



A Report on
3 - DAYS STUDENT WORKSHOP

ON

Advancements in Communication

Technology

(ACT-2024)

20th -22th February, 2024

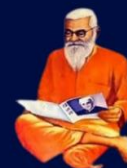
**CoE - ANTENNA , MICROWAVE & RF
ENGINEERING**

In collaboration with TESCA and Jyoti Electronics

Event Poster/Banner



**SWAMI KESHVANAND INSTITUTE OF
TECHNOLOGY, MANAGEMENT &
GRAMOTHAN, JAIPUR**



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CoE- ANTENNA, MICROWAVE & RF ENGINEERING

Presents

THREE DAYS STUDENTS WORKSHOP

(Under the MoU with TESCA and Jyoti Electronics)

**ADVANCEMENTS IN COMMUNICATION TECHNOLOGIES
(ACT-2024)**

(Hybrid mode)



Eminent Speakers

**Mr. Ashutosh Agarwal
Director, TESCA**

**Mr. Parth Agrawal,
Director (Technical),
Jyoti electronics, India**

**Dr. Sanjeev Yadav,
Associate Professor,
Central University, Jammu**



20-22 FEBURARY , 2024



JC BOSE

FACULTY COORDINATORS

**DR. KIRAN RATHI
DR. SUMAN SHARMA
MR. DINESH KUMAR**



SCAN TO REGISTER

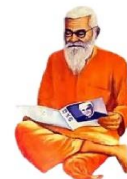
STUDENT COORDINATORS

**VIBHANSH JAIN
AAROHI MALSARIA
DISHIKA SHARMA**

Schedule Of The Event



**SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY,
MANAGEMENT & GRAMOTHAN, JAIPUR**



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
CoE- ANTENNA , MICROWAVE & RF ENGINEERING

Three Days Students Workshop
Advancements in Communication Technologies
(ACT- 2024)
(Hybrid Mode)
Feb 20-22, 2024

20

9:00 am -
9:20 am

Inauguration

TUE

9:20 am -
11:00 am

**Expert talk on applications of IoTs in
Electronics by Mr. Ashutosh Agarwal,
Director, TESCA (Offline mode)**

(Under the MoU with TESCA)

Venue: JC BOSE SEMINAR HALL

21

WED

10:00 am -
12:00 noon

**Expert talk on Smart Antenna Design by
Mr. Parth Agarwal, Director(Technical),
JYOTI ELECTRONICS (Online mode)**

(Under the MoU with JYOTI ELECTRONICS)

Venue: JC BOSE SEMINAR HALL

22

THU

9:00 am -
11:00 am

**Expert Lecture on different use cases of
5G Communication by Dr. Sanjeev
Yadav, Associate Professor, Central
University, Jammu (Online mode)**

Venue: JC BOSE SEMINAR HALL

➤ **Objectives of the event : -**

- To bring together individuals from diverse backgrounds and disciplines to share ideas, spark collaboration, and generate new solutions to technological challenges.
- It might encompass elements of learning, problem-solving, innovation, competition, education, or exploration within the realm of computers and technology.
- To provide attendees with the latest knowledge and insights on emerging technologies and their applications.
- Events provide opportunities for professionals from diverse backgrounds to network, build relationships, and foster collaborations. They can connect with potential partners, investors, mentors, and collaborators who can help advance their projects, research, or business ventures.

➤ **Details (Execution):-**

The 3-Day Workshop was held in hybrid mode which typically involved one offline session which was held on 20th of February and two online sessions held on 21st and 22nd of February consecutively.

- On day 1 - The inauguration took place and an expert talk on applications of IoT in electronics was delivered by Mr. Ashutosh Agarwal Director, TESCA, who discussed the current state and future of IoT in electronics, addressing challenges and opportunities, and also presented a case study of a successful implementation of IoT in electronics, showcasing the real-world impact. Followed by a hands on session in the project lab .

- On day 2 - This session was conducted in online mode which comprised of an expert talk on Smart Antenna Design by Mr. Parth Agarwal , Director (Technical), Jyoti Electronics who provided an in-depth exploration of smart antenna design and discussed various applications of smart antennas, such as 5G communication, wireless networks, radar systems, and satellite communication. and highlighted the emerging advancements and future directions in smart antenna technology.
- On day 3 - An Expert Lecture on different use cases of 5G Communication by Dr. Sanjeev Yadav, Associate Professor, Central University, Jammu. To showcase the diverse use cases of 5G communication through an engaging online presentation and interactive discussion and a deep dive into different sectors where 5G is driving innovation.

