

TECHNICAL SESSIONS

08:00–09:40 | Wednesday, 7 June 2017 | Hawai'i Convention Center



	Room: 312	Room: 313A	Room: 313B	Room: 313C
	WE1A: Advances in Numerical Techniques for Microwave Engineering Chair: Dan Jiao, <i>Purdue University</i> Co-Chair: James Skala, <i>Georgia Institute of Technology</i>	WE1B: Transmission Lines and Transitions Chair: Irfan Ashiq, <i>National Instruments Corporation</i> Co-Chair: Jun (Brandon) Choi, <i>Syracuse University</i>	WE1C: Novel Realizations of Non-Planar Filters and Multiplexers Chair: Giuseppe Macchiarella, <i>Politecnico di Milano</i> Co-Chair: Ming Yu, <i>Honeywell International Inc.</i>	WE1D: Low Noise Amplifiers - Progress and Applications Chair: James Sowers, <i>SSL</i> Co-Chair: James Whelehan, <i>JJW Consulting Inc.</i>
08:00-08:10	WE1A-1: A Symmetric Positive Semi-Definite FDTD Subgridding Algorithm for Arbitrary Grid Ratios With Uncompromised Accuracy Jin Yan, <i>Purdue University</i> ; Dan Jiao, <i>Purdue University</i>	WE1B-1: Cu/Co Metaconductor Based High Signal Integrity Transmission Lines for Millimeter Wave Applications Seabee Hwangbo, <i>University of Florida</i> ; Arian Rahimi, <i>University of Florida</i> ; Yong-Kyu Yoon, <i>University of Florida</i>	WE1C-1: Design of a Dual-Band Bandpass Filter With Dispersive Coupling Ahmad Haidar, <i>Xlim - CNRS - Universite De Liroges</i> ; Hussein Ezzeddine, <i>Jwaja University College</i> ; Stephane Bila, <i>Xlim - CNRS - Universite De Liroges</i>	WE1D-1: Comparison of a 35-nm and a 50-nm Gate-Length Metamorphic HEMT Technology for Millimeter-Wave Low-Noise Amplifier MMICs Fabian Thome, <i>Fraunhofer IAF</i> ; Arnulf Leuther, <i>Fraunhofer IAF</i> ; Hermann Massler, <i>Fraunhofer IAF</i> ; Michael Schlechtweg, <i>Fraunhofer IAF</i> ; Oliver Ambacher, <i>Fraunhofer IAF</i>
08:10-08:20			WE1C-2: Tunable Absorptive Bandstop Filter With an Ultra-Broad Upper Passband Mark Hickle, <i>Purdue University</i> ; Dimitrios Peroulis, <i>Purdue University</i>	
08:20-08:40	WE1A-2: High-Order Sensitivity Analysis With FDTD and the Multi-Complex Step Derivative Approximation Kae-An Liu, <i>University of Toronto</i> ; Costas Sarris, <i>University of Toronto</i>	WE1B-2: Enhancement of Phase-Shifting Nonreciprocity in Microstrip-Line-Based Metamaterials With Curvatures Tetsuya Ueda, <i>Kyoto Institute of Technology</i> ; Junji Yamauchi, <i>Kyoto Institute of Technology</i> ; Yuki Kubo, <i>Kyoto Institute of Technology</i> ; Tatsuo Itoh, <i>University of California, Los Angeles</i>	WE1C-3: A Compact Waveguide Filtering Structure With Transmission Zeros for Multi-Beam Satellites Luciano Accatino, <i>AC Consulting</i> ; Giuseppe Macchiarella, <i>Politecnico di Milano</i> ; Giorgio Bertin, <i>Consultant to AC Consulting</i>	WE1D-2: D-Band Low-Noise Amplifier MMIC With 50% Bandwidth and 3.0 dB Noise Figure in 100 nm and 50 nm mHEMT Technology Rainer Weber, <i>Fraunhofer Institute for Applied Solid State Physics</i> ; Hermann Massler, <i>Fraunhofer Institute for Applied Solid State Physics</i> ; Arnulf Leuther, <i>Fraunhofer IAF</i>
08:40-09:00	WE1A-3: Accurate Transmission Lines Characterization via Higher Order Moment Method Solution of Novel Single-Source Integral Equation Farhad Sheikh Hossieni, <i>University of Manitoba</i> ; Mohammad Hosen, <i>University of Manitoba</i> ; Anton Menshov, <i>University of Texas at Austin</i> ; Mohammad Shafiepour, <i>Manitoba Hydro International</i> ; Vladimir Okhmatovski, <i>University of Manitoba</i>	WE1B-3: Novel Multilayer SIW Tapers Synthesized Using an Extended Transverse Resonance Method Thomas Jaschke, <i>Technical University of Hamburg</i> ; Arne Jacob, <i>Technical University of Hamburg</i>	WE1C-4: New Design Methodology for Multiband Waveguide Filters Based on Multiplexing Techniques Santiago Cogollos, <i>Universitat Politècnica de València</i> ; Pablo Micó, <i>Universitat Politècnica de València</i> ; Joaquin Vague, <i>Universitat Politècnica de València</i> ; Vicente Boria-Esbert, <i>Technical University of Valencia</i> ; Marco Guglielmi, <i>Universitat Politècnica de València</i>	WE1D-3: A 300 GHz Low-Noise Amplifier S-MMIC for Use in Next-Generation Imaging and Communication Applications Axel Tessmann, <i>Fraunhofer IAF</i> ; Arnulf Leuther, <i>Fraunhofer IAF</i> ; Sandrine Wagner, <i>Fraunhofer IAF</i> ; Hermann Massler, <i>Fraunhofer IAF</i> ; Hans-Peter Stulz, <i>Fraunhofer IAF</i> ; Martin Zink, <i>Fraunhofer IAF</i> ; Markus Riessle, <i>Fraunhofer IAF</i> ; Thomas Merkle, <i>Fraunhofer IAF</i> ; Michael Kuri, <i>Fraunhofer IAF</i>
09:00-09:20	WE1A-4: A Fast and Robust Hybrid Solver for Realistic Electromagnetic Problems Kezhong Zhao, <i>ANSYS, Inc.</i> ; Rickard Petersson, <i>ANSYS, Inc.</i> ; Robert Kipp, <i>ANSYS, Inc.</i>	WE1B-4: Substrate Integrated Suspended Line to Air-Filled SIW Transition for High-Performance Millimeter-Wave Multilayer Integration Frederic Parment, <i>Centre National d'Etudes Spatiales (CNES)</i> ; Anthony Ghiotto, <i>University of Bordeaux</i> ; Tan Phu Vuong, <i>Université Grenoble Alpes</i> ; Ludovic Carpentier, <i>CNES - French space agency</i> ; Ke Wu, <i>École Polytechnique de Montréal</i>	WE1C-5: Triple-Band Dielectric Resonator Bandpass Filters Li Zhu, <i>Honeywell International Inc.</i> ; Raafat Mansour, <i>University of Waterloo</i> ; Ming Yu, <i>Honeywell International Inc.</i>	WE1D-4: Low Voltage and Low Power UWB CMOS LNA Using Current-Reused and Forward Body Biasing Techniques Jyh Chyurn Guo, <i>National Chiao Tung University</i> ; Ching Shiang Lin, <i>National Chiao Tung University</i> ; Yu Tang Liang, <i>National Chiao Tung University</i>
09:20-09:30	WE1A-5: An Extension of the Transverse Wave Formulation to Model Stochastic Electromagnetic Fields Johannes Russer, <i>Technische Universität München</i> ; Michael Haider, <i>Technische Universität München</i> ; Damien Bajon, <i>ISAE-Université Fédérale de Toulouse</i> ; Sidina Wane, <i>NXP Semiconductors</i> ; Peter Russer, <i>Technische Universität München</i>	WE1B-5: Broadband 55–95 GHz Microstrip to Waveguide Transition Based on a Dielectric Tip and a Tapered Double-Ridged Waveguide Section Florian Voineau, <i>STMicroelectronics</i> ; Anthony Ghiotto, <i>University of Bordeaux</i> ; Eric Kerherve, <i>University of Bordeaux</i> ; Mathilde Sié, <i>STMicroelectronics</i> ; Baudouin Martineau, <i>CEA-LETI</i>	WE1C-6: A Design Methodology for Fully Canonic NRN Filters in Coaxial Technology Giuseppe Macchiarella, <i>Politecnico di Milano</i> ; Stefano Tamiazzo, <i>Commscope Italy</i> ; Valentina Verri, <i>Politecnico di Milano</i>	WE1D-5: A 94–96 GHz Phased-Array Receive Front-End With 5-Bit Phase Control and 5 dB Noise Figure in 32 nm CMOS SOI Mustafa Sayginer, <i>University of California at San Diego</i> ; Gabriel Rebeiz, <i>University of California at San Diego</i>
09:30-09:40	WE1A-6: A New Time Reversal Method With Extended Source Locating Capability Wei Fan, <i>Department of Electrical and Computer Engineering</i> ; Zhizhang Chen, <i>Dalhousie University</i>	WE1B-6: A Compact Ultra-Wideband Microstrip Transition Nils Hansen, <i>Technical University of Hamburg</i> ; Jan-Philip Mohncke, <i>Technical University of Hamburg</i> ; Stefan Radziejewski, <i>Technical University of Hamburg</i> ; Arne Jacob, <i>Technical University of Hamburg</i>		

