



IEEE Applied Electromagnetics Conference
&
IEEE Indian Antenna Week
 December 18-22, Kolkata, India



DEC 18, SUN – Tutorials			
Organizers: Goutam Chattopadhyay, <i>California Institute of Technology, USA</i> Debabani Choudhury, <i>Intel, USA</i>			
Start time	BALLROOM – I	BALLROOM – II	BALLROOM – III
9:00	Radiofrequency Identification (RFID): A Brief Description of the Technology and its Impact, Magdalena Salazar Palma, <i>Universidad Carlos III de Madrid, Spain</i>	Monopole Printed Antennas Ramesh Garg, <i>IIT Kharagpur</i>	Cell Phone/Tower Radiation Hazards and Solutions, Girish Kumar, <i>IIT Bombay</i>
11:00	TEA		
11:15	Solving Some Real-World Electromagnetic Problems using Computational Electromagnetic Methods (CEM), Raj Mittra, <i>Pennsylvania State University, USA</i>	Micromachined Circuits and Antennas, Shibani Koul, <i>IIT Delhi</i>	Challenges and Solutions for RF System Integration, M. Swaminathan and K. Naishadham, <i>Georgia Institute of Technology, USA</i>
13:15	LUNCH		
14:00	<i>Solution of Challenging Electromagnetic Problems using a Higher Order Basis and a Parallel out-of-core Solver</i> , Tapan Kumar Sarkar, <i>Syracuse University, USA</i> and S.-W Ting, <i>University of Macau, China</i>	Wavelets in Data Analysis and Boundary Value Problems J. C. Goswami, <i>Schlumberger, USA.</i>	<i>Natural Disaster Monitoring by Receiving Microwave Emission from Rock Fracture or Volcanic Fumes</i> Tadashi Takano, <i>Nihon University and JAXA, Japan</i>
16:00	TEA		

DEC 19, MONDAY
Opening Session (BALLROOM- I & II)

9:00 Welcome

9:45AM - 10:30 AM Keynote Address:

Title: Simultaneous Extrapolation in Time and Frequency Domains Using Laguerre Associated Functions Expansion

Speaker: Magdalena Salazar-Palma, *Universidad Carlos III de Madrid, Spain,*
President, IEEE Antennas and Propagation Society

Chair: Raj Mitta, *Pennsylvania State University, USA*

Dec 19, Mon, 11:00-13:00 BALLROOM I&II
Technical Sessions TS 1: Printed Antennas I
Chair: Ramesh Garg, *IIT Kharagpur, India*

ATT 97 : "Dual Polarized Microstrip Antenna for Monopulse Application"
Satyajit Chakrabarti, *SAMEER, Kolkata, India.*

ATT 102: "Stacked Patch Antenna Design using ANN based BFO"
S. K. Jain, A. Patnaik, S. N. Sinha, *Indian Institute of Technology Roorkee, India.*

ATT 123: "Proximity fed Circular Microstrip Antennas"
Amit A. Deshmukh, *EXTC, DJSCOE, Mumbai, India,* K. P. Ray, *RFMS, SAMEER, IIT-Mumbai, India,* Ameya Kadam, *EXTC, DJSCOE, Mumbai, India.*

ATT 131: "A Compact CPW fed Patch Antenna for 5.8GHz RFID Application"
Ch. Sulakshana, Jyotshna Pokharel, L. Anjaneyulu, *National Institute of Technology Warangal, India.*

ATT 142: "Embedded KBNN and Its Application to Square Ring Microstrip Patch Antenna"
Dhruba C. Panda, *Centurion University of Technology and Management, Paralakhemundi, India,* E. Kusuma Kumari, *Gayatri Institute of Technology, Janagareddy Gudem, India.*

ATT 145: "Fast Testing Technique for Multibeam Antennas"
L. Durand, L. Duchesne, T. Blin, *Satimo, France,* Ph. Garreau, *Microwave Vision Group, France,* R. Braun, R. Konevsky, L. Shmidov, U. Shemer, *Orbit/FR, Israel,* G. Forma, *Thales Alenia Space, France,* P. Meisse, *Intespace, France,* E. Decoux, *Astrium, EADS, France,* M. Paquay, *ESA-ESTEC/TEC-EE, Netherlands.*

ATT 149: "Impedance Characteristics of Body-worn Electro-Textile Antenna under Flat and Bent Positions"
S. Sankaralingam, Sayantan Dhar, Rajendra Prasad Ghosh, Samik Chakraborty Bhaskar Gupta, *Jadavpur University, Kolkata, India.*

ATT 152: "Design of Circular/Triangular Patch Microstrip Antennas using a Single Neural Model"
Taimoor Khan, Asok De, *Delhi Technological University, Delhi, India.*

ATT 155: "The Design of Circular Microstrip Patch Antenna by using Conjugate Gradient algorithm of ANN"
Abhilasha Mishra, *North Maharashtra University, Jalgaon, India,* Ganesh Janvale, *Dr. BAMU, Aurangabad, India,* B. V. Pawar, *North Maharashtra University, Jalgaon, India,* A. J. Patil, *Shri Gulabrao Deokar College of Engineering, Jalgaon, India.*

ATT 156: "Neuro-modeling of simulated miniature rectangular microstrip antenna by using feed forward and feedback propagation"
Abhilasha Mishra, *North Maharashtra University, Jalgaon, India,* Ganesh Janvale, *Dr. BAMU, Aurangabad, India,* Smita Kasar, *JNEC, Aurangabad, India,* B. V. Pawar, *North Maharashtra University, Jalgaon, India,* A. J. Patil, *Shri Gulabrao Deokar College of Engineering, Jalgaon, India.*

ATT 159: "A Novel Spike Edged Rectangular Patch Antenna In C Band For Wireless Applications"
Anup Kr. Bordoloi, Pranjal Borah, Satyajib Bhattacharyya, N. S. Bhattacharyya, *Tezpur University Assam, India,*

MPA 26: "Optically Controlled Single-fed Circular Polarization Switching Patch Antenna"
Sarang Pendharker, R. K. Shevgaonkar, A. N. Chandorkar, *Indian Institute of Technology Bombay, India.*

Dec 19, Mon, 11:00-13:00 TOPAZ
Technical Sessions TS 2: Microwave Devices I
Chair: B. N. Basu, *Sir JC Bose School of Engineering, West Bengal, India*

INV1 (Invited Paper): "Identification of Objects using RF Signatures"
Somnath Mukhopadhyay, *RB Technology, USA.*



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ATT 150: "Compact Microstrip Ultra-Wideband Bandpass Filter Using Short-Circuited Coupled-Line Hairpin Resonator"
Shivam Tapar, Vamsi Krishna Velidi, Subrata Sanyal, *Indian Institute of Technology, Kharagpur, India.*

MDC 24: "Compact Coupled Line Quadrature Hybrid Coupler With Enhanced Balance Bandwidth"
Vamsi Krishna Velidi, Girja Shankar, Kandimalla Divyabramham, Subrata Sanyal, *Indian Institute of Technology, Kharagpur, India.*

MDC 25: "Tri-Band Bandpass Filter with Transmission Zeros between Each Band Using a Combination of Dual Step and Tri-Step SIR"
Rowdra Ghatak, *National Institute of Technology Durgapur, India*, Manimala Pal, *NSHM Knowledge Campus, Durgapur, India*, Pankaj Sarkar, *ITER Siksha 'O' Anusandhan, Bhubaneswar, India*, A. K. Aditya, *NSHM Knowledge Campus, Durgapur, India*, D. R. Poddar, *Jadavpur University, India.*

MDC 26: "A Compact UWB Bandpass Filter with Multiple Notch Band using Open Circuited Stub"
Pankaj Sarkar, *ITER Siksha 'O' Anusandhan, Bhubaneswar, India*, Rowdra Ghatak, *National Institute of Technology, Durgapur, India*, D. R. Poddar, *Jadavpur University, India.*

MDC 31: "Ultra-wideband Combine Filters based on Miniaturized Engineered Resonators and Inter-Resonator Tapped-In Coupling"
Baharak Mohajer-Iravanian, *EMWaveDev, USA*, Mahmoud A. EL Sabbagh, *L. C. Smith College of Engineering & Computer Science, Syracuse University, NY, USA.*

MDC 32: "A Compact Dual Band Bandpass Filter for WLAN/WiMAX Application"
Manimala Pal, *NSHM Knowledge Campus, Durgapur, India*, Joysmita Chatterjee, Rowdra Ghatak, *National Institute of Technology, Durgapur, India.*

MDC 33: "A Bandstop Filter Using A New Defected Microstrip And Defected Ground Structures"
Somdotta Roy Choudhury, Susanta Kumar Parui, Santanu Das, *Bengal Engineering and Science University, Shibpur, India.*

MDC 34: "Improvement Of Stopband Using A Spiral Defected Microstrip And Defected Ground Structures"
Somdotta Roy Choudhury, Susanta Kumar Parui, Santanu Das, *Bengal Engineering and Science University, Shibpur, India.*

MDC 39: "Design studies of ultra wideband microstrip bandpass filter with T-shaped defected ground structure controlled by inter-digital capacitance"
Arjun Kumar, M. V. Kartikeyan, *Indian Institute of Technology, Roorkee, India.*

