



International Microwave & RF Conference
11-13 December 2017
Ahmedabad, India



IMaRC-2017 Conference Program

December 11, 2017 (Monday)					
Time	Programs				
	Room: Atelier 1	Room: Atelier 2	Room: Atelier 3&4	Juniper Hall	
08.30-10.00	<p>Workshop MW1A: Devices, Components and Systems from Microwaves to Terahertz for Space to Medical Applications</p> <p>Session Chair: Goutam Chattopadhyay</p> <p>NASA-JPL, California Institute of Technology, USA</p>	<p>Workshop MW2A: RF, MW and MMW Technologies for 5G Systems</p> <p>Session Chairs: Vijay Nair and Debabani Choudhury</p> <p>Intel Corporation, USA</p>	<p>Workshop MW3A: Active and Passive Microwave Sensors</p> <p>(Radar Technology for Diverse Applications)</p> <p>Session Chairs: A. K. Singh (DRDO) and Arundhati Misra</p> <p>SAC, ISRO, India</p>		
	<p>Millimeter wave/THz in the Medical Context</p> <p>Robin Augustine</p> <p>Microwave Group, Solid State Electronics Division, Angstrom Laboratory, Department of Engineering Sciences, Uppsala University, Uppsala, Sweden</p>	<p>Enabling the Third Wireless Revolution through Transformative RF/Millimeter wave Circuits, Systems and Wireless Communication and Sensing Paradigms</p> <p>Harish Krishnaswamy,</p> <p>Columbia University, USA</p>	<p>Advances in Phased Array Technology for Radar & EW applications</p> <p>Anil Kumar Singh</p> <p>Defense Electronics Research Laboratory, DRDO, Hyderabad, India</p>		
	<p>Challenges, Design, and Realization of Photoconductive Based Systems for Millimeter Wave and Terahertz Applications</p> <p>Chinmoy Saha</p> <p>Department of Avionics, Indian Institute of Space Science & Technology, Thiruvananthapuram, Kerala, India</p>	<p>Massive MIMO: All-Digital Beam-Forming of Phased Sub-Arrays</p> <p>Abbas Omar</p> <p>University of Magdeburg, Germany</p>	<p>Chandrayaan-2 Dual-Frequency SAR: System Design & Realization</p> <p>Deepak Putrevu</p> <p>Space Applications Centre, ISRO, Ahmedabad, India</p> <p>ISRO Weather and Atmospheric Radar Technology Development</p> <p>V. K. Anandan</p> <p>RDA, ISTRAC (ISRO), Bangalore, India</p> <p>Design of RF systems for Multi Object Tracking Radar (MOTR)</p> <p>V. Sravan Kumar</p> <p>SDSC-SHAR (ISRO), Sriharikota, India</p>		
10:00-10:30	Coffee/Tea Break				
10:30-12:00	<p>Inaugural Session:</p> <p>Keynote Address by Chief Patron, Shri Tapan Misra, Director Space Applications Centre, ISRO, Ahmedabad, India</p> <p>Inaugural Address by Chief Guest, Shri A. S. Kiran Kumar, Chairman, Indian Space Research Organisation (ISRO), India</p>				

12:00-13:00	Inauguration of Exhibition			
13:00-13:30	Lunch break & visit to exhibition			
13:30-15:00	Workshop MW1B: Devices, Components and Systems from Microwaves to Terahertz for Space to Medical Applications Session Chair: Goutam Chattopadhyay NASA-Jet Propulsion Laboratory, California Institute of Technology, USA	Workshop MW2B: RF, MW and MMW Technologies for 5G Systems Session Chairs: Vijay Nair and Debabani Choudhury Intel Corporation, USA	Workshop MW3B: Active and Passive Microwave Sensors Session Chair: Rajeev Jyoti SAC, ISRO, Ahmedabad, India and Yuhsyen Shen, CNES, France	Ph. D. Initiative meeting
	Machine Learning in Radar Shobha Sundar Ram Department of Electronics and Communications Engineering (ECE), Indraprastha Institute of Information Technology (IIIT), New Delhi, India	Measurements Approaches for 5G Circuits and Systems Nuno Borges Carvalho Institute of Telecommunications, University of Aveiro, Portugal	ISRO's Microwave Missions: An Overview of Science and Applications Raj Kumar, SAC, ISRO, Ahmedabad, India CNES Microwave Missions: An Overview of Data Uses and Applications Eric Boussarie, CNES, France	