Come to the Exhibit Hall for a coffee break between 09:40–10:10

The Student Paper Competition's Interactive Forum starts at 10:30 on the Overlook Concourse (see pp. 52-53 for details)

TECHNICAL SESSIONS

08:00–09:40 | Wednesday, 7 June 2017 | Hawai'i Convention Center



Room: 314	Room: 315	Room: 316A	Room: 316B	Room: 316C	
WE1E: Advanced Doherty PAs Chair: Zoya Popovic, <i>University of Colorado</i> Co-Chair: Wolfgang Heinrich, <i>Ferdinand-Braun-Institut</i>	WE1F: Advances in mm-Wave/THz Communication Systems Chair: Jae-Sung Rieh, <i>Korea University</i> Co-Chair: Imran Mehdi, <i>Jet Propulsion Laboratory</i>	WE1G: Passive RFID and MMID Sensors Chair: Apostolos Georgiadis, <i>Heriot-Watt University</i> Co-Chair: Luca Roselli, <i>University of Perugia</i>	WE1H: Passive Array Systems and Beam Formers Chair: Roberto Vincenti Gatti, <i>University of Perugia</i> Co-Chair: Shishir Punjala, <i>JSMN Inc.</i>	WE1I: Advanced Sensors for Biological Applications Chair: Abbas Omar, <i>University of Magdeburg</i> Co-Chair: Jung-Chih Chiao, <i>University of Texas at Arlington</i>	
WE1E-1: Design and Characterization of a 1.7–2.7 GHz Quasi-MMIC Doherty Power Amplifier Roberto Quaglia; <i>Cardiff University</i> ; Mark Greene; <i>QORVO, Inc.</i> ; Matthew Poulton; <i>QORVO, Inc.</i> ; Steve Cripps; <i>Cardiff University</i>	WE1F-1: 56-Gbit/s 16-QAM Wireless Link With 300-GHz-Band CMOS Transmitter Kyoya Takano; <i>Hiroshima University</i> ; Kosuke Katayama; <i>Hiroshima University</i> ; Shuhei Amakawa; <i>Hiroshima University</i> ; Takeshi Yoshida; <i>Hiroshima University</i> ; Minoru Fujishima; <i>Hiroshima University</i>	WE1G-1: Millimeter-Wave Backscatter: A Quantum Leap for Gigabit Communication, RF Sensing, and Wearables John Kimionis; <i>Georgia Institute of Technology</i> ; Apostolos Georgiadis; <i>Heriot-Watt University</i> ; Ana Collado; <i>Heriot-Watt University</i> ; Manos Tentzeris; <i>Georgia Institute of Technology</i>	WE1H-1: Micropatterned W-Band Antenna Tiles Ryan Westafer; <i>Advanced Concepts Laboratory</i> ; James Dee; <i>Advanced Concepts Laboratory</i> ; Matthew Habib; <i>Advanced Concepts Laboratory</i>	WE1I-1: A CMOS Single-Cell Deformability Analysis Using 3D Hydrodynamic Stretching in a GHz Dielectric Flow Cytometry Jun-Chau Chien; <i>University of California, Berkeley</i> ; Mekhail Anwar; <i>University of California, San Francisco</i> ; Ali Niknejad; <i>University of California, Berkeley</i>	08:00-08:20
WE1E-2: 2.6 GHz GaN-HEMT Doherty Power Amplifier Integrated Circuit With 55.5% Efficiency Based on Compact Load Network Hwiseob Lee; <i>Sungkyunkwan University</i> ; Wonseob Lim; <i>Sungkyunkwan University</i> ; Jongseok Bae; <i>Sungkyunkwan University</i> ; Wooseok Lee; <i>Sungkyunkwan University</i> ; Hyunuk Kang; <i>Sungkyunkwan University</i> ; Youngoo Yang; <i>Sungkyunkwan University</i>	WE1F-2: An Integrated 7-Gb/s 60-GHz Communication Link Over Single Conductor Wire Using Sommerfeld Wave Propagation in 65-nm CMOS Kai Zhan; <i>Oregon State University</i> ; Abhishek Agrawal; <i>Oregon State University</i> ; Manoj Johnson; <i>Oregon State University</i> ; Ashwin Ramachandran; <i>Oregon State University</i> ; Tejasvi Anand; <i>Oregon State University</i> ; Arun Natarajan; <i>Oregon State University</i>	WE1G-2: Long Range Wireless Interrogation of Passive Humidity Sensors Using Van-Atta Cross-Polarization Effect and 3D Beam Scanning Analysis Dominique Henry; <i>LAAS-CNRS</i> ; Jimmy Hester; <i>Georgia Institute of Technology</i> ; Hervé Aubert; <i>Laboratoire d'analyse et d'architecture des systèmes</i> ; Patrick Pons; <i>Laboratoire d'analyse et d'architecture des systèmes</i> ; Manos Tentzeris; <i>Georgia Institute of Technology</i>	WE1H-2: Dual-Polarized Frequency-Scanning Phased-Array Antenna Based on Composite Right/Left Handed Serial Feed Network Dongyin Ren; <i>Syracuse University</i> ; Jun (Brandon) Choi; <i>Syracuse University</i> ; Tatsuo Itoh; <i>University of California, Los Angeles</i>	WE1I-2: Microwave Permittivity Extraction of Individual Biological Cells Submitted to Different Stimuli Amel Zedek; <i>Laboratoire d'analyse et d'architecture des systèmes</i> ; David Dubuc; <i>Laboratoire d'analyse et d'architecture des systèmes</i> ; Katia Grenier; <i>Laboratoire d'analyse et d'architecture des systèmes</i>	08:20-08:40
WE1E-3: Novel Broadband Doherty Power Amplifier Design for Multiband Handset Applications Kiichiro Takenaka; <i>Murata Manufacturing Co., Ltd.</i> ; Tsuyoshi Sato; <i>Murata Manufacturing Co., Ltd.</i> ; Hidetoshi Matsumoto; <i>Murata Manufacturing Co., Ltd.</i> ; Makoto Kawashima; <i>Murata Manufacturing Co., Ltd.</i> ; Norio Nakajima; <i>Murata Manufacturing Co., Ltd.</i>	WE1F-3: A Low-Power FSK/Spatial Modulation Transmitter for mm-Wave Wireless Links Kai Zhan; <i>Oregon State University</i> ; Jian Kang; <i>Oregon State University</i> ; Guangxin Wang; <i>Oregon State University</i> ; Telesphor Kamgaing; <i>Intel Corporation</i> ; Rahul Khanna; <i>Intel Corporation</i> ; Georgios Dogiamis; <i>Intel Corporation</i> ; Huaping Liu; <i>Oregon State University</i> ; Arun Natarajan; <i>Oregon State University</i>	WE1G-3: Single Transistor Passive Backscatter Sensor Ricardo Correia; <i>Instituto De Telecomunicacoes</i> ; Nuno Carvalho; <i>Instituto De Telecomunicacoes</i>	WE1H-3: High-Efficiency Phased Array Using Sequential Over-the-Air Combining Avraham Sayag; <i>Technion - Israel Institute of Technology</i> ; Emanuel Cohen; <i>Technion - Israel Institute of Technology</i>	WE1I-3: Correlation Between Morphology Change and Microwave Property During Single-Cell Electroporation Hang Li; <i>Lehigh University</i> ; Xiao Ma; <i>Lehigh University</i> ; Xiaotian Du; <i>Lehigh University</i> ; Yaqing Ning; <i>Huawei Technologies Co., Ltd.</i> ; Xuanhong Cheng; <i>Lehigh University</i> ; James Hwang; <i>Lehigh University</i>	08:40-08:50
