



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)

Accredited by NAAC with "A" Grade and NBA(ASE, CE, CSE, ECE, EEE, IT & ME)

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, NTR Dist, Andhra Pradesh, India

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Date:17.02.2025

### REPORT ON EVENT

#### Five Day Faculty Development Programme on

“Next-Generation Wireless Communication Systems: Trends, Technologies, and Future Directions”

**Event Type** : Faculty development program

**Date / Duration** :10<sup>th</sup> -14<sup>th</sup> feb 2025

**Resource Persons** :

Dr. Sourabh Solanki, Assistant professor, NIT Warangal

Dr. Maheswaran P, Assistant Professor, NIT Trichy.

Dr.Hemanth Kumar, Assistant Professor, NIT Trichy.

Dr.Vimal Bhatia, Professor, IIT Indore

Dr. G. Shrikanth Reddy, Assistant professor, IIT Mandi,

**Name of Coordinator** :Dr.M.VenkataSudhakar

**Name of Co-Coordinators** : Dr.P.Rakesh Kumar

**Target Audience** :Faculty and Research Scholars

**Total no of Participants:** 297

#### **Objective of the FDP:**

1. To provide in-depth knowledge of IoT and 5G-6G standards.
2. To explore the design and applications of antennas in modern wireless communication systems.
3. To explore the fundamentals and advancements in SDR for efficient communication systems.

#### **Outcome of FDP :**

1. Understand IoT and 5G-6G standards.
2. Design and simulation of antennas for 5G and beyond.
3. Apply the concepts of SDR for wireless communication.
4. Incorporate new technologies into teaching and research.

#### **Description / Report on Event:**

The Electronics and Communication Engineering (ECE) Department at Lakireddy Bali Reddy College of Engineering, Mylavaram, organized a five-day Faculty Development Program (FDP) on "Next-Generation Wireless Communication Systems: Trends, Technologies, and Future Directions." The FDP commenced with an Inauguration Function, where the Head of the Department (HOD) and the Coordinator shared their insights on the significance and objectives of the program. They encouraged participants to actively engage in the sessions and gain practical knowledge.

On the first day, Dr. Sourabh Solanki, Assistant Professor, Department of ECE, NIT Warangal, delivered a presentation on "Non-Terrestrial Networks for 6G Wireless Communication". On the second day, Dr. Maheswaran P, Assistant Professor, Department of ECE, NIT Trichy, delivered a presentation on "Advancements in Software-Defined Radio." On the third day, Dr. Hemanth Kumar, Assistant Professor, Department of ECE, NIT Trichy, delivered a presentation on "Antennas and Their Applications in Modern Wireless Communications." On the fourth day, Dr. Vimal Bhatia, Professor at IIT Indore, delivered a session on "IoT and 5G-6G Communications." On the fifth day, Dr. G. Shrikanth Reddy, Assistant Professor, School of Computing and Electrical Engineering at IIT Mandi, delivered a session on "Electrically Small Antennas for 5G Applications."

The lectures were highly inspiring and informative for the faculty. A total of 297 ECE faculty members and research scholars attended the FDP. The program concluded with a call to faculty members to effectively apply the acquired knowledge in project implementation, research paper writing, lab development, and syllabus revision.

Below link used for FDP registration:

<https://forms.gle/CEujpMJM1ad9Fyxg8>

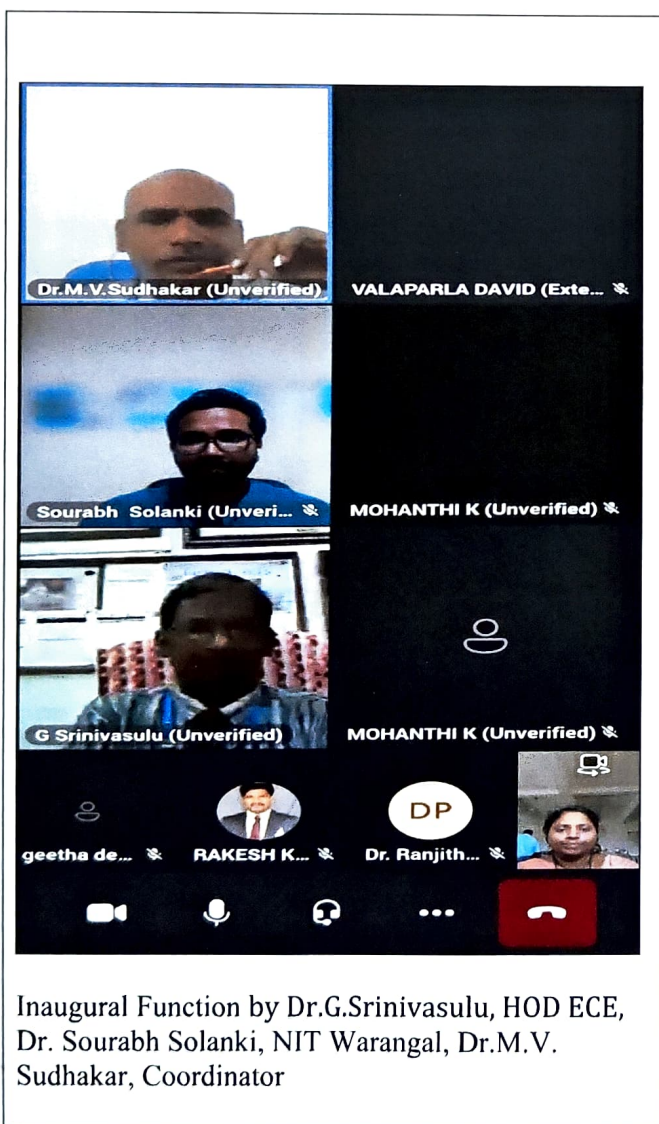
Link given below is used for attending FDP session:

