

A Five-Day Faculty Development Program on “Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications” - Communication – Reg.

Registrar <registrar@kluniversity.in>

Sat 2024-04-20 10:13 AM

To: Prof. Chandra Prakash <vchandrap@kluniversity.in>; V Srikanth <vsrikanth@kluniversity.in>; Dean - Placements & Internships (International)-K L University <nbvprasaad@kluniversity.in>; K R S Prasad <krsprasad_fed@kluniversity.in>; Slavanya <slavanya_css@kluniversity.in>; Shanmukh <shanmukh_fed@kluniversity.in>; Director-CRT <mvn@kluniversity.in>; prasanth <prasanthyalla@kluniversity.in>; Suman Maloji <suman.maloji@kluniversity.in>; Dr. I. Govardhani <govardhanee_ec@kluniversity.in>; Dr. G. Dinesh Kumar <dinesh@kluniversity.in>; Vemuri Praveen Kumar <vemuripraveen@kluniversity.in>; Sri Kavya K Ch <kavya@kluniversity.in>; Kabir Pasha SM - Director Placements <kabir@kluniversity.in>; loveswara rao Burthi <loveswararao@kluniversity.in>; Ram Prasad <avsrp_me@kluniversity.in>; Radhika Rani Chintala <radhikarani_cse@kluniversity.in>; ravi kumar <ravikumar@kluniversity.in>; Dr. Shaik Razia <skrazia@kluniversity.in>; Pavan Kumar <pavankumar_ist@kluniversity.in>
Cc: PRESIDENT <president@kluniversity.in>; H. <h@klh.edu.in>; Raja Harin koneru <krh@kluniversity.in>; PRO-CHANCELLOR <prochancellor@kluniversity.in>; Vice Chancellor - KLU <vc@kluniversity.in>; Dr. G. P. S. Varma, Vice-Chancellor <gpsvarma@kluniversity.in>; Pro VC <provc@kluniversity.in>; N Venkat Ram <venkatram@kluniversity.in>; Dr Jagadeesh Anne <drjagadeesh@kluniversity.in>

📎 1 attachments (694 KB)

CSRG_FDP_BROCHURE_2024.pdf;

Ref: KLEF/RO/Academic Staff College/2023-24

20th April 2024

Orders of the Hon'ble Vice-Chancellor dt. 20-04-2024

CIRCULAR

Sub: A Five-Day Faculty Development Program on “Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications” - Communication – Reg.

Ref: Letter received from Dr. I. Govardhani, Principal, Academic Staff College, KLEF.

This is to inform that the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff Collège (ASC), KLEF, is organizing a 5-days Faculty Development Program on "**Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications**", from **22nd April 2024 - 26th April 2024** on a Hybrid mode of conduction.

Eminent Speakers from IIT/IITM/OU/Industry have been arranged to share their knowledge. This FDP would provide a forum for exchange of ideas and authoritative views by Research Community from Industry & Academic fraternity.

All the faculty from CSRG cohort and Faculty interested from other cohorts of ECE, Research Scholars, Faculty from other College/University/Institute, Industry are informed to register for the FDP.

Registration link is given below.

<https://forms.gle/RxWheZHdSbvCB9Wa9>

E-Certificates will be provided for all the registered participants of this FDP with a minimum 75% attendance Percentage.

Last Date of Registration is on 20/04/2024.

For any further queries, kindly contact Dr.M.Sujatha, Professor, ECE, Convener, 9941353997, sujaarthik77@kluniversity.in

REGISTRAR

Encl: Brochure

Mail & Hard copy to: Hon'ble President, KLEF

Mail to: Hon'ble Vice-Presidents, KLEF

Mail & Hard copy to: Hon'ble Pro Chancellor

Mail & Hard copy to: Hon'ble Vice-Chancellor

Mail & Hard copy to: Pro Vice-Chancellors

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Mail to: Special Officer -Dr.A. Vani

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Mail to: Chief Technical Officer (CTO)-Mr.A.Satya Kalyan

Mr. Raja Sekhar, Emp. No. 2482, Jr. Network Administrator (E-mail: rajasekhar_syte@kluniversity.in)

Mail to: Professor In-charge, EduTech, Animation-Dr. M. Siva Kumar, Assoc. Professor, ECE

Mail to: Principal, Academic Staff College

HoD-ECE

All Faculty

All Research Scholars

Thanks & Regards



Dr. K. Subba Rao
REGISTRAR

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Faculty Development Programme on

ADVANCED ANTENNA DESIGN AND ITS EMERGING TECHNOLOGIES FOR 5G MM WAVE APPLICATIONS

On Hybrid Mode

22-04-2024 TO 26-04- 2024

RESOURCE PERSON

CH. V R S GOPALA KRISHNA, Professor Former Executive Director ECIL,
Hyderabad,India

Dr. PINKU RAJAN Asst. Professor Dept. of ECE ABV-IIITM Gwalior, M.P, India.