WE1E-4: Compact and High Efficiency Doherty Power Amplifiers Using a New Modulating Load Range Mohammad Darwish; <i>University of California, Davis</i> ; Anh-Vu Pham; <i>University of California, Davis</i>	WE1F-4: High Energy-Efficiency High Bandwidth-Density Sub-THz Interconnect for the Last-Centimeter Chip-to-Chip Communications Bo Yu; <i>University of California, Davis</i> ; Yu Ye; <i>University of California, Davis</i> ; Xuan Ding; <i>University of California, Davis</i> ; Tongning Hu; <i>University of California, Davis</i> ; Shilei Hao; <i>University of California, Davis</i> ; Jinbo Li; <i>University of California, Davis</i> ; Xiaoguang Liu; <i>University of California, Davis</i> ; Jane Gu; <i>University of California, Davis</i>	WE1G-4: Miniaturized Self-Powered UHF RFID Tag-Based Sensor Abdulhadi Abdulhadi; <i>Institut national de la recherche scientifique</i> ; Yassin Belaizi; <i>Université de Montpellier</i> ; Arnaud Vena; <i>Université de Montpellier</i> ; Tayeb Denidni; <i>Institut national de la recherche scientifique</i>	WE1H-4: A 320 GHz On-Chip Slot Antenna Array Using CBCPW Feeding Network in 0.13-μm SiGe Technology Zhang Ju Hou; <i>City University of Hong Kong</i> ; Yang Yang; <i>University of Technology Sydney</i> ; Xi Zhu; <i>University of Technology Sydney</i> ; Shaowei Liao; <i>City University of Hong Kong</i> ; Shum Man; <i>City University of Hong Kong</i> ; Quan Xue; <i>City University of Hong Kong</i>	WE1I-4: Change in the Dielectric Response of Single Cells Induced by Nutrient Deprivation Over a Wide Frequency Range Samaneh Afshar; <i>University of Manitoba</i> ; Azita Fazelkhal; <i>University of Manitoba</i> ; Elham Salimi; <i>University of Manitoba</i> ; Michael Butler; <i>University of Manitoba</i> ; Douglas Thomson; <i>University of Manitoba</i> ; Greg Bridges; <i>University of Manitoba</i>	08:50-09:00
WE1E-5: Efficiency Enhanced Post-Matching Doherty Power Amplifier Based on Modified Phase Compensation Network Zhou Xinyu; <i>City University of Hong Kong</i> ; Zheng Shaoyong; <i>Sun Yat-sen University</i> ; Chan Wingshing; <i>City University of Hong Kong</i> ; Derek Ho; <i>City University of Hong Kong</i>	WE1F-5: Long-Range Wireless Link With Fiber-Equivalent Data Rate Kenneth Brown; <i>Raytheon Company</i> ; Andrew Brown; <i>Raytheon Company</i> ; Travis Feenstra; <i>Raytheon</i> ; Darin Gritters; <i>Raytheon BBN Technologies</i> ; Elbert Ko; <i>Raytheon</i> ; Shane O'Connor; <i>Raytheon</i> ; Michael Sotelo; <i>Raytheon</i>	WE1G-5: Antennas and Antenna-Electronics Interfaces Made of Conductive Yarn and Paint for Cost-Effective Wearable RFIDs and Sensors Xiaochen Chen; <i>Tampere University of Technology</i> ; Shubin Ma; <i>Tampere University of Technology</i> ; Leena Ukkonen; <i>Tampere University of Technology</i> ; Toni Björninen; <i>Tampere University of Technology</i> ; Johanna Virkki; <i>Tampere University of Technology</i>	WE1H-5: A Duplexing Hybrid Antenna Design for Full-Duplex Applications Li-Chi Chang; <i>National Taiwan University</i> ; Huei Wang; <i>National Taiwan University</i>	WE1I-5: Microwave Noninvasive Blood Glucose Monitoring Sensor: Human Clinical Trial Results Heungjae Choi; <i>Cardiff University</i> ; Steve Luzio; <i>Swansea University</i> ; Beutler Jan; <i>University of Luxembourg</i> ; Adrian Porch; <i>Cardiff University</i>	09:00-09:10
WE1E-6: Harmonically Engineered and Efficiency Enhanced Power Amplifier Design for P3dB/Back-off Applications Tushar Sharma; <i>University of Calgary</i> ; Srinidhi Embar R; <i>NXP Semiconductors</i> ; Damon Holmes; <i>NXP Semiconductors</i> ; Ramzi Darraji; <i>University of Calgary</i> ; Jeff Jones; <i>NXP Semiconductors</i> ; Fadhel Ghannouchi; <i>University of Calgary</i>			WE1H-6: A Wideband Antenna With Switchable Beams Jun Hu; <i>Southeast University</i> ; Zhang-Cheng Hao; <i>Southeast University</i> ; Zhe Chen; <i>Southeast University</i>	WE1I-6: High Resistivity Silicon DRA Array for Millimeter-Wave High Gain Applications Alireza Zandieh; <i>University of Waterloo</i> ; Ahmed Abdellatif; <i>University of Waterloo</i> ; Aidin Taeb; <i>University of Waterloo</i> ; Safeddin Safavi-Naeini; <i>University of Waterloo</i>	09:10-09:20
			WE1H-7: Novel Wideband Decoupling Technique for MIMO Antenna Arrays With Two Independently Controlled Transmission Zeros Yifeng Cheng; <i>Chinese University of Hong Kong</i> ; Kwok-Keung Cheng; <i>Chinese University of Hong Kong</i>	09:20-09:30	
			WE1H-8: High Resistivity Silicon DRA Array for Millimeter-Wave High Gain Applications Alireza Zandieh; <i>University of Waterloo</i> ; Ahmed Abdellatif; <i>University of Waterloo</i> ; Aidin Taeb; <i>University of Waterloo</i> ; Safeddin Safavi-Naeini; <i>University of Waterloo</i>	09:30-09:40	