<https://teams.microsoft.com/l/meetup-join/19%3ad4SdJbyjssCNA5uIU5DGbZjCAiycDbsKPrzvMHUID01%40thread.tacy2/1738920591673?context=%7b%22Tid%22%3a%2207f3ae2f-c55d-46be-9215-1453785ba103%22%2c%220id%22%3a%22772a082e-cdd3-42c1-9c84-6965a6c2aff8%22%7d>

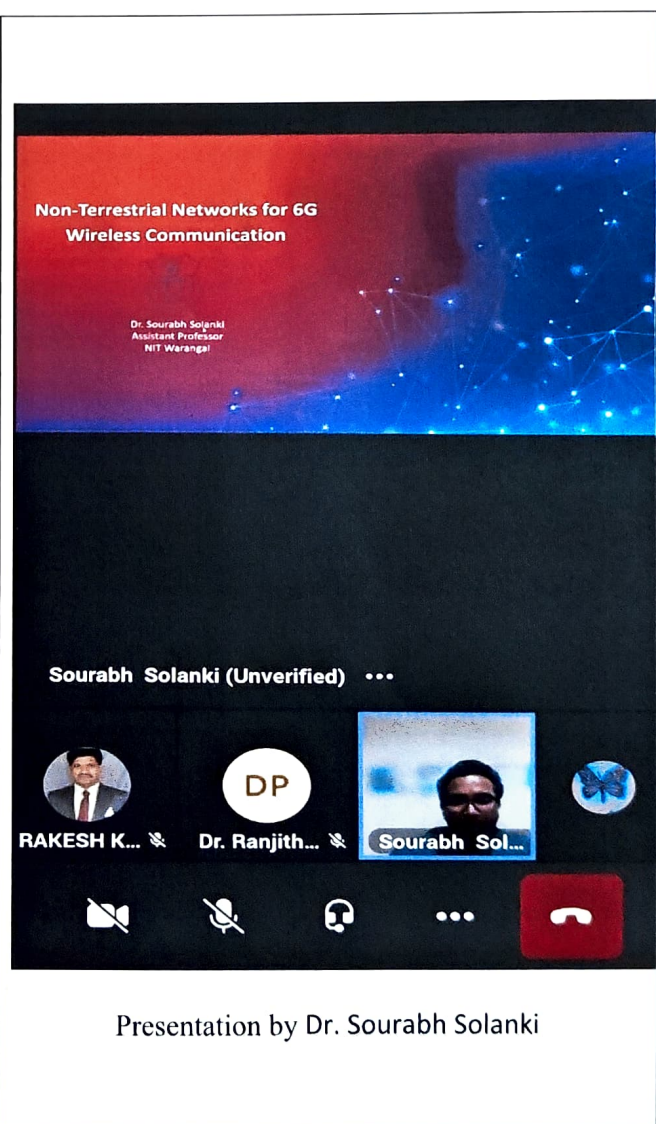
### Feedback / Suggestions:

1. Conduct more number of FDPs on similar advanced topics.

### Photographs



Inaugural Function by Dr.G.Srinivasulu, HOD ECE, Dr. Sourabh Solanki, NIT Warangal, Dr.M.V. Sudhakar, Coordinator



Presentation by Dr. Sourabh Solanki

**ADALM-Pluto SDR Analog Device**

Simplified Block Diagram

Maheswaran Palani

Presentation by Dr. Maheswaran P

**Microstrip Antenna Array - Millimeter Wave**

8x8 EMCP MSA Array at millimeter wave

Gain Plot  
Gain = 24 dBi = 250  
For 1dB Gain Variation,  
BW = 5.4 GHz

Hemanth Kumar

Presentation by Dr.Hemanth Kumar,

**Performance Analysis of Heterogeneous Networks with Non-orthogonal Multiple Access for 5G and beyond Systems**

Case I Case II

Throughput (Mbps)

Prof. Vimal Bhatia (Guest)

Presentation by Dr.Vimal Bhatia

**Multiple stubs resonator loaded ESA: (Measured data)**

ZY Plane radiation pattern

YX Plane radiation pattern

Measured gain and efficiency of proposed ESA

Parameters	Values
Dimension (mm: mm)	28 x 11
Frequency (GHz)	3.300 @ 1.825GHz 3.300 @ 3.300GHz 3.300 @ 3.500GHz
Gain (dBi)	1 @ 1.825GHz 1.2 @ 3.300GHz 1.2 @ 3.500GHz
Efficiency (%)	100
Chk Link	0.96x1

Shrikanth Reddy (Unverified)

Presentation by Dr. G. Shrikanth Reddy



Valedictory Function by Dr. G. Shrikanth Reddy, IIT Mandi, and Dr.G.Srinivasulu, HOD ECE, LBRCE

*M. Mohan*  
FDP Coordinator

*G. Srinivasulu*  
HOD, ECE