	Interconnecting Technologies for Terahertz Systems Goutam Chattopadhyay NASA-Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA	5G Network Emulation and Physical Layer Testing Mombasawala Mohmedsaeed Keysight Technologies, India	Comparative view of RF subsystem for SIR-C and NISAR L-band SAR systems Yuhsyen Shen and Scott Shaffer JPL, California Institute of Technology, California, USA CNES Microwave Radar Activities Overview Alain Mallet, CNES, France	
15:00-15:30	Coffee/Tea Break & Visit to Exhibition			
15:30-18:00	Workshop MW1C: RF-SOI for High Performance Front End Modules Session Chair: Venkata Vanukuru SMTS, Design Enablement, Global Founders	Workshop MW2C: RF Power Amplifier Design with GaN: Design Considerations and Challenges Session Chair: Asmita Dani, Metawave Corp., USA	Workshop MW3C: Active and Passive Microwave Sensors (15.30-16.30) (Transmitter and Receiver Technology Development for Radars) Session Chairs: S. K. Datta MTRDC, Microwave Tube Research and Development Centre (MTRDC), DRDO, Bangalore, India, and Anant Naik, CEO GAETEC, Hyderabad	
	RF FEM Market Trends Venkata Vanukuru	Power Amplifier Basics and Design Considerations for GaN Technology Asmita Dani, Metawave Corp., USA	Indian Initiatives Towards Design & Development of Compact Microwave Tubes and Power Modules S. K. Datta	

			Microwave Tube Research and Development Centre (MTRDC), DRDO, Bangalore, India.	
	RF Compact Models and PDKs Venkata Vanukuru		TWT/TWTA Design and Principles in Modern Operation for RADAR Systems Ernst Bosch, Thales, France	
	High Performance On-Chip RF Passive Devices Venkata Vanukuru	Loadpull Simulation Demo Using AWR Asmita Dani, Metawave Corp., USA	Phased Array Development at JPL for Remote Sensing Radars Y. Kim, W. Edelstein, A. Moussessian, J. Vacchione, Jet Propulsion Laboratory, California Institute of Technology, California, USA	
16:30-18:00			Workshop MW3D: Active and Passive Microwave Sensors (Millimeter-wave Technology Development: Emphasis on Passive Atmospheric Sounding Applications) Session Chairs: Eric Boussarie CNES, France and A N Bhattacharya, SAC, ISRO, India	
			Atmospheric Temperature and Humidity Sounding at Millimeter-waves: An Overview Prantik Chakraborty SAC, ISRO, India	
			Antenna Development at V, W and G bands for Temperature and Humidity Sounding Units Soumyabrata Chakraborty SAC, ISRO, Ahmedabad, India	
			Manufacturing and Testing Antennas and Quasi-Optics for space (sub) Millimeter-Wave Instrumentation Maarten van der Vorst ESTEC, European Space Agency, The Netherlands	
			Millimeter-wave Receiver Technology Development at V-Band for Temperature Sounding and W and G-Bands for Humidity Sounding Shailendra Singh & Piyush Sinha SAC, ISRO, India	
18:00-19:00	Visit to Exhibition			
19:00	Cultural program and Dinner			

December 12, 2017 (Tuesday)				
Time	Programs			
	Room: Atelier 1	Room: Atelier 2	Room: Atelier 3&4	Juniper Hall
09:00-10:50	Session TU1A: Novel Concepts in Transmission Lines Session Chair: Tadashi Kawai, Japan	Session TU2A: Low-Noise Amplifier Progress and Applications Session Chair: Kenjiro Nishikawa, Japan	Session TU3A: Circulators and Reconfigurable Antennas & Sensors Session Chair: Harish Krishnaswamy, USA	
09:00-09:30	Broadband Branch-Line Coupler Utilizing Coupled-Transmission Lines for 5G Applications (Invited Talk) Tadashi Kawai, Yuya Haoka and Akira Enokihara	Impact of LNA performances on Mobile Base Station Receiver (Invited Talk) Kenjiro Nishikawa, Masanobu Tsujii, Koshi Hamano, Kunihiko Kawai, Hiroshi Okazaki and Shoichi Narahashi	Integrated Non-Magnetic Non-Reciprocal Components based on Switch-Based Conductivity Modulation (Invited Talk) Harish Krishnaswamy, Aravind Nagulu, Negar Reiskarimian and Tolga Dinc	
09:30-09:50	A Miniaturized Three-Stage Dual-Frequency Matching Network Dinesh Rano, Deepayan Banerjee and Mohammad Hashmi	Low Noise Amplifier at Ka Band Divya Kumar Garg, Vijay Kumar, M. Madhava Kumar, Yogesh Verma and Sandeep Chaturvedi	Two-Port Reconfigurable Passive Radiator with Switchable Pattern for Active Antenna Application Rajesh Kumar Singh, Ananjan Basu and Shibani Kishen Koul	How to Write a Paper for IEEE Journals and Navigate the Review Process George Ponchak, NASA, USA