TECHNICAL SESSIONS

10:10–11:50 | Wednesday, 7 June 2017 | Hawai'i Convention Center



	Room: 312	Room: 313A	Room: 313B	Room: 313C
	WE2A: Maritime Applications of Radar Chair: Chris Rodenbeck, <i>Naval Research Laboratory</i> Co-Chair: John Pierro, <i>Telephonics Corporation</i>	WE2B: Tunable Passive Components Chair: Holger Maune, <i>Technische Universität Darmstadt</i> Co-Chair: Hualiang Zhang, <i>University of Massachusetts, Lowell</i>	WE2C: Planar Tunable and Reconfigurable Filters Chair: Shamsur Mazumder, <i>Worcester Polytechnic Institute</i> Co-Chair: Raafat Mansour, <i>University of Waterloo</i>	WE2D: Advanced Power Amplifier Architectures Chair: Paul Draxler, <i>Qualcomm Technologies, Inc.</i> Co-Chair: Damon Holmes, <i>NXP Semiconductors</i>
10:10-10:30	WE2A-1: Imaging of Dynamic Maritime Scenes Using Multi-Channel SAR Mark Sletten; <i>Naval Research Laboratory</i> ; Steven Menk; <i>US Naval Research Laboratory</i> ; John Jakabosky; <i>US Naval Research Laboratory</i> ; Thomas Higgins; <i>US Naval Research Laboratory</i>	WE2B-1: Reconfigurable 1.5–2.5-GHz Phase Shifter With 360-Degree Relative Phase-Shift Range and Reduced Insertion-Loss Variation Pei-Ling Chi; <i>National Chiao Tung University</i> ; Chia-Ling Huang; <i>National Chiao Tung University</i>	WE2C-1: Fully-Reconfigurable Bandpass Filter With Static Couplings and Intrinsic-Switching Capabilities Roberto Gomez-Garcia; <i>University of Alcalá</i> ; Dimitra Psychogiou; <i>University of Colorado</i> ; Jose-Maria Munoz-Ferreras; <i>University of Alcalá</i>	WE2D-1: A 14 W Wideband Supply-Modulated System With Reverse Buck Converter and Floating-Ground RF Power Amplifier Sophie Paul; <i>Ferdinand-Braun-Institut</i> ; Nikolai Wolff; <i>Ferdinand-Braun-Institut</i> ; Christophe Delepaut; <i>ESA</i> ; Václav Valenta; <i>European Space Agency</i> ; Wolfgang Heinrich; <i>Ferdinand-Braun-Institut</i> ; Olof Bengtsson; <i>Ferdinand-Braun-Institut</i>
10:30-10:50	WE2A-2: Microwave Wireless Coordination Technologies for Coherent Distributed Maritime Radar Robert Schmid; <i>Johns Hopkins Applied Physics Lab</i> ; Sean Ellison; <i>Michigan State University</i> ; Thomas Comberiate; <i>JHU/APL</i> ; Jason Hodkin; <i>JHU/APL</i> ; Jeffrey Nanzer; <i>Michigan State University</i>	WE2B-2: Modeling and Experimental Measurements of a Tunable Microstrip Resonator Using Plasma Discharges Vincent Laquerbe; <i>ISAE - Supaero</i> ; Romain Pascaud; <i>ISAE - SUPAERO</i> ; Thierry Callegari; <i>LAPLACE</i> ; Laurent Liard; <i>University de Toulouse</i> ; Olivier Pascal; <i>LAPLACE</i>	WE2C-2: Reconfigurable Dual-Band Bandpass Filter With Fully-Switch Operation Using Half-Wavelength Folded-Resonator With Varactor-Loaded Open-Stub Zhen Tian; <i>University of Electronic Science and Technology of China</i> ; Huizhen Qian; <i>University of Electronic Science and Technology of China</i> ; Xun Luo; <i>University of Electronic Science and Technology of China</i>	WE2D-2: Asymmetrically-Driven Current-Based Chireix Class-F Power Amplifier Designed Using an Embedding Device Model Hsiu-Chen Chang; <i>Ohio State University</i> ; Patrick Roblin; <i>Ohio State University</i> ; José Alejandro Galaviz-Aguilar; <i>National Polytechnic Institute</i> ; José Cruz Núñez Pérez; <i>Instituto Politécnico Nacional (IPN-CITEDI)</i> ; Robert Pond; <i>Rockwell Collins, Inc.</i> ; Chenggang Xie; <i>Rockwell Collins, Inc.</i> ; Seok Joo Doo; <i>Army Academy at Yeongcheon, Korea</i>
10:50-11:00	WE2A-3: Synthetic Aperture Radar (SAR) Pattern Discovery Using the Science of Emergence John Pierro; <i>Telephonics Corporation</i> ; Mark Pass; <i>DAn Solutions</i>	WE2B-3: Analysis of the Coverage of Tunable Matching Networks With Three Tunable Elements Eyad Arabi; <i>University of Bristol</i> ; Xingran Jiao; <i>University of Bristol</i> ; Kevin Morris; <i>University of Bristol</i> ; Mark Beach; <i>University of Bristol</i>	WE2C-3: Design of Dual-Mode Dual-Band Bandpass Filter With Independently Tunable Bandwidths and Reconfigurable Filtering Characteristics Ali Gorur; <i>Nevsehir Haci Bektas Veli University</i> ; Ceyhun Karpuz; <i>Pamukkale University</i> ; Adnan Gorur; <i>Omer Halisdemir University</i>	WE2D-3: A Multi-Band CMOS Doherty PA With Tunable Matching Network Paul Draxler; <i>Qualcomm Technologies, Inc.</i> ; Joonhoi Hur; <i>Qualcomm Technologies, Inc.</i>
11:00-11:10			WE2C-4: Dual-Band Reconfigurable Bandstop Filter With Independently Controlled Stopbands and Constant Absolute Bandwidths Zhi-Han Chen; <i>South China University of Technology</i> ; Shi-Xuan Zhang; <i>South China University of Technology</i> ; Qing-Xin Chu; <i>South China University of Technology</i>	
11:10-11:30	WE2A-4: Ship Detection in the Presence of Sea Ice Using RADARSAT-2 Data Chen Liu; <i>Defence R&D Canada</i> ; Paris Vachon; <i>Defence R&D Canada</i> ; Nicholas Sandirasegaram; <i>Defence R&D Canada</i>	WE2B-4: New Design Method of Impedance Matching Networks Based on Tapered Lines Using Generalized Superellipses Santiago Cogollos; <i>Universitat Politècnica de València</i> ; Joaquin Vague; <i>Universitat Politècnica de València</i> ; Vicente Boria-Esbert; <i>Technical University of Valencia</i> ; Jorge Martinez; <i>Technical University of Valencia</i>	WE2C-5: Design of Balanced Dual-B and Filter With Reconfigurable Center Frequencies Wei Jiang; <i>University of South Carolina</i> ; Tengxing Wang; <i>University of South Carolina</i> ; Yujia Peng; <i>University of South Carolina</i> ; Tian Xia; <i>University Of Vermont</i> ; Guoan Wang; <i>University of South Carolina</i>	WE2D-4: A Broadband Reconfigurable Load Modulated Balanced Amplifier (LMBA) Daniel Sheppard; <i>Cardiff University</i> ; Jeff Powell; <i>Skyarna Ltd.</i> ; Steve Cripps; <i>Cardiff University</i>
11:30-11:50	WE2A-5: Impact of Off-Shore Wind Turbine on Forward Scattering of Marine Radar Signals Muhammad Bilal Raza; <i>Helmut Schmidt University</i> ; Thomas Fickenscher; <i>Helmut Schmidt University</i>	WE2B-5: A VO2-Based 30 GHz Variable Attenuator Junwen Jiang; <i>University of Waterloo</i> ; Ka Wai Wong; <i>University of Waterloo</i> ; Raafat Mansour; <i>University of Waterloo</i>	WE2C-6: Reconfigurable 1.2–3.16-GHz Quad-Channel Diplexer With Compact Size, Constant Absolute Bandwidth, and High Isolation Pei-Ling Chi; <i>National Chiao Tung University</i> ; Yu-Ting Yan; <i>National Chiao Tung University</i>	WE2D-5: Wide Battery Range Supply Modulator With Reverse Current Protection in Envelope Tracking Operation Ji-Seon Paek; <i>Samsung Electronics Co., Ltd.</i> ; Young-Hwan Choo; <i>Samsung Electronics Co., Ltd.</i>