➤ **Details/List of Faculty coordinators: -**

Sr. No.	Name of Teacher	Branch
1.	Dr. Kiran Rathi	ECE
2.	Dr. Suman Sharma	ECE
3.	Mr. Dinesh Kumar	ECE

➤ **Details/List of student coordinators:-**

Sr. No.	Student Name	Univ. Roll No.	Year	Branch
1.	Vibhansh Jain	21ESKEC072	III	ECE
2.	Aarohi Malsaria	21ESKEC002	III	ECE
3.	Dishika Sharma	21ESKEC023	III	ECE

➤ **Conclusion of the event:-**

- In conclusion, the 3- day student workshop organized by the Department of Electronics and Communication Engineering ,SKIT Jaipur, exemplifies the participants gained valuable insights into various IoT based applications and improved their technical skills during the workshop.
- Throughout the event, participants were exposed to cutting-edge research, practical applications, and insightful discussions that illuminated the critical role of antennas in enabling the widespread deployment and optimization of 5G networks.

List of Students

Roll no	Name	Year	Branch	Email Id
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➤ **Feedback of the Event:-**

- Combining online and in-person participation allows for wider accessibility and engagement from the audience
- Incorporating presentations, workshops, and discussions caters to different learning styles and interests.
- Participants felt fulfilled and appreciated the hands-on approach, engaging presentations, and practical exercises. Overall, it was a valuable and well-received learning experience for the students.
- Bringing together experts on both antenna and 5G technology provided a comprehensive and interconnected view of the field.

Glimpses Of The Event



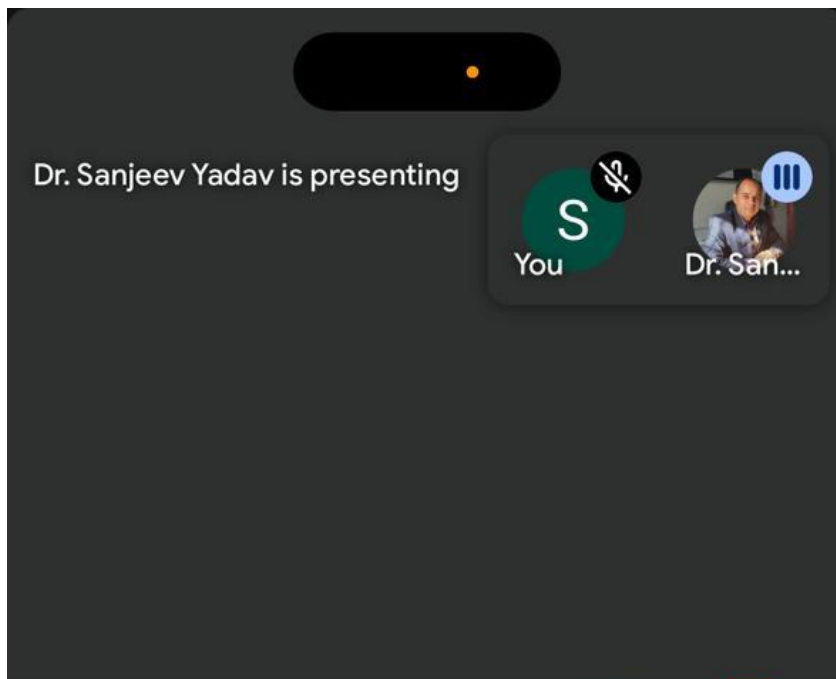












Three key Frequency ranges are currently worthy of consideration for different 5G deployment scenarios

Sub-1 GHz	1-6 GHz	Above 6 GHz
<ul style="list-style-type: none"> • Ideal coverage band could provide a very useful means of extending a superior 5G user experience into rural areas and deep inside buildings. • Could not support extremely wide bandwidths and therefore enable the fastest possible data rates • But Help prevent a new digital divide by ensuring the improved experience. • Reaches more people in both developed, and especially developing, markets. 	<ul style="list-style-type: none"> • There are numerous existing mobile bands between 1 GHz-2.6 GHz, and when 5G technology is ready to deploy there may be others between 2.6 GHz and 4 GHz. • Although these bands offer a reasonable mixture of coverage and capacity they are unlikely to be able to support the highest potential 5G data rates without carrier aggregation. 	<ul style="list-style-type: none"> • This spectrum could support very wide channel sizes and therefore extremely fast data rates, and massive additional mobile network capacity, making it fertile territory for 5G research. • However, heavy reliance on these bands without complimentary lower frequency spectrum may mean 5G services are limited to small urban areas and inside buildings as its radio propagation qualities would favor small cell sizes.