Dec 19, Mon, 11:00-13:00 SAPPHERE
Technical Sessions TS 3: CEM/EMC/EMM
Chair: J. C. Goswami, *Schlumberger, USA*

CEM 28: "A Refined Ray Tracing approach for Wireless Communications inside Underground Mines and Metrorail Tunnels"
Balamati Choudhury, R. M. Jha, *CSIR-National Aerospace Laboratories, Bangalore, India.*

CEM 29: "A Novel EM Analysis of Cascaded Thick FSS using Mode-Matching Generalized Scattering Matrix Technique"
Shiv Narayan, K. Prasad, R. U. Nair, R. M. Jha, *CSIR-National Aerospace Laboratories, Bangalore, India.*

CEM 36: "Thermal and Structural Modeling of high Efficient Multi-stage Depressed Collector for Space Applications"
Vishant Gahlaut, A. Mercy Latha, R. K. Sharma, R. K. Gupta, V. Srivastava, S. K. Ghosh, *CSIR – Central Electronics Engineering Research Institute, Pilani, India*, P. A. Alvi, *Banasthali University, Rajasthan, India.*

CEM 37: "Stability Analysis of Finite Volume Time Domain Methods"
Chakrapani Bommaraju, *International Institute of Information Technology, Hyderabad, India.*

CEM 44: "Extraction of Scattering Parameters Using Upwind Flux Finite Volume Time Domain Methods"
Chakrapani Bommaraju, *International Institute of Information Technology, Hyderabad, India.*

CEM 50: "Singular Kernel Representation in Wavelet Based Galerkin Method"
Amir Nader Askarpour, Reza Faraji-Dana, *University of Tehran, Tehran, Iran.*

CEM 51: "Electromagnetic Analysis of Dielectric Objects Using the Characteristic Basis Function Method"
Bijilash Babu, *Bessel Associates, Kerala, India*, Raj Mittra, *The Pennsylvania State University, PA, USA.*

CEM 52: "Study of Resolution in Microwave Imaging using Linear Sampling Method"
E. Mallikarjun, Amitabha Bhattacharya, *Indian Institute of Technology Kharagpur, India.*



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EMC 5: "Coupling of Transient Electromagnetic Fields Radiated by ESD to Aerial Coaxial Cables"

Rajashree Narendra, M. L. Sudheer, *BNMIT/ UVCE, Bangalore, India*, V. Jithesh, D. C. Pande, *LRDE, Bangalore, India*.

EMC 6: "Emissions from the Planar Electromagnetic Bandgap Structures Implemented in High Speed Packages"

Baharak Mohajer-Iravani, *Syracuse University, Syracuse, NY, USA*, Omar M. Ramahi, *University of Waterloo, Waterloo, Canada*.

EMC 8: "Investigation of EMI Reduction in Buck Converter by Using External Chaos Generator"

L. Premalatha, P. Aruna, *Anand Institute of Higher Technology, Chennai, India*.

EMM 33: "Method to reduce close-in sidelobes to avoid EMI problems by Slot Array Design"

M. Satyanarayana, *MVGR College of Engineering, India*, Dr. G. S. N. Raju, *AU College of Engineering (A), Visakhapatnam, India*.

Dec 19, Mon, 14:00-16:00 GARDEN Lobby

SP Student Paper Contest • Category I

Co-Chairs: R. K. Mishra, *Berhampur University, Orissa, India*

Iti Saha Mishra, *Jadavpur University, India*

SPC 1030: "A Single Band Notched CPW Antenna Design"

Surabhi Sharma, Harish Kumar, *Bhagwant Institute of Technology, Muzaffamagar, India*.

SPC 1057: "Spiral Inductors for V-band Wireless ICs"

Vasu Pulijala, Syed Azeemuddin, *International Institute of Information Technology, Hyderabad, India*.

SPC 1077: "A Complete User Adaptive Antenna Tutorial Demonstration: a GUI Based Approach Using JAVA and MATLAB® Interfacing"

Subhadeep Sen, Chandrima Biswas, *Calcutta Institute of Engineering and Management, Kolkata, India*.

SPC 1042: "Design of a Novel Compact Stacked EBG Structure and its Application in Fractal Microstrip Antenna Arrays"

Mohammad Mehdi Fakharian, Pejman Rezaei, *Semnan University, Semnan, Iran*.

SPC 1041: "Circularly Polarized Hexagonal Microstrip Antenna for Bluetooth Application"

Meheli Samanta, Santanu Das, *Bengal Engineering and Science University, Shibpur, India*.

SPC 1082: "A Circularly Polarized Patch Antenna and DRA Hybrid"

Abhishek Sahu, Asit K. Panda, *National Institute of Science & Technology, Berhampur, India*.

SPC 1084: "Improvement of Directivity and Bandwidth of Planar Antenna Using Metamaterial Structure"

Ali Nikbakht, Farzad Mohajeri, *Shiraz University, Shiraz, Iran*.

Dec 19, Mon, 14:00-16:00 SAPPHERE Lobby

SP Student Paper Contest • Category II

Co-Chairs: Satish Sharma, *San Diego State University, USA*

Bhaskar Gupta, *Jadavpur University, India*

SPC 1054: "Scattering by an infinite elliptic dielectric cylinder under oblique illumination"

Grigorios P. Zouros, *National Technical University of Athens, Athens, Greece*.

SPC 1068: "Microwave Study of Planar Honeycomb EBG Lattice with Hexagonal Basis Points"

Mahima Kapoor, K. S. Daya, *Dayalbagh Educational Institute, Agra, India*.

SPC 1083: "In-vivo Dielectric Characterization of Prokaryotic Subsystems using Cavity Perturbation Technique"

Rajveer Sharma, K. S. Daya, *Dayalbagh Educational Institute, Agra, India*.

SPC 1051: "Modified CPW Fed Band-Notched Ultra-Wideband Antenna"

Parth C. Kalaria, M. V. Kartikeyan, *Indian Institute of Technology Roorkee, India*.

SPC 1036: "Wideband Dual Frequency Antenna for WLAN Applications"

R. Devi, Dipak Kr. Neog, *Dhemaji College, Assam, India*.

SPC 1055: "Surface Wave Reduction in Circularly Polarized Microstrip Patch Antenna mounted on Textured Pin Substrate"

Manidipa Roy, Prateek Juyal, *Ambedkar Institute of Technology, Delhi, India*.

SPC 1078: "Compact Filter Using Coupled Metamaterial Mushroom Resonators with Corner Vias"

Seema Awasthi, Animesh Biswas, *Indian Institute of Technology Kanpur, India*.

SPC 1073: "High Q Ceramic Dielectric Resonator with Planar Spiral Slot Coupling"

Ritika Verma, K. S. Daya, *Dayalbagh Educational Institute, Agra, India*.



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SPC 1095: "Analysis of Waveguide junctions using mode matching technique"

Rajib Jana, Ratnajit Bhattacharjee, *Indian Institute of Technology Guwahati, India.*

SPC 1081: "Design of Circular/Triangular Patch Microstrip Antennas using a Single Neural Model"

Taimoor Khan, Asok De, *Delhi Technological University, Delhi, India.*

SPC 1058: "Metamaterial Inspired Planar Broadband Antenna"

Anila P. V., P. Mohanan, *Cochin University of Science and Technology, Cochin, India.*

SPC 1047: "Compact BroadBand Toploaded Planar Monopole Antenna For Low Frequency Applications"

Indhu K. K., P. Mohanan, *Cochin University of Science and Technology, Cochin, India.*

SPC 1056: "A CPW fed H-Shaped Reconfigurable Patch Antenna"

Ch. Sulakshana, Jyotshna Pokharel, *National Institute of Technology, Warangal, India.*

SPC 1094: "Quad-Ridge Horn Antenna Analysis and Design for Radio Astronomy Applications"

Ashish Rojatkar, Subramaniam Ananthkrishnan, *University of Pune, Pune, India.*

SPC 1053: "Coplanar Waveguide fed Semielliptical ring UWB antenna"

Dinesh R., P. Mohanan, *Cochin University of Science and Technology, Cochin, India.*

SPC 1076: "Improved Radiometer Reading with a Moderate Negative Pressure Microwave Antenna"

Øystein Klemetsen, Svein Jacobsen, *University of Tromsø, Tromsø, Norway.*

SPC 1032: "An Ultra-Wideband Antenna Using Hilbert Slots with Dual Band Rejection Characteristics"

Shashank Verma, Rowdra Ghatak, *National Institute of Technology Durgapur, India.*

SPC 1052: "Hybrid Triangular Dielectric Resonator Antenna (DRA) for WLAN/ISM Application"

Sudipta Maity, *Jadavpur University, Kolkata, India.*

Dec 19, Mon, 14:00-16:00 GARDEN Lobby

IS Interactive Poster Session

Co-Chairs: D. Pujara, *Nirma University, Ahmedabad, India*

Arijit De, *IIT Kharagpur, India*

ATT 114: "A Novel Small UWB Antenna Using New Fractal-like Geometry"

L. Ghanbari, S. Nikmehr, M. Rezvani, *Faculty of Electrical and Computer Engineering University of Tabriz, Iran.*

MRF 16: "Reduced Height RF MEMS for Low GHz Frequency"