TECHNICAL SESSIONS

10:10–11:50 | Wednesday, 7 June 2017 | Hawai'i Convention Center



Room: 314	Room: 315	Room: 316A	Room: 316B	Room: 316C	
WE2E: Microwave Signal Processing Components Chair: Hiroshi Okazaki, <i>NTT DoCoMo, Inc.</i> Co-Chair: Chin-Chun Meng, <i>National Chiao Tung University</i>	WE2F: Millimeter-Wave and Terahertz InP/SiGe Technologies Chair: Joe Qiu, <i>Army Research Office</i> Co-Chair: Edmar Camargo, <i>Camargo Consulting</i>	WE2G: Radar Sensing for Remote Health Monitoring Chair: Yanzhu Zhao, <i>Medtronic, Inc.</i> Co-Chair: Changzhi Li, <i>Texas Tech University</i>	WE2H: Resonator Based MW-THz Sensors Chair: Lora Schulwitz, <i>MDA Information Systems</i> Co-Chair: Kiki Ikossi, <i>IEEE</i>	WE2I: Advances in Far-Field and Near-Field Techniques for Wireless Power Transfer Chair: Quenton Bonds, <i>NASA</i> Co-Chair: Shigeo Kawasaki, <i>Japanese Aerospace Exploration Agency (JAXA)</i>	
WE2E-1: An Active Balanced Up-Converter Module in InP-on-BiCMOS Technology Maruf Hossain; <i>Ferdinand-Braun-Institut (FBH)</i> ; Chafik Meliani; <i>IHP Microelectronics</i> ; Muhammed Ihab Schukfeh; <i>Ferdinand-Braun-Institut</i> ; Nils Weimann; <i>Ferdinand-Braun-Institut</i> ; Marco Lisker; <i>IHP Microelectronics</i> ; Viktor Krozer; <i>Ferdinand-Braun-Institut</i> ; Wolfgang Heinrich; <i>Ferdinand-Braun-Institut</i>	WE2F-1: 180–265 GHz, 17–24 dBm Output Power, Broadband, High-Gain Power Amplifiers in InP HBT Zach Griffith; <i>Teledyne Scientific and Imaging</i> ; Miguel Urteaga; <i>Teledyne Scientific</i> ; Petra Rowell; <i>Teledyne Scientific</i>	WE2G-1: Detection of Vital Signs for Multiple Subjects by Using Self-Injection-Locked Radar and Mutually Injection-Locked Beam Scanning Array Chung-Yi Hsu; <i>National Sun Yat-sen University</i> ; Cho-Ying Chuang; <i>National Sun Yat-sen University</i> ; Fu-Kang Wang; <i>National Sun Yat-sen University</i> ; Zyy-Sheng Horng; <i>National Sun Yat-sen University</i> ; Lih-Tyng Hwang; <i>National Sun Yat-sen University</i>	WE2H-1: High Sensitive Detection of Flow Rate and Permittivity Through Microfluidics Based on Complementary Split-Ring Resonators Chia-Ming Hsu; <i>National Cheng Kung University</i> ; Chin-Lung Yang; <i>National Cheng Kung University</i>	WE2I-1: Ambient Energy Harvesting from Two-Way Talk Radio for On-body Autonomous Wireless Sensing Network Using Inkjet and 3D Printing Tong-Hong Lin; <i>Georgia Institute of Technology</i> ; Jo Bito; <i>Georgia Institute of Technology</i> ; Jimmy Hester; <i>Georgia Institute of Technology</i> ; John Kimionis; <i>Georgia Institute of Technology</i> ; Ryan Bahr; <i>Georgia Institute of Technology</i> ; Manos Tentzeris; <i>Georgia Institute of Technology</i>	10:10-10:30
WE2E-2: Wideband GaAs MMIC Diode Frequency Doubler Using 4:1 Broadside Coupled Balun Bert Henderson; <i>Cobham Defense Electronics</i> ; Steve Avery; <i>Cobham Defense Electronics</i> ; Scott Sacks; <i>Cobham Defense Electronics</i> ; Matthew Clements; <i>University of California, Davis</i> ; Anh-Vu Pham; <i>University of California, Davis</i>	WE2F-2: A High Efficiency 670 GHz x36 InP HEMT Multiplier Chain Alexis Zamora; <i>Northrop Grumman Corporation</i> ; Kevin Leong; <i>Northrop Grumman Corporation</i> ; Xiaobing Mei; <i>Northrop Grumman Corporation</i> ; Wayne Yoshida; <i>Northrop Grumman Corporation</i> ; Mike Lange; <i>Northrop Grumman Corporation</i> ; Khanh Nguyen; <i>Northrop Grumman Corporation</i> ; Ben Gorospe; <i>Northrop Grumman Corporation</i> ; William Deal; <i>Northrop Grumman Corporation</i>	WE2G-2: A Single Radar-Based Vital Sign Monitoring System With Resistance to Large Body Motion Mu-Cyun Tang; <i>National Sun Yat-sen University</i> ; Fu-Kang Wang; <i>National Sun Yat-sen University</i> ; Zyy-Sheng Horng; <i>National Sun Yat-sen University</i>	WE2H-2: Compelling Impact of Intermodulation Products of Regenerative Active Resonators on Sensitivity Mohammad Abdolrazzaghi; <i>University of Alberta</i> ; Mojgan Daneshmand; <i>University of Alberta</i>	WE2I-2: Hybrid Rectifier-Receiver Node Mohammad Rajabi; <i>Katholieke Universiteit Leuven</i> ; Sofie Pollin; <i>Katholieke Universiteit Leuven</i> ; Dominique Schreurs; <i>Katholieke Universiteit Leuven</i>	10:30-10:50
