhat K. Sharma,**  
Assistant Professor,  
VNIT Nagpur.

**Optimal Deployment of RIS in Blockage-Prone Environments**



**Day 6: 3:30 PM to 5:00 PM**

**Dr. Abhishek K. Gupta,**  
Associate Professor,  
IIT Kanpur.

**Opportunities in Next Gen Wireless Systems**



**Day 6: 5:00 PM to 6:30 PM**

**Dr. A. Chockalingam,**  
Professor,  
IISc, Bangalore.

**Online Test & Feedback**  
Dec 28, 2024  
6:30 PM to 7:30 PM

**Valedictory Session**  
Dec 28, 2024  
6:30 PM to 7:30 PM

## **\*How to Register\***

1. Log in to the **ATAL Academy Portal** at <https://atalacademy.aicte-india.org/>.
  - If you are not already registered, first sign up at <https://atalacademy.aicte-india.org/signup>.
  - Choose the role as **Participant** during signup and complete your profile details.
2. After logging in, navigate to the FDP tab.
3. Use the following filters:
  - Type: ATAL
  - Month: December
  - Thrust Area: ALL
  - Mode: Online
4. Press Ctrl + F and search for the application number 1730724711 to locate our FDP.
5. Click the '+' button to apply

**Note:** Please obtain the NOC from the relevant authority (HOD/Principal/Dean) of your institute, with their signature and seal. The NOC format is provided on the next page. You will be able to apply only after uploading the NOC.

- For any queries, feel free to call ☎ 9581313454 (Goutham).

# Letter Head

## Participant NOC Format

### Subject: NOC for Attending ATAL FDP

Ref No. \_\_\_\_\_

Date: \_\_\_\_\_

### To Whomsoever It May Concern

This letter is to express No Objection on Mr./Mrs./Ms./Dr. < Participant name > in attending the six days ATAL FDP on “**Reconfigurable Intelligent Surfaces for 6G Wireless Communication: Fundamentals to Future Research Directions**” through online mode conducted at National Institute of Technology Tiruchirappalli from December 23 - 28, 2024.

This certificate is issued as per requirement of AICTE for successful conduction of ATAL Faculty Development Program.

Yours Sincerely,

(Sign & Stamp)

HoI/Competent Authority

Institute Name and Address