Dr. GUNASEKARAN THANGAVEL Program Director - ETEE&EE Department University
of Technology and Applied Sciences Muscat, Sultanate of Oman

Prof. V. M. PANDHARIPANDE Honorary Director, CEME,UCE(A) Osmania University
Hyderabad, Telangana, India

Mr. RAKESH KUMAR Tech - Lead in Tech Mahindra Bangalore (Karnataka, India)

Dr. SANDEEP KUMAR CHATURVEDI Deputy General Manager and Head- MMIC
Design Center in GAETEC, DRDO, Chair, AP/MTT/EMC Chapter, IEEE Hyderabad Section.

Mr. KAPIL RAM GAVALI, RF Application Engineer ,ICON Design Automation Pvt. Ltd

Dr. SANTHOSH KUMAR Professor, ECE, KLEF .SPIE Fellow, SMIEEE, SMOPTICA

VENUE: Department of ECE, KLEF, Vijayawada

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Academic Staff College



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Faculty Development Programme on “Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications”

Event Date(s) : 22/04/2024 to 26/04/2024

Event Category : Cohort wise FDP(CSRG)

Event Venue / Room No. : Department of ECE, KLEF, Vijayawada

Event Objective : To initiate IEEE COMMSOC student branch at KLEF

The Academic Staff College (ASC) in association with Communication Systems Research Group (CSRG), dept. of ECE has organized a five-day FDP on “**Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications**”, from 22nd April 2024 - 26th April 2024 in Hybrid mode.

This Faculty Development Programme aims,

- To provide a platform to learn and share knowledge on Advanced Antenna design applications. This FDP would provide a forum for exchange of ideas and authoritative views by Research Community from Industry & Academic fraternity.
- To invite outstanding keynote speakers and well-known leading scientists and experts drawn across the globe will be expected to share their knowledge.
- To bring individuals from various fields, and to make a setting in which they can collaborate synergistically, and ideally make new logical outcomes.

This FDP would throw light on the challenges to researchers in their field related to ingenious RF, Antennas, and Wireless Communication. Over and above all, this FDP would open avenues and pave the pathways for the future generations by introducing innovative techniques and paradigms to face the challenges and transform into ‘opportunistic communications.

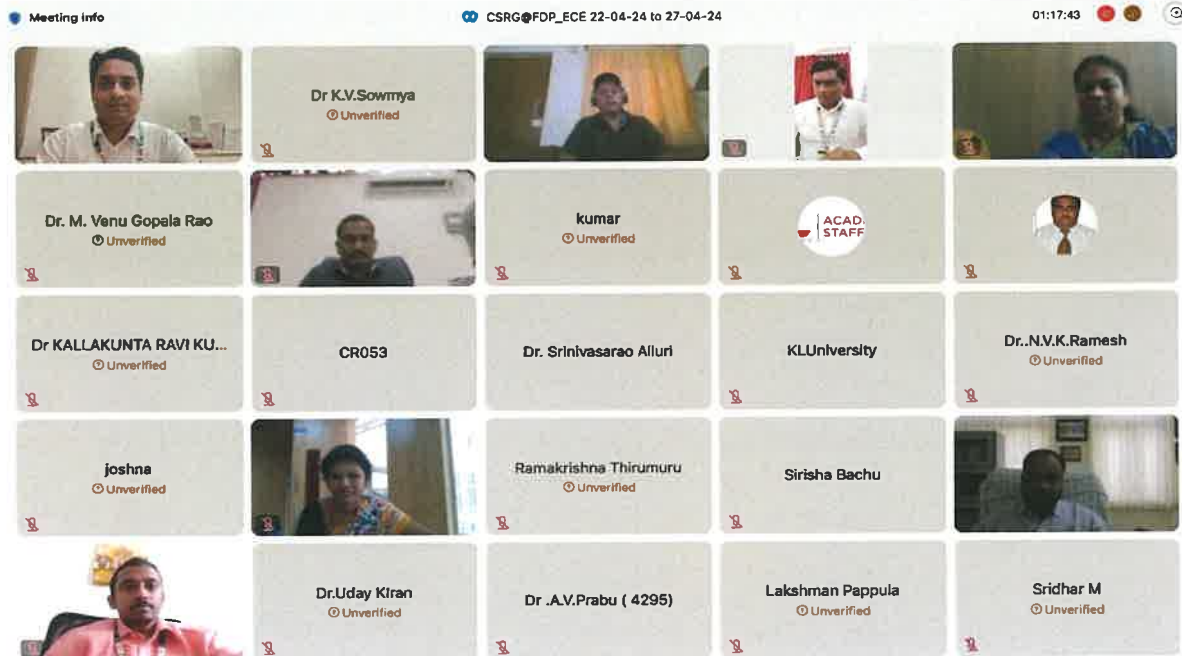
The Inaugural ceremony started with the formal prayer song and all the dignitaries take part in the Lighting of lamp Ceremony on a virtual Platform. On behalf of Management and all the dignitaries, Dr. M Suman, HOD, ECE, Vice-Principal, KLEF and FDP Chair addressed the gathering. Dr. I. Govardhani, Principal Academic Staff College, KLEF delivered the Welcome address. She welcomed the Guest of Honour Mr. Nishant Saxena, Senior Manager, Site Reliability Engineering, Dell Technologies, Invited Speaker Dr. Pinku Ranjan, Assistant Professor, Dept. of Electrical and Electronics Engineering ABV-IIITM Gwalior, M.P, India, faculty members and FDP Participants. Dr. Srinivas Rao, Addl.HOD. ECE, FDP Co-Chair addressed and wished for the FDP event to be a grand success.