WE2E-3: A Compact Ultra-Wide-Band Frequency Divider With a Locking Range of 12–61 GHz With 0 dBm of Input Power Ali Mostajeran; <i>Cornell University</i> ; Mohammad Emadi; <i>Qualcomm, Inc.</i> ; Andrea Cathelin; <i>STMicroelectronics</i> ; Ehsan Afshari; <i>University of Michigan</i>	WE2F-3: A 70–110 GHz Single-Chip SiGe Reflectometer With Integrated Local Oscillator Quadrupler Bon-Hyun Ku; <i>Qualcomm, Inc.</i> ; Hyunchul Chung; <i>University of California at San Diego</i> ; Gabriel Rebeiz; <i>University of California at San Diego</i>	WE2G-3: Digital IF Phase-Tracking Doppler Radar for Accurate Displacement Measurements and Vital Signs Monitoring Marco Mercuri; <i>Holst Centre</i> ; Yao-Hong Liu; <i>Holst Centre</i> ; Alex Young; <i>Holst Centre/imec-NL</i> ; Tom Torts; <i>IMEC</i> ; André Bourdoux; <i>IMEC</i> ; Chris Van Hoof; <i>IMEC</i>	WE2H-3: Fast Broadband Reflectometer for Diagnostics of Plasma Processes Based on Spatially Distributed Multipole Resonance Probes Malte Mallach; <i>Ruhr University Bochum</i> ; Moritz Oberberg; <i>Ruhr University Bochum</i> ; Peter Awakowicz; <i>Ruhr University Bochum</i> ; Thomas Musch; <i>Ruhr University Bochum</i>	WE2I-3: Design of Concurrent Dual-Band Rectifier With Harmonic Signal Control Koshi Hamano; <i>Kagoshima University</i> ; Ryuya Tanaka; <i>Kagoshima University</i> ; Satoshi Yoshida; <i>Kagoshima University</i> ; Akihira Miyachi; <i>Japanese Aerospace Exploration Agency (JAXA)</i> ; Kenjiro Nishikawa; <i>Kagoshima University</i> ; Shigeo Kawasaki; <i>Japanese Aerospace Exploration Agency (JAXA)</i>	10:50-11:00
WE2E-4: An F-Band Active Phase Shifter in 28 nm CMOS Maxime De Wit; <i>Katholieke Universiteit Leuven</i> ; Patrick Reynaert; <i>Katholieke Universiteit Leuven</i>	WE2F-4: A SiGe-Based Wideband 220–310-GHz Subharmonic Receiver Front-End for High Resolution Radar Applications Faisal Ahmed; <i>Johannes Kepler University of Linz</i> ; Muhammad Furqan; <i>Johannes Kepler University of Linz</i> ; Klaus Aufinger; <i>Infineon Technologies AG</i> ; Andreas Stelzer; <i>Johannes Kepler University of Linz</i>	WE2G-4: Arc Shifting Method for Small Displacement Measurement With Quadrature CW Doppler Radar Xiaomeng Gao; <i>Adnoviv LLC</i> ; Jia Xu; <i>University of Hawaii</i> ; Ashikur Rahman; <i>University of Hawaii</i> ; Victor Lubecke; <i>University of Hawaii</i> ; Olga Boric Lubecke; <i>University of Hawaii</i>	WE2H-4: Wireless Chipless Cure Monitoring Sensor for Fibre Reinforced Plastics Jannis Groh; <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Melanie Lipka; <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Jan Schür; <i>Institute of Microwaves and Photonics</i> ; Martin Vossiek; <i>Institute of Microwaves and Photonics</i>	WE2I-4: Wireless Power and Information Transfer in Closed Space Utilizing Frequency Selected Surfaces Masaya Tamura; <i>Toyoashi University of Technology</i> ; Daigo Furus; <i>Toyoashi University of Technology</i> ; Ippei Takano; <i>Toyoashi University of Technology</i>	11:00-11:10
		WE2G-5: A Double Sideband Continuous Wave Radar for Monitoring Carotid Artery Wall Movements Stefano Pisa; <i>Sapienza University of Rome</i> ; Erika Pittella; <i>Sapienza University of Rome</i> ; Emanuele Piuze; <i>Sapienza University of Rome</i> ; Orlandino Testa; <i>Sapienza University of Rome</i> ; Renato Cicchetti; <i>Sapienza University of Rome</i>		WE2I-5: Constant Current Power Amplifier for MHz Magnetic Resonance Wireless Power Transfer Systems Songnan Yang; <i>Intel Corporation</i> ; Bin Xiao; <i>Intel Corporation</i> ; Tiefeng Shi; <i>Intel Corporation</i>	11:10-11:20
WE2E-5: High Speed and Highly Efficient S-Band 20 W Mixerless Vector Power Modulator Abhijeet Dasgupta; <i>Xlim - CNRS-Université De Lioges</i> ; Anthony Disserand; <i>Xlim - CNRS- Université De Lioges</i> ; Jean Michel Nébus; <i>Xlim - CNRS- Université De Lioges</i> ; Audrey Martin; <i>Xlim - CNRS- Université De Lioges</i> ; Philippe Bouysse; <i>Xlim - CNRS- Université De Lioges</i> ; Pierre Medrel; <i>Xlim - CNRS- Université De Lioges</i> ; Raymond Quéré; <i>Xlim - CNRS- Université De Lioges</i>	WE2F-5: Power-Efficient W-Band (92–98 GHz) Phased-Array Receive Element With Quadrature-Hybrid Based Passive Phase Interpolator Sadia Afroz; <i>Virginia Polytechnic Institute and State University</i> ; Kwang-Jin Koh; <i>Virginia Polytechnic Institute and State University</i>	WE2G-6: Short-Range Indoor Localization Using a Hybrid Doppler-UWB System Yao Tang; <i>Texas Tech University</i> ; Jing Wang; <i>Texas Tech University</i> ; Changzhi Li; <i>Texas Tech University</i>	WE2H-5: Sensor Array on Structured PET Substrates for Detection of Thin Dielectric Layers at Terahertz Frequencies Matthias Maasch; <i>Technische Universität Darmstadt</i> ; Mario Mueh; <i>Technische Universität Darmstadt</i> ; Christian Damm; <i>Technische Universität Darmstadt</i>	WE2I-6: Design of a Position-Independent End-to-End Inductive WPT Link for Industrial Dynamic Systems Alex Pacini; <i>University of Bologna</i> ; Samer Aldhaher; <i>Imperial College London</i> ; Alessandra Costanzo; <i>University di Bologna</i> ; Paul Mitcheson; <i>Imperial College London</i>	11:20-11:30
					11:30-11:40
					11:40-11:50





