IEEE

MTT-S MHz to THz Community

IEEE AP-S Antennas and Propagation Society 75TH Anniversary

40 YEARS OF IEEE Hyderabad Section

DRDO

IEEE MTT-S & AP-S MAPCON

Microwaves, Antennas and Propagation Conference - 2024

IEEE MICROWAVES, ANTENNAS AND PROPAGATION CONFERENCE

December 09-13, 2024

Hyderabad International Convention Centre, Hyderabad

TECHNICAL PROGRAM BOOK

FOR DETAIL PROGRAM SCAN THE QR CODE

Organised By:

MTT-S / AP-S / EMC-S Joint Chapter, Hyderabad

Day 1 | 10th December , 2024, Tuesday

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6		
	Hall - MRG01	Hall - MRG02	Hall - MRG03	Hall - MRG04	Hall - MRG05	Hall - MRG06	Dining/Exhibition Area	HALL 1
8:30 AM	Tu.1.1: AI/ML for antenna design (6 papers)	Tu.2.1: AI/ML for Devices (6 papers)	Tu.3.1: Linear and Nonlinear MMICs(6 papers)	Tu.4.1: Absorbers (6 papers)	Tu.5.1: Active Circuits (6 papers)	Tu.6.1: THz Systems and Components (Part 1) (6 papers)		
9:00 AM								
9:30 AM								
10:00 AM	**Tea break**							
10:30 AM								Tu.H.2.Inaugural Session
11:00 AM								
11:30 AM								
12:00 PM								
12:30 PM	**Exhibition Inauguration and visit**							
1:00 PM	**Lunch**							
1:30 PM								
2:00 PM								Tu.H.3A: **Maurizio Bozzi**, University of Pavia, Italy, "Microwave Sensors: Operation Principles, Design, and Implementation Technologies", *(Plenary)*
2:30 PM								
3:00 PM	Tu.1.3: **Satish Chandra Rao**, Component and System Level Innovations to enable RF signal chain solutions across diverse markets, Analog Devices India (Keynote)	Tu.2.3: **George Shaker**, University of Waterloo, Canada, "UAV Classification using Radars, AI, and Digital Twins" (Keynote)		Tu.4.3: **Ramesh Gupta**, Ligado Networks, USA ,"Evolution and Application of Phased Array Antenna and Technologies for Satellite Applications," (Keynote)		Tu.6.3: PhD Connect		Tue.6.3B: Radar seekers-RCI (Invited Talks) *(Special Session)*
3:30 PM								
4:00 PM	Tea break							
4:30 PM	Tu.1.4: Everything you need to know about large signal analysis: Configuration, Calibration, Measurement, Data Analysis, and Design, Osman Ceylan, Maury Microwave Inc, USA *(Industry Microapp)*	Tu.2.4: Antenna & RF Front End Design for Monopulse Tracking System, Sumit Garg & Abhishek Tiwari, MathWorks (Industry Microapp)	Tu.3.4: Polarization Converters (8 papers)	Tu.4.4: Wearable Technologies (8 papers)	Tu.5.4: Slotted Antennas (8 papers)	Tu.6.4: Young Professional Panel Discussion / Mentor-Mentee Round table	Tu.DE.4, Antennas: Theory and Design (24 papers) *(Poster)*	Tu.H.4: **Satish Sharma**, "Design and Development of Flat Panel Phased Array Antennas for Wireless and Satellite Communication Applications," San Diego State University, USA *(Keynote)*
5:00 PM								
5:30 PM								Tu.H.4B: **Dirk I. L. de Villiers**, "An Optimal 18 m Shaped Offset Gregorian Reflector for the ngVLA Radio Telescope," University of Stellenbosch, South Africa *(Keynote)*
6:00 PM								
6:30 PM					MAPCON EC Meeting (in Second floor board room 2.06, Only for invited attendees)			Young Professional's Reception
7:00 PM								
7:30 PM								
8:00 PM							Welcome/YP Dinner	
8:30 PM								
9:00 PM								
9:30 PM								

Day 2 | 11th December , 2024, Wednesday

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6		
	Hall - MRG01	Hall - MRG02	Hall - MRG03	Hall - MRG04	Hall - MRG05	Hall - MRG06	Dining/Exhibition Area	HALL 1
8:30 AM	We.1.1: GaN Amplifiers (8 papers)	We.2.1: Intelligent surfaces and their applications in smart reflections absorption, and energy harvesting (8 papers) *(Special Session)*	We.3.1: MIMO Antennas (Part 1) (8 papers)	We.4.1: Radar Remote Sensing (8 papers)	We.5.1, RF Technologies for Defence (8 papers)	We.6.1: Passive Microwave Circuits - 1 (8 papers)		We.H.1: 3MT® Competition
9:00 AM								
9:30 AM								
10:00 AM								
10:30 AM	**Tea break**						We.DE.2: RF devices, components, and systems (20 papers) *(Poster)*	**Tea break**
11:00 AM	We.1.2: High Power Microwave Systems-MTRDC (Invited Talks) *(Special Session)*	We.2.2: Frequency Selective Surface (8 papers)	We.3.2: Bandpass Filters (7 papers)	We.4.2: Sensors for biomedical applications (8 papers)	We.5.2. Dielectric Resonator Antennas (8 papers)	We.6.2: Airborne Radar Systems-CABS/ADE (invited talks) *(Special Session)*		We.H.2: Latest Advance in Radar Technologies-LRDE (5 invited talks) *(Special Session)*
11:30 AM								
12:00 PM								
12:30 PM								
1:00 PM	**Lunch**							
1:30 PM								
2:00 PM								We.H.3: **Branislav Notaros**, "150 Years of Maxwell's Equations and 75 Years of AP-S and CEM, with Emphasis on Current Trends and Interdisciplinary Applications," Colorado State University, USA (Plenary)
2:30 PM								
3:00 PM		We.2.3: **Ahmed Kishk**, Concordia University, Canada, "Efficient antenna array design for mm-wave applications," (Keynote)		We.4.3: **Vikass Monnebhurun**, Centrale, Supplec, France, "Bridging the academia industry divide through IEEE standards," (Keynote)		We.6.3: **Uday Khankhoje**, IIT Madras, India "Beamforming for Intelligent Reflecting Surfaces," *(Keynote)*		We.H.4: Industry Panel Discussion
3:30 PM								
4:00 PM	**Tea break**						We.DE.4: Microwave/Millimeter wave/THz Components, Circuits, and Systems (25 papers) *(Poster)*	**Tea Break**
4:30 PM	We.1.4: Unleashing 5G Potential: Advanced EM Simulations with CST, Dr. Sai Krishna Puranam, CST. India *(Industry Microapp)*	We.2.4: UWB Antennas (8 papers)	We.3.4: Filters (8 papers)	We.4.4: Metasurface beam steering (8 papers)	We.5.4: Phased Array Antennas (7 papers)	We.6.4: Substrate Integrated Waveguide Components (8 papers)		We.H.4: Industry Presentation session
5:00 PM								
5:30 PM								
6:00 PM								
6:30 PM					IETE_MTT-S_AP-S_EMC-S Coordination Meeting (in 2nd floor board room 2.06, only for invited attendees)			Industry Reception
7:00 PM								
7:30 PM								

Day 3 | 12th December , 2024, Thursday

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6		
	Hall - MRG01	Hall - MRG02	Hall - MRG03	Hall - MRG04	Hall - MRG05	Hall - MRG06	Dining/Exhibition Area	HALL 1
8:30 AM	Th.1.1: Solving 3D RF Module Design Challenges with use case pf TRM design for phased Arrays-Anurag Bhargava, Keysight Technologies (Part 1) *(Industry Microapp)*	Th.2.1: Communication Systems (8 papers)	Th.3.1: Reconfigurable Antenna (8 papers)	Th.4.1: Wireless Power Transfer (8 papers)	Th.5.1: Metasurface-1 (8 papers)	Th.6.1: EM Model (8 papers)		Th.H.1: THz Devices, Circuits and Systems for Remote Sensing and Astronomy* (5 papers) *(Special Session)*, ***Goutam Chattopadhyay*** , *JPL, USA, "Highly compact Terahertz Planetary instruments" (Keynote)*
9:00 AM								
9:30 AM								
10:00 AM								
10:30 AM	Tea break						Th.DE.2: Antennas: Theory and Design (Part 2) (16 papers) *(Poster)*	Tea break
11:00 AM	Th.1.2: Solving 3D RF Module Design Challenges with use case pf TRM design for phased Arrays-Anurag Bhargava, Keysight Technologies (Part 2) *(Industry Microapp)*	Th.2.2: Antenna Measurements (8 papers)	Th.3.2: Reflectarray (8 papers)	Th.4.2a: **Madhavan Swaminathan**, "Future of Advanced packaging for mmWave Systems," Pennsylvania State University, USA (Keynote)	Th.5.2: AP-S Masterclass by **Weng Chew**, Purdue University "Classical and Quantum Computational Electromagnetics—An Overview",	Th.6.2: RF Circuits and Systems* (8 papers) *(Special Session)*		Th.H.2: WIE luncheon meeting
11:30 AM								
12:00 PM				Th.4.2b: **Venkata Vanukuru, Global Foundries, Bangalore**, "Past, Present and Future of RF-CMOS Front-end Circuits & Systems",*(Keynote)*				
12:30 PM								
1:00 PM	Lunch							
1:30 PM								
2:00 PM								Th.H.3a: **Ahmed Kishk**, "Compact Reflect/Transmit Array antennas," Concordia University, Canada *(Plenary)*
2:30 PM								
3:00 PM								Th.H.3b: **Ram Narayanan**,"Nonlinear and Harmonic Radar," Pennsylvania State University, USA (Plenary)
3:30 PM	Th.1.4: Chapter Chair Meeting (Joint APS and MTT-S)							
4:00 PM		**Tea break**						
4:30 PM		Th.2.4: Antennas for Radars (8 papers)	Th.3.4: Space Systems and Components (8 papers)	Th.4.4: Antenna Arrays (8 papers)	Th.5.4: Power Amplifier (8 papers)	Th.6.4: RF Circuits and Systems* (Part 2) (8 papers) *(Special Session)*		Th.H.4 Compound Semiconductors : Workhorse of Future Technologies - SSPL Delhi (Invited talks) *(Special Session)*
5:00 PM								
5:30 PM								
6:00 PM								
6:30 PM								
7:00 PM								
7:30 PM							Banquet dinner and Award Ceremony	
8:00 PM								
8:30 PM								
9:00 PM								
9:30 PM								
10:00 PM								

Day 4 | 13th December , 2024, Friday

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6		
	Hall - MRG01	Hall - MRG02	Hall - MRG03	Hall - MRG04	Hall - MRG05	Hall - MRG06	Dining/Exhibition Area	HALL 1
8:30 AM	Fr.1.1: Startup Session (Part 1)	Fr.2.1: Metasurface-2 (8 papers)	Fr.3.1: Antennas for Communications (8 papers)	Fr.4.1: Civilian Radar (8 papers)	Fr.5.1: Passive Microwave Circuits - 2 (8 papers)	Fr.6.1: EMI/EMC (8 papers)		
9:00 AM								Fr. H. 1.A **Sai Santhosh Manepally**, CADFEM India Pvt Ltd, Optimizing Critical Communication Performance in Challenging Environments - A Mission level, Physics-Based approach (Keynote)
9:30 AM								Fr.H.1B: **Usha Verma**, DSP, DRDO, "Revolutionalizing RF Systems for Electronic Warfare-Advancements through Digital Technology" *(Keynote)*
10:00 AM								
10:30 AM	**Tea break**							
11:00 AM	Fr.1.2: Startup Session (Part 2)	Fr.2.2: MIMO Antennas - 2 (8 papers)	Fr.3.2: Space Antennas (8 papers)	Fr.4.2: Reconfigurable Intelligent Surface (8 papers)	Fr.5.2: Patch Antennas (8 papers)	Fr.6.2: Industrial Applications of RF (8 papers)		Fr.H.2: **P.H. Rao** , SAMEER, "Technologies for 6G and India initiatives" (Keynote)
11:30 AM								
12:00 PM								Fr. H.2: **Goutam Chattopadhyay**, Jet Propulsion Lab, USA, "Millimeter-Wave and Terahertz Sources and Detectors for Communication and Radars", *(Keynote)*
12:30 PM								
1:00 PM	**Lunch**							
1:30 PM								
2:00 PM	Fr.1.3: Hands-on Workshop on simulation of Superconducting Qantum Circuits using Keysight Pathwave ADS, Keysight Technologies	Fr.2.3:, Circular Polarization (8 papers)	Fr.3.3: Multiband antennas (8 papers)	Fr.4.3: THz Components and Systems - 2 (8 papers)	Fr.5.3: T/R Module (8 papers)	Fr.6.3: Sensors for biomedical applications (Part 2) (8 papers)		MAPCON Career event (Industry-student interaction sesion)
2:30 PM								
3:00 PM								
3:30 PM								
4:00 PM	**Tea break**							
4:30 PM								Hand-Off meeting & Valedictory Function
5:00 PM								
5:30 PM								
6:00 PM								

Tuesday, December 10

Tuesday, December 10 8:30 - 10:00

Tu.1.1.: AI/ML for antenna design

Room: Hall - MRG01
Chairs: Abhishek K Awasthi, Kumar Vaibhav Srivastava

8:30 ***Optimizing Ultra-Low Sidelobe Level Radiation in Concentric Circular Array Antennas Using Evolutionary Algorithms***
Nageswar Rao Thadikamalla, Sudharani Chidurala and Prakasa Rao Amara

8:45 ***Pattern Synthesis of Linear Antenna Array Using Honey Badger Algorithm***
Abhinav Sharma, Anoop Raghuvanshi and Abhishek K Awasthi

9:00 ***Design and Optimization of Rectangular Dielectric Resonator Antenna for C-Band Frequencies Using Machine Learning Techniques***
Ankita Harkare, Ashwin Kothari, Ankit Bhurane, Nikhil Kakde, Narendra Dhakate and Piyush Pandit

9:15 ***Optimization of 4x2 Slot Array Antenna Based on Gap Waveguide Using Machine Learning Techniques***
Abhay Dwivedi, Ashutosh Dash and Priyansha Kaurav

9:30 ***ML Assisted Reconfigurable MIMO Antenna for 5G Applications***
Akhilesh Kumar, Praveen Kumar, Sushil Kumar Gupta and Vinay Kumar

9:45 ***A Machine Learning Prediction Model for Faster and Smarter MIMO Dielectric Resonator Antenna Design for Wireless Communication***
kartikeya gautam, Yajush Rai, Sunil Jorwal and Smriti Agarwal

Tuesday, December 10 8:30 - 10:00

Tu.2.1: AI/ML for Devices

Room: Hall - MRG02
Chairs: Kirti Dhwaj, Amalendu Patnaik

8:30 ***Efficient Data-Driven Simulation of Microwave Interaction With Complex Plasma Profiles***
Pratik Ghosh, Bhaskar Chaudhury and Shishir Purohit

8:45 ***Aerosol Jet Printing on Kapton for Affordable Millimeter Wave Antenna Prototyping***
Sumin David Joseph, Benedict EG Davies, Matthew MJ Davies, Edward A. Ball and Jon R Willmott

9:00 ***Data-Driven BiLSTM Prediction Model for Dual-Band RF Power Amplifier***
Hemant Kumari, Amartya Paul, Jintu Borah and Shubhankar Majumdar

9:15 ***Machine Learning Approach to Reduce Phase Quantization Error in Transmitarray***
Vimal Kumar, Gunjan Srivastava and Akhilesh Mohan

9:30 ***Prediction of 3D Printed Substrate's Dielectric Constant Using Artificial Neural Network***
Shilpa Pavithran, Amal Pramod, Elizabeth George and Alex James

Tuesday, December 10 8:30 - 10:00

Tu.3.1: Linear and Non linear MMICs

Room: Hall - MRG03
Chair: Jolly Dhar

8:30 ***Fully Balanced Ka-Band Up-Conversion Mixer MMIC With an Integrated Self Biased Amplifier***
Manu Raj, Sandeep K Chaturvedi, Sangam Bhalke and G Ravi

8:45 ***A 5-18 GHz Medium Power Amplifier MMIC With High Gain for Electronic Warfare***
Mandleshwar Kumar Mishra, Amit Prabhat Singh Yadav and Sandeep K Chaturvedi

9:00 ***Design of an MMIC Medium Power Amplifier at 47GHz***
Dhruba Das and Bijit Biswas

9:15 ***Design, Simulation and Stability Analysis of a MMIC Based W-Band Medium Power Amplifier***
Paramita Banerjee, Souma Chatterjee and Arijit Majumder

9:30 ***Ka Band IQ Modulator MMIC With an Integrated Amplifier for SATCOM Application***
Manu Raj, G Ravi, Sandeep K Chaturvedi and Sangam Bhalke

9:45 ***A 3-W, 25 dB Gain, 40 % PAE Three-Stage Ka- Band MMIC Power Amplifier***
Ritan Das, Chiranjit Majumder and Basudev Majumder

Tuesday, December 10 8:30 - 10:00

Tu.4.1.: Absorbers

Room: Hall - MRG04
Chairs: Mahesh P Abegaonkar, Sukomal Dey

8:30 ***A Wideband Photo Paper Based Microwave Absorber***
Satya Prasad Mishra and Sudipta Maity

8:45 ***Wideband Electrically Tunable Metamaterial Absorber Using Varicap and PIN Diode***
Tufail Ahmad Zulfi, Rajan Agrahari and Manpuran Mahto

9:00 ***High Performance Dual-Band THz Metamaterial Absorber for Versatile Biosensing Applications***
Raghvenda Kumar Singh, Ashish Gupta, Pinku Ranjan, Jayant Kumar Rai and Rakesh Chowdhury

9:15 ***Dual Band Polarization Insensitive Metasurface Absorber***
Sudhakar Sahu and Shaik Abdul Khader

9:30 ***Impact of Unit Cell Variation on Visible Spectrum Multiband Metamaterial Absorbers***
Radha Yadav, Mehul Bagaria and Rajib Chowdhury

9:45 ***The Synthesis of Pixelated Wideband Through Multiband Metamaterial Absorber(MA) Using Jumping Spider Optimization Algorithm for Electromagnetic Energy Harvesting Applications***
Prakash Ranjan, Chetan Barde and Shweta Kumari

