

IIITB COMET Foundation Public Outreach:

IIITB COMET Foundation has initiated the following activities as part of public outreach and skill development:

1. IIITB COMET Foundation Thought Leadership Series on Advanced Communication Systems:

This initiative aims to bring in thought leaders in areas related to Advanced Communication Systems to share their views on the future of communication networks and related aspects. Thus far, we have had one talk in this series (details in table below).

| Date | Title of talk | Speaker(s) |
|----------------|--------------------------------------|--|
| March 25, 2022 | Indigenous 5G Technology Development | Prof. Kiran Kuchi (Dean R&D, IIT Hyderabad) |

2. IIITB COMET Foundation Workshop Series on Advanced Communication Systems:

This initiative aims to upskill human resources in the areas of Advanced Communication Systems. We reach out to students from engineering institutions across India, and to the industry, inviting them to partake in virtual one-day workshops. We have successfully conducted three such workshops (details below; flyers in Appendix A)

| Sl No | Date | Title of Workshop/Webinar | Speaker(s) |
|-------|-------------------|---|---|
| 1 | March 26, 2022 | 5G-NR PHY Layer: Modeling, Technologies, and Standards | Dr. Prem Singh (IIITB) Dr. Ekant Sharma (IIT Roorkee) |
| 2 | May 21, 2022 | Intelligent Reflecting Surfaces: Fundamentals and Applications | Dr. Rajarshi Mahapatra (IIIT NR) Dr. Priyanka Das (IIITB) |
| 3 | July 30, 2022 | Radar Sensing: Fundamentals and Recent Advances | Dr. Vinod Reddy (IIITB) Mr. Vinay Kulkarni (Ignitarium) |
| 4 | December 17, 2022 | Overview of Layer 2 & Layer 3 Protocols and Algorithms for Open-RAN based 5G Base Station | Dr. Saptarshi Chaudhuri (Head of the Radio Access Network System Engineering and L1 Department of Radisys Corporation) |

| | | | |
|---|----------------------|---|--|
| 5 | May 19, 2023 | Various Aspects of Quantum Computing | Dr. Bodhaditya Santra (IIT Delhi) Dr. Atul Kumar (IIT Jodhpur) Jayasri DontaBhaktuni (Mahindra University) Dr. Ishu Gupta (IIITB) Dr. Sachin Punyani (Amazon Web Services) Dr. Shiva Kumar Malapaka / Dr. Dibakar Das/ B.Ashok (IIITB) |
| 6 | June 17, 2023 | Webinar on "5G New Radio Development with MATLAB" | Mr. Tabrez Khan (Team Lead, Application Engineering Team, MathWorks) |
| 7 | June 24, 2023 | Ultra-Low Power Voltage Reference Circuits | Mr. Vinod Menezes (Texas Instruments, Bangalore) and Dr. Manikandan R R (IIITB) |

3. Public lecture series in collaboration with IIITB's Samvaad initiative, on the theme of "5G Verticals and Roll Out"

We partnered with IIITB's Samvaad initiative, with the aim to educate the public on recent happenings in areas related to 5G and wireless communications. These talks were live streamed to the public via YouTube. We had five talks, details of which are included below.

| Date | Title of talk | Speaker(s) |
|---------------|--|---|
| June 06, 2022 | Mobile Edge Computing and it's Standardization Aspects | Prof. Arzad Alam Kherani (IIT Bhilai) |
| June 13, 2022 | Latest Advances in mmWave MIMO and Massive MIMO | Prof. Aditya Jagannatham (IIT Kanpur) |
| June 20, 2022 | AI for Wireless Communications | Dr. Anand Mukhopadhyay & Dr. Praful Pai (MathWorks) |
| June 27, 2022 | Beam Management in 5G: A Stochastic Geometry Analysis | Dr. Sanket Kalamkar (Qualcomm, San Diego, USA) |
| July 04, 2022 | O-RAN Standards and it's Implementation Aspects | Dr. Sai Dhiraj Amuru (WiSig Networks) |

Appendix A

Flyers for IIITB COMET Foundation Workshop Series on Advanced Communication Systems

1.