EXHIBIT-ONLY TIME



12:00–15:30 | Wednesday, 7 June 2017
Hawai'i Convention Center, Exhibit Hall

There's so much to do and see at the Exhibition! New for 2017, we've allocated special exhibit-only time to ensure that even the most die-hard technical attendees have an opportunity to visit the show floor.

Here are some not-to-be-missed activities happening during this time!

- Visit the 5G Demos in the IoT/5G Kiosk area (Booth 848)
- IMS Hackathon, challenging participants at all levels of RF/microwave experience to find out who is the ultimate RF circuit hacker (see p. 54 for details)
- *Keiki hālau* (children's hula) performance in the Gathering Place at 13:45
- Presentation of the Industry Paper Competition and Advanced Practice Paper Competition winners in the Gathering Place after the *keiki hālau* (see pp. 55–57 for details).
- Presentation of the 3MT® Competition winners (see p. 50 for details)
- Attend a MicroApps seminar located in the MicroApps Theater (Booth 1946).



About MicroApps: MicroApps seminars are 20-minute technical presentations presented by IMS Exhibitors, addressing commercial microwave technologies that are of interest to the microwave community. MicroApps gives attendees an ideal opportunity to see the latest products, services, and technologies at the world's largest microwave exhibition.

Don't miss the 12:00 MicroApps Panel Session: "The Future of RF Semiconductor Test" Booth 1946



See pp. 111-113 for the full MicroApps Schedule

Visit with the **over 450 exhibiting companies** that represent the state-of-the-art when it comes to materials, devices, components, and subsystems, as well as design and simulation software and test/measurement equipment. Whatever you are looking to acquire, you will find the industry leaders ready and willing to answer your purchasing and technical questions (see the Exhibition Catalog for a complete listing of companies).

WEDNESDAY

Don't forget to return to the Exhibit Hall at 17:00 for the Industry-Hosted Reception! (see p. 33 for details)



With over three hours of Exhibit-Only Time, there's no excuse not to visit an old friend, make a new connection, or find a new product

HAWAII 5G Catch the Wave!

Let everyone know you "Caught the Wave" by connecting and sharing with the official IMS Social Media Channels (see p. 4 for details). Also be sure to check out the official IMS2017 Snapchat filter while you're onsite.