09:50-10:10	A Compact Ultra-Wideband Conductor-Backed CPW Crossover with Improved Isolation Abinash Kumar Singh and MrinalKanti Mandal	X-Band Self Biased MMIC Amplifier using 250nm GaAs pHEMT process Tuhin Paul, Harinath Mynam and Samriti Kumar Garg	Design of Nanostructured Graphene Based RF Complementary Split Ring Resonator Gas Sensor for Detection of Nitrogen Dioxide Sandeep Singh, Prakrati Azad, Mohd. Akhtar and Kamal Kar	
10:10-10:30	Miniaturization of Wideband Loose Coupled (10 dB) BLC Using Dual Transmission Lines Mukesh Kumar, Sk. Nurul Islam, Susanta Kumar Parui and Santanu Das.	High Gain and Low Noise Figure Single-to-Differential CMOS LNA for Ka-Band Communication System Raghu Srinivas and Punithavathi Duraiswamy	Frequency Agile Monolithic Inset Fed Microstrip Patch Antenna Based on Barium Strontium Titanate (Ba_{0.9}Sr_{0.1}TiO₃) Ferroelectric Substrate Pratik Mevada, Arun Sharma, Sanjeev Kulshrestha, Soumyabrata Chakrabarty, Milind Mahajan and Rajeev Jyoti	
10:30-10:50			Graphene Based Multiband Frequency Reconfigurable antenna Jayendra Kumar, Banani Basu, Fazal Talukdar and Arnab Nandi	
10:30-11:00	Coffee/Tea Break & Visit to Exhibition			
11:00-12:30	Session TU1B: Advanced Oscillators and Synthesizers Session Chair: Ananjan Basu, India	Session TU2B: Transmitter and Receiver Techniques for Next Generation Mobile Communication Systems Session Chair: Yasunori Suzuki, Japan	Session TU3B: Microwave/Millimetre-wave/THz Systems, Session Chair: Kamal Samanta, UK	
11:00-11:30	Forced Opto-electronic Oscillators using Self-ILPLL (Invited Talk) Afshin Daryoush, Ulrich Rohde, Ajay Poddar, Tianchi Sun and Li Zhang	Requirements of millimeter-wave-band transmitter for Massive MIMO base station (Invited Talk) Yasunori Suzuki, Kunihiko Kawai, Hiroshi Okazaki, ShoichiNarahashi, Takahiro Asai and Yukihiro Okumura	Graphene-Based Nano-Rectifiers (Invited Talk) Aimin Song, Gregory Auton, Arun Kumar Singh, Jiawei Zhang, Xijian Zhang and Ernie Hill	
11:30-11:50	K-Band High Stability and Resolution Frequency Synthesizers using Forced Opto-Electronic Oscillators Tianchi Sun, Li Zhang, Ajay Poddar, Afshin Daryoush and Ulrich Rohde	3D Generalized coefficient supported model for Concurrent Dual-band Digital Predistortion of Envelope Tracking Power Amplifier Praveen Jaraut and Meenakshi Rawat	Gold Coated Cobalt Nanoparticles as SAR Controlling Agent for Hyperthermia Applications B V Naik and Satya Kesh Dubey	

11:50-12:10	<p>PLL Based High Stability Temperature Compensated Crystal Oscillator</p> <p>Varaprasad Rayudu, Sarath R, Chandrashekar Mariyappa, Unnikrishnan P.M and Vinod Chippalkatti</p>	<p>Efficiency Enhancement in Delta-Sigma Modulator based Transmitter using Level Transformation</p> <p>Nishant Kumar and Karun Rawat</p>	<p>A Low-Cost Test Bench for the Characterization of Microwave Devices Using Modulated Envelope Signal</p> <p>Girish Chandra Tripathi and Meenakshi Rawat</p>	
12:10-12:30	<p>A Novel Approach for Modelling Oscillator Circuit with Antennas</p> <p>Srinaga Nikhil N and Ke Wu</p>	<p>Baseband I/Q regeneration Method for Direct Conversion Receiver to Nullify Effect of Second Order Intermodulation Distortion</p> <p>Milind Shah and Sanjeev Gupta</p>	<p>Active Radar Calibrator Electronics for RISAT-1</p> <p>Nidhi Singh, Ch. V. N. Rao and Jolly Dhar</p>	
12:30-13:30	Lunch break & Visit to Exhibition			
13:30-15:10		<p>Special Session TU2C:</p> <p>High Throughput Satellites(HTS)</p> <p>Session Chair: K. S. Parekh, Shashank Saxena, India</p>		<p>Special Session TU3C:</p> <p>MICRO APP1</p> <p>Session Chair: M. B. Mahajan, India</p>