The Day wise Schedule is given below:

Date	Timings	Event Description
23/04/2024	2.00 pm to 3.30 pm	Tech. session by Mr. Rakesh Kumar
24/04/2024	2.00 pm to 3.30 pm	Tech. session by Dr. Gunasekaran Thangavel
25/04/2024	10.00 am-12.30 pm	Hands on Session on AWR software tool by Mr. Kenil Ram Goveli
25/04/2024	2.00 pm to 3.30 pm	Tech. session by Dr. Santhosh Kumar
26/04/2024	2.00 pm to 3.30 pm	Tech. session by Prof. V. M. Pandharipande
26/04/2024	3.30 pm to 4.30 pm	Valediction

Day-1: 22-04-2024

Followed by the inaugural Mr. Nishant Saxena, Guest of honour delivered his inaugural address and Dr. Pinku Ranjan delivered his key note on **Recent trend in Millimetre-wave antennas/Dielectric Resonator antennas for Millimetre-wave applications**. Dr. M. Sujatha Professor, ECE, Convener FDP delivered Vote of thanks.



Online Inaugural Session on 22/04/2024

A screenshot of a Zoom meeting. The meeting title is 'CSRG@FDP_ECE 22-04-24 to 27-04-24'. The time is 02:15:20. The speaker is Dr. Pinku Ranjan. The presentation slide is titled 'KNN Regression' and contains the following text:

- KNN is a straightforward and flexible method for performing regression and classification where one uses the nearest neighbors in the training data to directly predict the values in the validation and test data.
- When using the KNN regressor, x represents the input vector, y represents the output vector, and k denotes the number of neighbors used to perform the prediction.
- There are many methods to calculate the distance in the KNN. The most commonly used three methods are Euclidian, Manhattan, and Hamming distances.
- Euclidean distance is given by:

$$d(x, x') = \sqrt{(x_1 - x'_1)^2 + \dots + (x_n - x'_n)^2}$$

The right sidebar shows the list of participants (27):

- DS Dr. M. Sujatha (Host, me)
- Dr. Pinku Ranjan (Presenter, Unverified)
- CR053 (Co-host, kluniversity.in)
- 2389 Mr. Namgiri Suresh (kluniversity.in)
- 2993 Dr. B. Suresh (P. School) (kluniversity.in)
- 4822 Dr. K.V. Sowmya (Unverified)
- 731 Dr. MVN

Buttons for 'Mute all' and 'Unmute all' are visible at the bottom of the participant list.

CSRG@FDP_ECE_22-04-24 to 27-04... Meeting Info Speaking: Dr. Pinku Ranjan 02:15:20

Viewing Dr. Pinku Ranjan's shared content 100%

KNN Regression

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Invite Expand panel to show video

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- CR053 Cohost - kluniversity.in
- 2389 Mr.Namgiri Suresh kluniversity.in
- 2993 Dr.B.Suresh (P.School) kluniversity.in
- 4822- Dr.K.V.Sowmya Unverified
- 731 Dr.MVN

Mute all Unmute all

CSRG@FDP_ECE_22-04-24 to 27-04... Meeting Info 02:28:26

Viewing Dr. Pinku Ranjan's shared content 100%

DR based Multiband MIMO Antenna [6]

Schematic diagram

Fabricated antenna

$|S_{11}|$ and Near field Analysis

Single-Port Analysis

Surface Current Distribution

E-Field Distribution at 5.2 GHz

E-Field Distribution at 3.5 GHz

21

Participants (26)

Invite Expand panel to show video

Participants (26)