Bandana Mishra, Z. C. Alex, *VIT University Vellore, India.*

MDC 28: "Full-Scale Non-Linear Analysis of IV-IV Compound Semiconductor Based IMPATTs in High-Power Operation Mode at MM-wave Window frequency"

Moumita Mukherjee, Diptadip Chakraborty, Arijit Das, *CMSDS, Institute of Radio Physics and Electronics, University of Calcutta, India.*

MDC 36: "Design and Nonlinear Analysis of a Dual-Band Doherty Power Amplifier for ISM and LMDS Applications"

Fatemeh Taghian, Abdolali Abdipour, Abbas Mohammadi, Parisa Momen Roodaki, *Amirkabir University of Technology, Tehran, Iran.*

MDC 41: "Spiral Inductors for V-band Wireless ICs"

Vasu Pulijala, Syed Azeemuddin, *Center for VLSI and Embedded Systems Technology, International Institute of Information Technology, Hyderabad, India.*

MDC 42: "Spurious Band Suppression of Microstrip Band Pass Filter Using Complementary Triangular Split Ring Resonators"

Vidyalakshmi M. R., *National Institute of Technology, Tiruchirappalli, India*, Rekha. B, *SAMEER-CEM, Chennai, India*, Raghavan. S., *National Institute of Technology, Tiruchirappalli, India*, P. H. Rao, *SAMEER-CEM, Chennai, India.*

MDC 43: "Nonlinear analysis and design of a power amplifier in 60 GHz frequency band"

S. Afshardeikhah, A. Abdipour, *Amirkabir University of Technology, Tehran, Iran.*

MDC 52: "Techniques to Improve Sharpness and Stop Band Rejection of Defected Ground Structure Based Low Pass Filter"

Ashwani Kumar, A. K. Verma, *Microwave Research Laboratory, University of Delhi, India.*

MDC 53: "A 2WATT Ku-Band MMIC Power Amplifier Design"

Madhumita Chakravarti, Punna Venkateswarlu, Rai Rajender Reddy, *RCI, Hyderabad, India.*

CEM 30: "EM Performance Analysis of Multilayered Metamaterial Frequency Selective Surfaces"

Shiv Narayan, Gopinath R., R. U. Nair, R. M. Jha, *CSIR-National Aerospace Laboratories, Bangalore, India.*

CEM 34: "Development and performance characterization of RF cavities, Output coupler and RF section in a 5GHz, 250 kW klystron"

Meenu Kaushik, O. S. Lamba, L. M. Joshi, Suman, Pradeep, Vishnu Jindal, Debashish Pal, Deepender Kant, *CSIR – Central Electronics Engineering Research Institute, Pilani, India.*

CEM 46: "Comparing the Material Modeling Abilities of FDTD and FIT through the Accuracy Analysis of the Scattering Parameters"

Chakrapani Bommaraju, *International Institute of Information Technology, Hyderabad, India.*

DRA 7: "Ultrawideband Pawn DRA: Time Domain Studies"

D. Ganguly, S. M. Das, *Institute of Radio Physics and Electronics, University of Calcutta, India,* A. Rojaitkar, *University of Pune, India,* D. Guha, *Institute of Radio Physics and Electronics, University of Calcutta, India*

DRA 8: "Limitations in Proper Excitations of $HEM_{11\delta}$ and $HEM_{12\delta}$ Modes in a Cylindrical Dielectric Resonator Antenna: A Comparative Study"

A. Banerjee, D. Guha, *Institute of Radio Physics and Electronics, University of Calcutta, India.*

EMC 7: "Generation of Chaos and EMI Reduction in Current Controlled Boost Converter using Random Modulation"

Premalatha L., Thanuja A., *Anand Institute of Higher Technology, Anna University, Chennai, India.*

EMC 9: "Reduction of ripple and EMI in DC-DC cuk converter using chaos theory and tuned band rejection filter"

Premalatha L., Padmavathy D., *Anand Institute of Higher Technology, Anna University, Chennai, India.*

EMM 19: "Left-handed CTSRR-slot pair loaded microstrip transmission line"

Vidyalakshmi M. R., *National Institute of Technology, Tiruchirappalli, India,* Rekha B., *SAMEER-Center for Electromagnetics, Chennai, India,* Raghavan S., *National Institute of Technology, Tiruchirappalli, India,* P. H. Rao, *SAMEER-Center for Electromagnetics, Chennai, India.*

EMM 20: "Microwave dielectric properties of low temperature sintered Anb_2O_6 (A=Ca,Mg,Cu,Ni) for LTCC"

Jyotirmayee Satapathy, M. V. Ramana Reddy, *Osmania University, Hyderabad, India.*

EMM 29: "Measurement of Effective Dielectric Constant : A Comparison"

Aakashdeep, Saurav Kr. Basu, G. V. Ujjwal, Sakshi Kumari, V. R. Gupta, *Birla Institute of Technology Mesra, India.*

EMM 30: "Simulating a Cubic Cloak Using CST"

Abhishek Sahu, Asii Panda, Rabindra K. Mishra, *National Institute of Science and Technology, Berhampur, India.*

RST 14: "Performance Evaluation of Single and Dual Frequency Carrier Smoothing techniques for LAAS"

A. Supraja Reddy, M. R. Sriharsha, A. D.Sarma, *Osmania University, Hyderabad, India,* D. Krishna Reddy, *Chaitanya Bharathi Institute of Technology, Hyderabad, India.*

RST 16: "Electromagnetic Attenuation by Conducting Polymers Composites",

Satish Chandra Gupta, Aditya Panwar, *Defence Institute of Advanced Technology, Girinagar, Pune, India,* Sandhya Gupta, A. V. Singh, *JNV University, Jodhpur, India.*

WPR 12: "Design and Implementation of S-Band Multi-mission Satellite Positioning Data Simulator for IRS Satellites"

R.Srinivas, *National Remote Sensing Centre, ISRO, Hyderabad, India,* L. Nithyanandan, *Pondicherry Central University, India,* P. Naveen Kumar, *Osmania University, Hyderabad, India,* P. V. V. Subba Rao, G. Uma Devi, *National Remote Sensing Centre, ISRO, Hyderabad, India.*

SPC 1024: "Patch Antenna Using Metamaterial"

R. Arthi, *Pondicherry Engg. College, Pondicherry, India.*

SPC 1031: "Design of Planar Monopole Antenna Fed by Asymmetric Coplanar strip for WLAN Applications"

Davinder Parkash, *Haryana College of Tech. & Management, Kailthal, India,* Rajesh Khanna, *Thapar University Patiala, Punjab, India.*

SPC 1045: "UWB antenna with Single Notch-Band for WLAN environment"

Sarah Jacob, P. Mohanan, *Cochin University of Science and Technology, Cochin, India.*

SPC 1049: "Modified CPW fed monopole antenna with reduced SAR value for mobile application"

Laila D., P. Mohanan, *Cochin University of Science and Technology, Cochin, India.*



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Dec 19, Mon, 16:00-17:30 BALLROOM I

Organised Session OS 1: Communication I

Co-Chairs: V. U. Reddy, *Osmania University, Hyderabad, India*
Ana Pérez, *Universitat Politècnica de Catalunya (UPC), Spain*

OS 1.1: "Signal Design for a Specified Transmit Beam pattern, Spatial Ambiguity Function for MIMO Radar"

V. U. Reddy, *Osmania University, Hyderabad, India.*

OS 1.2: "Autonomous Design for the MISO Interference Channel"

Ana Pérez, *Universitat Politècnica de Catalunya (UPC), Barcelona, Spain.*

OS 1.3: "Regulation and Research on Wireless Communications"

Miguel A. Lagunas, Ana I. Perez-Neira, *Universitat Politècnica de Catalunya (UPC), Barcelona, Spain*, Miguel A. Vázquez, *Centre Tecnològic de Telecomunicacions de Catalunya, Barcelona, Spain.*

Dec 19, Mon, 16:00-17:30 BALLROOM II

Organised Session OS 2: Spacecraft Antenna

Co-Chairs: Surendra Pal, *ISRO, Bangalore, India*
V. V. Srinivasan, *ISRO, Bangalore, India*

OS 2.1: "Design Considerations for Dual Circularly Polarized Spherical Phased Array Antenna at X-Band for Spacecraft Data Transmission"

V. V. Srinivasan, Chandrakanta Kumar, B. Pavan Kumar, V. K. Lakshmeesha, S. Pal, *ISRO Bangalore, India.*

OS 2.2: "Integrated Quadrifilar Helix at C-Band for Spacecraft Omni Antenna System"

B. Pavan Kumar, M. Kumar, Chandrakanta Kumar, Senthil Kumar, V.V. Srinivasan, *ISRO Bangalore, India.*

OS 2.3: "Ku-Band Omni Antenna System for Satellite TTC"

Sivareddy D., A. V. G. Subramanyam, U. Prabakaran, V. V. Srinivasan, V. K. Lakshmeesha, *ISRO Bangalore, India.*

Dec 19, Mon, 16:00-17:30 TOPAZ

Organised Session OS 3: Indian Initiatives in Microwave Vacuum Electronic Devices (MVEDs)

Co-Chairs: S. N. Joshi, *CEERI, Pilani, India*
S. K. Datta, *Microwave Tube R&D Centre, Bangalore, India*

OS 3.1: "Advances in High Power Microwave Devices – Indian Scenario"