13:30-14:00		<p>A Perspective from a Global Satellite Operator</p> <p>Deepak Mathur, Executive Vice President, Global Sales, Video, SES</p>	13:30-14:10	<p>EM Simulation for Space Applications</p> <p>Rijin Saseendran- CST Application Engineer</p>
14:00-14:30		<p>New Trends and Technologies for High Throughput Satellites</p> <p>Stephan Vesval, Airbus</p>	14:10-14:30	<p>Complete X-Band 2x2 Phased Array Antenna Design and Simulation Including LTCC Transmit/Receive Module</p> <p>Tabish Khan, Sales Director for EMEIA, AWR Group, NI</p>
14:30-14:50		<p>Technologies for Next Gen Flexible Payloads</p> <p>D K Singh, SAC, ISRO, India</p>	14:30-14:50	<p>Accelerating Space Mission Design and Operations with Systems Tool Kit</p> <p>Dr. Libish K Balachandran, Engineering Consultant –Aerospace and Defence Analytics Graphics, Inc. (AGI)</p>
14:50-15:10		<p>RF Transmission on Amplifiers using Linear Signals– Linearized or Back-off Operation</p> <p>Ernst Bosch, Thales, France</p>	14:50-15:10	
15:10-15:30	Coffee/Tea Break & visit to exhibition			
15:30-17:20	<p>Session TU1D: Antenna Arrays and DGS Structures</p> <p>Session Chair: Rajeev Jyoti, India</p>	<p>Session TU2D: Novel Concepts in Filters</p> <p>Session Chair: Alla Abunjaileh, India</p>		IMaRC Executive Committee Meeting
15:30-16:00	<p>Degree of Freedom of Selecting Coupling Coefficient and Quality Factor in Near-Field Wireless Power Transfer: A Case Study of Using DGS Structures (Invited Talk)</p> <p>Ramesh Pokharel</p>	<p>The State of the Art of Electronically Tunable Compact Bandpass Filters Design (Invited Talk)</p> <p>Dmitry Kholodnyak</p>		

16:00-16:20	Amplitude and Phase Calibration of Antenna Arrays Yash Vasavada and Jeffrey Reed	High frequency RF Signal Filtering Using Photonic Technology for Radar Applications Javeria S Shanoor, Shubhankar Mishra, Ankit Kumar, Rajeswari P and Meena D	
16:20-16:40	A Novel Technique based on Modified Genetic Algorithm for the Synthesis of Thinned Planar Antenna Array with Low Peak Side Lobe Level over Desired Scan Volume Jijenth M, Kundan Kumar Suman, V S Gangwar, A K Singh and S P Singh	Harmonic Suppression in an In-line Chebyshev Bandpass Filter by Asymmetrical Perturbations Tarun Kumar Das and Sayan Chatterjee	
16:40-17:00	An Efficient Synthesis of Unequally Spaced Antenna Array with Electronic Scan Capability Utilizing Particle Swarm Optimization Allen Vivean Miranda, Ashwin P and V S Gangwar	A Novel Transition Device and Multiple Band-pass Filter using ring resonator Based on Spoof Surface Plasmon Polaritons at Microwave Frequency Rahul Kumar Jaiswal, Nidhi Pandit and Nagendra Prasad Pathak	
17:00-17:20		An Efficient Realization of Canonical Filter Using Lesser Number of Physical Cross Couplings Vikas Gupta, Tushar Gajjar, Kasif Pathan, Yauvan Dave and Nishant Shukla	
Visit to Exhibition			
Session TUP1(Exhibition Hall): Poster Session: A			
Session Chair: M. M. Sharma and Shibana Koul, India			
17:20-18:20	Extraction of 3D Additive Processes for Magnetically Tuned Frequency Selective Surfaces		
	Khaled Alhassoon, Yaaqoub Malallah, Chinmay Kolwalkar, Anurag Sarnaik, Dr. Nalin Kumar, David Tudor and Afshin Daryoush		
	T-Shaped Resonator for X-band Applications		
	Prince Jain, Archana Thourwal, Shonak Bansal, Soumadri Samanta, Neha Sardana, Neena Gupta, Sanjeev Kumar and Arun K Singh		
	Accurate Prediction, Validation of Ambient Microwave Breakdown Threshold in High Power Microwave Filters and Novel Design Techniques to Establish Sufficient Margins		
	Praveen Kumar Ambati, Vikrant Singh, Shilpi Soni and V D Parekh		
	Quad Band Metamaterial Inspired Planar Sensor for Dispersive Material Testing		
	Nilesh Tiwari, Surya Singh and M Jaleel Akhtar		
TRL Calibrated Coplanar Microwave Sensor for Characterization of Biomolecules			
Abhishek Kumar Jha, Daniel Havelka, Ondrej Krivosudský and Michal Cifra.			