Tuesday, December 10 8:30 - 10:00

Tu.5.1: Active Circuits

Room: Hall - MRG05
Chairs: Raghvendra Kumar Chaudhary, Puja Srivastava

8:30 ***A High Gain GaAs pHEMT Low Noise Amplifier for Ka-Band Active Phase Shifters***

Nemai Karmakar, Chia-Han Lin, Kim Tuyen Trinh, Hsien-Chin Chiu and Hsuan-ling Kao

8:45 ***Development of High-Power X-Band MMIC SPDT Switch Using Single Series GaN HEMT Switching Device***
Rakhi Kumari, Sangam Bhalke, Meena Mishra and Umakant Goyal

9:00 ***RF Power Characterization of Indigenously Designed and Fabricated 130 Watt GaN HEMT Power Bar in Packaged Form***
Sudhir Kumar, S K Tomar, Sandeep K Chaturvedi, Sangam Bhalke, Mohd Imran, Anupriya Katiyar, Reeta Reeta, Meena Mishra, D S Rawal and Ashish Jindal

9:15 ***Four-Port Inductor Based Current-Reuse VCO With Reduced Current-Crowding Effect and Reduced Phasenoise***
Anirban Mukhoapdhyay and Kaushik Saha

9:30 ***Design and Development of Active Frequency Doubler MMIC at X-Band***
Anil Kumar Gupta, Shruti Sinha, Jolly Dhar and Cvn Rao

9:45 ***Design of Fully Integrated & Linear pHEMT Voltage Controlled Oscillator at 2240±145 MHz***
Gourav Agrawal, Piyush Sinha, Jolly Dhar and Cvn Rao

Tuesday, December 10 8:30 - 10:00

Tu.6.1.: THz Systems and Components (Part 1)

Room: Hall - MRG06
Chairs: Ananjan Basu, Priyansha Kaurav

8:30 ***Design and Optimization of a Dual-Band THz Antenna for 6G Wireless Communication Using Interpolated Quasi-Newton Algorithm***
Gaurav Kumar Soni, Akash Rawat, Dinesh Yadav, Purnima Sharma and Manish Varun Yadav

8:45 ***Thermo-Mechanical Design and Analysis of W-Band Sheet Beam Electron Gun Assembly for Efficient Heat Dissipation***
Subham Chowdhury, Debasish Pal, Devajyoti Das, Ayan Kumar Bandyopadhyay and Anirban Bera

9:00 ***A Low Loss High Isolation SPDT MMIC Switch at 145 GHz***
Dhruba Das and Raumik Manna

9:15 ***On-Chip Terahertz Inverted E-Connected I-Shaped Plasmonic Waveguide Bandpass Filter***
Ashish Kumar, Sarita Raj, Mahima Arrawatia, Ratnajit Bhattacharjee, Debabrata Sikdar and Ashwini Sawant

9:30 ***Development of a Compact and Portable Terahertz Imaging System for Industrial Applications***
A. Mercy Latha and Rishi Ranjan

9:45 ***Design and Analysis of a Planar Multiband Antenna for Applications in Terahertz Spectrum***
Ramakrishna Mahapatra and Surajit Kundu

Tuesday, December 10 10:30 - 12:30

Tu.H.2.: Inaugural Session

Room: Hall: 1

Tuesday, December 10 14:00 - 15:00

Tu.H.3: Microwave Sensors: Operation Principles, Design, and Implementation Technologies

Plenary Session

Dr. Maurizio Bozzi, University of Pavia, Italy

Room: Hall: 1
Chair: Shiban Koul

A broad range of different physical quantities can be determined by adopting electromagnetic techniques at microwave frequency: among them, an important class of sensors aims at the determination of the electric and magnetic characteristics of materials, for instance with the scope to establish the content of a certain element in liquids. Another class of sensors are devoted to the accurate determination of the linear or the angular displacement of a target.

Depending on the intended application, the requested features of microwave sensors are typically the compact size, the low manufacturing cost, and the easy design and fabrication, as well as the good accuracy of the results.

This talk will provide an overview of some recent achievements in the area of microwave sensors, for applications ranging from the characterization of the electrical properties of materials to the determination of rotation and proximity. The use of planar structures and SIW technology, the fabrication by additive manufacturing, as well as the adoption of hybrid solutions will be presented and discussed.

Tuesday, December 10 15:00 - 16:00

Tu.1.3: Component and System Level Innovations to enable RF signal chain solutions across diverse markets

Keynote Talk
Satish Chandra Rao, Analog Devices India

Room: Hall - MRG01

Tuesday, December 10 15:00 - 16:00

Tu.2.3.: Radars for UAV classification

Keynote Talk
Prof. George Shaker, University of Waterloo, Canada

Room: Hall - MRG02
Chair: Shobha S Ram

Tuesday, December 10 15:00 - 16:00

Tu.4.3.: Evolution and Application of Phased Array Antenna and Technologies for Satellite Applications

Keynote Talk
Ramesh Gupta, Ligado Networks, USA

Room: Hall - MRG04
Chair: Narayana Murthy

Tuesday, December 10 15:00 - 16:00

Tu.6.3.: PhD Connect

Social/Networking
Dr. Mridula Gupta, Dr. Jolly Dhar, Dr. Somak Bhattacharya

Room: Hall - MRG06

Chairs: Somak Bhattacharyya, Jolly Dhar

Tuesday, December 10 16:00 - 17:30

Tu.DE.4: Antennas: Theory and Design

Poster Session

Room: Dining and Exhibition Hall

Chair: Madhur D Upadhayay

A CPW-Fed Super Wideband Antenna With Triple Band Notch Characteristics
Sai Chaitanya Petchetty, Murali K H and Yashaswi Ghanapuram

A Millimeter Wave Circularly Polarized Dielectric Resonator Antenna for Ka-Band Applications
Reena Kumari

The Miniature Reconfigurable Circular Disc Monopole Antenna With Tunable Band-Notch Feature
Prachi Joshi, Indra Bhooshan Sharma and MM Sharma

Optimal Design of Planar Log-Periodic Array Antenna: A Revisit Through Theory of Characteristic Modes
Sumithra Panneerselvam, M. Chithra, Naveen Kumar Maurya and Kannadassan Dhanaraj

Dual-Broadband Circularly Polarized Antenna for UWB Applications
Mayur Joshi, Shashank Kumar Yadav, Nitish Kumar Mishra, Vikram Maurya and Sarthak Singhal

A Planar E Shaped Antipodal Vivaldi Antenna With Elliptical Slots for GPR Application
Saptaparna De and Surajit Kundu

A Novel Approach for Isolation Enhancement of Tri-Band Compact MIMO Antenna for Wireless Communication Applications
Inderpreet Kaur and Banani Basu

Metamaterial Loaded MIMO Antenna on Swastika Substrate for DSRC Applications
Devraj Gangwar, Jagannath Malik and Amalendu Patnaik

Advances in Metasurface Antenna for Real-Time Biomedical Applications
Diptiranjan Samantaray, Sathwik Kommuju, Deepak Ram, K. Chaitanya, Biswa Ranjan Swain and Somak Bhattacharyya

Compact SIW Backed Antenna With Integrated Multiplexer for Quad-Band Applications
Vaishali Perumal, Apoorva Shah, Indraneel Ray Chaudhary and Sounik Kiran Kumar Dash

Design and Analysis of a Dual Band Printed Antenna for V2X, HiperLAN2 and Other Wireless Applications
neetu gupta, Prem Pal Singh, Sudhir Sharma and Chandra Shekhar Rajora

Performance Comparison of Time-Modulated Linear Antenna Arrays Using Various Switching Techniques
Kaira Akshara, Gopi Ram, Suneel Varma and Arun Kumar Gande

Dual Polarized Vivaldi Antenna for X- Band Satellite and Radar Applications
Golla Ramyasree and Suman Nelaturi

RHCP and LHCP Helical Antenna Design for GMRT Polarization, Calibration and Testing
Anurag Vilas Wankhede, Sanjeet Rai and Shweta J. Meshram

Progress in ICRF Antenna and Feeder System Research in Tokamak Experiments at IPR
Kishore Mishra, Atul Varia, Sunil Kumar and Dharmendra Rathi

A Compact Inverted I-Shaped HMSIW Antenna

Dhara Milan Patel, Poonam Thanki, Falguni Raval and Kanwar Preet Kaur

A Wideband Dual-Feed Microstrip Antenna With Pattern Diversity
Saurav Roy and K Vinoy

Wide Band Reconfigurable Salt Water Column Antenna for RF Communication
Sarada Sree Atchutuni and Rajesh Kumar

Ground Size Optimization for High Boresight Gain in Offset-Fed Wide Slot Antennas
Ashish Kumar Verma, Rahul Singhal, Ritish Kumar, Abhishek Karwa and Abhishek Joshi

Ultra-Wideband Tx and Rx Discone Antenna for Multi-Frequency Operation
Abhishek Kumar and Lakshminarayana Merugu

Fractal T-Square Antenna for Radar Applications
Prasannajeet Mohanty, Subhasish Pandav and Santanu Kumar Behera

Tweaked Triangular Monopole Antennas for Wide Band Applications
Ajay Prudhvi Raj Pasupula, Kamla Prasan Ray and Sanket Kalamkar

Design and Development of Compact Antenna for 5G Base Station With Stable Radiation Pattern
Natarajamani S and Sasidhar P D P

Design of Dual Band Circular Slot Patch Antenna on Various Textile Substrates for Biomedical Applications in Sub-6GHz
T. Shanmuganantham and Pangaja Preethi R

Design and Analysis of Moon-Shaped CPW-Fed Antenna for Ultra-Wideband Applications
Dheeraj Pandey, Surajit Kundu and Banoth Kavitha

Tuesday, December 10 16:30 - 18:30

Tu.1.4.: Everything you need to know about large signal analysis: Configuration, Calibration, Measurement, Data Analysis, and Design

Industrial Microapps
Maury Microwave Inc, USA

Room: Hall - MRG01
Chair: Osman Ceylan

Tuesday, December 10 16:30 - 18:30

Tu.2.4.: Antenna & RF Front End Design for Monopulse Tracking System

Industry Microapps
Mr. Sumit Garg & Mr.Abhishek Tiwari, MathWorks Inc.

Room: Hall - MRG02

Tuesday, December 10 16:30 - 18:30

Tu.3.4.: Polarization Converters

Room: Hall - MRG03

Chairs: Christophe Fumeaux, Debidas Kundu

16:30 ***Mechanically Reconfigurable Terahertz Quasi-Optical Components for Spectral Filtering and Polarization Control***
Sakib Quader, Xiaojing Lv, Xiaolong You, Rajour Tanyi Ako, Madhu Bhaskaran, Sharath Sriram, Christophe Fumeaux and Withawat Withayachumnankul

16:45 ***Multi-Band and Multi-Functional Reflective Type Polarization Converting Metasurface***
Ajeet Kumar Rathor, Jeet Ghosh, Gopinath Samanta and M. V. Deepak Nair

17:00 ***A High Efficiency Truncated Square-Shaped Multifunctional Reflective Polarizer for Modern Satcom Applications***
Ashish Gupta, Raghvenda Kumar Singh, Pinku Ranjan, Jayant Kumar Rai and Rakesh Chowdhury

17:15 ***Metasurface Based Multi-Band Polarization Converter Using Subwavelength Stepped Impedance Resonator***
Naveen Bhukya, Amartya Banerjee, Tapas Chakravarty, Achanna Anil Kumar and Rowdra Ghatak

17:30 ***A Dual Band Transmittive-Type Linear to Circular Polarization Converter Using Single Layer Metasurface***
Ravi Kumar, Vishnu Kumar Mishra, Biswajeet Mukherjee, Vinit Kumar, Praveen Ambati, Jolly Dhar and Somak Bhattacharyya

17:45 ***Multiple Wideband Reflective Polarizer With Simultaneous Linear-Circular and Linear-Linear Conversion Ability for X to Ka-Band Applications***
Mohammad Abdul Shukoor, Karun Rawat and Sukomal Dey

18:00 ***Transparent and Flexible Wideband Polarization Conversion Metasurface for Aircraft Windows***
K B S Sri Nagini, Vudattu JayaPrakash, Chandu DS and Pooja N Kakani

18:15 ***A Tilted-Modified Phi-Shaped Reflective Type Polarizer for V/W-Band Applications***
Shreya Pourush and Raghvendra Kumar Chaudhary

Tuesday, December 10 16:30 - 18:30

Tu.4.4.: Wearable Technologies

Room: Hall - MRG04
Chairs: Somak Bhattacharyya, Rajesh K Singh

16:30 ***Radar Based Vital Sign Detection***
Pranjali Gaur and Utkarsh Verma

16:45 ***Wearable Antenna Design and Analysis of Active Range of Motion for Upper Limb Movement Using On-Body UWB Channel Parameters***
Yashika Chauhan and Deepika Sipal

17:00 ***Design of Frustum-Shaped Conformal Antennas for Telemetry Operations***
Angel Shiny Chellathurai and Rafi Ullah

17:15 ***Flexible CPW-Fed Antenna for Ultra-Wideband Wearable Application***
Navneet Gupta, Sanjay Prakash Pathak and P R Deepa

17:30 ***A Metasurface-Based Flexible Triple Bandpass Filter in ISM and IoT Bands Towards Wearable Applications***
Arjab Sengupta, Soham Banerjee, Vishnu Kumar Mishra, Gobinda Sen, Sayan Sarkar, Ardhendu Kundu and Somak Bhattacharyya

17:45 ***A Circularly Polarized Wearable Antenna for X-Band Applications***
Rishabh Kumar Baudh, Sonal Sahu, Manoj Singh Parihar and Dinesh Vishwakarma

18:00 ***A Badge Shaped Tri Band Microstrip Patch Antenna for Wireless Applications***
Santosh Kumar Prasad, Reeta Devi, Pranjal Borah and Anupjyoti Sarma

18:15 ***Textile Based Polarization Reconfigurable Aperture Coupled Microstrip Patch Antenna for Wearable Applications***
Reshma Ramesh, Shubhanshi Jain and Chinmoy Saha

Tuesday, December 10 16:30 - 18:30

Tu.5.4.: Slotted Antennas

Room: Hall - MRG05
Chairs: Mohammad Abdul Shukoor, Shubhankar Majumdar

16:30 ***Design and Development of C + Ku Band Shared Aperture Monopulse Antenna***
Swetha Muthyala, Dhananjay Ramachandra Jahagirdar, Nidhi Madhuri Aluwala and Anjaneyulu Lokam

16:45 ***A Wrench-Shaped Wideband Monopole Antenna for Wireless Applications***
Guntuboina Radha Kumari, Santanu Kumar Behera, Ajit Sahoo and Subhasish Pandav

17:00 ***Millimeter-Wave Slotted Metal Cavity Resonator Circular Polarized Antenna***
Vimal Kumar, Nikhil Kumar, Manaswi Singh and Utpal Dey

17:15 ***A CPW-Fed Triple Band Slot Antenna With Symmetrical Stubs for WLAN/WiMAX Applications***
Yashrajsinh Harichandrasinh Solanki, Vivek Kumar Pandit and Abhishek K Awasthi

17:30 ***Cavity Backed Dual-Band Polarization Reconfigurable Slot Antenna for RFID Readers***
Sanket Kalamkar, Rajesh K Singh and KP Ray

17:45 ***Fluid-Driven Pattern Reconfigurable Antenna With Cavity-Backed Slot***
Muhammad Umar Khan, Awab Muhammad, Adnan Nadeem, Ravi Kumar Arya, Prashant Chaudhary and Raj Mittra

18:00 ***SIW-Based Monopulse Antenna for X-Band Tracking***
Subarna Ranjit, Satyajit Chakrabarti and Susanta Kumar Parui

18:15 ***Tolerance Analysis of W-Band Slotted Array Monopulse Antenna***
Swetha Muthyala, Harshitha Modugumudi, Nidhi Madhuri Aluwala, Dhananjay Ramachandra Jahagirdar and Anjaneyulu Lokam

Tuesday, December 10 16:30 - 18:30

Tu.6.4.: Young Professional Session

Mentoring Session
Panel Discussion / Mentor-Mentee Round Table

Room: Hall - MRG06
Chair: Amit Kumar Singh

Tuesday, December 10 16:30 - 17:30

Tu.H.4a.: Design and Development of Flat Panel Phased Array Antennas for Wireless and Satellite Communication Applications

Keynote Talk
Prof. Satish Sharma, San Diego State University, USA

Room: Hall: 1
Chair: Mohammad Jaleel Akhtar

Tuesday, December 10 17:30 - 18:30

Tu.H.4B: An Optimal 18 m Shaped Offset Gregorian Reflector for the ngVLA Radio Telescope

Keynote Talk

Prof. Dirk I. L. de Villiers, University of Stellenbosch, Stellenbosch, South Africa

Room: Hall: 1
Chair: Jawad Y Siddiqui

Tuesday, December 10 18:30 - 20:00

Tu.5.5: Executive Committee Meeting

Meeting

Only for selected invitees

Room: Hall - MRG05

Tuesday, December 10 18:30 - 20:00

Tu.H.5: Young Professional Reception

Social/Networking

Room: Hall: 1

Tuesday, December 10 20:00 - 22:00

Tu.H.6: Welcome Dinner

Social/Networking

Room: Hall: 1

Wednesday, December 11

Wednesday, December 11 8:30 - 10:30

We.1.1: GaN Amplifiers

Room: Hall - MRG01
Chair: Umakant Goyal

8:30 ***Design of X Band 40W GaN Power Amplifier***
Sari S and Tulasi Sivakumar D

8:45 ***High Performance GaN LNA for Space Based Radar Front-End***
Ekta Saini, Santanu Sinha and Punam Tyagi

9:00 ***A Large-Signal AlGaN/GaN HEMT Model for Ku-Band Applications***
Deepti Mongia and Subhash Chander

9:15 ***A Methodology to Characterize the Virtual Gate Effect in a Power Amplifier***
Nagaditya Poluri and Maria Merlyne De Souza

9:30 ***A 42 dB Gain, 16 W X-Band MMIC Power Amplifier With 46% PAE for Satellite Applications***
Sri Sruthi T Sriram, Basudev Majumder and Immanuel Raja

9:45 ***Simplified Doherty Power Amplifier With Harmonic Suppression***
S Indumathi, Kushan Chakraborty, Sion P and Satyanarayana V

10:00 ***Design of a Power Amplifier With Enhanced Power Added Efficiency Using GaN at 60 GHz***
Harshavardhan Singh and Renjitha Unnithan