Dr. Sanjeev Yadav is presenting



5G Spectrum

16

Sub-1 (~1 GHz)

- Moderate Ch. Capacity
- Low Speed
- Deep Indoor Coverage
- Pioneer: 700 MHz
- Modes: FDD/SUL

Sub-6 (1-6 GHz)

- Large Ch. Capacity
- High Speed
- Wide Area Coverage
- Pioneer: 3.5 GHz
- All TDD/FDD/SUL/SDL

mmWave (>6 GHz)

- Very Large Ch. Capacity
- Ultra Speed
- Limited Area Coverage
- Pioneer: 26/28 GHz
- Only TDD

Key Advantages of the Sub-6 GHz

- Spectrum sharing: 5G will coexist with 2G/3G/4G having an bandwidth of 1.7 to 2.7 GHz.
- Infrastructure sharing.

5G NR Bands (sub-6 GHz)	Ranges (GHz)	Countries (Licensed 5G Trials)	Duplex Mode
n51	1.427 - 1.432	no country uses this bands	Time Division Duplexing (TDD)
n50	1.432 - 1.517		
n41	2.496 - 2.69	USA	
n38	2.57 - 2.62		
n78	3.3 - 3.8	India, Europe, China, UK, Germany, France, Italy, South Korea, Australia	
n77	3.3 - 4.2	USA, Japan	
n79	4.4 - 5	Japan, china	



Dr. Sanjeev



Vibhansh



You



Dr. Sanjeev



Vibhansh



You



12:44

LTE

gpu-exft-hrx

Users Jyoti is presenting



Abhay

Anupam

S

U

Trying to speak? Turn on your microphone.



Users Jyoti is presenting
▼ gpu-exft-hrx ▶

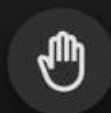


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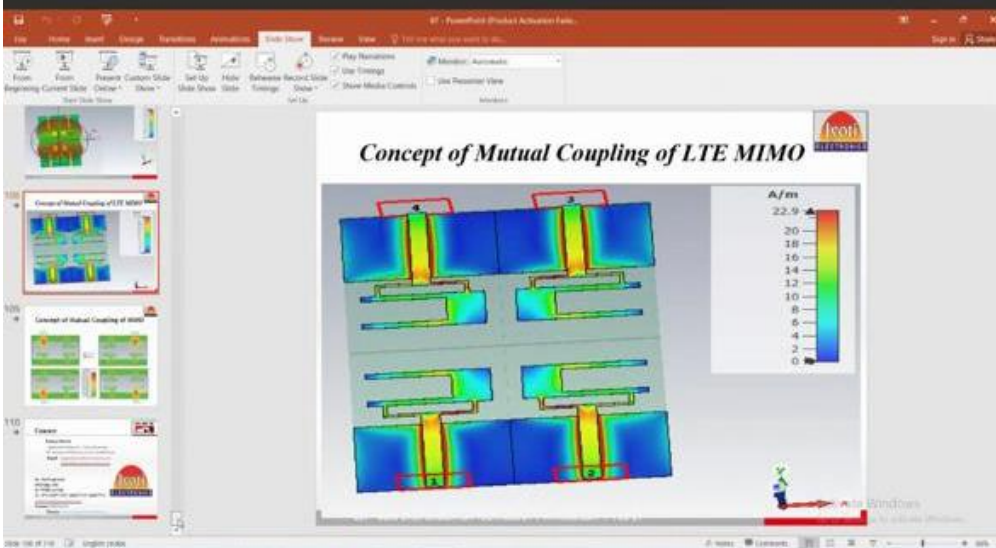
Jyoti ELECTRONICS



Users Jyoti is presenting
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S You
U Users



Certificate of Participation



**Swami Keshvanand Institute of Technology
Management & Gramothan, Jaipur**
Three Days Workshop



ON
Advancements in Communication Technologies (ACT-2024)

Organised by

CoE- Antenna, Microwave and RF Engineering
Department of Electronics & Communication Engineering

In association with



TESCA and Jyoti Electronics



Certificate of Participation

This is to certify that the Mr. **Abhishek Kumar** has participated in the 3 days students workshop on **Advancements in Communication Technologies (ACT-2024)** held from 20/02/2024 to 22/02/2024 at Swami Keshvanand Institute of Technology Management & Gramothan, Jaipur.

Mr. Ajay Singh Rathore
HR Manager, TESCA

Prof. Mukesh Arora
HOD ECE, SKIT

Mr. Parth Agarwal
Director (Technical)
Jyoti Electronics

THANK YOU