Lalit Kumar, *MTRDC, Bangalore, India.*

OS 3.2: "Initiatives in New Generation High Power Microwave Sources in India"

S. K. Datta, K. S. Bhat, *Microwave Tube R&D Centre, Bangalore, India*, V. Srivastava, *CEERI, Pilani, India*, Y. Choyal, *Devi Ahilya Viswa Vidyalyaya, Indore, India*, P. K. Jain, *Banaras Hindu University, Varanasi, India*, Baidyanath Basu, *Sir JC Bose School of Engineering, Hooghly, India.*

OS 3.3: "Indian Gyrotron Initiatives"

S. N. Joshi, A. K. Sinha, *CEERI, Pilani, India.*

Dec 19, Mon, 16:00-17:30 SAPPHIRE

Technical Session TS 4 : Antenna for Defence, Space and Wireless

Chair: Rajeev Jyoti, *SAC, Ahmedabad, India*

ADS 8: "Design considerations for a wide scan cavity backed patch antenna for active phased array radar"

Naveen Kr. Vishwakarma, Ravi Samminga, Dr. Ashutosh Kedar, Dr. A. K. Singh, *Electronics & Radar Development Establishment, C V Raman Nagar, Bangalore, India.*

ADS 9: "Influence on Side Band Radiation of Uniformly Excited TMAA During Reduction of SLL of the Main Beam"

S. K. Mandal, Rowdra Ghatak, G. K. Mahanti, *National Institute of Technology, Durgapur, India.*

ADS 11: "Synthesis of Broadside Uniform Circular Antenna Array with low on-Surface Scanning"

Sudipta Das, Durbadal Mandal, *National Institute of Technology, Durgapur, India.*

ADS 13: "Design and Development of W-Band Pencil Beam Antenna"

Pramendra Kumar Verma, Raj Kumar, Mahakar Singh, *Defence Electronics Applications Laboratory Dehradun, India.*

ADS 17: "Low Current Tapered Non-Uniform Linear Array Synthesis with Decreasing Sidelobe Using NPSO"

Sudipta Das, Durbadal Mandal, *National Institute of Technology, Durgapur, India.*

AMT 2: "A Novel Measurement Technique for the Alignment of Satellite Reflectors and Feeds: from Subsystem to Spacecraft and up to final RF testing"

Pravesh Mathur, C. Koteswar Rao, Swapnil Pathak, Rudra Gowda, K.V.Govinda, *ISRO Satellite Centre, Bangalore, India.*



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AMT 3: "Challenges in Multibeam onboard Tracking Antenna Characterization: An ISRO Experience"

Puneet K. Mishra, Nagesh S. K., K. V. Govinda, *ISRO Satellite Centre, Bangalore, India.*

MWP 4: "Post-Processing of Measured Field data using Equivalent Source Technique"

L. J. Foged, L. Scialacqua, F. Saccardi, *SATIMO, Via dei Castelli Romani, Italy*, J. L. Araque Quijano, *Universidad Nacional de Colombia, Colombia*, G. Vecchi, *Politecnico di Torino, Turin, Italy*, M. Sabbadini, *ESA/ESTEC, Noordwijk, Netherlands*, U. Shemer, *Orbit/FR, Israel.*

MPA 7: "UWB Printed Hexagonal Monopole Antennas with WLAN Band Rejection"

T. Mandal, *Government College of Engineering and Textile Technology, Serampore, India*, S. Das, *Bengal Engineering and Science University, Shibpur, India.*

Dec 20, Tue, 9:00-10:30 BALLROOM I & II

Technical Session TS 5 : Invited Session I

Chair: Tadashi Takano, *Nihon University and JAXA, Japan*

INV 2: "A Look at Transformation Electromagnetics (TEM)-A New Paradigm for Antenna Design"

Raj Mittra, *Pennsylvania State University, USA.*

INV 3 "A Domain Decomposition Approach combining MLFMM and ray-tracing"

Felipe Catedra, *Universidad de Alcalá, Madrid, Spain.*

INV 4: "Do you know your S-parameters?"

Tapan Kumar Sarkar, *Syracuse University, USA.*

Dec 20, Tue, 11:00-13:00 BALLROOM I&II

Technical Session TS 6 : Engineered Materials

Chair: K. Yasumoto, *Kyushu University, Japan*

ADS 14: "Annular Ring Antenna on a Novel PBG Structure"

Shatabdi Chakraborty, Shweta Srivastava, *Birla Institute of Technology, Mesra, Ranchi, India.*

ATT 87: "Metamaterial Loaded Square Slotted Dual Band Microstrip Patch Antenna"

J. G. Joshi, Shyam S. Pattnaik, S. Devi, *National Institute of Technical Teachers Training and Research, Chandigarh, India.*

ATT 95: "Compact Epsilon Negative ZOR-Antenna"

Gautam Kumar Singh, Raghendra Kumar Chaudhary, Kumar Vaibhav Srivastava, *IIT, Kanpur, India.*

ATT 128: "Compact Elliptical Microstrip Patch Antenna with Slotted Ground for Ku-Band Applications"

M. M. Sharma, Sanjeev Yadav, Ashok Kumar, *Malaviya National Institute of Technology, Jaipur, India*, Y. Ranga, *Macquarie University, Australia*, Deepak Bhatnagar, *University of Rajasthan, Jaipur, India.*

ATT 129: "A Compact Array with Low Mutual Coupling using Defected Ground Structures"

A. K. Arya, A. Patnaik, M. V. Kartikeyan, *Indian Institute of Technology, Roorkee, India.*

ATT 135: "Design of a Dual Polarized Rectangular Patch Antenna Using DGS"

Chandan Kumar Ghosh, Sourav Moitra, *Dr. B.C. Roy Engineering College, Durgapur, India*, Jhuma Kundu, *Aryabhata Institute of Engineering and Management, Panagarh, India*, A. K. Mukhapadhyaya, *Dr. B.C. Roy Engineering College, Durgapur, India*, S. K. Parui, *Bengal Engineering and Science University, Shibpur, India.*

ATT 146: "Design and Performance Analysis of EBG Antenna for Wireless Applications"

Krishnananda, Avinash K. R., T. S. Rukmini, R. V. *College of Engineering, Bengaluru, India.*

MPA 2: "Metamaterial Loaded Dual Band Microstrip Patch Antenna"

J. G. Joshi, Shyam S. Pattnaik, S. Devi, *National Institute of Technical Teachers Training and Research, Chandigarh, India.*

MPA 24: "Theory and Simulation of Split Ring Slotted Square Patch Antenna"

Pradyumn Ku. Patra, S. Jagadish Raj, *National Institute of Science and Technology, Berhampur, Odisha, India*, S. S. Pattnaik *National Institute of Technical Teachers Training & Research, Chandigarh, India*, R. K. Mishra, *Berhampur University, Odisha, India.*

MPA 27: "Enhancement of Front to Back Ratio and Directivity with wire medium ϵ -Near Zero Metamaterial as Superstrate in Microstrip Patch Radiators"

Deepak Gangwar, Prateek Juyal, Ashok Mittal, Asok De, *Ambedkar Institute of Technology, Delhi, India.*

MPA 35: "Transmission Line Model for Planar Antenna on DPS-DNG-DPS Substrate"

R. K. Mishra, Rashmita Kumari Panigrahy, *Berhampur University, Berhampur, India.*



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MPA 33: "Broadband Patch Antenna on Conjugate Omega DGS"

Sudhakar Sahu, *KIIT University, Bhubaneswar, India*, D. R. Poddar, *Jadavpur University, Kolkata, India*, R. K. Mishra, *Berhampur University, Berhampur, India*.

Dec 20, Tue, 11:00-13:00 TOPAZ

Technical Session TS 7 : Electromagnetic Materials

Chair: M. T. Sebastian, *NIIST- CSIR Trivandrum, India*

ATT 158: "Characterization of LiTiZn-Ferrite for Microstrip Devices"

Naveen Kumar Saxena, *Agra College, Agra, India*, Nitendar Kumar, *Solid State Physics Laboratory, Delhi, India*, P. K. S. Pourush, *Agra College, Agra, India*.

EMM 21: "Dielectric response of BaZn_{1/3}Ta_{2/3}O₃ reinforced polymer composites"

K. M. Manu, *National Institute for Interdisciplinary Science and Technology, CSIR, Thiruvananthapuram, India*, Sumeet Soni, V. R. K. Murthy, *Indian Institute of Technology Madras, India*, M. T. Sebastian, *National Institute for Interdisciplinary Science and Technology, CSIR, Thiruvananthapuram, India*.

EMM 22: "Microwave dielectric properties of green tape for LTCC applications"

Abhilash P., Dhanesh Thomas, M. T. Sebastian, *National Institute for Interdisciplinary Science and Technology, CSIR, Trivandrum, India*, V. R. K. Murthy, *Indian Institute of Technology Madras, India*.

EMM 23: "Polystyrene-Silver Composites for Embedded Capacitor Applications"

Dhanesh Thomas, K. P. Sreelakshmi, K. M. Manu, M. T. Sebastian, *National Institute for Interdisciplinary Science and Technology, CSIR, Trivandrum, India*.

EMM 24: "Effect of amorphous fillers on low loss ceramics for advanced microwave electronics"

Jobin Varghese, Sumesh Gopinath, M. T. Sebastian, *National Institute for Interdisciplinary Science and Technology, CSIR, Thiruvananthapuram, India*.