10:15 ***Design of an Efficient GaN Power Amplifier Using Harmonic Suppression Technique***
Joydeb Mandal, Elumalai Dillibabu, Srinivasarao Rambalapu and Satyanarayana V

Wednesday, December 11 8:30 - 10:30

We.2.1: Intelligent surfaces and their applications in smart reflections absorption, and energy harvesting

Special Session
Room: Hall - MRG02
Chairs: G Shrikanth Reddy, Anirban Sarkar

8:30 ***A Triple Band Polarization Insensitive Graphene-Based Metasurface Absorber in Terahertz Gap***
Ajeet Singh Verma and Somak Bhattacharyya

8:45 ***High Efficient Low Profile Metasurface for RF Energy Harvesting***
Piyush Ranjan, B Kumar and Rajan Agrahari

9:00 ***EM Design of Multifunctional Metasurface for Multiband Polarizer***
Arya K. M., Raveendranath Nair and Shiv Narayan

9:15 ***Ultra-Wideband Dual-Polarized Frequency Independent Reflective Metasurface for RCS Reduction***
Himansu Sekhar Senapati, Ravi Anand, Abhishek Kumar and Anirban Sarkar

9:30 ***A 2-Bit Reconfigurable Intelligent Surface With Wide Beam Steering Angles***
Goundla Sricharani, Patinavalasa Megh Sainadh and Saptarshi Ghosh

9:45 ***Two Dimensional Beam Scanning Using Transmitarray Antenna for X-Band Applications***
Abhishek Kumar, Ravi Anand, Prashant Shah and G Shrikanth Reddy

10:00 ***Miniaturized Dual-Band 2.5D Reconfigurable Frequency Selective Surface for Switching Between Passband and Microwave Absorption***
Soumik Dey, Arun Muthu Ram M and Sukomal Dey

10:15 ***AMC Based Antenna Sensor for Wireless Testing and Monitoring of Dielectric Materials***
Abhishek Kumar, Prakrati Azad and Mohammad Jaleel Akhtar

Wednesday, December 11 8:30 - 10:30

We.3.1.: MIMO Antennas (Part 1)

Room: Hall - MRG03
Chairs: Mohammad Abdul Shukoor, Hemant Kumar

8:30 ***Design and Analysis of a Dual-Port MIMO Antenna for WLAN and n258 Bands With Flexible Configuration***
Manish Sharma, Kanhaiya Sharma, Shailaja Salagrama, Ganga Prasad Pandey and Rana Gill

8:45 ***Design of Orthogonally Placed Trapeze-Spiral MIMO Antenna for Wireless LAN Applications***
Praveena Sambath Kumar, Krishnamurthy Ramanujam and Parthasarathy Ramanujam

9:00 ***Compact Monopole MIMO Antenna With SRR and DGS for Satellite Communication***
Jayraman G, Indrasen Singh and Dilip Kumar Choudhary

9:15 ***A Modified Hexagonal Shaped Sub-6 GHz 5G Antenna in MIMO Configuration***
Rahul Porwal, Rahul Kumar Garg, Nikhil Raj and M. V. Deepak Nair

9:30 ***Four Port MIMO Frequency Tunable Dielectric Resonator Antenna for 5G Sub 6 GHz Application***
Jayant Kumar Rai, Pinku Ranjan, Rakesh Chowdhury, Ashish Gupta and Raghvenda Kumar Singh

9:45 ***A Unique Rectangular Shaped CP THz MIMO Antenna for High Speed Vehicular Communication***
Deepak Solanki, Leeladhar Malviya and Ajay Parmar

10:00 ***Elliptical Shaped MIMO Antenna With Asymmetric Fins for mmWave Application***
Deepak Solanki, Ajay Parmar and Leeladhar Malviya

10:15 ***Dual Band Four Port MIMO Slot Antenna for 5G Millimeter Wave Applications***
Swetha Amit, Sr, Viswanath Talasila, Arvind Kumar G and S G Shivaprasad Yadav

Wednesday, December 11 8:30 - 10:30

We.4.1.: Radar Remote Sensing

Room: Hall - MRG04
Chairs: Tapas Chakravarty, Jolly Dhar

8:30 ***GNLMD-Net: Gaussian Non-Local Means Despeckling Network for ISAR Images***
Palguna Kumar Reddy Gopireddy, Arun Kumar Gande, Gopi Ram and Mohammad Farukh Hashmi

8:45 ***Analysis of Groundwater-Induced Land Subsidence in Kolkata City Using InSAR and Sentinel-1 Data***
Nandita Mukherjee, Tarun P Singh and Biswajeet Pradhan

9:00 ***Implementation of Spectral Estimation With Wavelet Denoising Techniques for Advanced Indian MST Radar: A Comparative Study***
Dhaval Tukaram Chande, Yerram Ravinder, Durga Rao and K M V Prasad

9:15 ***Radiated Mode Characterization of NISAR in CATF-An Overview***
Haindavi Manigilla, Puneet K Mishra, Renuka R, Vivek Rai Srivastava, Pramod V. B. and RV Nadagouda

9:30 ***Improved RF Subsurface Imaging Under Complex Terrain by Synergistic Use of Radar and LiDAR***
Amit Swain, Pathikrit Gupta, Anwesha Khasnobish, Chirabrata Bhaumik, Tapas Chakravarty and Mohammad Jaleel Akhtar

9:45 ***P-Band Frequency Synthesizer for Airborne Synthesis Aperture Radar***
Yudhbir, Ravi Khatri, Piyush Sinha, Jolly Dhar and Cvn Rao

10:00 ***Modular Approach for Frequency Generation in an Airborne SAR System***
Srishti Srivastava

Wednesday, December 11 8:30 - 10:30

We.5.1.: RF Technologies for Defence

Room: Hall - MRG05

Chair: Pathipati Srihari

8:30 ***Development of Advanced Vircator and Its Experimental Results***
Shivabhagya M S, D Senthil Kumar, Simy Antony, Naveen Kumar K S, Rakesh Kumar, Sisir Kumar Nayak and S K Datta

8:45 ***Enhancing Border Surveillance Efficiency Through Edge Computing and Anomaly Detection***
Bhudeb Chakravarti and Moumita Mukherjee

9:00 ***A Multi-Octave EW Receiver in VHF/UHF Band for Strategic Applications***
Virendra Prasad, Lalitha Saripaka, Abhilash Thumiki and Y. Hemalatha

9:15 ***Multiband Jamming Waveform Design for Advanced GNSS Receivers and UAVs***
S Shashank, Vinay B Narayane, Paresh Saxena and Ashutosh Baheti

9:30 ***Real-Time Direction of Arrival Tracking of Drone Utilising Radio Frequency Techniques***
Harsh Kumar, Amit Surpur, Avunuri Manideep and Karun Rawat

9:45 ***Real-Time UAV Detection Through RF Signal Analysis and Machine Learning***
Rana Pratap Yadav and Sunil Kumar

10:00 ***Precision Beamforming for SAGIN Networks: A Reinforcement Learning Approach to Combat UAV Hovering Instability***
Arushi Ananthakrishnan, Akshaya Rajesh, Sudhanshu Arya, Sandhana Mahalingam M, Ying Wang and R.Pandeeswari

10:15 ***A 81.2-83.1 GHz Differential Pulsed Millimeter Wave Voltage-Controlled Oscillator on a 65 nm CMOS Process for Radar and Imaging Applications***
Samiyalu Usurupati, Immanuel Raja, Chinmoy Saha and Yahia M. M Antar

Wednesday, December 11 8:30 - 10:30

We.6.1.: Passive Microwave Circuits (Part 1)

Room: Hall - MRG06
Chairs: Somak Bhattacharyya, Shiban Koul

8:30 ***Design of a Compact 2-Bit PIN Diode Reflection Type Phase Shifter Using Radial Stubs***
Farah Bilawal, Fatemeh Babaeian and Nemai Karmakar

8:45 ***Optimum Design of Non-Quadrature Phase Difference Coupler With Unequal Power Division Using Coupled Lines***
Rakesh Sinha and Rudraswami SU

9:00 ***An Innovative Approach for Microwave Circuit Design and Analysis Using Fully Symmetrical Planar Smith Chart***
Hemant Kumar

9:15 ***Design of Ridge Waveguide Based 16-Way Wideband Radial Power Combiner/Divider***
Elumalai Dillibabu, Rupa Samyuktha Kotla and Sayyad Shahwaz Ali

9:30 ***Flexible Dual Band Matching Solution for Diverse Complex Loads***
Sagili Sudheer Reddy, Swastik Kanjilal, Shaik Sameer Ahammad, Priyansha Kaurav and Sandip Kumar

9:45 ***A Novel Dual-Band Matching Circuit Covering Wide Frequency Ratio Suitable for 5G Applications***
Samyuktha Gundla, Shubham Sharma, Nagaditya Poluri, Avinash Lahgere and Sandip Kumar

10:00 ***Design of a Compact Distributed-Lumped Ka-Band BPF With Wide Stopband in IPD Technology***
Arjun Sadasivan, Jolly Dhar, Shruti Sinha and Cvn Rao

10:15 ***A Compact Five-Port Hybrid Network With Electronic Control of Both Magnitude and Phase***
Shrawan Kumar Patel, Mrinal Kanti Mandal and Mahima Patel

Wednesday, December 11 10:30 - 11:59

We.DE.2.: RF Devices, Components, and Systems

Room: Dining and Exhibition Hall
Chair: Piyush Sinha

Resolution Enhancement of Sub-Wavelength Imaging Using Magnetic-Dominated Fields
Ghazaleh Tashtarian, Ahad Tavakoli, Abdolali Abdipour, Hamid Akbari-Chelaresi and Omar Ramahi

Design & Development of Space Qualified Modular Receiver for Synthetic Aperture RADAR Payloads
Vivan Prakash, Shailendra Singh, Jolly Dhar, Harshita Tolani and Cvn Rao

A 2.45 GHz Rectifier Matching Circuit for Radio Frequency Energy Harvesting
Udayabhaskar Pattapu, Rajasekhar Manda, Sowmya G, K Vijaychandra and Sushrut Das

Continuous Temperature Monitoring of Substation Switchgear Using Wireless Passive UHF RFID Technology
Kamran Arif, Geetha Chakaravarthi and Ashok Kumar Nallathambi

Design and Development Compact Truncated Patch Antenna With Button-Slot Loading for Wearable Devices
Ayyappa Swamy Burra and Bappadittya Roy

Investigation Into Different Materials for Designing a Radome Wall for Airborne Applications
Ravindra B. Sathe and Rashmi A. Pandhare

Non-Invasive Sensor for Hyperglycemia Detection and Monitoring
Shalini Patel, Adarsh Singh, Bappaditya Mandal, Robin Augustine, Rupesh Gupta, Virendra Kumar, Debasis Mitra and Chaitali Koley

Study on the Microwave Disinfection of Food Grains Using 42GHz Gyrotron Source
Braj Kishore Shukla, Sr.

Wideband RCS Reduction of a Microstrip Antenna in Ku Band
Priyanka Das, Lekha P, Ameer Abbas H, Monish Balaji S and T Aishwarya

A-Sandwich Tangent Ogive Radome Operating in X-Band for Airborne Applications
S j Vignesh and Rashmi A. Pandhare

Coaxial Cavity Tunable Bandpass Filter for Radar Applications
Krishnaveni Gannoju, Jr, Anantha Bharathi and G. Ravi Shankar Reddy

An On-Chip Fractal Antenna Using Defective Ground Structure for Compact RFIC Applications
Harshavardhan Singh and Sujit Kumar Mandal

Contoured-Beam Transmitarray Antenna for Satellite Communication
Ramesh Chandra Gupta, Vijay Kumar Singh and Milind B Mahajan

Design and Analysis of 5 Element C-Band and 4 Group X-Band Conformal Shared Aperture Antenna Array for Spaceborne SAR Applications
Bala Ankaiah Nunna and Suman Nelaturi

Dispersion Relation of a Cylindrical Dielectric Coated Conductor
Sudipta Maity

Design and Fabrication of Out of Plane MEMS Actuator Driven by Lorentz Force
Aamir Saud Khan and Bhaskar Mitra

Design of a Compact Dual Layer Filtenna With Good Frequency Selectivity

Veerabhadra Rao Akurathi and Gopi Ram

Design and Analysis of a Compact Filtenna for C Band Applications
Maneesha Dwivedi

Advanced Step Tracking Technique for Improved Satellite Path Prediction
Akula Ramu, Krishna Prasad S, Ramesh Chandra Gupta, Alok Kumar Singhal, Sravan Kumar Sagi, Vijay Kumar Singh and Milind B Mahajan

A SIW Backed Compact Self-Quadruplexing Antenna for C-Band and X-Band Applications
Vaishali Perumal, Yash Vardhan Agarwal, Anurag Rai and Sounik Kiran Kumar Dash

Passive UHF RFID-Based Sensor: Influence of Electrical Conductivity and Localized Surface Cracks on Industrial-Grade Metal Specimens
Setti Suresh and Geetha Chakaravarthi

Wednesday, December 11 11:00 - 13:00

We.1.2.: High Power Microwave Devices and Applications MTRDC

Special Session (Invited Talks)
1. "Application of High Power Gyrotrons in the Field of Fusion Research, Deep Drilling and Space," Dr. BK Shukla, IPR-DAE
2. "High Power Microwave Transmitter for Electronic Attack (EA) Systems," Mr. S Siva Kuamr, DLRL-DRDO
3. "Development of High Power Klystrons at CSIR-CEERI," Dr. AK Bandhopadyay, CSIR-CEERI
4. "Activities in Development of Space Travelling-wave Tube at ISRO-SAC," Mr. Ramagiri Santhosh Kumar, SAC-ISRO
5. "RF Control and Instrumentation for Particle Accelerator," R. T. Keshwani, BARC, Mumbai

Room: Hall - MRG01
Chair: Vishal Kesari

Wednesday, December 11 11:00 - 13:00

We.2.2.: Frequency Selective Surface

Room: Hall - MRG02
Chairs: Animesh Biswas, Amalendu Patnaik

11:00 ***Design and Analysis of a Modified Compass-Cross-Slot Frequency Selective Surface (FSS)***
Santhya Premdharshini P K and R Boopathi Rani

11:15 ***Design and Analysis of Interconnected Square Ring FSS for C-Band Shielding Applications***
Anusuya S and R Boopathi Rani

11:30 ***Broadband Time-Modulated FSS for C, X, and Ku Band Radar Countermeasures***
Baisakhi Bandyopadhyay and Kumar Vaibhav Srivastava

11:45 ***FSS-Based Rasorber With Wideband Absorption and Tunable Transmission***
Vishal Singh, Sagar Bhattacharya and Thottappan M

12:00 ***Design of Dual-Polarized Active FSS Based Rasorber With Switchable Transmission***
Murtaza Waheed, Mehran Manzoor Zargar and Kushmanda Saurav

12:15 ***A Compact Wideband Polarized Insensitive Frequency Selective Absorber***
Ankita Indu, Satyajit Chakrabarti and Susanta Kumar Parui

12:30 ***Sun Inspired Tri-Band FSS Based Absorber With High Angular Stability and Polarization Insensitivity Used for RF Energy Harvesting Applications***

Sagar Bhattacharya, Somak Bhattacharyya and Thottappan M

12:45 ***A Modified Octagonal Ring-Loaded Cross Dipole FSS for mmWave Electromagnetic Shielding***
Archana Kumari, Ruby Sharma, Hamed Rahmani and Raghvendra Kumar Chaudhary

Wednesday, December 11 11:00 - 13:00

We.3.2.: Bandpass Filters

Room: Hall - MRG03
Chairs: Raghvendra Kumar Chaudhary, Arun Kumar Gande

11:00 ***Multimode Selective Wideband Bandpass Filter Using Coupled Lines Loaded With Open Stubs***
Jamel Ben Romdhane Hajri, Sr, Sheng Zhang and Liu Hai

11:15 ***Design of a Distributed Coupled-Line Nonreciprocal Bandpass Filter With Constant Insertion Loss and Tunable Phase Shift via Hybrid Coupler***
Suhail Afroz Mohammad, Arun Kumar Gande and Gopi Ram

11:30 ***Impedance Transforming Inline Bandpass Filter With High Selectivity Using Internal and External Frequency-Variant Couplings***
Vinay Bharat Narayane and Girish Kumar

11:45 ***Design of L Band High Power Coaxial Line Bandpass Filter With Wideband Harmonic Rejection***
Elumalai Dillibabu, Joydeb Mandal and Rupa Samyuktha Kotla

12:00 ***A Compact Microstrip Band-Pass Filter for S/C-Band Applications***
Anil Kumar Nayak, Igor Filanovsky, Kambiz Moez and Amalendu Patnaik

12:15 ***A Compact Bandpass Filter Based on a Multi-Mode Re-Entrant Cavity for 5G Applications***
Malika Somanath and K Vinoy

12:30 ***Electronically Reconfigurable Band Pass Filter for Vehicular Application***
Anil Rajput and Ravi Kumar Gangwar

Wednesday, December 11 11:00 - 13:00

We.4.2.: Sensors for biomedical applications

Room: Hall - MRG04
Chairs: Subhradeep Chakraborty, Sisir Kumar Nayak

11:00 ***A QMSIW Based Antenna Sensor for Breast Tumor Detection***
V L Bhavani Maddirala, Divya Chaturvedi, Arvind Kumar and Ramesh Reddy Bojja

11:15 ***Design of Meta Surface Based Monopole Antenna Sensor for Breast Cancer Detection***
Tiru Ganesh, Divya Chaturvedi, V L Bhavani Maddirala and Arvind Kumar

11:30 ***Design and Assessment of Low Frequency Synchronous Demodulator in Dicke Radiometer for Passive Tissue Thermometry***
Arjun A K and Kavitha Arunachalam

11:45 ***MIABSA: High Sensitivity Metamaterial Inspired Absorber for Biomedical Sensing Applications***
Javaid A. Sheikh, Umhara Rasool, Rehana Amin, Binsha Rashid and Muneeza Mushtaq

12:00 ***Compact Dual Band Implantable Antenna for Bio-Telemetry Application***
Ayush Agrawal, Jeet Ghosh, Gopinath Samanta and M. V. Deepak Nair

12:15 ***Design of RF Biosensor for Blood Glucose Monitoring***
Sanjana Banerjee, Anjan Kumar Kundu and Pujayita Saha