The flyer is for a workshop series on advanced communication systems, specifically focusing on 5G-NR Physical Layer. It features a central graphic of a city skyline at night with a large, glowing '5G' logo overlaid. The IIITB COMET Foundation logo is at the top. The text 'WORKSHOP SERIES ON Advanced Communication Systems' is in the top right. The main title 'ONE DAY WORKSHOP ON 5G-NR PHYSICAL LAYER' is prominently displayed, followed by 'Modeling, Technologies & Standards'. The date and time 'March 26, 2022 | 09:30 am via Zoom' are in a blue box. Two speakers are featured: Dr. Prem Singh from IIIT Bangalore and Dr. Ekant Sharma from IIT Roorkee. A 'REGISTER NOW >>' button is in the center. At the bottom left is a QR code with the text 'SCAN FOR MORE DETAILS'. At the bottom right, there are registration details and contact information.

IIITB COMET
FOUNDATION

WORKSHOP SERIES ON
Advanced Communication Systems

5G

ONE DAY WORKSHOP ON
5G-NR PHYSICAL LAYER
Modeling, Technologies & Standards

March 26, 2022 | 09:30 am via Zoom

DR. PREM SINGH
IIIT Bangalore

DR. EKANT SHARMA
IIT Roorkee

REGISTER NOW >>

SCAN FOR MORE DETAILS

* Registration mandatory
* Registered participants will receive participation certificates

For more details & free registration visit :
comet.iiitb.ac.in/workshop-5g-nr

Contact us: workshop.comet@iiitb.ac.in

IIITB COMET Foundation
(A Section 8 Company)
Ramanujan block, IIIT Bangalore,
26/C, Electronics City,
Bangalore – 560 100

2.



IIITB COMET
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WORKSHOP SERIES ON
Advanced Communication Systems

INTELLIGENT REFLECTING SURFACES

FUNDAMENTALS & APPLICATIONS

DATE: 21-05-2022, SATURDAY



SPEAKER
**DR. RAJARSHI
MAHAPATRA**
Dr. SPM IIIT Naya Raipur

SESSION 1: 10:00 TO 11:30

- Introduction to 5G & Beyond
- IRS channel modeling

SESSION 3: 14:00 TO 15:00

- Comparison with existing technologies
- Academic and industry initiatives



SPEAKER
**DR. PRIYANKA
DAS**
IIIT Bangalore

SESSION 2: 11:45 TO 13:15

- Applications of IRS in wireless communications
 - Coverage extension, Physical layer security, Cognitive radio, UAV

SESSION 4: 15:15 TO 16:15

- Major Challenges
- Joint active and passive beamforming
- Channel estimation
- IRS deployment
- Future research directions

REGISTER NOW >>



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For more details & free registration visit :
comet.iiitb.ac.in/workshop-5g-irs

Contact us: workshop.comet@iiitb.ac.in

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3.




WORKSHOP SERIES ON
Advanced Communication Systems

ONE DAY WORKSHOP ON


RADAR SENSING:
FUNDAMENTALS AND RECENT ADVANCES

July 30, 2022 | 09:30 am via  Zoom

SPEAKERS




DR. VINOD VEERA REDDY
IIIT Bangalore



MR. VINAY KULKARNI
Ignitarium Technology Solutions

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SCAN TO REGISTER

- * Registration mandatory
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For more details & free registration visit :
comet.iiitb.ac.in/workshop-radar

Contact us: workshop.comet@iiitb.ac.in

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4.

IIITB COMET
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WORKSHOP SERIES ON
Advanced Communication Systems

A central graphic featuring a large, glowing blue '5G' text. Above the '5G' is a blue Wi-Fi symbol. The '5G' is surrounded by several blue square icons, each with a Wi-Fi symbol, connected by thin blue lines. The background is dark blue with a subtle geometric pattern.

ONE DAY WORKSHOP ON
**Layer 2 & Layer 3 Protocols
and Algorithms for Open-RAN based
5G Base Station**

Saturday, December 17, 2022 | 09:30 am via  Zoom

SPEAKER

A portrait of Dr. Saptarshi Chaudhuri, a man with dark hair and glasses, wearing a dark shirt.