- DS Dr. M. Sujatha Host, me
- Dr. Pinku Ranjan Presenter - Unverified
- CR053 Cohost - kluniversity.in
- 2389 Mr.Namgiri Suresh kluniversity.in
- 2488 Dr.Fazal Noorbasha kluniversity.in
- 2993 Dr.B.Suresh (P.School) kluniversity.in
- 4822- Dr.K.V.Sowmya

Mute all Unmute all

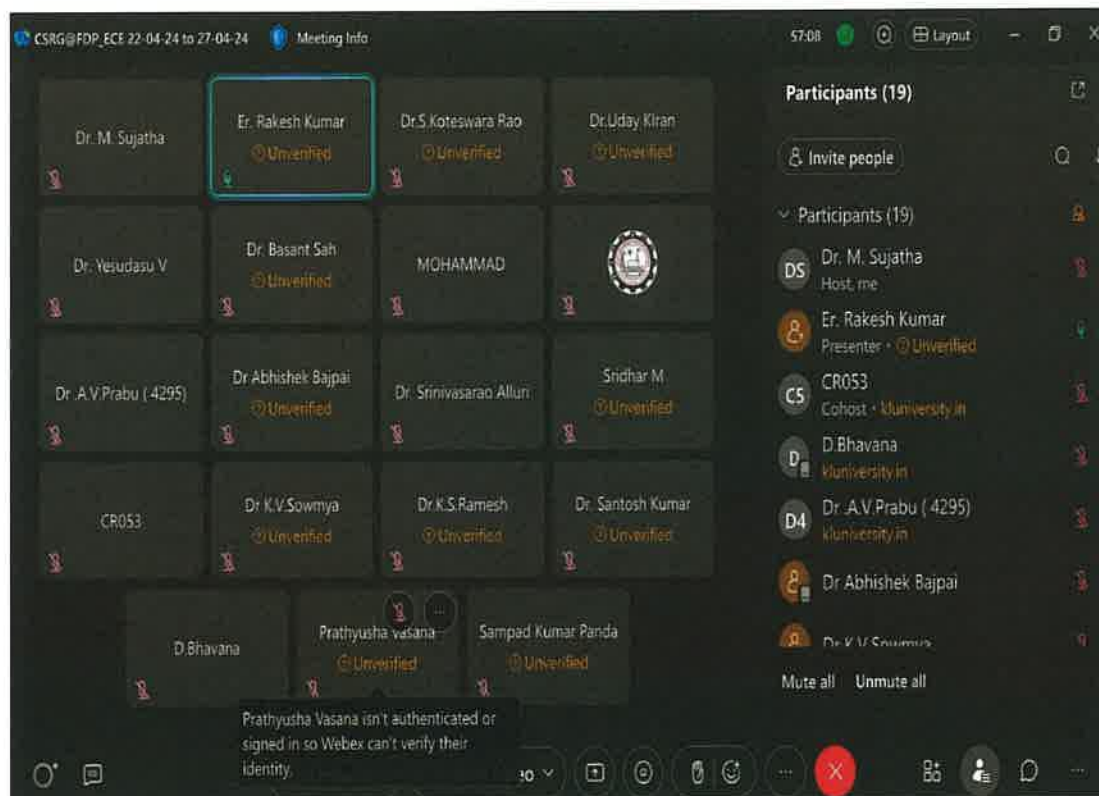
Dr.Pinku Ranjan Key note address an Millimetre wave applications

Day-2: 23-04-2024

The session was handled by Mr.Rakesh Kumar, Tech Lead ,Tech Mahindra ,Bangalore on the topic “**5G evolution and 5G Use Cases**”. Communication networks have come a long way since the introduction of first-generation mobile networks in the 1980s. Since then,

additional services and higher throughputs have constantly been driving newer generations of mobile networks through GPRS/EDGE, HSPA/HSPA+, LTE/LTE-A Pro, and now the fifth generation network that is commonly referred to as 5G or New Radio (NR). It is essential to note that intelligent devices – smartphones, wearables, and sensors – complement this evolution in order to realize the full potential of the given services.