12:30 ***Hairpin Resonator Based Non-Invasive EM Biosensor for Lung Health Monitoring***
Preeti Tiwari, Ravi Anand, Prashant Shah and Anirban Sarkar

12:45 ***Multi-Turn Loop Antenna for Monitoring Internal Brain Temperature***
Arjun A K and Kavitha Arunachalam

Wednesday, December 11 11:00 - 13:00

We.5.2.: Dielectric Resonator Antennas

Room: Hall - MRG05
Chairs: Debatosh Guha, Jaiverdhan

11:00 ***An Artificial Magnetic Conductor Backed Cylindrical Dielectric Resonator Antenna for Portable Wireless Communication Devices***
Nidhi Upadhyay, Amanpreet Kaur, Arnab Pattanayak and Ashima Singh

11:15 ***Circularly Polarized Cylindrical Dielectric Resonator Antenna With a New Rectangular-Frame Aperture Feed for 5G Applications***
Debashis Das and Rajib Jana

11:30 ***A Cylindrical Dielectric Resonator Antenna Based on Apollonian Gasket of Circles***
Mathilda Colaco, Pragati Patel, Mallikarjun Erramshetty, Biswajeet Mukherjee and Mahesh P Abegaonkar

11:45 ***Enforced PEC Boundary Condition to a DML Fed RDRA: A Tri-Mode Tri-Band RDRA for Wireless Applications***
Goffar Ali Sarkar, Syed Enamur Rahaman, Sahin Islam, Sk Islam and Susanta Kumar Parui

12:00 ***Investigation of Dual-Band Dual-Sense Circularly Polarized MIMO DRA for 5G Millimetre Wave Applications***
Ravi Kumar Gangwar, Sanghmitra Sanghmitra, Tripta Kumari and Raghvendra Kumar Chaudhary

12:15 ***Cylindrical DRA Array MIMO System With High Isolation for mm-Wave Band 5G Applications***
Manish Singh, Meenakshi Rawat and Manoj Singh Parihar

12:30 ***Decoupling Dynamics in MIMO DRA: The Impact of Metallic Sheets on H-Plane & E-Plane Antenna***
Gourab Das, Akshit Kandiyan, Rakesh Chowdhury, Pinku Ranjan, Anand Sharma, jaskirat kaur and Arun Kumar Singh

12:45 ***High-Gain Wideband Circularly Polarized Dielectric Resonator Antenna Array for X-Band Applications***
Sonal Sahu, Rishabh Kumar Baudh, Manoj Singh Parihar and Dinesh Vishwakarma

Wednesday, December 11 11:00 - 13:00

We.6.2.: Compound Semiconductors : Workhorse of Future Technologies - SSPL Delhi

Special Session (invited talks)
1 "Compound Semiconductors: Workhorse of Future Technologies, "Dr. Suma Varughese, DG, MCC, DRDO
2. "Compound Semiconductors for THz Applications," Ms. Seema Gautam, Scientist 'F'
3. "Photonic Integrated Circuits: Revolutionizing Defense Systems with High-Speed and Secure Capabilities," Mr. Ashish Jindal, Scientist 'E'
4. "III-V Semiconductors as Future Clean Energy sources," Mr. Roopesh Choubey, Scientist 'F'
5. "Application of Compound Semiconductor in Quantum Technologies," Mr. Umakant Goyal, Scientist 'F'

Room: Hall - MRG06
Chair: Meena Mishra

Wednesday, December 11 11:00 - 13:00

We.H.2.: Ground-Based Radar Technologies LRDE

Special Session (Invited talks) and Keynote

1. Keynote talk, "Latest Advances in Radar Technologies," Dr. G. Vishwam, Sc 'H' &OS, Director, LRDE
2 "3D Printing for Antenna with Embedded Integrated Channels," Dr. Iqbal Ahmed Khan, Sc F, LRDE
3 "Spherical Radomes for AESA Radars," Manjushree Tamang, Sc F
4. "Trends in Receiver Technology & Application in Radars," Sumanta Pal, Sc F
5 "Metamaterial Based Antennas," Preeti D, Sc F
6. "T/R Module Technology Evolution," Swaraj Varshney, Sc E

Room: Hall: 1
Chair: G Vishwam

Wednesday, December 11 14:00 - 15:00

We.H.3.: 150 Years of Maxwell's Equations and 75 Years of AP-S and CEM, with Emphasis on Current Trends and Interdisciplinary Applications

Plenary Session

Prof. Branislav Notaros, Colorado State University, USA

Room: Hall: 1
Chair: Surendra Pal

As a community, just last year we celebrated 150 years of Maxwell's equations, and computational electromagnetics (CEM) has a history of about 75 years. This year the IEEE Antennas and Propagation Society (AP-S) celebrates its 75th Anniversary, as it was founded in 1949. This plenary talk presents a quick overview of 75 years of research in CEM within the AP-S and AP community at large, where both the CEM and AP-S have similar and interwoven histories of 75 years, a half of the history of Maxwell's equations. Current trends and future prospects in CEM are discussed, with an emphasis on an area of paramount importance for AP and CEM where historically progress was slow. The talk presents a synergistic combination of error estimation and control, adaptive refinement, and uncertainty quantification for CEM, which are essential for modern effective and reliable simulation-based design in mission-critical applications. The talk also presents advanced engineering applications combining CEM and AP concepts, techniques, and technologies with emerging interdisciplinary topics, to solve general real-world problems with impacts on wireless communication, medical imaging and diagnostics, and remote sensing/radar meteorology. The applications include cyber-physical systems in smart underground mining; design of RF coils/antennas for next-generation high-field, high-frequency magnetic resonance imaging scanners; direct electromagnetic coupling system for orthopaedic fracture-healing diagnostics, many times faster than using X rays; and optical and radar measurements, modeling, and characterization of snowflakes and snow. While these topics and applications are really "all over" science and engineering, the talk will focus on the strong interweaving common thread among all of them - electromagnetics

Wednesday, December 11 15:00 - 16:00

We.2.3.: Efficient Antenna Array Design for Millimeter-Wave Applications

Keynote Talk

Prof. Ahmed Kishk, Concordia University, Montreal Canada

Room: Hall - MRG02

Wednesday, December 11 15:00 - 16:00

We.4.3.: Bridging the academia industry divide through IEEE standards

Keynote Talk

Vikass Monnebhurun, Centrale, Supplec, France

Room: Hall - MRG04

Wednesday, December 11 15:00 - 16:00

We.6.3: Beamforming for Intelligent Reflecting Surfaces

Keynote Talk
Uday Khankhoje, IIT Madras, India

Room: Hall - MRG06
Chair: Debidas Kundu

Wednesday, December 11 16:00 - 17:30

We.DE.4.: Microwave/Millimeter wave/THz Components, Circuits, and Systems

Poster Session
Room: Dining and Exhibition Hall
Chairs: Subhradeep Chakraborty, Arjuna Muduli

Novel Coupling Design for Substrate Integrated Waveguide Bandpass Filter
Govind Kumar Mishra, Hemendra Kumar Pandey and Nagendra P Pathak

Design of a High Power S-Band Multiple-Beam Klystron
Ashok Bansiwal, P. Shalini, Sushil Raina, V. Nallasamy and Subrata Kumar Datta

Design and Analysis of Logistic Impedance Taper for Distortion Less Pulse Transmission
Sankhadeep Das and Rakesh Sinha

Design of Digitally Reconfigurable Bandwidth and Center Frequency Bandpass Filter
Rupa Samyuktha Kotla, Elumalai Dillibabu and Praveen Gundeti

Low Insertion Loss 6-Bit Phase Shifter With Decoder Control for L-Band Radar
Nikhil Gupta, Bal Mukund Jha, Neeresh Kumar and Seema Doongarwal

Assessment of Binder Aggregate Behavior of Bituminous Mixes Using Log-Periodic Feedlines Based Microstrip Filter
Amartya Paul, Rinaldo Snaitang, Pradeep Kumar Gautam and Shubhankar Majumdar

A Wideband Quasi Hybrid 180° Circulator for Satellite and Radar Applications
Varikuppala Akhila, Bharathi Anantha and G. Ravi Shankar Reddy

A Novel Filtering Balun Implemented in Substrate Integrated Waveguide Technology
Neema S Joseph and Gowrish Basavarajappa

Miniaturized Circular Slotted Crossovers With Defected Ground Structures
Ajay Kumar Singh, Pankaj Kumar, Kamla Prasan Ray and Bibhuti Bhusan Padhy

Design, Simulation and Testing of Wave Collection and Transport System for Michelson Interferometer Diagnostic
Abhishek Sinha and Surya Pathak

A Miniaturized Tunable Dual-Band BPF With CABW Using Stub-Loaded Multi-Mode Single Resonator
Nagendra Kumar and Shriman Narayana

Compact Hexagonal Shaped Multiband Patch Antenna Loaded With Complementary Split Ring Resonators for THz Frequency Applications
Jaiverdhan, MM Sharma, Bhawna Kalra, Deepshikha Lodhi and Sanjeev Yadav

Few-Shot Learning for Defect Classification From Terahertz Images Using Siamese Network With Triplet Loss Function
A. Mercy Latha, Rheva Francis, Bhumireddi Sai Gayathri and Rishi Ranjan

Automation of Conducted Susceptibility Testing According to IEC 61000-4-6
Rakesh Roshan, Mohammad Jaleel Akhtar, A. r. Harish and Shivam Sharma

Bi-Functional Wideband Switchable Metasurface for Cross and Circular Polarization Conversion
Prashant Kumar Rajbhar and Rajan Agrahari

Compact Wideband FSS Band Stop Filter for C, X, and Ku Band Applications
Murakonda Sainath, Mettu Goutham Reddy and Karthikeyan Sholampettai Subramanian

Optically-Driven RIS for Next-Generation 5G Networks
Chandresh Dhote, Vrunda Bhavsar, Anamika Singh and Prabhat Kumar Sharma

Ultrawideband Metasurface Microwave Absorber Based on Laser Induced Graphene
Mohammad Shahnawaz, Himangshu Baskey and Mohammad Jaleel Akhtar

Characterization of Materials to Realize Metasurface Design Through 3D Printing
Sujan Shrestha, Khushboo Singh, Mohsen Asadnia and Karu Esselle

A Single Layer Multi-Functional Reflection Type Polarization Converter for C/X/Ku/K Band Applications
Riya Malia and Archana Rajput

A Narrowband Polarization Insensitive Multifunctional Frequency Selective Surface
Patinavalasa Megh Sainadh and Saptarshi Ghosh

A Metasurface Based Dual Passband Filter With Sharp Rejection for L-Band Applications
Vishnu Kumar Mishra, Ravi Kumar, Biswajeet Mukherjee, Vinit Kumar, Praveen Ambati, Jolly Dhar, Thottappan M and Somak Bhattacharyya

Diagonally Polarized Dual Beam Holographic Metasurface Antenna
Swarnadipto Ghosh, Indranil Ghosh, Subhadrita Ghosh, Priyadarshanam Hari, Chinmoy Saha and Yahia Antar

Parametric Insights Into Square Loop-Based Artificial Magnetic Conductors
Rahul Singhal, Abhishek Joshi, Ashish Kumar Verma, Ritish Kumar and Abhishek Karwa

A Novel Reconfigurable Antenna Sensor Based on Microstrip Circuits for Environmental Monitoring
Lu Yi Liu, Jawad Y Siddiqui, Ajay K Poddar, Ulrich Rohde and Mei Song Tong

A Broadband Metasurface Absorber Based on Indium-Tin-Oxide Thin Film
Xiao Yu Li, Jawad Y Siddiqui, Ajay K Poddar, Ulrich Rohde and Mei Song Tong

Wednesday, December 11 16:30 - 18:30

We.1.4.: Unleashing 5G Potential: Advanced EM Simulations with CST

Industrial Microapps
Dr. Sai Krishna Puranam, CST. India (Industry Microapp)

Room: Hall - MRG01

Wednesday, December 11 16:30 - 18:30

We.2.4.: UWB Antennas

Room: Hall - MRG02
Chairs: Balachary Molupoju, Chinmoy Saha

16:30 ***Miniaturization of CPW Fed Ultra-Wideband Slot Antenna***
Surbhi Arora and Jayanta Mukherjee

16:45 ***Design and Analysis of a Compact Ultra Wideband Antenna With Frequency Notch in WiMAX Band***
Surajit Kundu

17:00 ***Planar Compact Efficient Wideband Antenna for Short Range Communication***
Dheeraj Pandey, Banoth Kavitha and Surajit Kundu

17:15 ***Fractal Inspired Dual-Band Compact UWB MIMO Radiator With Wideband Isolation***
Jeet Banerjee, Manoj Sarkar and Rowdra Ghatak

17:30 ***Performance Investigation of Triangular Lattice Arrangement Based UWB Phased Array for Electronic Warfare Applications***
Mayank Vishwakarma and Nagarajarao Puthalapattu

17:45 ***Magnetic and Dielectric Loaded Miniaturized Ultra-Wide Band Spiral Antenna***
Jayakrishnan VM, Debaprasad Barad and Balachary Molupoju

18:00 ***Dual Wideband High Gain Moon-Shaped Antenna for 5G Millimeter-Wave Energy Harvesting Applications***
Daasari Surender, Mamoni Saha, Taimoor Khan, Anjani Kumar and Fazal A Talukdar

18:15 ***Compact Linearly Polarized Resistor Loaded Bow-Tie Antenna for GPR System***
Gaurav Kumar, Mevada B Pratik, Ramesh Chandra Gupta, Vijay Kumar Singh and Milind B Mahajan

Wednesday, December 11 16:30 - 18:30

We.3.4.: Filters

Room: Hall - MRG03
Chair: A. r. Harish

16:30 ***Second Order Dual-Band Band Pass SIW Filter***
Suresh Kumar Chenna, Runa Kumari and Harish V. Dixit

16:45 ***Compact Wide Stop Band Quarter Mode SIW Bandpass Filter***
Ananya Parameswaran, Ashish Chandelkar and Arvind Kumar

17:00 ***Design and Development of Groove Gap Waveguide Filters for High-Power Space Applications at Q-Band Using Space-Mapping Technique***
Rajni Kant, Deepak Ghodgaonkar, Abhishek Jindal, Parthasarathi Samanta, Hitesh Modi and Praveen Ambati

17:15 ***Magnet-Free Circulator Using BAW Filters Based on Spatiotemporal Modulation for Full-Duplex Applications***
Chedurupalli Shivakumar, Abhilash Thumiki, Lalitha Saripaka and James Raju K c

17:30 ***Compact Triple-Band Bandpass Filter Using Coupled Resonators With Transmission Zeros***
Ramkumar S, Saravanan M, Nyruthi A K, Nishanthan M, Kiruthika V M and Anitha M

17:45 ***Design of Third-Order BPFs With Featured Transmission Zeros for Enhanced Selectivity***
Shriman Narayana, Sivavenkateswara Rao V., Shadab Rabbani, Nagendra Kumar, Sandip Kumar and Yatendra Singh

18:00 ***Comparison of the Performance of Inline Filter Topologies Implementing Transmission Zeroes***
Anjali Kumari, Giuseppe Macchiarella, Nicolò Delmonte, Lorenzo Silvestri, Matteo Oldoni, Steven Caicedo Mejillones, Stefano Moscato and Maurizio Bozzi

18:15 ***High-Performance Compact Lowpass Filter With Controlled Transmission Zeros***
Jyoti, Ashwani Kumar and Amit Birwal

Wednesday, December 11 16:30 - 18:30

We.4.4.: Beam steering with metasurface

Room: Hall - MRG04
Chairs: Tapas Chakravarty, William Whittow

16:30 ***Dual-Frequency, Polarization-Dependent Beam Steering With a Novel Phase-Profiled Metasurface***
Amartya Banerjee, Tapas Chakravarty and Rowdra Ghatak

16:45 ***A Low Profile Planar Metasurface for Near-Field Focusing***
Krishna Kumar, Rashmi Priya and Rajan Agrahari

17:00 ***Multilayer Fourth Order Single Band Aperture Coupled Bandpass Frequency Selective Surface***
Peela Ramanarjuna Srisatya, Prasun Chongder, Animesh Biswas and Soumava Mukherjee

17:15 ***Beam Tilting Phase Gradient Metasurface for mm-Wave Antenna***
Rohit Khandekar and Deepika Sipal

17:30 ***Low Profile Reconfigurable Metasurface in X-Band for Electronic Beam-Steering***
Swaraj Varshney. and Mahesh P Abegaonkar

17:45 ***High Gain Beam Steering 3D Printed Digital Metasurface Lens Antenna for W-Band 6G Terahertz Applications***
Kumari Shurbhi, Amit Kumar Singh and Amratya Khattri

18:00 ***Dual Polarized Beam Switchable 1-Bit Coded Reflective Metasurface***
Atul Kumar and Basudev Majumder

18:15 ***Polarization Agile Multibeam Holographic Metasurface Antenna With Variable Excitation***
Subhadrita Ghosh, Swarnadipto Ghosh, Chinmoy Saha, Aakash Bansal and William Whittow

Wednesday, December 11 16:30 - 18:30

We.5.4.: Phased Array Antennas

Room: Hall - MRG05
Chair: Satish K. Sharma

16:30 ***A High Performance 5-6 GHz GaAs MMIC Beamforming Core Chip for Active Phased Arrays***
Amit Prabhat Singh Yadav, Sandeep K Chaturvedi and Nikhil Bangar

16:45 ***Design and Analysis of 5-18 GHz Planar Coupled Dipole Array Antenna for Phased Array Applications***
Thokala Latha, Gopi Ram, Arun Kumar Gande and Chakravarthy Mada

17:00 ***A Multilayer Stacked Patch Antenna Tile for Octal Digital Transmit/Receive Module of S-Band Dual Polarized Phased Array Antenna***
Tarlok Singh, Indira Srivastava, Bal Mukund Jha and Seema Doongarwal

17:15 ***Staggered Panel Based Approach for GLL Improvement in Large Phased Array for Spacebrone SAR Application***

Mevada B Pratik, Ramesh Chandra Gupta, Vijay Kumar Singh, Sanjeev Kulshrestha and Milind B Mahajan

17:30 ***Sub-Arrays Using CSRR Loaded Dual-Band Microstrip Patch Antennas for MIMO and Phased Array Applications in 6G FR3 Band***
Debaprasad Barad and Debdeep Sarkar