Electromagnetic Metamaterial Based Sensor Design for Chemical Discrimination			
Tarakeswar Shaw and Debasis Mitra			
Low Error Ku-band 5-bit Digital Attenuator MMIC			
ProlayVerma, Puja Srivastava, Dinesh K. Singh and Apurba N Bhattacharya			
18:00			Chapter Chairs Meeting
19:00	Dinner		

December 13, 2017 (Wednesday)						
	Room: Atelier 1		Room: Atelier 2		Room: Atelier 3&4	
09:00-10:30	Session WE1A: Development in MMIC Power Amplifiers Session Chair: Ajay Poddar, India	09:00-10:20	Session WE2A: Advanced Frequency Multipliers Session Chair: K J Vinoy, India	09:00-10:30	Session WE3A: Packaging Techniques Session Chair: C V N Rao, India	
09:00-09:30	A 38-GHz High-Efficiency and Low-Quiescent-Power Power Amplifier for Phased Array Applications in 65-nm CMOS Process (Invited Talk) Huei Wang, Yu-Ting Chou, Jung-Lin Lin and Yuan-Hung Hsiao	09:00-09:20	Broadband Frequency Doubler/Multiplier Saurabh Pegwal, Mahesh P. Abegaonkar and Shibam K. Koul	09:00-09:30	3D/Multilayer Heterogeneous Integration and Packaging for Next Generation Applications in Millimeter-Wave and Beyond (Invited Talk) Kamal Samanta	
09:30-09:50	0.5W Ku Band SSPA with Gain and Phase control for beam forming network Pranav Prakash Singh, Puja Srivastava, Sumit Srivastava, Prolay Verma and Dinesh K Singh	09:20-09:40	Ultra-Broadband Uniplanar Passive X2 Multipliers covering the Ku to W band using Slotline and CPS based Balun topologies Utkarsh Unnikrishna and Amarpal Khanna	09:30-09:50	Ultra Wideband Receiver Protection Limiter Using 0.13µm pHEMT Technology Sandeep Chaturvedi, S.L. Badnikar and Anant A. Naik	Education Committee Special Interest Group on Microwave & Wireless Education (SIGMA_WE)
09:50-10:10	Extended C Band 32 Watt SSPA for Communication Satellite Payload Yogita Sharma, Ramesh Doshi, Puja Srivastava, Amit Bhatt, Dinesh Kumar Singh, Bijeev N V, VasantryJani and Naveen Bhushan Sharma	09:40-10:00	A Power Efficient Ka-Band MMIC Active Frequency Doubler with Output Amplifier Bijit Biswas and Arun Kumar Gande.	09:50-10:10	A Broadband Circuit Analog Absorber using Resistively Loaded Square Loops Neha Hakla, Saptarshi Ghosh and Kumar Vaibhav Srivastava.	