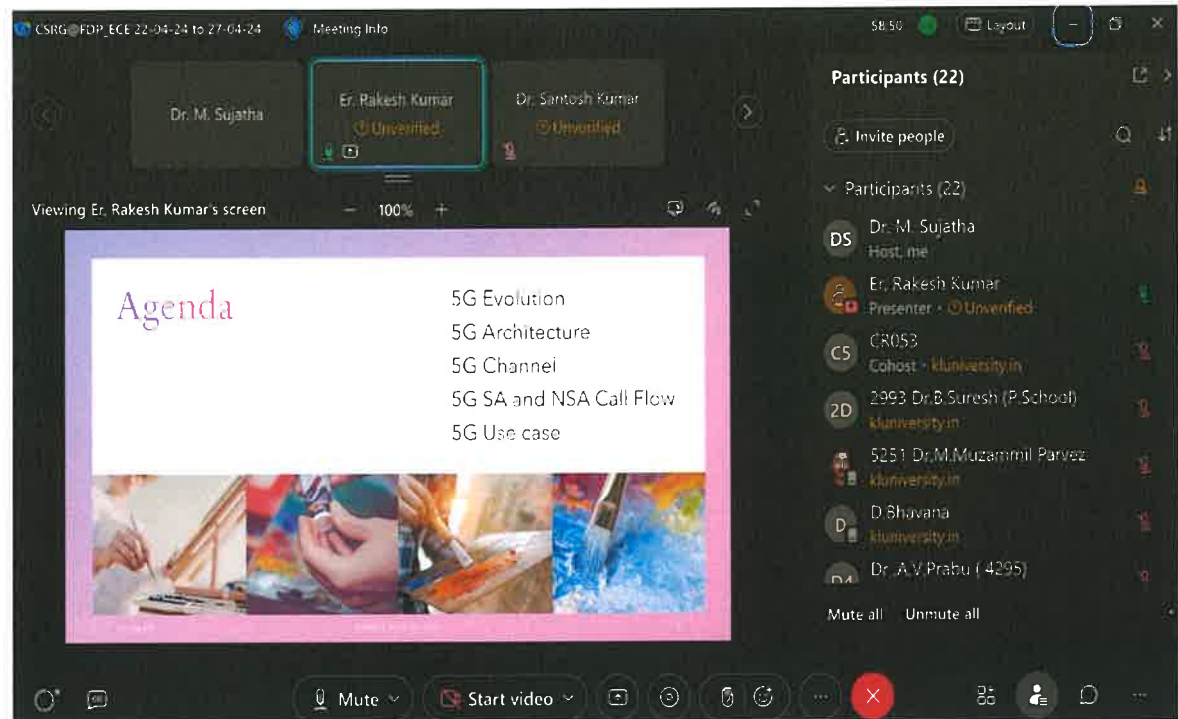
5G, in particular, is seen to catalyze the shift from trivial voice and data services towards advanced time-sensitive and mission-critical services like V2X, IIoT, IoMT, robotics, gaming, and AR/VR. This sets an ideal platform for 6G technology and beyond to enable AI native and futuristic use-cases that will evolve in the current decade.



5G use cases and spectrum band relevance

5G use cases are suitable for different frequency bands due to different requirements in terms of bandwidth, latency, and other performance metrics. The 5G launch band at 3.5 GHz has been used by the majority of networks for initial services but an increase in the harmonised spectrum available will be required to maintain growth in subscribers and speeds. Low, mid-, and high band spectrum are all required to support 5G use cases. Some key industrial 5G use cases like Preventive maintenance through IoT sensors, Productivity and performance

monitoring, Providing internet connectivity to legacy machines without replacement and Controlling robotics remotely with no noticeable delay or interference were also discussed.



Mr.Rakesh Kumar, Tech Lead ,Tech Mahindra ,Bangalore delivered Key note on 5G evolution and 5G Use Case on 23/04/2024

Day-3: 24-04-2024

Session was handled by Dr.Gunasekaran Thangavel , University of Technology and Applied Sciences, , Muscat on ***“on Chip antenna for bio medical Implantable devices”***. Miniaturized integrated antennas are essential to the implementation of novel intelligent systems for wireless communication, RFID, biosensors and other related applications. The on-chip antenna concept is the actual trend in integrated wireless sensor systems because it is a practical solution to compact, small size and low-cost devices for short range applications, like RFID tags and biomedical sensor data transmitters.

Rapid scaling of low-cost CMOS technology has enabled circuits and systems to operate into the micro/millimeter wave frequency band, where the required antenna size shrinks and makes the implementation of an on-chip antenna feasible. An on-chip antenna (OCA)

represents a possible solution for a fully integrated wireless system with no off-chip components, paving the way to new unexplored applications, such as miniaturized sensors for biomedical applications.

The screenshot shows a Zoom meeting window. At the top, the meeting title is 'CSRG@FDP_ECE 22-04-24 to 27-04-24'. The participants list at the top includes Dr. M. Sujatha, Gunasekaran T (Unverified), and CR053. The main screen displays a presentation slide titled 'On-Chip Antennas for Implantable Medical Devices'. The slide content includes the presenter's name, Dr. Gunasekaran Thangavel, his title, Program Director (IIT), and his affiliation, EEE Division, Engineering Department, University of Technology and Applied Sciences, School of Technology of Omer. The slide also features two diagrams of a heart with implanted antennas, labeled (a) and (b). The participants list on the right shows 22 participants, including Dr. M. Sujatha (Host), Gunasekaran T (Presenter), CR053 (Co-host), and several other participants from KJ Somaiya Institute of Technology.