DR. SAPTARSHI CHAUDHURI
Head, RAN System Engineering
and L1 Department, Radisys Corporation

REGISTER NOW >>

* Registration mandatory
* Registered participants will receive participation certificates

For more details & free registration visit :
comet.iiitb.ac.in/workshop-layers2and3

Contact us: workshop.comet@iiitb.ac.in

A square QR code with a black and white pixelated pattern.

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5.





IIITB COMET
FOUNDATION

WORKSHOP ON VARIOUS ASPECTS OF QUANTUM COMPUTING

FRIDAY, MAY 19, 2023 | 10AM AT IIITB CAMPUS

Program

| | |
|---|--|
|  <p>10.00 AM - 10.15 AM About COMET and The Workshop MILIND GANDHE CEO, COMET Foundation, IIITB</p> |  <p>10.15 AM - 10.30 AM Introduction to Various Aspects of Quantum Computing SHIVA KUMAR MALAPAKA IIITB</p> |
|  <p>10.30 AM - 11.30 AM Cold atom quantum technologies BODHADITYA SANTRA Assistant Professor of Physics, IIT Delhi</p> |  <p>11.30 AM - 12.30 PM Quantum Information Processing and its potential Applications ATUL KUMAR IIT Jodhpur</p> |
|  <p>2.00 PM - 3.00 PM Hybrid Quantum machine learning methods -Use cases JAYASRI DONTABHAKTUNI Dept of Physics, Mahindra University</p> |  <p>3.00 PM - 3.20 PM Quantum Machine Learning Core Computer Science Applications ISHU GUPTA IIITB</p> |
|  <p>3.40 PM - 4.10 PM A sneak peek into the future with quantum computing and its use cases SACHIN PUNYANI Amazon Web Services</p> |  <p>4.10 PM - 4.30 PM Connectivity in Large Quantum Networks SHIVA KUMAR MALAPAKA IIITB</p> |
|  <p>4.40 PM - 5.00 PM Non-linear Oscillators & Adiabatic Quantum Computation B ASHOK IIITB</p> | |

REGISTER NOW >>

* Registration mandatory

To Register Visit: bit.ly/aqc2023

To Learn More Visit: comet.iiitb.ac.in/workshop-quantum-comp

Contact us: workshop.comet@iiitb.ac.in

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6.



In collaboration with
 **MathWorks®**

THOUGHT LEADERSHIP SERIES

5G NEW RADIO DEVELOPMENT WITH MATLAB

MONDAY JUNE 17, 2023 | 10-11 AM | ONLINE

AGENDA:

- 5G requirements and use cases
- Key 5G physical layer features
- Physical layer simulation with 5G Toolbox
- Industry Success Stories
- Reference Resources, Q&A



SPEAKER
MR TABREZ KHAN
Team Lead,
Application Engineering
Team, MathWorks

REGISTER NOW »

VISIT
bit.ly/5GMAT23



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* Registration mandatory

For more details & free registration visit :
comet.iitb.ac.in/lecture-matlab-5g-nr-dev


Contact us: workshop.comet@iitb.ac.in

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7.



Pioneering Excellence in Education,
Research & Innovation



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FOUNDATION

WORKSHOP SERIES ON
Advanced Communication Systems


ULTRA-LOW POWER VOLTAGE REFERENCE CIRCUITS

SAT, 24-JUNE-2023 | 9:30 AM | HYBRID MODE


WORKSHOP TOPICS:

- Overview of ultra-low power sensor node applications
- Voltage reference performance parameters and circuit topologies
- Band-gap voltage reference circuits
- MOSFET : Sub-threshold region of operation
- Nano-Watt power consumption sub-threshold MOSFET based voltage reference circuits
- Pico-Watt power consumption leakage based voltage reference circuits

SPEAKERS




DR. MANIKANDAN R R
IIIT Bangalore



MR. VINOD MENEZES
Texas Instruments

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bit.ly/ULPV23



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For more details & free registration visit :
comet.iiitb.ac.in/workshop-analog-vlsi

Contact us: workshop.comet@iiitb.ac.in

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