10:10-10:30	Sparse Identification of Memory Effects and Nonlinear Dynamics for Developing Parsimonious Behavioral Model of RF Power Amplifier Sanjika Devi R V and Dhanesh G Kurup	10:00-10:20	High Power Single and Power-Combined 180 GHz Frequency Doubler Using Schottky Diode Technology HairuiLui, Colin Viegas, Jeff Powell, HoshSanghera, Andrew Whimster, Manju Henry and Byron Alderman	10:10-10:30	Optimum Launch-Taper Matching Technique for mm-wave Applications Shraman Gupta, Abdel RazikSebak and Vijaya Kumar Devabhaktuni	
10:30-11:00	Coffee/Tea Break & Visit to Exhibition					
11:00-12:30	Session WE1B: Instrumentation and Measurements in Transmission Lines Session Chair: Goutam Chattopadhyay, US		Session WE2B: Novel Radar Techniques and Packaging Techniques Session Chair: Yogesh Verma, India		Session WE3B: Novel Designs of Power Dividers/Couplers Session Chair: George Ponchak, US	
11:00-11:30	Terahertz Instruments for CubeSats (Invited Talk) Goutam Chattopadhyay		Design Challenges of Realizing an Active Radar Seeker at Ka-Band (Invited Talk) Yogesh Verma	11:00-11:20	Design and Development of coaxial line based 2kW, 10-30dB variable dual directional coupler Abhinav Jain	
11:30-11:50	Short Range cloud reflectivity measurement using X-Band Primary Surveillance Radar Amit Upadhyay, Raghuram PR and Thomas Varughese		Performance Analysis of Multilayer Graphene Nano ribbon Based Interconnects Manjit Kaur, Neena Gupta and Arun Kumar Singh	11:20-11:40	Balanced-to-Unbalanced In-Phase Power Divider Amar Nath Yadav and Ratnajit Bhattacharjee	
11:50-12:10	Dual band single layered meta-surface cloak N Kumutha, K Hariharan, B Manimegalai and N Amutha		DDS based low phase noise LFM Generator for Multi Object Tracking Radar T.S. Binilroy, Rohit T Kurian and J Girija	11:40-12:00	Design of Four-way Substrate Integrated Coaxial Line (SICL) Power Divider for K Band Applications Soumava Mukherjee	

12:10-12:30	Design and Development of Mode Launcher for TM01 Mode in Circular Waveguide in S-Band Shreekant Patel, Rahul Jaiswal, Raj Singh and Anitha V.P	LTCC Based Multi-Chip Modules at C-band and Ka-band for Satellite payloads Maulik Bhavsar, Prakhar Kumar, Ishan Chaturvedi, Puja Srivastava, Dinesh Kumar Singh and Apurba Bhattacharya	12:00-12:20	Design of Ridge Gap Waveguide Power Divider for Reduced-sidelobe 60 GHz Applications Shraman Gupta, Abdel RazikSebak and Vijaya Kumar Devabhaktuni	
12:30-13:30	Lunch Break & Visit to Exhibition				
13:30-15:10		Special Session WE2C: MICRO APP2 Session Chair: Jolly Dhar, India		Special Session WE3C: NISAR Session Chair: Raj Kumar, Mukesh Patel, India	
13:30-13:50		Novel High Power Ka-Band Low Pass Filter Operating in Overmoded Rectangular Waveguide for Space Mr. Troy Rodriguez, CEO & President of Sierra Microwave Technology		Overview of L-Band SAR on-board NISAR Satellite Yunjin Kim, Jet Propulsion Laboratory (JPL), NASA	
13:50-14:10		The effect of processing parameters on the Microwave Electrical properties of LTCC Sanjay Chitale, Technical Service, ESL, Ferro Company		S-Band SAR Overview on-board NISAR Satellite Rakesh Bhan, Tapan Misra, Rajeev Jyoti, Raj Kumar, SAC, ISRO, India	
14:10-14:30		Harnessing the power of High Performance Computing for simulation of large FEM models Shrinivas Bhat K R, Technical Director of Entuple Technologies		NISAR Applications Overview Raj Kumar, Arundhati Misra, VM Ramanujam, Tapan Misra SAC, ISRO, India	
14:30-14:50		Thermal Cooling for Electronics Arun Kumar, Technology Specialist at Entuple technologies		NISAR L-SAR Digital Electronics Subsystem – A Multichannel Distributed Processing System with Synchronous Timing Control for digital Beam Forming and Multiple Echo Tracking Chung-Lun Chuang, Scott Shaffer, Noppasin Niamsuwan, Samuel Li, Eric Liao, Chester Lim, Vu Duong, Barry Volain, Ken Vines, Muh-Wang Yang, Kevin Wheeler, Jet Propulsion Laboratory (JPL), NASA	