17:45 ***Two-Stage Reference-Free Fault Diagnosis in Phased Array Antennas***
Kp Prajosh, Francesco Ferranti and Uday Khankhoje

18:00 ***Characterization of Fiber-Optics Based Composite Signal Distribution for Phased Array Radar***
Pradnya Kalkundrikar, Deepak N, Kusuma P, Ramesh B, Ramakrishna P and Krishna S Kumar

Wednesday, December 11 16:30 - 18:30

We.6.4.: Substrate Integrated Waveguide Components

Room: Hall - MRG06
Chairs: Aakash Bansal, Soumava Mukherjee

16:30 ***Optically Transparent Corrugated Substrate Integrated Waveguides***
Aakash Bansal and William Whittow

16:45 ***Cascaded Quarter-Circular Mushroom Resonators Loaded to Substrate Integrated Waveguide for Semi Selective Bandpass Filter***
Soumit Samadder Chaudhury, Seema Awasthi and Rajat Kumar Singh

17:00 ***Parametric Analysis and Design Methodology for Integrated Digitated Capacitor-Based Corrugated Substrate Integrated Waveguides***
Aakash Bansal, Chinthana J Panagamuwa and William Whittow

17:15 ***Gain Enhancement of Substrate Integrated Waveguide Based Cavity-Backed Slotted Planar Antenna Array Using FSS Superstrate***
Rimi Sengupta, Ayan Chatterjee, Soumen Banerjee, Susanta Kumar Parui and Monojit Mitra

17:30 ***Design of a Planar Multi Layer Reconfigurable SIW Band Pass Filter for 5G Applications***
Debapriya Sen, Anand Mohan Tripathi, Harikrishna Avirneni and Satyanarayana V

17:45 ***Miniaturized High Selectivity Half-Mode SIW Bandpass Filter***
Sambaiah Pelluri, Nagaraju P and Machavaram V. Kartikeyan

18:00 ***Novel Probe-Fed SIW to Dielectric Waveguide Transition for Ku-Band Applications***
Sunil Kumar Sahoo, Mohammad Jaleel Akhtar and Animesh Biswas

18:15 ***A Single Complementary Split Ring Shaped Fixed Frequency SIW Resonator for Rotation Sensing Application***
Rachna Prabha, Prashant Kumar Varshney and Govind Murmu

Wednesday, December 11 16:30 - 18:30

We.H.4.: Industry Session

Special Session
Panel Discussion and Presentations

Room: Hall: 1
Chair: Debabani Choudhury

Wednesday, December 11 18:30 - 20:30

We.H.5.: Industry Reception

Social/Networking

Room: Dining and Exhibition Hall

Thursday, December 12

Thursday, December 12 8:30 - 10:30

Th.1.1.: Solving 3D RF Module Design Challenges with Use Case of TRM Design for Phased Arrays (Part 1)

Industry Microapp

Keysight Technologies

Room: Hall - MRG01

Chair: Anurag Bhargava

Thursday, December 12 8:30 - 10:30

Th.2.1.: Communication Systems

Room: Hall - MRG02

Chairs: Padmanava Sen, Madhur D Upadhayay

8:30 ***Co-Existence Filter Analysis of FSS-ES and 5G Base Stations***
Vidyalakshmi Mandakolathur Ravi, Ratnesh Kumar Gaur and Girish Chandra Tripathi

8:45 ***Orthogonal Chirp Orbital Angular Momentum Beams***
Ravi Kadlimatti and Farhana Firdous

9:00 ***Experimental Demonstration of SIC in a Co-Linearly Polarised Full-Duplex Antenna for 6G and Its Multi-Element Implementation***
Jogesh Chandra Dash and Debdeep Sarkar

9:15 ***Shared Radiator Full Duplex Antenna for Wi-Fi Application***
Raghvendra Pratap Singh and Mahesh P Abegaonkar

9:30 ***Optimum RF Carrier Pair Allotment Based on IMD Minimising Strategies***
Pooja Prajapat

9:45 ***Analysis of a Concave Cylindrical Rectangular Microstrip Antenna for GSM-Band Application***
Mirza Wazed Ahmed Begg and Sudipta Maity

10:00 ***Performance Analysis of Millimeter Wave Radar Waveforms for Integrated Sensing and Communication***
Akanksha Sneh, Aakanksha Tewari, Shobha S Ram and Sumit Jagdish Darak

10:15 ***Analysis of Analog Radio-Over-Fiber Link for 5G NR Fronthauling in N258 Frequency Band***
Manas Srivastava and Krishna S Kumar

Thursday, December 12 8:30 - 10:30

Th.3.1.: Reconfigurable Antennas

Room: Hall - MRG03

Chairs: Manoj Singh Parihar, Amit Kumar Singh

8:30 ***A Novel Frequency-Reconfigurable Antenna Employing Solid Dielectric Variation***
Shrinjoy Chatterjee, Nrusingha Charan Pradhan and Chinmoy Saha

8:45 ***A Frequency Reconfigurable Magnetic Dipole Based Electrically Small Quasi-Isotropic Antenna***
Jyotibhusan Padhi, Rushiraj Jawale, Awanish Kumar, Prashant Shah and G Shrikanth Reddy

9:00 ***Harmonic Beam Steering With 2-Bit Equivalent Phases Using a 1-Bit Time-Domain Coding Metasurface***
Deepak Kumar Sahoo, Debidas Kundu and Amalendu Patnaik

9:15 ***Polarization Reconfigurable Inverted F Antenna for Multiband Applications***
Hirak Keshari Behera, Arjuna Muduli and Laxmi Prasad Mishra

9:30 ***Design of a Multilayer Transmissive-Reflective Frequency Selective Surface With Wide Stop-Band for mmWave Applications***
Alka Dileep, Sanjana Paul, Raghvendra Kumar Chaudhary and Kumar Vaibhav Srivastava

9:45 ***Compact VHF/UHF Wideband Omnidirectional Antenna Using a New Modified Reflective Ground Plane for Gain Enhancement***
Rishabh Raj, Anubhav Kumar and Raghvendra Kumar Chaudhary

10:00 ***Design and Analysis of Compound Reconfigurable Antenna for IRNSS Band Applications***
Minakshmi Shaw, Pradeep Kumar, T. Saravanakumar and Yogesh Kumar Choukiker

Thursday, December 12 8:30 - 10:30

Th.4.1.: Wireless power transfer

Room: Hall - MRG04
Chairs: Vinay Bharat Narayane, Sisir Kumar Nayak

8:30 ***RFR-Based ML for Predicting Radiation Properties of MM Lens Antenna in Microwave WPT***
Shashank Kulkarni, Niraja P Sanghai, Amarnath Kumar, Chayanika Baishya and Sisir Kumar Nayak

8:45 ***Orientation Independent Wireless Power Transfer System Design Utilizing Negative Refractive Index Metasurface***
Nilanjan Dutta, Shrabani Mukherjee and Kaushik Mandal

9:00 ***Computerised Numerical Control Machined Fresnel Zone Lens for Efficient Radiative Microwave WPT at 5.8 GHz***
Amit Kumar Baghel, Helena Ribeiro, Nuno Borges Carvalho, Pedro Pinho, Jorge Luís and Martinho M. Oliveira

9:15 ***A Wideband Polarization-Insensitive Metasuraface Absorber for Harvesting RF Energy & Wireless Power Transmission***
Gagandeep Kaur and Archana Rajput

9:30 ***Multi-Facet Loaded Quad-Band Dielectric Resonator Antenna for Self-Sustainable Smart City Applications Using RF Energy Harvesting***
Daasari Surender, Ponnam Manaswini, Ponnam Srinidhi, Mamoni Saha, Venkata Reddy Adama, Taimoor Khan, Fazal A Talukdar and Rama Krishna Dasari

9:45 ***A Triple Band Implantable Antenna for Wireless Power Transfer and Bio-Telemetry Application***
Amogh Jain, Gopinath Samanta, Jeet Ghosh and M. V. Deepak Nair

10:00 ***Polarization Insensitive Near Unity Absorption FSS for RF Energy Harvesting Application***
Farheen Fatima and Mohammad Jaleel Akhtar

Thursday, December 12 8:30 - 10:30

Th.5.1.: Metasurface (Part 1)

Room: Hall - MRG05
Chairs: Sukomal Dey, Saptarshi Ghosh

8:30 ***A Resistive Ink Based Circular Swastika-Shaped Radar Absorbing Structure for Stealth Application***
Priyanka Priyanka, Prashant S. Alegaonkar and Himangshu Baskey

8:45 ***Wideband SIW Based Frequency Selective Surface Using Exponential Tapering Technique***
Vinayak Mahadik, Jogesh Chandra Dash, Raju Malleboina, Shilpa Kharche and Debdeep Sarkar

9:00 ***Wideband Highly Efficient Cross Polarization Converter Based on Metasurface***
Joysmita Chatterjee, Mahesh Singh, Gunjan Srivastava and Akhilesh Mohan

9:15 ***Reconfigurable Multifunctional Metasurface for Wideband Polarization Conversion***
Madhusudhan Goud Rangula, Ananya Duggal, Princy Paul and Krishnamoorthy Kandasamy

9:30 ***Novel All-Metal Dual-Band Phase-Shifting Cells: A Generic Design and Their Applications***
Foez Ahmed, Khushboo Singh and Karu Esselle

9:45 ***A Lightweight 3D Printed Metasurface for Wideband RCS Reduction***
Munna Aziz, Akhila Gouda and Saptarshi Ghosh

10:00 ***Automated Design of Pixelated Metasurfaces Using Particle Swarm Optimization for Diverse Applications***
Yugesh Chandrakapure, Anand Kumar, Alok Chandra Joshi, Akhlesh Lakhtakia and Debdeep Sarkar

10:15 ***Holographic Metasurface Antennas Using Complementary Yagi-Uda Based Aperture Coupled Surface Wave Launcher***
Thota Balaji, Gautham Purohit and Chinmoy Saha

Thursday, December 12 8:30 - 10:30

Th.6.1.: EM Models

Room: Hall - MRG06
Chairs: Erin Kiley, Kirill Klionovski

8:30 ***Design of a Physics-Informed Learning Model for the Electromagnetic Modeling of Functional Materials***
Naina Narang and Greeshma Lingam

8:45 ***Analysis of Port Excitation Using Finite-Difference Time-Domain (FDTD) Simulations***
Yanmila Shadang, Vikram Kumar and Mohd Osaid Shaikh

9:00 ***Theoretical Insights Into mm-Wave Metasurface Behaviour***
Yasha Mandawat, Ananya R Bhat and A Mahesh

9:15 ***Multi-Temperature RF GaN HEMT Model Using the ASM Industry Standard***
Inayat Hussain Wani, Zeeshan Gulzar, Zarak Bhat, Misbah Noor and Sheikh Aamir Ahsan

9:30 ***1D-FDTD Formulation With NARX Neural Network***
Nihar Kanta Sahoo, Dhruba Panda and Rabindra Kishore Mishra

9:45 ***Polarization-Resolved Speckle Correlations in Scattering Birefringent Films***
Nikita Choudhary

10:00 ***Generation of Multi-Modal Orbital Angular Momentum (OAM) Wave at Millimeter-Wave Frequency***
Subhendu Chakraborty, Debasish Pal and Ayan Kumar Bandyopadhyay

10:15 ***Modelling a Nonlinearly Spaced 24-Element Array Radio Telescope***

Stanley Kuja, Manuella Kwawu and Tim C. A. Molteno

Thursday, December 12 8:30 - 10:30

Th.H.1: THz Devices, Circuits and Systems for Remote Sensing and Astronomy

Special Session

Keynote Speaker: Dr. Goutam Chattopadhyay, JPL, USA, "Highly compact Terahertz Planetary instruments"

Room: Hall: 1
Chairs: Prantik Chakraborty, Prashant Kumar Mishra

8:30 ***Enhancement of Cut-Off Frequency Beyond 2.5 THz by Optimization of Anode Area of Planar Schottky Barrier Diodes for MMIC Applications***
Saptarshi Pathak, G. Sai Saravanan, Rakesh Aluguri, Raghava Swarna, Suresh Ramancha, Hari Sankar Sahoo, Ch. Sridhar, Sandeep K Chaturvedi, A A Naik, Naresh Emani and Shiv Govind Singh

8:45 ***Realization of MMIC Based Electronically Tunable mm-Wave Local Oscillator Sources for Sub-Harmonically Pumped Receivers at 230 & 345GHz***
Anamiya Bhattacharya, Harshita Tolani, Shrija Bhattacharyya, Latheef Shaik, Mahendra Pratap Singh Bhadoria, Prantik Chakraborty, Jolly Dhar and Cvn Rao

9:00 ***System Design, Integration and End-to-End Characterization of 220-230GHz & 330-345GHz Heterodyne Spectrometer Systems***
Mahendra Pratap Singh Bhadoria, Prantik Chakraborty, Harshita Tolani, Anamiya Bhattacharya, Shrija Bhattacharyya, Latheef Shaik, Vipin Kumar and Cvn Rao

9:15 ***Design, Development and Characterization of mm/Sub-mm Wave Receivers at 220-230 & 330- 345GHz for Radio Astronomical Applications***
Harshita Tolani, Latheef Shaik, Anamiya Bhattacharya, Shrija Bhattacharyya, Mahendra Pratap Singh Bhadoria, Prantik Chakraborty, Jolly Dhar and Cvn Rao

9:30 ***Development of Cryogenic Technologies and Systems for mm and Sub mm Wave Receivers for Ground Based Astronomical Applications***
Ashish Kumar Shukla, Anamiya Bhattacharya, Mahendra P Bhadoria, Prantik Chakraborty, Ulkesh B Desai, Aayush Sohgoura, Arup Kumar Hait, Harshita Tolani and Rajesh R Patel

Thursday, December 12 10:30 - 11:59

Th.DE.2.: Antennas: Theory and Design (Part 2)

Poster Session
Room: Dining and Exhibition Hall
Chairs: Amartya Banerjee, Rakesh Sinha

Estimation of Antenna Factor for Printed Circular Monopole Antenna for EMI/EMC Testing
Melcom Marshal, Ajay Prudhvi Raj Pasupula and Kamla Prasan Ray

Bifunctional Metasurface for Linear Polarization Conversion and Absorption Using Vanadium Dioxide
Ananya Borkotoky, Abhishek Mishra and Amit Verma

A New Reconfigurable Intelligent Surface Featuring Amplification Capabilities for 6G Communication
Venkata Mani Vakamulla and Greeshma Bharathi D

Design of a High Power and High Gain Slotted Array Antenna
Ashok Bansiwal, P. Shalini, V. Nallasamy and Subrata Kumar Datta

A Low-Cost SIW-Based Wideband H-Plane Horn Antenna
Jyotirmoy Bharali and Sudipta Maity

Low Gain Wi-Fi6E Antenna Over Metal Chassis Laptop Devices
Prathibha Peddireddy, Jay Vishnu Gupta and Jayprakash Thakur

Self-Diplexing Antenna Design Based on Substrate Integrated Waveguide (SIW) for 5G Millimeter-Wave Applications

Nikhita Kulkarni, Aditi Rani, Priya Kumari and Sushrut Das

Substrate Integrated Waveguide Technology Based Cavity Backed Antenna for Millimeter Wave Applications
Varikuppala Akhila, Bharathi Anantha and G. Ravi Shankar Reddy

A Compact PCB Antenna for 433 MHz Band: Design, Simulation, and Experimental Validation
Vinicius Magno Uchoa Lima Oliveira, Amit Kumar Baghel and Nuno Borges Carvalho

Improved Boresight Gain in Slotted Trapezoidal Ground UWB Monopole With Non-Concentric Circular Loops
Rahul Singhal, Ashish Kumar Verma, Ritish Kumar, Abhishek Joshi and Abhishek Karwa

Multiband Antenna System Based on Complementary-Ring Bethe-Hole Array as Superstrate
Kanwar Preet Kaur, Trushit Upadhyaya, Yogeshwar Prasad Kosta and Medhavi Kosta

Design of Various Stacked Configurations of Hexagonal Shaped Microstrip Antennas for Broadband Applications
Hemant Kumar, Gopagani Abhilash, Dheeraj Sai T and Kamla Prasan Ray

Ultra Wide-Band Circularly Polarized Graphene Tunable SIW-CDRA for 6G THz Applications
Yakub Banoth and Amarjit Kumar

A Y-Shaped Dielectric Resonator Antenna Excited With a Microstrip-Fed Aperture for Multiband Circular Polarization
Trivesh Kumar, R Robinson, Kapil Saraswat, Sachin Mittal and Manoj Singh Parihar

Thursday, December 12 11:00 - 13:00

Th.1.2.: Solving 3D RF Module Design Challenges with Use Case of TRM Design for Phased Arrays (Part 2)

Industry Microapp
Keysight Technologies

Room: Hall - MRG01
Chair: Anurag Bhargava

Thursday, December 12 11:00 - 13:00

Th.2.2.: Antenna Measurements

Room: Hall - MRG02
Chairs: Mridula Gupta, A Mahesh

11:00 ***Dual Port Merged-Elliptical Patch With Tapered Ground Designed for Integrated Narrow WiMAX/C-Band and Wideband Antenna for Multiple Wireless Applications***
Kanhaiya Sharma, Manish Sharma, Yogesh Solunke, Ganga Prasad Pandey, Rana Gill and Samineni Peddakrishna

11:15 ***Highly Miniaturized SIW-Based Self-Multiplexing Antenna for Pentaband Applications***
Aditi Rani, Priya Kumari and Sushrut Das

11:30 ***Antenna Arrays With Time-Modulation for Generating Beams in Two Directions at Harmonic Frequencies and Scanning Capabilities***
Kannarao Shatarasi, Gopi Ram and Arun Kumar Gande

11:45 ***Optimization and Mathematical Analysis for Mosaic Patch Antenna for Improved Gain***
Ankita Harkare, Mahesh P Abegaonkar, Shraddha Hiranwar and Shabnam R. Quadri

12:00 ***Microwave-Based Safe Alternative for X-Ray Scans for Pleural Effusion***
Adarsh Singh, Debasis Mitra, Bappaditya Mandal and Robin Augustine

12:15 ***Two-Port Elliptical Shaped Monopole MIMO Antenna Array With High Isolation Using DGS Technique***
Vivek Kumar Pandit, Dhaval Pujara and Rushabh V Patel