The screenshot shows a Zoom meeting window. At the top, the meeting title is 'CSRG@FDP_ECE 22-04-24 to 27-04-24'. The participants list at the top includes Dr. M. Sujatha, Gunasekaran T (Unverified), and 8028_Mahesh@klu (Unverified). The main screen displays a presentation slide titled 'Low-loss MIMO antenna wireless communication system for 5G cardiac pacemakers (Ref 17)'. The slide content includes a diagram of a human torso with a heart and a pacemaker, connected to a wireless communication system. The diagram shows a '5G cardiac pacemaker' connected to a '5G cardiac pacemaker' via a '5G cardiac pacemaker' and a '5G cardiac pacemaker'. The participants list on the right shows 31 participants, including Dr. M. Sujatha (Host), Gunasekaran T (Presenter), 8028_Mahesh@klu (Co-host), and several other participants from KJ Somaiya Institute of Technology.

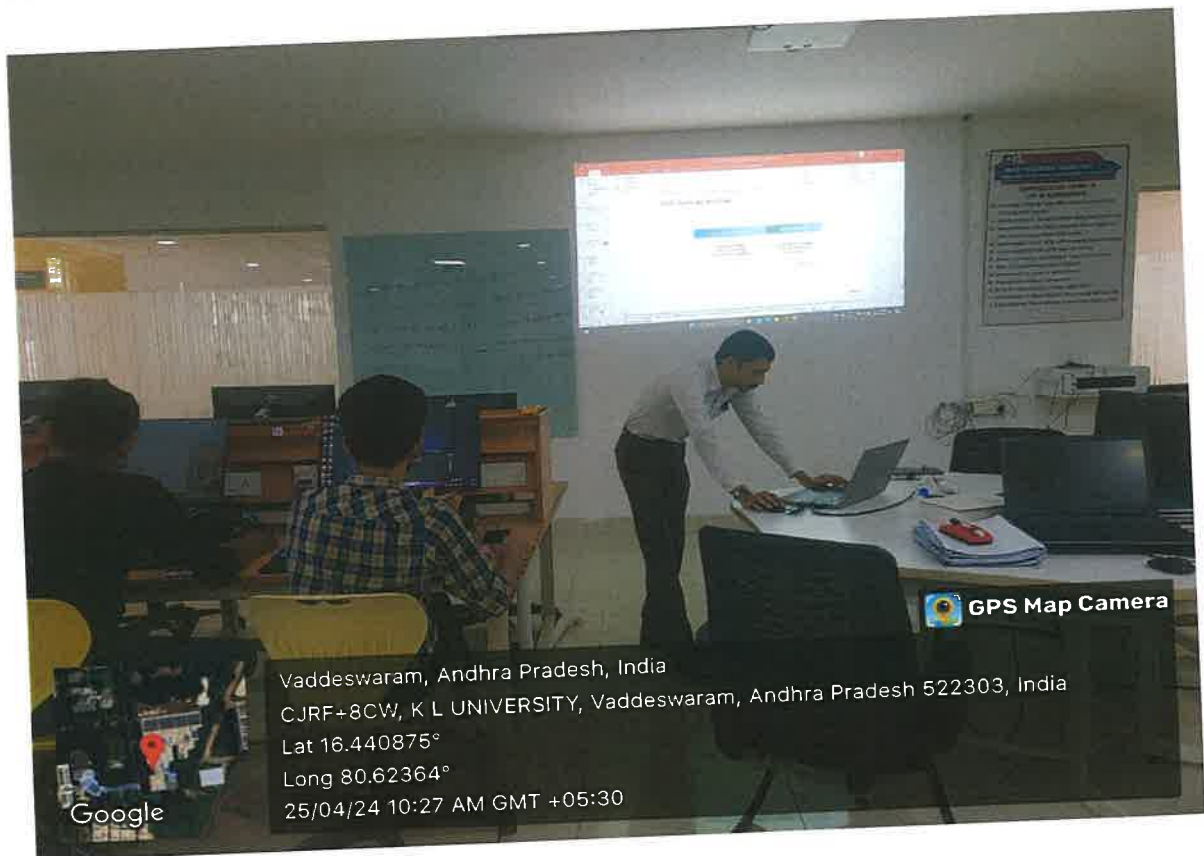
Dr. Gunasekaran Thangavel , Program Director - Electronics & Telecommunication Engineering, Electrical and Electronics Engineering Department, University of Technology

and Applied Sciences, , Muscat, Sultanate of Oman, delivered a FDP session on 24/04/2024, "on Chip antenna for bio medical Implantable devices".