14:50-15:10				An L-Band High-power Transmit/Receive Module (TRM) for the NISAR Mission T. Thirvikraman, S.J. Horst, L. Yam, P. Littlewood, D.C. Howard, F. Inanlou Jet Propulsion Laboratory (JPL), NASA	
15:10-15:30	Coffee/Tea Break & Visit to Exhibition				
15:30-17:10	Session WE1D: Filters for Microwave Applications Session Chair: Dmitry Kholodnyak, Russia	Session WE2D: Numerical Methods and Optimization Session Chair: Mohm. Jaleel Akhtar, India	15:30-17:00	Session WE3D: RF Transceivers and Components Session Chair: Minoru Fujishima, Japan	Student Design Contest
15:30-15:50	Novel High Q Coaxial Resonator Filter for Millimeter Wave Application Vineet Dad and Sanjeev Gupta	Efficient Design Optimization and Variability Analysis of Defective Ground Structure Filters Using Metamodels Evi Van Nechel, Francesco Ferranti, Yves Rolain and John Lataire	15:30-16:00	300-GHz-Band CMOS Transceiver (Invited Talk) Minoru Fujishima	

15:50-16:10	A canonical predistorted filter based on TM mode dielectric resonator Nishant Shukla, Vikas Gupta, Tushar Gajjar and Kasif Pathan	Complementary Frequency Selective Surface Array optimization using Equivalent circuit model Krushna Kanth V and Raghavan S	16:00-16:20	Design and Fabrication of 1GHz Lateral TPoS MEMS Resonator for RF front end applications K N Bhadri Narayanan, Deleep R Nair and Amitava Dasgupta		
16:10-16:30	A Miniaturized Two Pole Metamaterial Bandpass Filter Using Ω-Shaped IDC for Cellular Application Dilip Kumar Choudhary and Raghvendra Kumar Chaudhary	A Hybrid Method of Analysis for Shaped Dielectric Lenses Compared with Measurement Results Ravishankar S. Mahesh Appajappa, Shushrutha K S and Cdr. Vijay Singh	16:20-16:40	Design of Efficient Rectifier Circuit in the GSM band for Energy Harvesting Applications Sandhya Chandravanshi and Mohm. Jaleel Akhtar		
16:30-16:50	Triple Band Microwave Filter Using Stepped Impedance Line (SIL) and Stub Loaded Resonator with Five Transmission Zeroes Prashant Ranjan, Gaurav Upadhyay, Nand Kishore, V. S. Tripathi and Shivesh Tripathi. Triple Band	Simulation Study of Ultra-compact Microstrip UWB Bandpass Filter with Wide Stopband Using DGS Based Low Pass Filter Bhagirath Sahu, Soni Singh, Manoj Kumar Meshram and Surya Pal Singh	16:40-17:00	A Novel Compact Tri-band Matching Network with Enhanced Frequency Ratios Deepayan Banerjee, Antra Saxena and Mohammad Hashmi		
16:50-17:10		Analysis and Design of Frequency Reconfigurable Stepped Impedance Resonator Band Pass Filter D Packiaraj and Debapriya Sen				
17:10-18:00	Session WE1: Poster Session (Exhibition Hall): B Session Chair: Ramesh Gupta and J Girija, India					Ph. D. Initiative Meeting
	Compact Dual Band Varactor-tunable Unequal-length Branch-line Hybrid Amarjit Kumar and Nagendra Prasad Pathak					
	Hysteresis with Non-linear and Memory effect on Nonuniform Transmission Line Lalit Kumar, Vinay Shankar Pandey, Harish Parthasarathy and Vibhakar Shrimali					
	Design of Dual-band Wilkinson Power Divider using CRLH Transmission Line based on CSRR Mukesh Kumar, S. K. Nurul Islam and Gobinda Sen					
	220-270 GHz Waveguide to Microstrip Transition Vivan Prakash and Shailendra Singh					
	Penta Band Polarization Insensitive Metamaterial Absorber for EMI/EMC Reduction and Defence Applications Amit Kumar Singh, Mahesh P. Abegaonkar and Shibam K. Koul					
	Database Technique for Tumor Detection and Dielectric Profile Estimation Using Microwave Priyansha Kaurav, Shibam K. Koul and Ananjan Basu					
18:00-18:45	Valedictory Function/Award Presentation					
19:15	Dinner					