12:30 ***Optimizing OAM Beams by Varying Refractive Index of Hemi-Spherical Dielectric Lens***
Deepak Yadav, Jyothishree Pillai, Madhur D Upadhayay and Jitendra Prajapati

12:45 ***Fresnel Zone Number for Localization of Ground Plane***
Maifuz Ali and Anil Kumar Yerrola

Thursday, December 12 11:00 - 13:00

Th.3.2.: Reflectarray

Room: Hall - MRG03
Chairs: Chandrakanta Kumar, Ajay K Poddar

11:00 ***Design of a Dual Polarized Amplifying Reflectarray Element***
Murtaza Waheed and Kushmanda Saurav

11:15 ***Low-RCS Reflectarray Co-Designed With Phase Controllable Absorptive Frequency-Selective Reflection Structure***
Ummer Rashid Dar, Kushmanda Saurav and Archana Rajput

11:30 ***Metal-Only Reflectarray Based on Polarization Conversion Element for THz***
Rupam Bharati, Arun Kumar Saurabh, Ajitesh and Manoj Kumar Meshram

11:45 ***Design of a Metasurface-Based Bifunctional Folded Transmit/Reflect Array Antenna***
Sougata Chatterjee, Somak Bhattacharyya and Yashwant Gupta

12:00 ***Offset-Fed 3D-Printed Zoned Reflectarray Antenna for Ultra-Wideband Millimeter-Wave 5G Satellite Communication Links***
Suchitra Tiwari, Amit Kumar Singh and Ankit Dubey

12:15 ***A Four Leaf Clover Shape Reflectarray Antenna for X Band Applications***
Urvashi Singh, Ravi Mali and Manoj Kumar Meshram

12:30 ***Generation of Custom Shaped Beams With Digital Beam Forming in Focal Array Fed Reflector Antenna Systems***
Suvrajit Ghosh, Akula Ramu, Atrish Mukherjee, Sravan Kumar Sagi and Milind B Mahajan

12:45 ***Gain and Bandwidth Enhancement of Printed Dipole Antenna for X-Band Applications by Using 1-Bit Reflectarray***
Ravi Mali, Rajkumar Jatav, Praveen Singh Rathore, Urvashi Singh, Abhishek Kumar Saroj and Manoj Kumar Meshram

Thursday, December 12 11:00 - 12:00

Th.4.2.: Advanced Packaging

Keynote Talk
Madhavan Swaminathan, Pennsylvania State University, USA

Room: Hall - MRG04

Thursday, December 12 11:00 - 13:00

Th.5.2.: Classical and Quantum Computational Electromagnetics-An Overview

AP-S Masterclass
Prof. Weng Chew, Purdue University

Room: Hall - MRG05
Chair: Kamla Prasan Ray

Thursday, December 12 11:00 - 13:00

Th.6.2.: RF Circuits and Systems

Special Session
Room: Hall - MRG06
Chairs: Surendra Pal, K Vinoy

11:00 ***Battery-Less Reconfigurable Intelligent Surface Powered by Energy Harvesting Rectenna Array***
Shivam Bansal, Vikas Kumar Malav and Ashwani Sharma

11:15 ***A C-Band 30W GaN MMIC PA With On-Chip Drain Pulse Modulator***
Suman Aich, Tuhin Paul, Samriti Kumar Garg, Epili Raja Kirana Saraba, Rajendra Singh, Mukesh Patel and Cvn Rao

11:30 ***Enhanced RF Performance on Graded-Channel AlGaN/GaN HEMTs With Aerogel-Cavity for 6G Applications***
Angen Franklin S, Subhash Chander and D. Nirmal

11:45 ***Miniaturized Tunable Bandpass Filter for Sub-1 GHz Band Applications***
Ajay Kochar, Kumud Ranjan Jha, Satish K. Sharma and Zahoor A. Pandit Jibran

12:00 ***Ultra Wide Band Low Noise Amplifier With Gain Equalizer***
M Laxmi

12:15 ***Miniaturized RF Power Distribution Network for Space Borne SAR Payload***
Samidha Jain, Jolly Dhar, Cvn Rao and Shruti Sinha

12:30 ***Radar-Based In-Home Monitoring System for Supporting Aging and Wellness***
Hajar Abedi, Ahmad Ansariyan, Plinio P Morita, Alexander Wong, Jennifer Boger and George Shaker

12:45 ***Ultra-Wide Band Dual-Polarized Transceiver Antenna Module for Buried Target Detection in Lossy Medium***
Goura Snehalatha, Debaprasad Barad, Sri Hari Mente and Balachary Molupoju

Thursday, December 12 11:00 - 14:00

Th.H.2: Women in Microwave Luncheon

Social/Networking
Room: Hall: 1
Chair: Madhumita Chakravarti

Thursday, December 12 12:00 - 13:00

Th.4.2b: Past, Present and Future of RF-CMOS Front-end Circuits & Systems

Keynote Talk
Venkata Vanukuri, Global Foundries

Room: Hall - MRG04

Thursday, December 12 14:00 - 15:00

Th.H.3: Compact reflect/Transmit Array antennas

Plenary Session

Prof. Ahmed Kishk, Concordia University, Canada

Room: Hall: 1

Chair: Debatosh Guha

A reflect array (RA) antenna is a parasitic array of elements arranged periodically and spatially illuminated by a spherical wave generated by a feed located at a focal point away from the array. Conventionally, RA elements are arranged on a grounded planar surface. Thus, the focal point is virtual, chosen by the designer based on the feed characteristics. The RA antenna combines the characteristics of reflectors and array antennas. Thus, it can perform all the reflector and array antenna functions and overcome their disadvantages.

Broadband planar reflectarrays are usually achieved by designing broadband elements with a large focal-to-diameter ratio (F/D). This requires a huge volume and relatively large and heavy feed. A small F/D should be used to reduce the feed size and volume. However, planar RA with a small focal-to-diameter ratio (F/D) suffers from limited bandwidth regardless of the element bandwidth. The primary factor hindering the bandwidth is increasing the planar-RA spatial path delay from the center to the edge, which introduces substantial phase variations that cannot adequately compensate for the RA elements away from the design frequency. A faceted RA was proposed, but the structure became more complicated, particularly for a small F/D. Here, a new simple RA design approach is proposed to enhance the bandwidth. Planar RA is cut to annular rings of sub-reflectarrays (sub-RAs), with the center sub-RA being circular. The sub-RAs are displaced to lower levels below the outer sub-RA and kept at the same position as the feed to reserve feed edge illumination. An overview of RAs and the parameters that control their performance is presented. The proposed structure, referred to as "Stepped RA," is presented by an example of circularly polarized RA. Cross-bowtie elements are used in the planar- and stepped RA with an aperture diameter 25.25λ. Element rotation is employed for phase compensation. The Stepped RA reduces the relative path delay as the ray moves toward the edge. A parametric study is performed, and a simple, compact Stepped RA is designed. The performance of the Stepped RA is compared to the Planar RA. The two RA configurations are fabricated and measured. The Stepped RA exhibits a matching bandwidth of 33.4 %, a 1-dB gain bandwidth of 23.2 %, a 1-dB axial ratio bandwidth of 33.4 %, and an aperture efficiency of 51 % (at 30 GHz). Based on the results, the stepped RA 1-dB gain bandwidth is improved by 13 % over the conventional planar RA. Other forms of compact RA are presented, such as the folded RA, which requires half of the focal length of the RA, and the wrapped RA constructed from textile material, both discussed in some detail.

In addition, transmitarry (TA) is where spherical waves impinge on a planar array of elements with two sides are discussed. The feed side is a receiving array of elements terminated by other elements on the other side to reradiate as a transmitting array. As in RA, the elements compensate for the phase errors and provide the required phases to reradiate to a specific direction or shape the beam.

Thursday, December 12 15:00 - 16:00

Th.H.3B: Nonlinear and Harmonic Radar

Plenary Session

Prof. Ram Narayanan, Pennsylvania State University, USA

Room: Hall: 1

Nonlinear radar exploits the difference in frequency between radar waves that illuminate and are reflected from electromagnetically nonlinear targets. Nonlinear radar differs from traditional linear radar by offering high clutter rejection and is particularly suited to the detection of devices containing metals and semiconductors. Examples include tags for tracking insects, tags worn by humans for avoiding collisions with vehicles, or for monitoring vital signs. Such tags contain a radio-frequency (RF) nonlinearity, often a Schottky diode, connected to a suitable antenna. Targets with inherent nonlinearities, such as metal contacts, semiconductors, transmission lines, antennas, filters, and ferroelectrics, also respond to nonlinear radar. A nonlinear radar can be used to locate devices whose emissions exceed permitted limits, allow security personnel to detect unauthorized radio electronics in restricted areas, or enable first-responders to pinpoint personal electronics during emergencies. Harmonic radar is a special type of nonlinear radar that transmits one or multiple frequencies and listens for frequencies at or near their harmonics.

The talk will address the design and application of nonlinear and harmonic radar, their advantages and limitations compared to conventional linear radar, and special considerations associated with the design of nonlinear and harmonic radar components and subsystems.

Thursday, December 12 15:30 - 19:30

Th.1.4.: Chapter Chair Meeting (Joint APS and MTT-S)

Meeting
Only for special invitees

Room: Hall - MRG01
Chairs: Ajay K Poddar, Chinmoy Saha

Thursday, December 12 16:30 - 18:30

Th.2.4.: Radar Antennas

Room: Hall - MRG02
Chairs: Dhruba Das, Y. Hemalatha

16:30 ***Feed Assembly Design for INCUS***
Paolo Focardi and Gaurangi Gupta

16:45 ***Investigation of Resonance De-Tuning in Scalable All Metal-Patch Phased Array Radar Antenna***
Debaprasad Barad, Sri Hari Mente and Balachary Molupoju

17:00 ***Sub-Array Based Tile Array Antenna for Beam Forming and Multi-Beam Radar Applications in X-Band***
Debaprasad Barad, Tanmayi Seedrala and Balachary Molupoju

17:15 ***Multi Frequency Self Diplexing All Metal Ridge Waveguide Antenna for Cloud Radar Applications***
Shubhanshi Jain, Manas Sarkar and Chinmoy Saha

17:30 ***Dual Polarized Vivaldi Antenna for Ground Penetrating Radar for Interplanetary Rover***
Gaurav Kumar, Mevada B Pratik, Ramesh Chandra Gupta, Vijay Kumar Singh and Milind B Mahajan

17:45 ***Low RCS Antenna Array Design Using Chessboard Arrangement of Antenna Elements***
Ummer Rashid Dar, Balvinder Singh, Mehran Manzoor Zargar and Archana Rajput

18:00 ***Design and Analysis of Non-Conventional Dielectric Dome Antenna for Scan Enhancement***
Madhusudhan TM, Amrit Raj, A Mahesh and Ashutosh Kedar

18:15 ***Digital Implementation of Beam Squint Mitigation for Wide Band Active Phased Radars***
Meena Dasan, Vidyamol s and Preenu Acha Prasad

Thursday, December 12 16:30 - 18:30

Th.3.4.: Space Systems and Components

Room: Hall - MRG03
Chairs: Prashant Kumar Mishra, Immanuel Raja

16:30 ***Decade Bandwidth, Ultra-Compact, 2-Way Equal Power Divider for Space Applications***
Anamiya Bhattacharya, Harshita Tolani, Latheef Shaik, Jolly Dhar, Umesh Maheshwari and Cvn Rao

16:45 ***A Metasurface-Based Bandpass Filter in Ka-Band for Space Applications***
Mehul Kumar Sahoo, Vishnu Kumar Mishra, Biswajeet Mukherjee, Vinit Kumar, Praveen Ambati, Jolly Dhar and Somak Bhattacharyya

17:00 ***Development of Ku-Band Heterodyne Receiver for Space Applications***
Prashant Prashant, Nidhi Singh, Harshita Tolani, Gurleen Singh Rajpal, Jolly Dhar and Cvn Rao

17:15 ***Application of High Power Gyrotrons in the Field of Fusion Research, Deep Drilling and Space***

Braj Kishore Shukla, Sr.

17:30 ***Performance Enhancement of Ku-Band Receiver for SCATSAT-1 Scatterometer***
Shruti Sinha, Samidha Jain, Jolly Dhar and Cvn Rao

17:45 ***Development of Ku-Band Frequency Generator of OCEANSAT-3 Payload***
Pankaj Sandip Bhavsar, Harshita Tolani, Jolly Dhar, Cvn Rao and Nilesh M. Desai

18:00 ***1GHz x3 Frequency Multiplier With Integrated Filter for Space Applications***
Nilesh Makwana, Shruti Sinha, Jolly Dhar and Cvn Rao

18:15 ***Design of an Inductorless Wideband Noise Cancelled Capacitor Cross Coupled Balun-LNA for Satellite Communication Application***
Subarnajit Saha and Immanuel Raja

Thursday, December 12 16:30 - 18:30

Th.4.4.: Antenna Arrays

Room: Hall - MRG04
Chairs: Kaushik Mandal, Sanjeev Yadav

16:30 ***Planar Array Antenna With a Simple Feed Network for Beam Steering***
Soumyadeep Ghosh and Kaushik Mandal

16:45 ***Optimization of Side Lobe and Side Band Reduction in Time-Modulated Elliptical Antenna Arrays Using CRPSO and NPSO Algorithms***
Satish Kumar, Gopi Ram, Durbadal Mandal and Rajib Kar

17:00 ***Importance of Common Grounding for Tightly Coupled Dipole Array and Its Feed Network***
Rajbala Solanki, Peng-Khiang Tan and Theng Huat Gan

17:15 ***Planar Array Antenna With Reconfigurable Feed Network for Wide-Angle Beam Switching***
Soumyadeep Ghosh and Kaushik Mandal

17:30 ***Compact and Wideband Antenna Array for Surveillance Applications***
Sanket Kalamkar, Rajesh K Singh, Ashish Jindal, Meena Mishra, Suma Varughese and Umakant Goyal

17:45 ***Experimental Investigation of Electromagnetic (EM) Bridge for Deployable Antenna Array at P, L and S Band***
Raksha Ram, Mevada B Pratik, Ramesh Chandra Gupta, Vijay Kumar Singh and Milind B Mahajan

18:00 ***Low-Cost Ultra-Wideband Fractal Antenna Array for L-Band Beam Squint Applications***
Archideb Sinha, Rupa Samyuktha Kotla, Joydeb Mandal and Viji Paul P

18:15 ***Time-Modulated Array for Direction of Arrival Estimation Using Unipolar and Bipolar Pulse Sequences***
Shrabani Sarkar and Sujit Kumar Mandal

Thursday, December 12 16:30 - 18:30

Th.5.4.: Power Amplifiers

Room: Hall - MRG05
Chairs: Sangam Bhalke, Arijit Majumder

16:30 ***Class F Power Amplifier: Enhanced Analysis and Design Through Integrated Reflected Wave Consideration***
Syed Enamur Rahaman, Goffar Ali Sarkar, Priya Kumari and Ankit Bhattacharjee

16:45 ***A 27 dBm 5-18 GHz Multifunction Bidirectional Amplifier Using GaAs pHEMT Process***
Swathi Sree Bindu and Sandeep K Chaturvedi

17:00 ***200W Solid-State Pulsed RF Power Amplifier at S-Band***
Arun Kumar and Paulami Sarkar

17:15 ***Stepped Impedance Matching Network for the Design of Harmonic Tuned RF Power Amplifier***
Arani Ali Khan, Saurabh Shukla and Soumava Mukherjee

17:30 ***A 14GHz, 16dBm Power Amplifier With 50% PAE in 130nm CMOS for SATCOM Applications***
Kishore Bantupalli, Santosh Kumar Gedela and Venkata Narayana Rao Vanukuru

17:45 ***Reliability Analysis of Ku-Band 2-Watt Solid State Power Amplifier***
Geetanjali Maharana, Sangam Bhalke and Sandeep K Chaturvedi

18:00 ***High Power Compact Doherty Power Amplifier for n8 and n106 5G Base-Station***
Karthik Rudramuni, Dushayant Kumar Sharma and Karun Rawat

18:15 ***Design and Implementation of n8 and n106 UHF Band High Power Inverted Doherty Power Amplifier***
Ahmad Zakaria Ahmad, Mohammad Abdul Shukoor, Dushayant Kumar Sharma and Karun Rawat

Thursday, December 12 16:30 - 18:30

Th.6.4.: RF Circuits and Systems (Part 2)

Special Session
Room: Hall - MRG06
Chairs: Surendra Pal, K Vinoy

16:30 ***A Composite Dense Dielectric Patch Antenna With Improved Radiation Characteristics in Diagonal, Principal Planes and Other Different Phi Cut Planes***
Subhradeep Chakraborty, Ananjan Basu and Mahesh P Abegaonkar

16:45 ***Realization of True Time-Delay Based Transmit Modules for EW Applications***
K Chakradhar, Sonal G Naik and Y. Hemalatha

17:00 ***Design and Development of Dual Transmit Receive Module (DTRM) With Variable Phase and Gain for Beam Forming Applications***
Nirmal Mundra and Sanjay Srivastava

17:15 ***Beam-Shaped Slant Polarized Sectoral Horn Antennas for EW Applications***
Navyasri Mahalakshmi Bandela

17:30 ***Differential Code Bias Measurement for Navigation Payload***
Aarshbh Vasishth, Jatin Trivedi, Anik Saha and Rakesh Vyas

17:45 ***Design & Development of L - Band Drop - in - Isolator for Space Applications***
Muralikrishna CH, Varaprasad Rayudu, Chandrashekar Mariyappa and Harish V. Dixit

18:00 ***A Novel LTCC Based Temperature Compensated Transmit Receive Module for Space Borne Earth Observation Microwave Sensor***
Ravi Khatri, Mounika Kare, Yudhbir, Piyush Sinha, Jolly Dhar and Cvn Rao

18:15 ***Wideband Orthogonal Antenna Design With Minimal Physical Footprint for 5G Smartphones***
R Akhil Karthik, Karthikeya GS, Shiban K Koul, Ajay K Poddar and Ulrich Rohde

Thursday, December 12 16:30 - 18:30

Th.H.4.: Airborne Radar Systems-CABS/ADE

Special Session (Invited Talks)

Room: Hall: 1

Thursday, December 12 19:30 - 22:30

Th.H.5: Banquet and Awards Ceremony

Social/Networking

Room: Dining and Exhibition Hall, Hall: 1

Friday, December 13

Friday, December 13 8:30 - 10:30

Fr.1.1.: Startup Session (Part 1)