Day-4: 25-04-2024

On the day-4, Mr. Kapil Ram Gavali, RF Application Engineer, ICON Design Automation Pvt. Ltd. delivered a hands-on session on "**Cadence AWR on High frequency antenna design for 5G applications**".

The Cadence AWR Design Environment platform provides RF/microwave engineers with integrated high-frequency circuit, system and electromagnetic (EM) simulation technologies and electronic design automation (EDA) to develop physically realizable electronics ready for manufacturing. The platform helps designers create RF/microwave IP with the aid of complex IC, package, and PCB modeling, simulation, and verification, and address all aspects of circuit behavior to achieve optimal performance and reliable results for first-pass success.



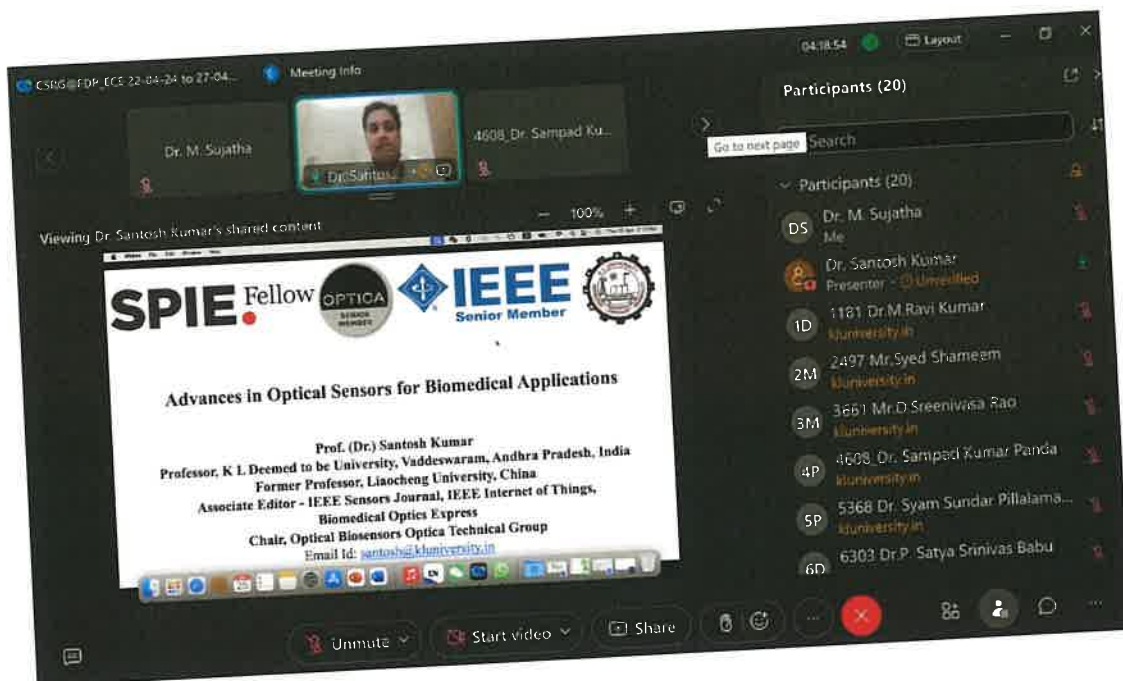


Mr. Kapil Ram Gavali, RF Application Engineer, ICON Design Automation Pvt. Ltd. Delivered Hands on session on Cadence AWR on High frequency antenna design for 5G applications on 25/04/2024, @R204, ECE Department, KLEF.

Day-4: Session-2

On the day-4, session-2, Dr. Santosh Kumar, Professor, ECE, KLEF delivered a session on “**Advances in Optical Sensors for Bio medial Applications**”. With the growing demand for sensitive, label-free, and real-time detection of biological analytes, optical biosensors have emerged as important devices in a wide range of biomedical applications, including medical diagnostics, bioanalysis, and personalised healthcare.