EMM 25: "Calculations of Scattering and Absorption Efficiencies of Nobel Metal Nanoparticles"

Anthony Centeno, Fang Xie, Jonathan Breeze, Neil Alford, *Imperial College London, London, United Kingdom*.

EMM 26: "Stopband Characteristics of Complementary Triangular Split Ring Resonator Loaded Microstrip Line"

Vidyalakshmi. M. R., *National Institute of Technology, Tiruchirappalli, India*, Rekha B., P. H. Rao, *SAMEER-CEM, Chennai, India*.

EMM 28: "Generalized Approach to Determine the Plasma Frequency for Wire Media: Useful for Metamaterial Applications"

Amitesh Kumar, Arijit Majumder, Sougata Chatterjee, *SAMEER Kolkata, India*, Shantanu Das, *Bhabha Atomic Research Centre, Mumbai, India*, Subal Kar, *Institute of Radiophysics & Electronics, University of Calcutta, Kolkata, India*.

EMM 32: "Development of under-cut type RF window for 50 kW Power Coupler"

Rajesh Kumar, P. Singh, *Bhabha Atomic Research Centre, Mumbai, India*, L. M. Joshi, *CEERI Pilani, Rajasthan, India*.

EMM 34: "Dispersion Relation in 1-D LHM-EBG Crystal"

R. K. Mishra, *Berhampur University, Berhampur, India*.

EMM 35: "Design of UWB Filter Using DGS and Slot SRR Array with Band Rejection for IEEE 802.11a WLAN"

Romita Chaudhuri, Swagato Mukherjee, *Heritage Institute of Technology, Kolkata, India*, Chinmoy Saha, *Swami Vivekananda Institute of Science and Technology, Kolkata, India*.

EMM 36: "A Comparative Analysis for Split Ring Resonators of Different Geometrical Shapes"

Chinmoy Saha, *Swami Vivekananda Institute of Science and Technology, Kolkata, India*, Jawad Y. Siddiqui, *Institute of Radio Physics and Electronics, University of Calcutta, Kolkata, India*.

Dec 20, Tue, 11:00-13:00 SAPPHIRE

Technical Session TS 8 : Microwave Devices II

Chair: W. M. Boerner, *UIC-ECE Comm., Sensing and Navigation Lab, Chicago, USA*

INV 5 (Invited Paper): "Microwave Sensor for Orange Classification"

Monai Krairiksh, P. Leekul, *King Mongkut's Institute of Technology, Bangkok, Thailand*.

MDC 27: "Estimation of the axial field of an axially magnetized permanent ring magnet with non-linear demagnetization characteristics"

Mrityunjay Santra, Lalit Kumar, *MTRDC, Bangalore, India*, Jyothi Balakrishnan, *Bangalore University, Bangalore, India*.

MDC 29: "Development of Magneto-static Solver Module for the design of compact and light-weight Traveling Wave Tubes"

A. Mercy Latha, V. Srivastava, R. K. Gupta, S. K. Ghosh, *CEERI, Pilani, India*.

MDC 30: "Design And Realization of a Low Loss, High Isolation Cband Balanced Subharmonic Mixer"

Sona Vishwakarma, *Space Applications Centre, Ahmedabad, India*, A. N. Bhattacharya, *ISRO, Bangalore, India*.



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MDC 37: "Band-Pass Characteristics of an Axially Periodic Disc-Loaded Circular Waveguide for Potential Application in a Gyro-TWT Amplifier"

R. K. Singh, *Bharat Sanchar Nigam Limited, Ludhiana, India.*

MDC 44: "Multilayer Coplanar Waveguide of Finite Conductor Thickness: Quasi-Static Spectral Domain Analysis"

Paramjeet Singh, A. K. Verma, *University of Delhi, India.*

MDC 45: "Compact Filter Using Coupled Metamaterial Mushroom Resonators With Corner Vias"

Seema Awasthi, Animesh Biswas, *Institute of Technology, Kanpur, India.*

MDC 46: "Development Of An Analog Phase Shifter For Particle Accelerator Control Circuits"

A. Basu, S. K. Koul, *IIT -Delhi, India*, S. Basak, Alok Chakravarti, *Variable Energy Cyclotron Centre, India.*

MDC 47: "Design of Tunable Matching Networks Over 800-5200 MHz Using Real Frequency Techniques"

Doğu Çağdaş Atilla, Çağatay Aydın, *Istanbul University, Istanbul, Turkey*, Tayfun Nesimoglu, *Middle East Technical University, Guzelyurt, Mersin 10, Turkey*, Prakash Chacko, *Motorola Technology, Penang, Malaysia*, B. S. Yarman, *Istanbul University, Istanbul, Turkey.*

MDC 51: "HTS Selective Bandstop Filter for Radio Astronomy Applications"

Srikanta Pal, *Birla Institute of Technology, Mesra, India*, Michael J. Lancaster, *University of Birmingham, UK.*

IP 4: "Antenna Simulation Overview Using CST Microwave Studio"

K. Pandurangan, *Computer Simulation Technology- CST AG, India.*

IP 5: "Advanced solution for RF, Microwave, and Antenna Applications"

Desmond Tan, *ANSYS, Singapore.*

Dec 20, Tue, 16:00-17:30 BALLROOM I

Technical Session TS 10 : MEMS, Measurements and Wireless Antennas

Chair: K. T. Selvan, *University of Nottingham Malaysia Campus, Malaysia*

INV 6 (Invited Paper): "Bio-MEMS"

S. Raghavan, *National Institute of Technology, Trichirappalli, India.*

AMT 4: "105m long anechoic chamber For High Power Microwave measurements"

Jean-François Rosnarho, Matthieu Guesne, *SIEPEL, France.*

MPA 13: "Inscribed Gasket Fractal Circular Monopole Antenna for UWB Application"

Anirban Kamakar, *Netaji Subhash Engg. College, Kolkata, India*, Rowdra Ghatak, *National institute of Technology Durgapur, India*, D. R. Poddar, *Jadavpur University, Kolkata, India.*

MPA 22: "4X4 Rectangular Patch Array Antenna for Bore Sight Application of Conical Scan S-band Tracking Radar"

Anila Kumar Sahu, *ITR Chandipur (DRDO), Balasore, India*, Manas Ranjan Das, *Lovely Professional University, Phagwara, India.*

MPA 34: "Arrays of Patch Antenna using Log Periodic Property"

Megha Dadel, *Birla Institute of Technology Ext. Centre, Patna, India*, Shweta Srivastava, *Birla Institute of Technology, Mesra, India.*

MWA 5: "Circularly Polarized Stacked Square Patch Microstrip Antenna with Tuning Stubs"

Vijay Sharma, *Govt. Women Engg. College, Ajmer, India*, Brajraj Sharma, V. K. Saxena, *University of Rajasthan, Jaipur, India*, K. B. Sharma, S.S. Jain Subodh P.G. College, *Jaipur, India*, M. M. Sharma, *Malviya national Institute of Technology, Jaipur, India*, D. Bhatnagar, *University of Rajasthan, Jaipur, India.*

MWA 4: "Stacked Arrangement of Modified Hexagonal and Square Microstrip Patches for Broadband Circularly Polarized Performance"

Manoj Dubey, Ajay Tiwari, D. Bhatnagar, V. K. Saxena, J. S. Saini, *University of Rajasthan, Jaipur, India.*

Dec 20, Tue, 14:00-15:30 BALLROOM I&II

Technical Session TS 9 : State of the art Technology: Industry Views

Chair: D. C. Pande, *LRDE, Bangalore, India*

Introductory Talk by Dr. D. C. Pande, *LRDE, Bangalore, India*

IP 1: "Hybridising electromagnetic simulation methods: Theory and practice"

Ernst Burger, *FEKO, South Africa.*

IP 2: "Advanced techniques for the computation of radar cross section features"

Ivan Gonzalez, *University of Alcala, Spain.*

IP 3: "State of the art Technology - "MXE" Full Compliance EMI Receiver"

Ashutosh Dwivedi, *Agilent Technologies India Pvt. Ltd., New Delhi, India.*



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Dec 20, Tue, 16:00-17:30 BALLROOM II

Technical Session TS 11 : Wireless Antennas I

Chair: Subramaniam Ananthakrishnan, *University of Pune, India*

INV 7 (Invited Paper): "Investigations on a Wideband Novel Modified Archimedean Spiral Antenna Array Covering DCS/PCS/WLAN and LTE Wireless Communication Bands"

Balamurugan Shanmugam, Satish K. Shama, *San Diego State University, San Diego, CA, USA.*

ADS 15: "Modified High Frequency Omnidirectional Antenna For Wireless Communication"

Mrs. P. Jothilakshmi, *Velammal College of Engineering and Technology, Madurai, India.* Dr. (Mrs.) S. Raju, *Thiagarajar College of Engineering Madurai, India.*

ATT 96: "Analysis Of Distributed Conformal Antennas On A Moving Platform"

Parameswar R., P. H. Rao, K. P. Ray, *SAMEER-Center for Electromagnetics, Chennai, India.* N. Balakrishnan, *Indian Institute of Science, Bengaluru, India.*

ATT 151: "Dual Frequency Active Antenna"