Mentoring Session

Room: Hall - MRG01

Friday, December 13 8:30 - 10:30

Fr.2.1.: Metasurface (Part 2)

Room: Hall - MRG02

Chairs: Debidas Kundu, Ashwani Sharma

8:30 ***Alford Loop Inspired Phase-Gradient Metasurface Lens for X-Band Applications***
Vedula Kiran Bharadwaj, Soumya Chakravarty, Tapas Chakravarty and Rowdra Ghatak

8:45 ***An Antenna With A Sectoral Radiation Pattern Based on A Modulated Metasurface Ground Plane***
Kirill Klionovski

9:00 ***A Single Layer Broadband Conformal FSS Based Absorber Using Resistive Ink***
Chaitra Guruvelli, Rachit Gupta and Paritosh Peshwe

9:15 ***Flat Gain Antenna With 3D Printed Metastructure for 5G Applications***
Rohit Khandekar and Deepika Sipal

9:30 ***Innovative Methodology for Designing Frequency Selective Surfaces on Arbitrary Curved Surfaces***
Akhila Gouda, Munna Aziz and Saptarshi Ghosh

9:45 ***Design and Eigen Analysis of Diagonal Tensor Based Holographic Metasurface Antenna***
Gautham Purohit, Swarnadipto Ghosh, Chinmoy Saha and Yahia Antar

10:00 ***Design of a Sub-6 GHz Wideband Antenna With Metasurface-Based Gain Enhancement for 5G Applications***
Sekhar M and Suman Nelaturi

10:15 ***One-Bit Coded Near-Field Corrected Metasurface for Beam Steering Applications***
Ishaan Kedar, Raju Malleboina, Debdeep Sarkar and Ashutosh Kedar

Friday, December 13 8:30 - 10:30

Fr.3.1.: Antennas for Communciations

Room: Hall - MRG03
Chairs: Vikass Monebhurrun, Rajbala Solanki

8:30 ***Design and Analysis of a Low-Profile Transmissive/Absorptive Rasorber for Ku-Band Applications***
Ranjith Kumar R and Parthasarathy Ramanujam

8:45 ***Compact and Highly Isolated QMSIW Based Self-Diplexing Antenna for Smart Traffic V2V Communication Applications***
Matta Venkata Pullarao, Singam Aruna and Srinivasa Naik Kethavathu

9:00 ***Development of Low Side Lobe Level Multi-Piece Narrow Wall Slotted Waveguide Array Antenna***
Neeresh Kumar

9:15 ***A Compact In-Band Full-Duplex Antenna With Improved Performance for V2V/V2X Communications***
Akash Ahirwar, Anil Kumar Nayak and Saptarshi Ghosh

9:30 ***A Compact Planar Wideband Antenna With Higher-Order Modes Suppression for 5G NR n-79 Band***
Sandeep Rana, Gunjan Srivastava and Akhilesh Mohan

9:45 ***Tapered Cavity-Backed Drooped Crossed Dipole Antenna for Precise GNSS Applications***
Kaushik Kannan, Kashish Grover, Ramesh Chandra Gupta, Sravan Kumar Sagi, Vijay Kumar Singh and Milind B Mahajan

10:00 ***Dual-Polarized Broadband Inverted Dipole Antenna Design for Base Station Applications***
Saranya Matta, Sambhudutta Nanda, Rajanikanta Swain and Dheeren Kumar Mohapatra

10:15 ***Design and Analysis of Wide-Angle and High Scanning Rate SSPPs Leaky-Wave Antenna***
MingCan Cui, feng Quanyuan and Yan Wen

Friday, December 13 8:30 - 10:30

Fr.4.1.: Civilian Radars

Room: Hall - MRG04
Chairs: Amartya Banerjee, George Shaker

8:30 ***Nonlinear Impairments in Short-Range Linear FM Radar Frequency Translation Units***
Solon Spiegel and Lucas Danz

8:45 ***Federated Learning and LiDAR Data-Assisted Ground Station Selection for Autonomous Vehicles***
Nipun Agarwal and Sandeep Joshi

9:00 ***Design and Development of Ultra-Wideband Receiver for Impulse Ground Penetrating Radar***
Nidhi Singh, Harshita Tolani, Vivan Prakash, Vikash Kumar, Jolly Dhar, Cvn Rao and Nilesh M. Desai

9:15 ***MIMO Antenna Performance Analysis With Realistic Bumper for Automotive Application***
Ananya R Bhat, Yasha Mandawat, A Mahesh and Debdeep Sarkar

9:30 ***Design and Sensitivity Studies of 4D Radar Waveguide Antenna***
Priyanka Anush Bhagawath, Eric Fang, Vamsy Godthi and Yinglong Du

9:45 ***Metasurface Lens Antenna for Microwave Subsurface Anomaly Detection and Imaging***
Soumya Chakravarty and Mohammad Jaleel Akhtar

10:00 ***Around-The-Corner Radar Sensing Using Reconfigurable Intelligent Surface***
Kainat Yasmeen, Debidas Kundu and Shobha S Ram

10:15 ***Non-Contact RADAR-Based Approach for Dielectric Material Characterization of Impure Water Samples***
Erik Pineda-Alvarez, Karthik Kakaraparty and Ifana Mahbub

Friday, December 13 8:30 - 10:30

Fr.5.1.: Passive Microwave Circuits (Part 2)

Room: Hall - MRG05
Chairs: Sandeep Kumar Singh, Sanjeev Yadav

8:30 ***Analysis of Bond Wires and Proposal for Compensation Circuits in 73 GHz Applications***
Sumin David Joseph, Sideqe Askre and Edward A. Ball

8:45 ***TEM to TE11 Mode Converter Using Step Waveguide Transformer Section***
Neha Parmar, Runa Kumari, Harish V. Dixit and Ratan D. Sanjay

9:00 ***Effect of Resonator-Coupled Control Line on Microwave Transmon Qubit Gate Operations***
Niloy Ghosh, Hemanth Gedela and Sarang Pendharker

9:15 ***3D Printed Cylindrical Luneburg Lens***
Maxon Okramcha, Zuobin Wang, Yida Fan, Keren Xu, Ravi Kumar Arya and Junwei Dong

9:30 ***Electromagnetic Analysis and Frequency Response of Plasma Medium for High Power Microwaves***
Krushna Kanth Varikuntla, Muhammad Ali Babar Abbasi and Okan Yurduseven

9:45 ***Electromagnetic and Particle-In-Cell (PIC) Simulation of L-Band Tunable Pulsed Magnetron***
Shivendra Maurya, Kanagaraj N. and Rajendra Verma

10:00 ***An X-Band RF Binary Phase Modulator Based on a Reflection-Type Phase Shifter***
Mahima Patel, Shrawan Kumar Patel, Mrinal Kanti Mandal and Debarati Sen

10:15 ***Design and PIC Simulation of Klystron Like RBWO With Four Premodulation Cavities***
Pratibha Verma and Thottappan M

Friday, December 13 8:30 - 10:30

Fr.6.1.: EMI/EMC

Room: Hall - MRG06
Chairs: Mohammad Jaleel Akhtar, Aakash Bansal

8:30 ***Mitigating EMI Due to Inductively Coupled Plasma Excitation in Rubidium Atomic Clocks***
Deepak Attri, Mansi Arora, Maulik L Bhavsar, Chandra Prakash Sharma and M. Senthilkumar

8:45 ***Improvement of RF Interference on DDR Interface Using Tab-Routed Microstrip Line***
Rajiv Panigrahi, Navrita Beniwal, Gaurav Pandey, Anuradha Patel and Sabari Siva Sankaran N

9:00 ***Dual Wide-Band Magnetic Dipole Antenna With Improved RFI for Laptop System***
Jay Vishnu Gupta, Jayprakash Thakur and Prathibha Peddireddy

9:15 ***An Efficient Power Integrity Method to Optimize Decoupling Capacitors for an Automotive Board***

Navrita Beniwal, Sayed Afsar, Anil Baby and Sanjeev Kumar Gupta

9:30 ***Enhancing High-Frequency Performance: Dielectric and EMI Shielding Properties of Natural Rubber Composites***
Rakesh Reghunath, Murali K. P and Jinu Paul

9:45 ***Design and Optimization of Featherweight, Ultra-Thin, Flexible PET/CNF/PU Multilayered Sandwich Structure for Absorption-Dominant EMI Shielding***
Jitendra Tahalyani, Mohammad Jaleel Akhtar and Kamal K. Kar

10:00 ***Silver Nanowire Based Highly Flexible Lightweight Optically Transparent Thin Film for EMI Shielding Applications***
Anshuman Choudhary and Mohammad Jaleel Akhtar

10:15 ***Coaxial Measurements for EMI Characterization of Dielectric Powders as Inclusions for Low Frequency Cement Based EMI Shielding Applications***
Jayakumar M and Sabarish Narayanan B Balagangadharan

Friday, December 13 11:00 - 13:00

Fr.1.2: Startup Session (Part 2)

Mentoring Session
Room: Hall - MRG01

Friday, December 13 11:00 - 13:00

Fr.2.2.: MIMO Antennas (Part 2)

Room: Hall - MRG02
Chairs: Amitavo Choudhury, Soumava Mukherjee

11:00 ***A 4x4 MIMO SIW Antenna for Vehicular Communications***
Neeraj Gautam, Kundan Kumar, Lakhindar Murmu and Bipin Chandra Mandi

11:15 ***Series-Fed Binomial Tapered Microstrip Antenna With Low Side Lobe Level for Automotive MIMO RADAR Applications***
Ashish Kumar Patro, Amrit Prasad Behera, Jogesh Chandra Dash and Debdeep Sarkar

11:30 ***A Double Slotted Antipodal Vivaldi Yagi-Uda Antenna for 5G mmWave MIMO Applications***
Sanjana Paul, Raghvendra Kumar Chaudhary and Kumar Vaibhav Srivastava

11:45 ***Widebeam Four-Element Filtering Magneto-Electric Dipole MIMO Antenna for X/Ku-Bands***
Anubhav Kumar and Raghvendra Kumar Chaudhary

12:00 ***Design of Two-Port Wideband MIMO Antenna With High Isolation for Sub-6 GHz (5G), ISM Band and WLAN Applications***
Amit Kumar, Deepak Khandelwal, Ravi Kumar, Divyanshu Pandey, Ishrath Unissa and Abha Kumari

12:15 ***Cavity Backed MIMO Antenna With CSRR Resonator for n257/n258 5G mmWave Applications***
Ajay Parmar, Saptarshi Ghosh and Leeladhar Malviya

12:30 ***Characterization of a Coaxially Fed MIMO Antenna for n257 mmWave IoT Applications***
Syed Naheel Raza Rizvi, Abdullah Mazhar, Maheeja Maddegalla, Umair Rafique, Hijab Zahra and Syed Muzahir Abbas

12:45 ***Integrated Dual 8-Port MIMO Antenna for Sub-6 GHz and mm-Wave 5G-NR Communications***
Gunjan Srivastava, Vimal Kumar, Sandeep Rana, Amit Yadav and Akhilesh Mohan

Friday, December 13 11:00 - 13:00

Fr.3.2.: Space Antennas

Room: Hall - MRG03
Chairs: Arijit Majumder, Piyush Sinha

11:00 ***Dual Band Dual Polarised Stacked Reflectarray Antenna at Ku-Band for GEO TT&C On-Orbit Application***
Vatyam Sai Kraanthi and Venkata Sitaraman Puram

11:15 ***X-Band Circularly Polarized Quadrifilar Helix Antennas for Spacecraft TT&C and Data Transmission Applications***
Vatyam Sai Kraanthi and Venkata Sitaraman Puram

11:30 ***An Ultrawide Band 5G Millimeter Wave Antenna Using Square Loop Ring Resonators***
Zahoor A. Pandit Jibran, Kumud Ranjan Jha, Satish K. Sharma and Ashish Suri

11:45 ***A CPW-Fed Tri-Band Parasitic Patch Antenna for 5G, WLAN and Satellite Applications***
Krishna Chennakesava Rao Madaka, Kaveri Garnepudi, Srilakshmi Jonnala and Ramya Gorantla

12:00 ***X/Ka Dual Band Dual Circularly Polarized Reflector Antenna System for Deep Space Satellite TT&C and Data Transmission Applications***
Bokki Sandhya Reddy and Venkata Sitaraman Puram

12:15 ***Design and Realization of Small S-Band Ground Station Antenna Using Ade Geometry***
Sandip Roy, Sandesh Bhimrao Mane, Madhar S K, Mir Sardar M, C S Padmavathy and Uma Gotimukula

12:30 ***Design and Analysis of Endfire Circular Patch Antenna With Partial Ground for Ka-Band Applications***
Nitesh Kashyap

12:45 ***Optimization of Grid Parameters of Dual-Gridded Reflector Antenna to Improve Cross-Polar Performance for Wide-Coverage Contoured-Beam***
Ramesh Chandra Gupta, Vijay Kumar Singh and Milind B Mahajan

Friday, December 13 11:00 - 13:00

Fr.4.2.: Reconfigurable Intelligent Surface

Room: Hall - MRG04
Chairs: Debabrata K. Karmokar, Shubhankar Majumdar

11:00 ***Cross-Polarization Insensitive 1-Bit Unit Cell to Design a Reconfigurable Intelligent Surface for Beam Scanning Applications***
Shrabani Mukherjee, Nilanjan Dutta and Kaushik Mandal

11:15 ***A Polarization Insensitive Wideband 1-Bit RIS Unit Cell Design Using Printed Dipoles***
Mondeep Saikia, María García Fernández, Guillermo Alvarez Narciandi, Muhammad Ali Babar Abbasi and Okan Yurduseven

11:30 ***1.5-Bit Passive RIS for Single Beam Anomalous Reflection***
Sylvie Rana, Sai Sreenija Yallanki, Sumit Kumar and A. r. Harish

11:45 ***Characterizing RIS-Reflected EM Waves Based on Gaussian Beam Models***
Dipankar Saha, Andreas E. Olk, Linlong Wu and Bhavani Shankar Mysore R

12:00 ***Plasma Based Self-Reconfigurable Energy Selective Surface for High-Power Protection***
Krushna Kanth Varikuntla, Muhammad Ali Babar Abbasi and Okan Yurduseven

12:15 ***Implementation of 2-Bit Intelligent Reflecting Surface (IRS) Tuned by Varactor Diode for Electronically Beam Steering Performance***
Sukhendu Jana, Anumoy Ghosh and Arijit Majumder

12:30 ***Polarization Insensitive Angularly Stable and Frequency Reconfigurable Programmable Metasurface Based RIS for B5G/6G Communication***
Arun Muthu Ram M and Sukomal Dey

12:45 ***Binary Particle Swarm Optimization for Design of a Reconfigurable Transmissive Unit Cell***
Saurav Roy and K Vinoy

Friday, December 13 11:00 - 13:00

Fr.5.2.: Patch Antennas

Room: Hall - MRG05
Chairs: Jaiverdhan, T. Shanmuganantham

11:00 ***Flexible Wideband Microstrip Patch Antenna Using DGS for MIoT/ Healthcare Applications***
Pooja Sharma, Tilakdhari Singh, Shivesh Tripathi, Anand Sharma, Vinay Kumar and Vijay Shanker Tripathi

11:15 ***Microstrip Patch Antenna Design With Improved Gain Using Geometric Optimization***
Ankita Harkare, Mahesh P Abegaonkar and Khushi Agrawal

11:30 ***Mutual Coupling Reduction Between the Closely Placed Patch Antennas***
Rupa Laller, Mahesh P Abegaonkar and Ananjan Basu

11:45 ***High Gain Decagon Shaped Tri-Band Patch Antenna for K/Ka Band Satellite Communications***
Safana Amala Yazhini A, Pritha Gayathri K and T. Shanmuganantham

12:00 ***A Frequency Switchable Multiband Microstrip Patch Antenna Using Two P-I-N Diodes for X/Ku Band Communication***
Pritha Gayathri K, Safana Amala Yazhini A and T. Shanmuganantham

12:15 ***Microstrip Patch With Strategic Loading: A New Variant for Significant Improvement in the Polarization Purity***
Soumojeet Basak, Sk Rafidul and Debatosh Guha

12:30 ***Design and Analysis of a Conformal Series Fed Microstrip Patch Antenna Array With Unequal Power Division and Delay Lines***
Prithvisha Gupta, Shubhanshi Jain, Gopika R, Swarnadipto Ghosh and Chinmoy Saha

12:45 ***A Unique Hourglass-Shaped Patch Integrated, Compact Monopulse Antenna for Orthogonal Target Detection and Tracking***
Rakesh Prasad, Saransh Duharia, Preeti Tiwari and Anirban Sarkar

Friday, December 13 11:00 - 13:00

Fr.6.2.: Industrial Applications of RF

Room: Hall - MRG06
Chairs: Anantha Bharathi, Sudipta Maity

11:00 ***Metal Stamped Antenna to Enhance Mechanical Strength of Water-Cooled Microwave Applicator***
Mudavath Baburam and Kavitha Arunachalam

11:15 ***Forward and Backward to Forward Beam Scanning Bow-Tie Slot Loaded SIW Leaky-Wave Antenna***
Debabrata K. Karmokar, Ravi Anand and Anirban Sarkar

11:30 ***Circular SIW Microwave Sensor for Methanol Detection in Spurious Liquors***
Prakrati Azad, Mohammad Jaleel Akhtar and Ankita Kumari

11:45 ***A Novel Software-Defined Radio Transceiver System With a Dynamic and Adaptive Digital Pre-Distortion Solution***
Amrit Kumar Panigrahi and Karun Rawat

12:00 ***A Novel Bi-Directional Dipole Antenna Array for UAV-Based Back-Haul Link at C-Band Frequency Range***

Pallav Kumar Sah and Ifana Mahbub

12:15 ***Multibit Quasi Confromal Chipless RFID for Wideband Applications***
Jenil Nagrecha, Amit Kumar Singh, Akhilesh Kumar and Abhishek Chauhan

12:30 ***Quantum-Driven Collaborative UAS Beam-Reforming: A Novel Approach for Congested Spectrum Environment in NextG Communications***
Tejaswini R, Devadatha Vemuri, Xinyi Li, Sudhanshu Arya, Sandhana Mahalingam M and Yifeng Peng