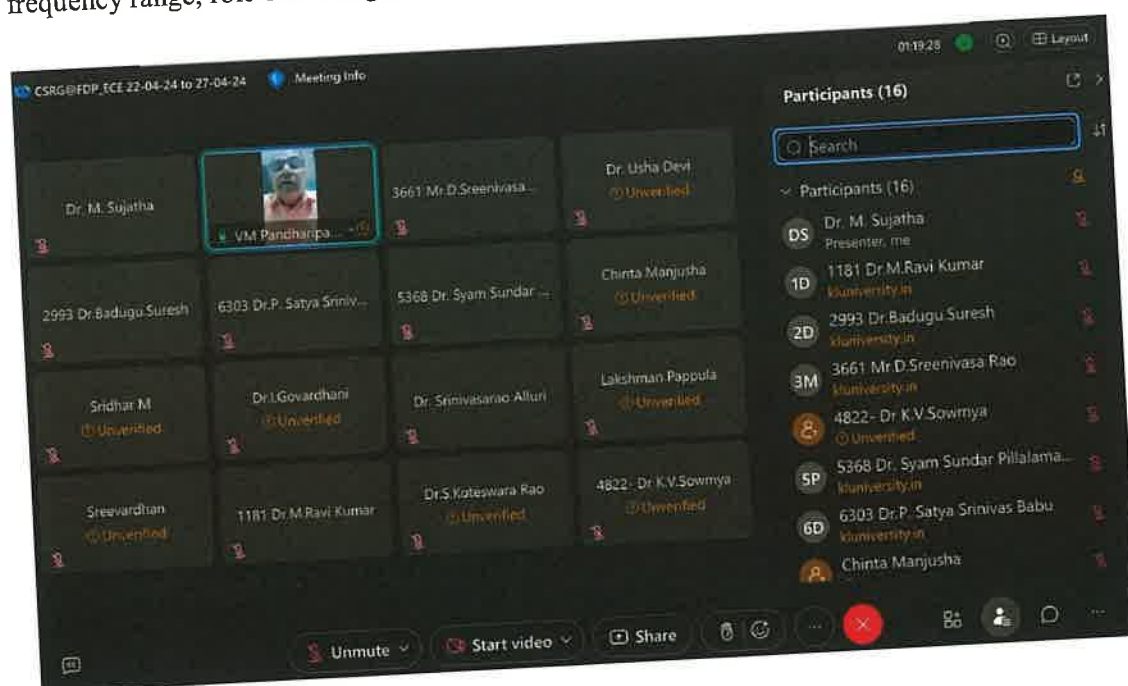




Dr. Santosh Kumar, Professor, ECE, KLEF delivered a session on “Advances in Optical Sensors for Bio medial Applications” on 25/4/2024.

Day-5: 26-04-2024:

On the last day, Dr. V. M. Pandhari Pande, Osmania University, delivered a Technical talk on “**Teaching and Research on RF and Microwave Engineering**”. The session included the definition of RF Microwave engineering, typical applications of RF and microwaves, frequency range, role of RF engineers etc.



Dr.V.M.Pandhari Pande,Professor Honorary Director, CEME,UCE(A),Osmania University, Hyderabad, Telangana, India delivered a Technical talk on Teaching and Research on RF and Microwave Engineering on 26/04/2024.


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29/4/2024

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This is to certify that

Mr/Ms/Dr Dr.M.Ravi Kumar

has attended the 5-days Faculty Development Program on "Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications", Organized by the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff College (ASC),KLEF,from22.04.2024to26.04.2024.

Dr. M. Sujatha
Convener
Department of ECE

Dr. M. Suman
Professor & HOD
Department of ECE

Dr. T. K. RamaKrishna
Principal
College of Engineering

Dr. I. Govardhani
Principal
Academic Staff College



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CERTIFICATE OF PARTICIPATION

This is to certify that

Mr/Ms/Dr Dr.Fazal Noorbasha

has attended the 5-days Faculty Development Program on "Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications", Organized by the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff College (ASC), KLEF, from 22.04.2024 to 26.04.2024.

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This is to certify that

Mr/Ms/Dr Dr.Badugu.Suresh

has attended the 5-days Faculty Development Program on "Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications", Organized by the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff College (ASC),KLEF,from22.04.2024to26.04.2024.

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This is to certify that

Mr/Ms/Dr Dr K Sony

has attended the 5-days Faculty Development Program on "Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications", Organized by the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff College (ASC), KLEF, from 22.04.2024 to 26.04.2024.

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Mr/Ms/Dr Mr.A.V.PRABHU

has attended the 5-days Faculty Development Program on "Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications", Organized by the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff College (ASC),KLEF,from22.04.2024to26.04.2024.

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Mr/Ms/Dr Dr K.V.Sowmya

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This is to certify that

Mr/Ms/Dr Dr.M.Muzammil Parvez

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This is to certify that

Mr/Ms/Dr Dr.P. Satya Srinivas Babu

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Principal
College of Engineering

Dr. I. Govardhani
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This is to certify that

Mr/Ms/Dr Dr.M.Venkata Narayana

has attended the 5-days Faculty Development Program on "Advanced Antenna Design and its Emerging Technologies for 5G mm Wave Applications", Organized by the Communication Systems Research Group (CSRG), Department of ECE, in association with Academic Staff College (ASC),KLEF,from22.04.2024to26.04.2024.

Dr. M. Sujatha
Convener
Department of ECE

Dr. M. Suman
Professor & HOD
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Dr. T. K. Rama Krishna
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