Madhur Deo Upadhyay, Mahesh P. Abegaonkar, Ananjan Basu, S. K. Koul, *IIT Delhi, India.*

MPA 3: "Quad Band CPW Antenna for PCS, Bluetooth, WiMax and WLAN Applications"

Masoumeh Darvish, Hamid Reza Hassani, *Shahed University, Tehran, Iran.*

MPA 8: "Multiband CPW-Fed Monopole Antenna for MIMO Applications"

Masoumeh Darvish, Hamid Reza Hassani, *Shahed University, Tehran, Iran.*

MPA 10: "Active Microstrip Antenna for Circular Polarization"

A. K. Gautam, *Pramod Benjwal, G. B. Pant Engineering College, Pauri Garhwal, India.* B. K. Kanaujia, *Ambedkar Institute of Technology, New Delhi, India.*

Dec 20, Tue, 16:00-17:30 TOPAZ

Technical Session TS 12 : Microwave Devices III

Chair: Monai Krairiksh, *King Mongkut's Institute of Technology, Bangkok, Thailand*

MDC 22: "Design of a Dual-Band Dual-Mode Substrate Integrated Waveguide Filter with Symmetric Transmission Zeros"

Mohammad Almalkawi, Michael Westrick, Vijay Devabhaktuni, Mansoor Alam, *University of Toledo, USA.* Li Zhu, *COM DEV Int. Ltd, Ontario, Canada.* Jing Deng, *UNC Greensboro, USA.*

MDC 23: "Studies on the Millimeter-wave Performance of MITTATs from Avalanche Transit Time Phase Delay"

Aritra Acharyya, J. P. Banerjee, *Institute of Radiophysics and Electronics, University of Calcutta, India.*

Moumita Mukherjee, *CMSDS, Institute of Radiophysics and Electronics, University of Calcutta, India.*

MDC 35: "A Low Cost Magnetically Tunable Microstrip Ring Resonator"

Rajeev Pourush, *Mody Institute of Technology and Science, Rajasthan, India.* G. S. Tyagi, *Dayalbagh Educational Institute, Agra, India.*

MDC 38: "Miniaturized Wilkinson Power Divider with Harmonic Suppression with stubs"

R. Gowri, Sribidhya Mohanty, Anurag Vidyarthi, *Graphic Era University, Dehradun, India.*

MDC 40: "Design of a UHF Low-Loss Leaky SAW Impedance Element Filter Unit Section"

Santanu Sinha, Ajay Kumar, Surinder Singh, *Space Applications Centre, ISRO, Ahmedabad, India.*

MDC 48: "Dielectric Relaxation Study of Butanenitrile with 1,2-dichloroethane Using TDR Technique"

V. P. Pawar, A. V. Patil, *Maharashtra Udayagiri Mahavidyalaya, India.* G. N. Shinde, *Indira Gandhi Mahavidyalaya, Nanded, India.*

MDC 49: "Defect Induced Electromagnetic Band Gap in 2D Circular Dielectric Slab"

Tulika Giri, K. S. Daya, *Dayalbagh Educational Institute, Agra, India.*

MDC 55: "Studies on Near Field experimental setup for Microwave machining"

Rajesh Kumar, Shantanu Das, *Bhabha Atomic Research Centre, Mumbai, India.*

MRF 15: "A Microelectromechanical Disk Resonator-based Bandpass Filter for Wireless RF Applications"

Joydeep Basu, Tarun Kanti Bhattacharyya, Ritesh Ray Chaudhuri, Anindya Lal Roy, *IIT-Kharagpur, India.*

Dec 20, Tue, 16:00-17:30 SAPPHIRE

Technical Session TS 13 : Fractals and Arrays

Chair: R. K. Mishra, *Berhampur University, Orissa, India*

INV 8 (Invited Paper) : "Glimpses of Microwave Activities in India"

D. Bhatnagar, *University of Rajasthan, Jaipur, India.*

ADS 10: "Inscribed gasket fractal circular monopole antenna for UWB application"

Anirban Karmakar, *Netaji Subhash Engg College, Kolkata, India*,
Rowdra Ghatak, *National Institute of Technology, Durgapur, India*,
D. R. Poddar, *Jadavpur University, Kolkata, India*.

ATT 88: "Minimization of Side Lobe Level of Scanned Linear Array Antenna with Fixed Dynamic Range Ratio utilizing Iterative Fast Fourier Transform"

V. V. Bhargav Bikkani, G.K. Mahanti, *National Institute of Technology Durgapur, India*, B. C. Mahato, *Aryabhatta Institute of Engineering and Management, Durgapur, India*.

ATT 89: "Iterative Fast Fourier Transform for Placing Nulls in Broadside Linear Array Antenna with Minimum Side Lobe Level and Fixed Dynamic Range Ratio"

V. V. Bhargav Bikkani, G. K. Mahanti, *National Institute of Technology, Durgapur, India*, B. C. Mahato, *Aryabhatta Institute of Engineering and Management, Durgapur, India*.

ATT 94: "Pattern Recovery in Failed Antenna Arrays by Partial Control of Real-Weights"

Om Prakash Acharya, Amalendu Patnaik, Sachendra N. Sinha, *Indian Institute of Technology, Roorkee, India*.

ATT 116: "Wide Slot Fractal-Antenna Design With Improved Bandwidth"

Hitesh Dholakiya, Dhaval Pujara, *Institute of technology, Nirma University, Ahmedabad, India*, S. B. Sharma, *Indian Institute of Technology and Engineering, Ahmedabad, India*.

ATT 134: "Printed Slotted Waveguide Array Antenna

Devi V. P., *SSN College of Engineering, Tamilnadu, India*, B. Rekha, P. H. Rao, *SAMEER Chennai, India*.

Dec 21, Wed, 9:00-10:00 BALLROOM I&II
IEEE AP-S DISTINGUISHED LECTURE

Chair: Magdalena Salazar-Palma, *Universidad Carlos III de Madrid, Spain*.

"Floquet Modal Based Analysis of Phased Array Antennas and Methods of Beam Synthesis," Arun K. Bhattacharyya, *Northrop Grumman Corporation, USA*.

Dec 21, Wed, 10:30-12:30 BALLROOM I&II
Technical Session TS 14 : Invited Session II
Chair: T. K. Sarkar, *Syracuse University, USA*

INV 9: "RADIOASTRON - A satellite antenna in space for Extremely Long Baseline Interferometry (ELBI)"

S. Ananthkrishnan, *Pune University, India*.

INV 10: "Resonance and Enhancement of Electromagnetic fields in Cylindrical EBG Structures"

Kiyotoshi Yasumoto, *Kyushu University, Japan*.

INV 11: "THz Radar and its Imaging Capabilities"

Goutam Chattopadhyay, *NASA-Jet Propulsion Laboratory, California Institute of Technology, USA*.

INV 12: "Fundamentals of Electromagnetic Units and Constants"

Krishnasamy T. Selvan, *University of Nottingham Malaysia Campus, Malaysia*.

Dec 21, Wed, 13:30-15:00 BALLROOM I

Organised session OS 4 : Communication II

Co-Chairs: V. U. Reddy, *Osmania University, Hyderabad, India*
Ana Pérez, *Universitat Politècnica de Catalunya (UPC), Spain*

OS 4.1: "Recent Advances in Satellite based Navigation for Aviation"

A. D. Sarma, *Osmania University, Hyderabad, India*.

OS 4.2: "Measurement of path loss in urban and suburban environments over various regions of India and the associated modelling studies"

M. V. S. N. Prasad, *National Physical Laboratory, New Delhi, India*.

OS 4.3: "Near/Far field of Antennas"

Magdalena Salazar-Palma, *Universidad Carlos III de Madrid, Spain*,
Arijit De, *IIT Kharagpur, India*.

Dec 21, Wed, 13:30-15:00 BALLROOM II

Technical Session TS 15 : Antenna Electromagnetics and Remote Sensing

Chair: Arun K. Bhattacharyya, *Northrop Grumman Corporation, USA*

INV 13 (Invited Paper): "Future perspectives of SAR Polarimetry with applications to Multiparameter fully polarimetric POLSAR Remote Sensing"

W. M. Boerner, *UIC-ECE Comm., Sensing and Navigation Lab, Chicago, USA*.

ATT 106: "Transient electromagnetic scattering from thin wire: an iterative scheme to study a stable solution of the time domain electric field integral equation"

Dorsaf Omri, Taoufik Aguil, *Engineering school of Tunis, Tunisia*.

ATT 139: "Locally-One-Dimensional FDTD for EM Scattering from Two-Dimensional Structures"

Md. Masud Rana, Ananda Sanagavarapu Mohan, *University of Technology Sydney (UTS), Sydney, Australia*.

ATT 140: "Effect of Serpentine and Non Uniform Waveguide Mode converters on TM_{01} and TE_{11} : A Comparative Study based on simulations"

Ratan Sanjay D., V. G. Borkar, *DRDO, Hyderabad, India*.