12:45 ***Microfluidic Sensor Based on SIW Self-Diplexer Antenna for Simultaneous Detection of Adulteration of Different Oils***
Vudattu JayaPrakash, Chandu DS and K B S Sri Nagini

Friday, December 13 14:00 - 16:00

Fr.1.3.: Hands-on workshop on Design of Superconducting Quantum Circuits using Keysight Pathwave ADS

Industry Microapp
Keynote Technologies

Room: Hall - MRG01
Chair: Soumya Dey

Friday, December 13 14:00 - 16:00

Fr.2.3.: Circular Polarization Strategies

Room: Hall - MRG02
Chairs: Satyajit Chakraborty, Uma Gotimukula

14:00 ***A Gain-Enhanced Wideband Metasurface-Based Circularly Polarized Partially Grounded Patch Antenna***
Deepak Ram, Amit Kumar Singh and Somak Bhattacharyya

14:15 ***Wide Band Compact Circularly Polarized Patch Antenna Array Using Non-Uniform Metasurface***
Sandireddy Ramadevi and Vikas Vishnu Khairnar

14:30 ***An Endfire Circularly Polarized Antenna for Surface-Mount Applications***
Ratul De, Mahesh P Abegaonkar and Ananjan Basu

14:45 ***A Multi-Functional Single-Layer Polarization Converter With High-Efficiency***
Riya Malia and Archana Rajput

15:00 ***3D Printable GRIN Lens for C-Band Circularly Polarized Antenna***
Jahnavi K P Urs, Amogh G and Shushrutha K S

15:15 ***A Low Profile Dual Circularly Polarized Leaky Wave Antenna at W-Band***
Shilpi Singh and Ananjan Basu

15:30 ***Circularly-Polarized High Aperture Efficiency Multi-Section Smooth-Walled Horn Antenna at Ka-Band for Space-Borne Beacon***
Rajesh Singh Parmar, Ramesh Chandra Gupta, Sravan Kumar Sagi, Vijay Kumar Singh and Milind B Mahajan

15:45 ***Design and Simulation of Hexagonal Dual Circularly Polarized X-Band Sub-Array With Beam Steering Capability Using High Performance Patch Antenna***
Madhar S K, Sandesh Bhimrao Mane, Sandip Roy, Mir Sardar M, C S Padmavathy and Uma Gotimukula

Friday, December 13 14:00 - 16:00

Fr.3.3.: Multiband Antennas

Room: Hall - MRG03
Chairs: Raghvendra Kumar Chaudhary, Girish Chandra Ghivela

14:00 ***Design a Super Wideband Antenna With Dual Band Notch Characteristics and Its MIMO Applications***
Himanshu Nagpal and Sachin Agrawal

14:15 ***Implementation of Ladder Decoupling Structure to Enhance Isolation in Slotted Rhombic Shaped Multi-Band (SRSM) MIMO Antenna***
T. Hemalatha, Bappadittya Roy, Uma Maheswari Yarram, P Monisha and K Anjan Kumar

14:30 ***SIW Cavity-Backed Semi-Array Antenna for Dual-Band MIMO Applications***
Vaidehi C Nare, Raghvendra Kumar Chaudhary and Animesh Biswas

14:45 ***Design and Analysis of Compact Antenna for 5G Bands for V2X Wireless Telemetry and IoT Multiband Applications***
Arun Raj and Durbadal Mandal

15:00 ***Gap-Coupled and Hybrid-Coupled Half Hexagonal Microstrip Antennas for Dual Frequency Operations***
Ravanth Dontula and Kamla Prasan Ray

15:15 ***Cavity Backed Cross Dipole Dual Band (L1+L5 Band) Active Antenna for GNSS Reflectometry Applications***
Devendra Kumar Sharma, Kashish Grover, Sanjeev Kulshrestha and Milind B Mahajan

15:30 ***A Multi-Functional Triple-Band Reflection Type Polarization Converter***
Ummer Rashid Dar, Mehran Manzoor Zargar, Neeraj Kumar, Aditya Kumar, Archana Rajput and Kushmanda Saurav

Friday, December 13 14:00 - 16:00

Fr.4.3.: THz Components and Systems (Part 2)

Room: Hall - MRG04
Chairs: Pratik Ghosh, Kushmanda Saurav

14:00 ***Fabrication Error Study of W-Band Planar Beam-Wave Interaction Structure***
Monodipa Sarkar and Niraj Kumar

14:15 ***Enhanced Liquid Adulteration Detection Using a Novel CSRR-Loaded Planar Microwave Probe***
Javaid Ahmad Rather, Harshvardhan Singh, Venkateshwar Sharma, Yogesh Kumar Yadav, Kushmanda Saurav and Sahil Kalra

14:30 ***Highly Sensitive Si/h-BN Exotic Avalanche Photo Detector for Applications in IR Detection: A Detailed Numerical Investigation and Experimental Verification***
Debabrata Raha, Bhudeb Chakravarti, Abhijit Kundu and Moumita Mukherjee

14:45 ***Design of a MEMS-Compatible Metamaterial Absorber (MMA) for Terahertz Imaging Applications***
Amit Kumar, Deepak Bansal, Anirban Bera, Debashish Pal and Ayan Kumar Bandyopadhyay

15:00 ***Study of Beam-Wave Interaction in W-Band Folded Waveguide Travelling Wave Tube***
Amitavo Choudhury, Rohan Das, Saloni Adhikari, Pawan Pareek, Subhradeep Chakraborty, Chirag Prakashchandra Mistry and Sanjay Ghosh

15:15 ***Cathodes for Futuristic THz VEDs***
Asish Kumar Singh, Sushil Kumar Shukla, Subhrajit Manna, Vikram Rawat, Tejendr Pratap Singh and Ranjan Kumar Barik

15:30 ***Planar and Modular Silicon Package Suitable for Future Large-Format 1.9 THz Heterodyne Arrays***
Sven L van Berkel, Cecile Jung-Kubiak, Jacob Kooi, Alejandro Peralta, Imran Mehdi and Goutam Chattopadhyay

Friday, December 13 14:00 - 16:00

Fr.5.3.: T/R Modules

Room: Hall - MRG05
Chairs: Amitavo Choudhury, Abhay Gandhi

14:00 ***Wideband Lightweight Integrated Q-Band Up-Down Converters for Communication System***
Mahadev Sarkar, Gaurav Anand and Harikrishna M V

14:15 ***Miniaturized Multi Octave Quad Front- End With Built-In Health Check for Multi-Channel Receivers***
Lalitha Saripaka, Abhilash Thumiki, Virendra Prasad, Y. Hemalatha and James Raju K c

14:30 ***Error Analysis & Optimisation Techniques in Wide Band T/R Module Based 1 X 16 Plank***
ARP Mallika, Latha Thokala, D. Srinivas Rao, Sravani Matham, C. Vasant Kumar, G. Syamala Rao and Y. Hemalatha

14:45 ***Studies on Metasurface Geometries for Scan Enhancement in Phased Array Antennas***
Amogh G, A Mahesh, Shushrutha K S, Ashutosh Kedar and Pramod Kumar

15:00 ***Design of Low Noise Broadband Three Channel Receiver Front-End at X Band With High Channel to Channel Isolation and High Image Rejection***
Mousumi Sarkar, Sukhendu Bhanja, Arun Kumar and Arijit Majumder

15:15 ***Analysis and Mitigation of Undesirable Harmonics in CMOS-Based Integrated Frequency Doublers***
Sumit Kumar, Soham Lakhote and Gaurab Banerjee

15:30 ***GaAs-Based Multi-Functional Beamforming MMIC for X-Band SAR Applications: Design, and Performance Evaluation***
Piyush Sinha, Nitesh Sharma, Ravi Khatri, Jolly Dhar and Cvn Rao

15:45 ***A Miniaturized LTCC Based Hermetically Sealed X-Band TR Module***
Nitesh Sharma, Piyush Sinha, Jolly Dhar and Cvn Rao

Friday, December 13 14:00 - 16:00

Fr.6.3.: Sensors for biomedical applications (Part 2)

Room: Hall - MRG06
Chair: Bappaditya Mandal

14:00 ***A Compact Fractal Microstrip Patch Antenna for Skin Cancer Detection Using Monostatic Radar-Based Microwave Imaging Technique***
Komalpreet Kaur and Amanpreet Kaur

14:15 ***Resonator-Based Wearable System for Efficient Intra-Body Communication Through Fat Tissue for Biomedical Applications***
Tarakeswar Shaw, Bappaditya Mandal, Roger Karlsson and Robin Augustine

14:30 ***Imaging With Deep Sub-Wavelength Resolution Using Metasurface***
Hamid Akbari-Chelaresi and Omar Ramahi

14:45 ***Breast Cancer Detection Using a Metasurface of 3mm Cell at 200 MHz***
Mauricio Hernandez and Omar Ramahi

15:00 ***Medical Imaging Using a Wideband Monopole Antenna for Breast Tumor Detection***
Athul O Asok and Sukomal Dey

15:15 ***Wideband Meander Line Based Antenna for Microwave Head Imaging Applications***
Athul O Asok and Sukomal Dey

15:30 ***A Wire Monopole With Secondary Current Suppression for Microwave Imaging of Biological Tissues***
Sumithra Panneerselvam and Kavitha Arunachalam

15:45 ***Detection of Cardiovascular Activities of Multiple Patients Using MIMO mmWave Radar***
Paramananda Jena, Kedar Nath Sahu and Sagarika Behera

Friday, December 13 14:00 - 16:00

Fr.H.3.: MAPCON Careers: Industry-students interaction

Social/Networking

Room: Hall: 1

Friday, December 13 16:30 - 18:30

Fr.H.4.: Hand-Off meeting & Valedictory Function

Social/Networking

Room: Hall: 1

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S, Shivabhagya
Sadhu, Rahul
Saha, Anindya
Saha, Mamoni
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Spiegel, Solon
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Thumiki, Abhilash
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Tomar, S
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Tripathi, Shrivishal
Tripathi, Sweta
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Tyagi, Punam
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Vaddinuri, Anitha
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Vishwakarma, Mayank
VM, Jayakrishnan
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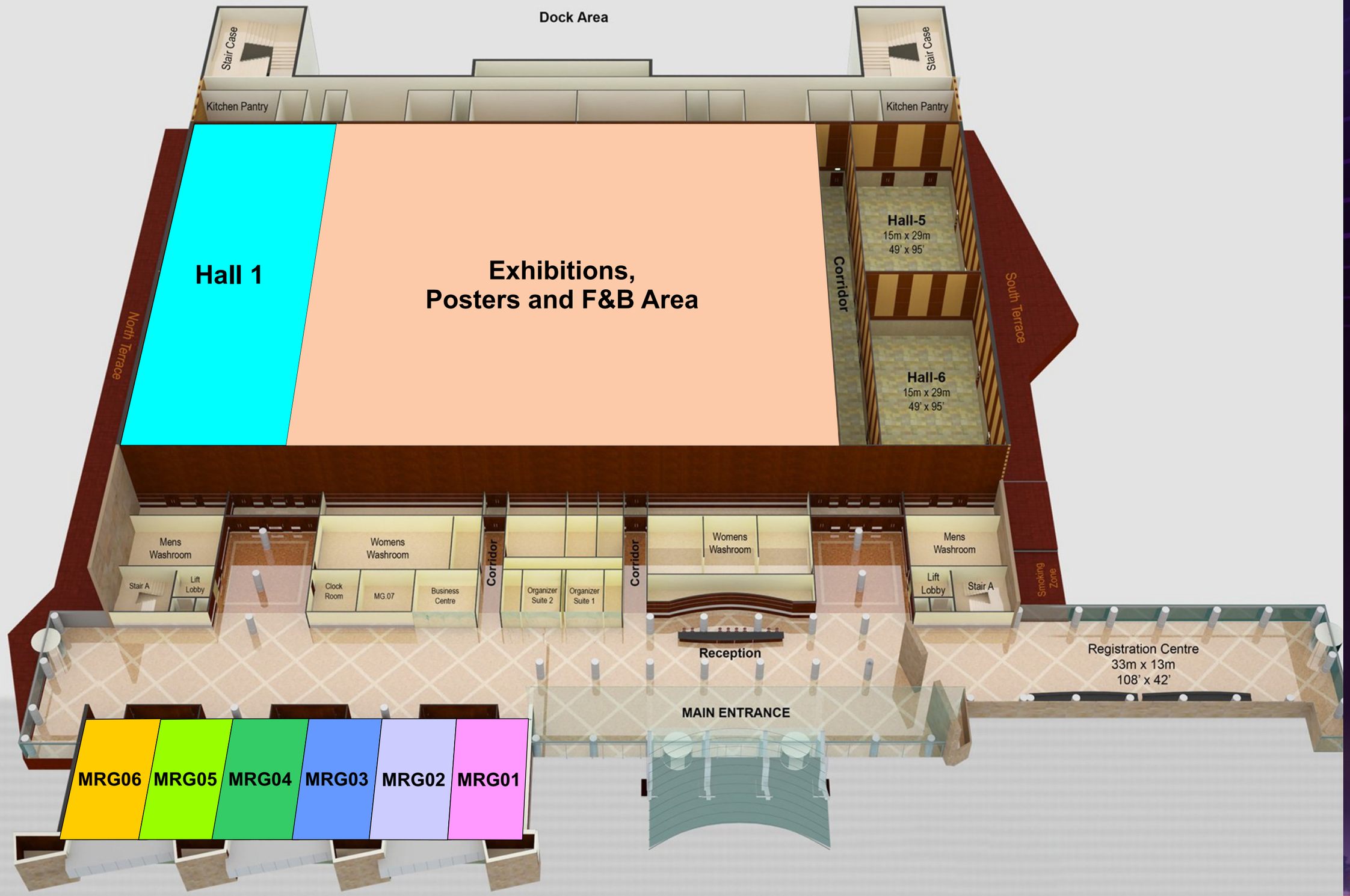
Yasmeen, Kainat
Yurduseven, Okan


Dock Area
Stair Case
Stair Case
Kitchen Pantry
Kitchen Pantry
Hall 1
Exhibitions,
Posters and F&B Area
North Terrace
Corridor
Hall-5
15m x 29m
49' x 95'
South Terrace
Hall-6
15m x 29m
49' x 95'
Mens
Washroom
Stair A
Lift
Lobby
Womens
Washroom
Clock
Room
MG.07
Business
Centre
Corridor
Organizer
Suite 2
Organizer
Suite 1
Corridor
Womens
Washroom
Reception
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Washroom
Lift
Lobby
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Smoking
Zone
Registration Centre
33m x 13m
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MAIN ENTRANCE
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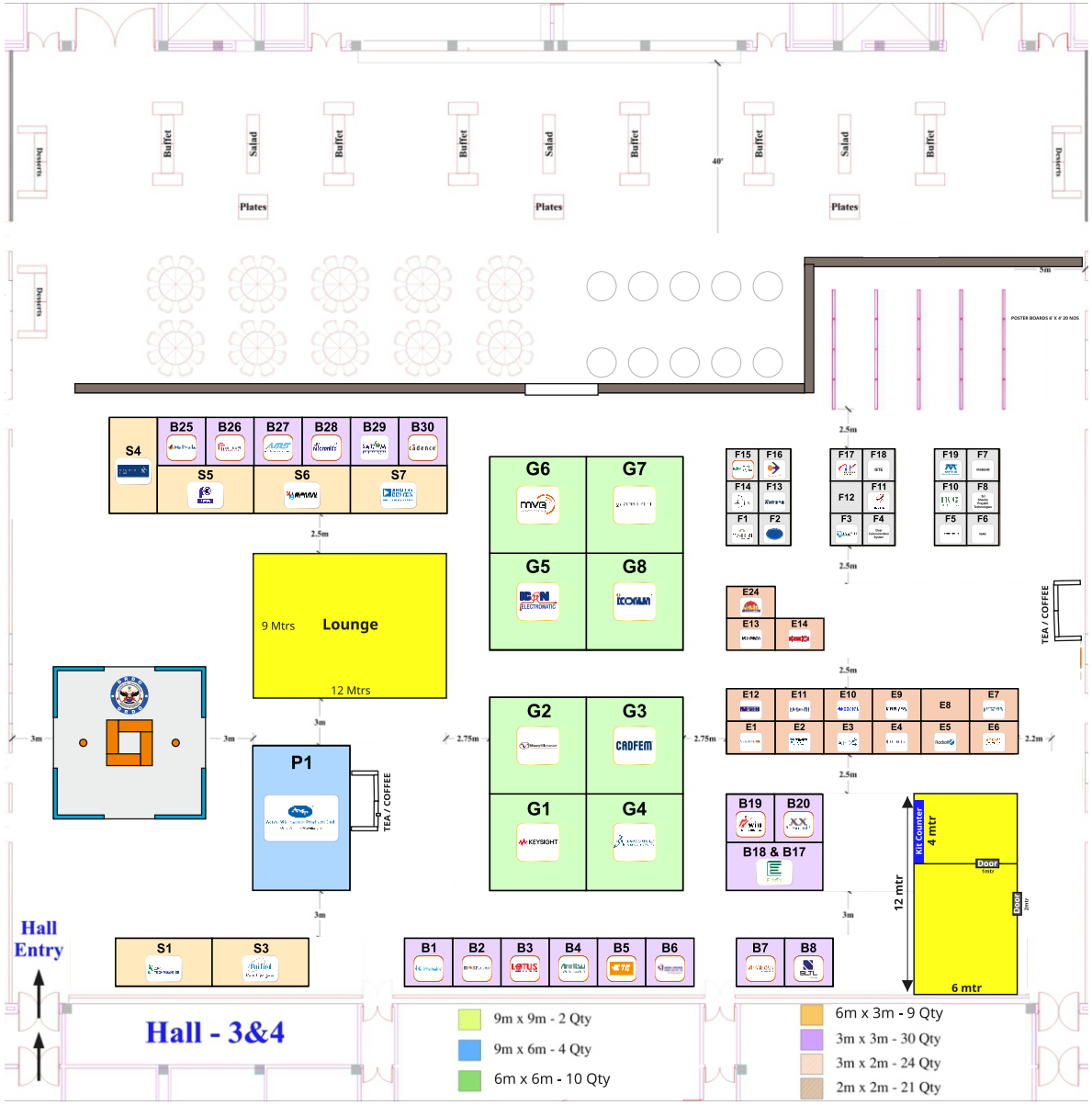
MRG03
MRG02
MRG01

EXHIBITION HALL



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