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ATT 147: "Design of Normal mode Helical Antenna using Neural Networks"

Jagadeesh V.K., Santhosh Kumar S., *College of Engineering, Trivandrum, India.*

ATT 164: "Analysis of Variation of Various Parameters on Design of Discone Antenna"

Sarita Verma, Abhilasha Mishra, *Dr. Babasaheb Marathwada University, Aurangabad, India*, Rukhsana Khan, *NMIMS University, Mumbai, India.*

MPA 32: "Study and Realization of Dual Mode Tuned Antenna Beam Steering"

Pradyumna Ku. Patra, *NIST, Berhampur, India*, Shyam Sundar Pattnaik, *NITTTR, Chandigarh, India*, Sudhajit Misra, B. S. Nayak, *NIST, Berhampur, India.*

Dec 21, Wed, 13:30-15:00 BALLROOM III

Technical Session TS 16 : Wireless Antennas II

Chair: Deepak Bhatnagar, *University of Rajasthan, India*

ATT 98: "High Gain Multiple Resonance Ku-band Microstrip Patch Antenna"

Satya Kesh Dubey, *CSIR-National Aerospace Laboratories, Bangalore, India*, Surya K. Pathak, Kunal K. Modh, *Institute for Plasma Research, Gandhinagar, India.*

MPA 14: "Multifunctional Microstrip Antennas for Wireless Applications"

K. J. Vinoy, *Indian Institute of Science, Bangalore, India.*

MPA 15: "CPW fed Wide-Band Printed Omnidirectional Antenna"

Akshay Jain, Pramod Kumar Verma, V. K. Singh, Mahakar Singh, *DEAL, DRDO, India.*

MPA 25: "Slotted Slim RFID Tag Antenna For Metallic Applications"

Apoorva Sharma, Syed Azeemuddin, *Communications Research Center International Institute of Information Technology, Hyderabad, India*, A. R. Harish, *Indian Institute of Technology Kanpur, India.*

MPA 28: "A Compact Ultra-Wideband CPW-fed Printed Antenna with SRR for Rejecting WLAN Band"

M. M. Sharma, Ashok Kumar, Sanjeev Yadav, *Malaviya National Institute of Technology, Jaipur, India*, Y. Ranga, *Macquarie University, Australia*, D. Bhatnagar, *University of Rajasthan, India.*

MWA 8: "The Edge Truncated Compact Square Microstrip Patch Antenna (ET-CSMPA) for Wireless Applications"

Halappa R. Gajera, *University of Mysore, Karnataka, India.*

MWA 9: "Multipurpose Band Specific Antenna Design and Realization for Wireless Authentication Device"

Jude Antonyamy, Saroj K. Patro, *Product Engineering Services, Mindtree Ltd., Bangalore, India.*

MWA 10: "A Review of PIFA Technology"

Jhimlee Adhikari Ray, *Calcutta Institute of Engg. & Mgmt., WBUT, India*, S. R. Bhadra Chaudhuri, *Bengal Engineering & Science University, Shibpur, India.*

MWA 11: "Wideband CPW fed Planar Monopole Antenna with dual notch"

Debasis Mitra, Swarup Das, Dhruva Das, S. R. Bhadra Chaudhuri, *Bengal Engineering and Science University, Shibpur, India.*

Dec 22, Thu, 9:00-11:00 BALLROOM II

Technical Session TS 17 : Broadband and UWB Antennas

Chair: Rowdra Ghatak, *NIT Durgapur, India*

ATT 91: "Design and Development of Folded Stub Loaded Microstrip Reflectarray Antenna"

Srikanth M., Raghavan S., *National Institute of Technology, Tiruchirappalli, India*, P. H. Rao, *SAMEER, Chennai, India.*

ATT 99: "Analysis of UWB Patch Antenna with Reactive Loading"

Satya Kesh Dubey, *CSIR-National Aerospace Laboratories, Bangalore, India.*

ATT 101: "Reflector Based Fat Monopole UWB Antenna For Impulse Radar Application"

Dhiraj K. Singh, D. C. Pande, *LRDE, Bangalore, India*, A. Bhattacharya, *Indian institute of Technology, Kharagpur, India.*

ATT 105: "Broadband Dual Linear Antenna with Omni-Directional Coverage"

S. D. AHIRWAR, C. Sairam, Sheilu Singh, T. Khumanthem, *DRDO, Hyderabad, India.*

ATT 120: "Analysis of Broadband U-slot cut RMSA"

Amit A. Deshmukh, *EXTC, DJSCOE, Mumbai, India*, K. P. Ray, *RFMS, SAMEER, Mumbai, India.*

ATT 124: "Broadband Microstrip Antenna using Radiating Edge Coupled Parasites"

Sarthak Singhal, Amit Kumar Singh, Manoj Kumar Meshram, *IT-BHU, Varanasi, India.*

ATT 125: "Modified CPW Fed Band-Notched Ultra-Wideband Antenna"

Parth C. Kalaria, M. V. Kartikeyan, *IIT-Roorkee, India.*



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ATT 126: "A Broadband Aperture Coupled Microstrip Patch Antenna Design"

M. Mahdi Honari, Abdolali Abdipour, Gholamreza Moradi, *University Of Technology, Tehran, Iran.*

ATT 130: "Performance Analysis of a Cavity Backed Wideband Directional Antenna"

M. Sreenivasan, P. H. Rao, *SAMEER- Chennai, India.*

ATT 160: "A Novel Planar Monopole Design for UWB Applications"

O. Nithin Bharadwaj, Karthik Rajakumar, *HCL Technologies Ltd., Chennai, India.*

MPA 30: "A Monopole Ultra-wideband Antenna with Reconfigurable Band-notch"

Rishik Bazaz, *Delhi Technological University, India*, S. K. Koul, Ananjan Basu, *Indian Institute of Technology, Delhi, India.*

MPA 31: "Dual Band Notched Fractal Ultra-Wideband Antenna"

Anirban Karmakar, *Netaji Subhash Engg. College, Kolkata, India*, Rowdra Ghatak, *National institute of Technology, Durgapur, India*, D. R. Poddar, *Jadavpur University, India.*

Dec 22, Thu, 9:00-11:00 BALLROOM III

Technical Session TS 18 : DRA and Printed Antennas

Chair: Goutam Chattopadhyay, *California Institute of Technology, USA*

DRA 2: "Wideband Two-layer Rectangular Dielectric Resonator Antenna with $(Zr_{0.8}Sn_{0.2})TiO_4$ -Epoxy Composite System"

Raghendra Kumar Chaudhary, Himangshu Bhusan Baskey, Kumar Vaibhav Srivastava, Animesh Biswas, *Indian Institute of Technology Kanpur, India.*

DRA 3: "The input impedance of triangular shape dielectric resonator antenna"

S. Dutta, M. Biswas, *Jadavpur University, India.*

DRA 5: "A Monopole Type Sierpinski Carpet Fractal Patterned Rectangular Dielectric Resonator Antenna for UWB Application"

Dipali Soren, *M. P. C. C. of Engineering & Technology, Bhilai, India*, Rowdra Ghatak, *National Institute of Technology Durgapur*, R. K. Mishra, *Berhampur University, India*, D. R. Poddar, *Jadavpur University, India.*

DRA 6: "Dual Band Metal Loaded Double-Segment Cylindrical DRA"

Debasis Mitra, Dhruva Das, Swarup Das, S. R. Bhadra Chaudhuri, *Bengal Engineering and Science University, Shibpur, India.*

MPA 16: "Improved CAD model to compute the input impedance of tunable circular patch antenna"

S. Banik, M. Biswas, *Jadavpur University, Kolkata, India.*

MPA 19: "CAD model to compute the input impedance of tunable triangular patch antenna"

M. Dam, *Hooghly Engineering and Technology College, Hooghly, India*, M. Biswas, *Jadavpur University, Kolkata, India.*

MPA 23: "An ANN Model to Determine Design Parameter of Circular Monopole Antenna"

Moumi Pandit, Tanushree Bose (Roy), *Sikkim Manipal Institute of Technology, India.*

ATT 107: "Performance Analysis of a Compact Directional Monopole Antenna"

Praveen Gundeti, George Thomas K., *SAMEER- Chennai, India.*

ATT 109: "Design of Cross-Slot Coupled Microstrip Antenna Using Self Adaptive Differential Evolution"

Arindam Deb, Jibendu Sekhar Roy, *KIIT University, Bhubaneswar, India*, Bhaskar Gupta, *Jadavpur University, India.*

ATT 121: "Broadband Proximity fed half E-shaped Microstrip Antennas"

Amit A. Deshmukh, *EXTC, DJSCOE, Mumbai, India*, K. P. Ray, *RFMS, SAMEER, Mumbai, India.*

ATT 144: "Design and Realization of Ultra-Wideband Monopole Antenna"

Rajeev Jyoti, *Space Applications Centre, Ahmadabad, India*, Aarti Gehani, Dhaval Pujara, *Institute of Technology, Nirma University, Ahmadabad, India.*

ATT 154: "Bi-Quad Band Dielectric Resonator Antenna for Wireless Application"

Pramod Kumar, Santanu Dwari, *ISM, Dhanbad, India*, N.K.Agrawal, *Inderprastha Engineering College, Ghaziabad, India*, A. K. Shrivastav, *SAMEER- Chennai, India.*

Dec 22, Thu, 11:30-13:00 BALLROOM II

Organised Session OS 5 : Microwave Defence Applications

Co-Chairs: S. Sanyal, *IIT Kharagpur, India*

Lakshminarayana Merugu

OS 5.1: "Cross Polar Calibration using inclined Dihedrals"

A. Ghosh, V. G. Borkar, *RCI Hyderabad, India.*

OS 5.2: "Radome material Characterization for its accurate loss tangent values in KU band"

A. Renuka, A. Ghosh, V. G. Borkar, *RCI Hyderabad, India.*

OS 5.3: "RCS of Generic Missile models using PO/GTD Techniques"



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Kandimalla Divyabramham, Jagjit Singh Sidhu, Sankarsan Padhy, Subrata Sanyal, *Indian Institute of Technology Kharagpur, India.*

OS5.4: "Design and development of slip cast fused silica radome for airborne applications"
G. V. R. K. Rao, A. Ghosh, V. G. Borkar, *RCI Hyderabad, India.*

Dec 22, Thu, 11:30-13:00 BALLROOM III

Organised/Technical Session OS 6 /TS 19: Radar and Remote Sensing

Co-Chairs: Amit Mishra, *University of Cape Town, South Africa*
Chinmoy Bhattacharya, *DIAT Pune, India*

OS 6.1: "A UWB based Improved Imaging of Breast Tumors"
Santu Sardar, *DRDO, Hyderabad, India.*

OS 6.2: "Nonlinear Adaptive Control of Vehicular Radar"
Dipankar Deb, *Indian Institute of Technology, Guwahati, India.*

OS 6.3: "Entropy Based Landcover Classification Using Polarimetric SAR Images and GMM method"
Rajib Kumar Panigrahi, *IIT Guwahati, India*, Amit Kumar Mishra, *University of Cape Town, South Africa.*

OS 6.4: "Recent advances in modeling and validation of high resolution clutter",
Chinmoy Bhattacharya, *DRDO, Pune, India.*

OS 6.5: "Recent advances in UWB radar",
Viswanath Ganapathy, *Saankhya Labs Pvt. Ltd., Bangalore, India.*

RST 10: "A New Adaptive Formation Control Scheme for a Constellation of Satellites with Parametric Uncertainties"
Dipankar Deb, *Indian Institute of Technology Guwahati, India.*

RST 11: "Analysis of Software Based GPS Data for Studying Some Characteristics of Ionospheric Irregularities"
Aritri Debnath (Ghosh), Tanushree Bose (Roy), *Sikkim Manipal Institute of Technology, Sikkim, India.*

RST 15: "Vertical profile of Z-R relationship and its seasonal variation at a tropical location"
Saurabh Das, Shamitaksha Talukdar, Aniruddha Bhattacharya, Arpita Adhikari, Animesh Maitra, *Institute of Radio Physics and Electronics, University of Calcutta, Kolkata, India.*

Dec 22, Thu, 14:00-16:20 BALLROOM II

Technical Session TS 20 : Antennas, Wave Propagation and Remote Sensing

Chair: Animesh Maitra, *University of Calcutta, India*

INV 14 (Invited Paper): "Reflections on and in Bose's pyramidal horn antenna and the problem of corner diffraction"
Subrata Sanyal, *IIT Kharagpur, India.*

RST 17: "Effect of fabrication tolerance on radar cross section values of corner reflectors"
Joita Mukherjee, A. Ghosh, V. G. Borkar, *RCI Hyderabad, India*

ATT 165: "Design, Development & measurement of X band Gaussian Beam antenna"
A. Renuka, A. Ghosh, V. G. Borkar, *RCI Hyderabad, India.*

ATT 113: "Sidelobe Level Reduction of Aperiodic Planar Array Using an Improved Invasive Weed Optimization Algorithm"
R. Bhattacharya, T. K. Bhattacharyya, *Indian Institute of Technology Kharagpur, India*, S. Saha, *Institute of Engineering & Management, Kolkata, India.*

ATT 115: "Radiation pattern synthesis of linear antenna arrays by amplitude tapering using Genetic Algorithm"
Durbadal Mandal, Y. Naren Tapaswi, *National Institute of Technology Durgapur, India.*

ATT 153: "Adaptive Phased Array Antenna Based on NMOS Phase Shifter for Intelligent Transport System Application"
Tapas Mondal, Milan Mazumdar, Dr. B. C. Roy *Engineering College, Durgapur, India*, Rowdra Ghatak, *NIT- Durgapur, India*, S. R. Bhadra Chaudhuri, *Bengal Engineering and Science University, Shibpur, India.*

WPR 10: "Reduction of Attenuation of E.M. Wave Inside Plasma Formed During Supersonic or Hypersonic Re-entry of Missile Like Flight Vehicles By The Application of D.C Magnetic Field - A Technique For Mitigation of RF Blackout"
Rajkumar Dutta, Rajarshi Biswas, Niladri Roy, *Defence Research and Development Organization (DRDO), Chandipur, India.*

WPR 11: "Microphysical characteristics of clouds and precipitation during the Indian monsoon period over Kolkata region"
Kaustav Chakravarty, P. Ernest Raj, *Indian Institute of Tropical Meteorology, Pune, India.*

WPR 13: "Modeling, Calculating and Capacity Enhancement of a Rayleigh Fading MIMO Channel"
Abinash Gaya, Dhruva Charan Panda, *Centurion University of Technology and Management, Orissa, India.*

WPR 14: "Radiometric Observations before and during a Rain Event at a Tropical Location"
Aniruddha Bhattacharya, Arpita Adhikari, Shamitaksha Talukdar, Animesh Maitra, *Institute of Radio Physics and Electronics, University of Calcutta, Kolkata, India.*



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WPR 15: "Simulated Propagation through Leafy Vegetation"
Saumya Adhikari, *PES Institute of Technology, Bangalore, India.*

WPR 16: "Towards Prevention of Collision of Elephants with Trains"
Ashish Kawdia, Sameer Dixit, Dipankar Deb, *Indian Institute of Technology, Guwahati, India.*

Dec 22, Thu, 14:00-16:20 BALLROOM III

Technical Session TS 21 : Antennas and Wireless Sensors

Chair: Siddik Yarman, *Istanbul University, Turkey*

INV 15 (Invited Paper): "Wireless Sensors Network Based Home Management"
Subhas Chandra Mukhopadhyay, *Massey University (Manawatu), New Zealand*

MPA 29: "Ultra Wideband Square Planar Monopole Antenna with V-Shaped Coupling Elements"
Cahit Karakuş, *Kultur University, Turkey*, Çağatay Aydın, Doğu Çağdaş Atilla, *Istanbul University, Turkey*, Tayfun Nesimoğlu, *METU, NCC, Turkey*, Siddik Yarman, *Istanbul University, Turkey.*

ATT 90: "Design and Characterization of Polarizing Grid as Sub-Reflector in Folded Reflectarray Antennas"
Srikanth M., Raghavan S., *National Institute of Technology, Tiruchirappalli, India*, Rekha B., P. H. Rao, *SAMEER, Chennai, India.*

ATT 92: "Circularly Polarized Tilted beam Printed Crank-Line Antenna"
Kailash Kashyap G., Raghavan S., *National Institute of Technology, Tiruchirappalli, India*, Rekha B., P.H. Rao, *SAMEER, Chennai, India.*

ATT 100: "Degradation of On Board Antenna Performances by Re-entry Plasma during Supersonic or Hypersonic Re-entry of Flight Vehicles and Its Mitigation Technique by Application of D.C. Magnetic Field"
R. Dutta, R. Biswas, N. Roy, *ITR-DRDO Chandipur, India.*

ATT 108: "Radiation Characteristics of Partial Height Curved Iris Excited Centered Slot X-Band Radiator"
S. Chatterjee, *Jadavpur University, Kolkata, India*, R. Ghatak, *National Institute of Technology Durgapur, India*, D. R. Poddar, *Jadavpur University, Kolkata, India.*

ATT 122: "Circularly Polarized Rectangular Slot Antenna with Trapezoidal Tuning Stub for UWB Application"
J. P. Shinde, *Sinhgad Academy of Engineering, Pune, India*, Raj Kumar, *Defense Institute of Advanced Technology, Pune, India*, M. D. Uplane, *Shivaji University Kolhapur, Kolhapur, India*, P. N. Shinde, *Sinhgad Academy of Engineering, Pune, India.*

ATT 127: "High Efficiency Compact Ground Station Antenna Using Displaced Ellipse Reflector"
Sandip Sankar Roy, T. Naga Sekhar, *National Remote Sensing Centre, ISRO, Balanagar, Hyderabad, India.*

ATT 136: "Multi-Frequency Microstrip Antennas for Wireless Applications and its effect on fraud"
Arpita Sen, Neela Chattoraj, *Birla Institute of Technology, Mesra, India.*

ATT 141: "Millimeter Wave In-line Coaxial-to-Rectangular Waveguide Transition"
Meenakshi Durga, Seema Tomar, Sushil Singh, Lalit Suthar, *Defence Electronics Application Laboratory, DRDO, Dehradun, India.*

ATT 148: "Simplified Analysis of Resonant Complex Slots in a Waveguide"
S. S. Kakatkar, K. P. Ray, *SAMEER Mumbai, India.*

ATT 163: "Design of a Substrate Integrated Waveguide H plane Horn antenna on a PTFE substrate for automotive radar application"
S. R. Ranade, *SAMEER Mumbai, India*, D. U. Nair, *Pillai's Institute Of Information Technology, Navi Mumbai, India.*

Dec 22, Thu, 16:20 BALLROOM II&III
TEA and Valedictory Session