TECHNICAL SESSIONS

15:40–17:00 | Wednesday, 7 June 2017 | Hawai'i Convention Center



	Room: 313A	Room: 313B	Room: 313C	Room: 314
	WE4B: Novel Large-Signal Model Extraction Techniques Chair: Arvind Sharma, <i>AKSH Research</i> Co-Chair: Q.J. Zhang, <i>Carleton University</i>	WE4C: Novel Substrate-Integrated Waveguide (SIW) Filters Chair: Christopher Galbraith, <i>Massachusetts Institute of Technology, Lincoln Laboratory</i> Co-Chair: Masud Hannan, <i>Intel Corporation</i>	WE4D: Advances in Terahertz Technologies Chair: Bill Deal, <i>Northrop Grumman Corporation</i> Co-Chair: Paul Khanna, <i>National Instruments Corporation</i>	WE4E: Doherty Power Amplifiers for Wireless Communications Chair: Monte Watanabe, <i>Northrop Grumman Corporation</i> Co-Chair: Joseph Staudinger, <i>NXP Semiconductors</i>
15:40-16:00	WE4B-1: Direct Extraction of an Admittance Domain Behavioral Model from Large-Signal Load-Pull Measurements M. Rocio Moure; <i>Universidad de Vigo</i> ; Michael Casbon; <i>Cardiff University</i> ; Monica Fernandez-Barciela; <i>Universidad de Vigo</i> ; Paul Tasker; <i>Cardiff University</i>	WE4C-1: Mode Composite Waveguide Filter With Dual-Mode Operation Jiapin Guo; <i>École Polytechnique de Montréal</i> ; Ke Wu; <i>École Polytechnique de Montréal</i>	WE4D-1: A Micromachined Differential Probe for On-Wafer Measurements in the WM-1295 (140–220 GHz) Band Chunhu Zhang; <i>University of Virginia</i> ; Matthew Bauwens; <i>Dominion MicroProbes</i> ; Linli Xie; <i>University of Virginia</i> ; Michael Cyberek; <i>University of Virginia</i> ; Nicolas Barker; <i>University of Virginia</i> ; Robert Weikle; <i>University of Virginia</i> ; Arthur Lichtenberger; <i>University of Virginia</i>	WE4E-1: 85 W Pavg, 500 W Peak Power, 1.8–2.2 GHz Wideband GaN Doherty Power Amplifier Rached Hajji; <i>QORVO, Inc.</i> ; Luis Hernandez; <i>QORVO, Inc.</i> ; Gary Burgin; <i>QORVO, Inc.</i> ; Jeff Gengler; <i>QORVO, Inc.</i> ; Thomas Landon; <i>QORVO, Inc.</i>
16:00-16:10	WE4B-2: Time Domain Poly-Harmonic Distortion Models of RF Transistors and its Extraction Using a Hybrid Passive/Active Measurement Setup Amir-Reza Amini; <i>University of Waterloo</i> ; Slim Boumaiza; <i>University of Waterloo</i>	WE4C-2: A Novel Dual-Band Bandpass Filter Using a Single Perturbed Substrate Integrated Waveguide Cavity Mingkang Li; <i>University of Science and Technology of China</i> ; Chang Chen; <i>University of Science and Technology of China</i> ; Weidong Chen; <i>University of Science and Technology of China</i> ; Lingyun Zhou; <i>University of Science and Technology of China</i> ; Hualiang Zhang; <i>University of Massachusetts, Lowell</i>	WE4D-2: A Broadband THz Waveguide-to-Suspended Stripline Loop-Probe Transition Johanna Hanning; <i>Chalmers University of Technology</i> ; Vladimir Drakinskiy; <i>Chalmers University of Technology</i> ; Peter Sobis; <i>Omnisys Instruments</i> ; Tomas Bryllert; <i>Chalmers University of Technology</i> ; Jan Stake; <i>Chalmers University of Technology</i>	WE4E-2: A 200 Watt Broadband Continuous Mode Doherty Power Amplifier for Base-Station Applications Xiaofan Chen; <i>Tsinghua University</i> ; Wenhua Chen; <i>Tsinghua University</i> ; Zhenghe Feng; <i>Tsinghua University</i> ; Fadel Ghannouchi; <i>University of Calgary</i>
16:10-16:20			WE4D-3: High Performance 500–750 GHz RF MEMS Switch Yukang Feng; <i>University of Virginia</i> ; N. Scott Barker; <i>University of Virginia</i>	
16:20-16:30	WE4B-3: Conservative Current and Charge Data Extracted from Pulsed S-Parameter Measurements for GaN HEMT PA Design Cristiano Gonçalves; <i>Instituto De Telecomunicacoes</i> ; Luis Nunes; <i>Huawei Technologies Co., Ltd.</i> ; Pedro Cabral; <i>Instituto De Telecomunicacoes</i> ; Jose Pedro; <i>Instituto De Telecomunicacoes</i>	WE4C-3: Substrate Integrated Waveguide Dual-Passband Filters With Flexibly Allocated Center Frequencies and Bandwidths Kang Zhou; <i>Nanjing University of Science and Technology</i> ; Chunxia Zhou; <i>Nanjing University of Science and Technology</i> ; Wen Wu; <i>Nanjing University of Science and Technology</i>		WE4E-3: An Integrated RF Match and Baseband Termination Supporting 395 MHz Instantaneous Bandwidth for High Power Amplifier Applications Ning Zhu; <i>NXP Semiconductors</i> ; Roy McLaren; <i>NXP Semiconductors</i> ; Damon Holmes; <i>NXP Semiconductors</i> ; John Holt; <i>NXP Semiconductors</i> ; Peter Rashev; <i>NXP Semiconductors</i> ; Jeffrey Jones; <i>NXP Semiconductors</i>
16:30-16:40			WE4D-4: V02 Switch Based Submillimeter-Wave Phase Shifters Chris Hillman; <i>Teledyne Scientific</i> ; Bob Ma; <i>Teledyne Scientific</i> ; Philip Stupar; <i>Teledyne Scientific</i> ; Zach Griffith; <i>Teledyne Scientific</i>	
16:40-16:50	WE4B-4: Knowledge-Based Neural Network (KBNN) Modeling of HBT Junction Temperature and Thermal Resistance From Electrical Measurements Masaya Iwamoto; <i>Keysight Technologies</i> ; Jianjun Xu; <i>Keysight Technologies</i> ; Wenfan Zhou; <i>Keysight Technologies</i> ; David Root; <i>Keysight Technologies</i>	WE4C-4: An Ultra-Wide Stopband Self-Packaged Quasi-Lumped-Element Low Pass Filter Based on Substrate Integrated Suspended Line Technology Zonglin Ma; <i>University of Electronic Science and Technology of China</i> ; Kaixue Ma; <i>University of Electronic Science and Technology of China</i> ; Shouxian Mou; <i>University of Electronic Science and Technology of China</i>		WE4E-4: An Extended Symmetrical Doherty Power Amplifier With High Efficiency Over a Wide Power Range Mohammad Darwish; <i>University of California, Davis</i> ; Anh-Vu Pham; <i>University of California, Davis</i>
16:50-17:00			WE4D-5: A Monolithic Low-Cost 3-dB Directional Coupler Based on Silicon Image Guide (SIG) Technology at Millimeter-Wave Band Aidin Taeb; <i>University of Waterloo</i> ; Mohamed Basha; <i>Zewail City of Science and Technology</i> ; Suren Gigoyan; <i>University of Waterloo</i> ; Gholamreza Rafi; <i>University of Waterloo</i> ; Sujeet Chaudhuri; <i>University of Waterloo</i> ; Safeddin Safavi-Naeini; <i>University of Waterloo</i>	

TECHNICAL SESSIONS

15:40–17:00 | Wednesday, 7 June 2017 | Hawai'i Convention Center



Room: 315	Room: 316A	Room: 316B	Room: 316C	
<p>WE4F: Recent Advancements in III-V Integrated Circuits for Communications from S-Band to Sub-mm Waves Chair: Nicholas Kolias, <i>Raytheon Company</i> Co-Chair: Reynold Kagiwada, <i>Northrop Grumman Corporation</i></p>	<p>WE4G: Signal Sources and Noise Suppression Techniques Chair: Deukhyoun Heo, <i>Washington State University</i> Co-Chair: Brad Nelson, <i>QORVO, Inc.</i></p>	<p>WE4H: Practical Considerations in Wireless Systems Chair: Steven Rosenau, <i>SSL</i> Co-Chair: Fred Schindler, <i>QORVO, Inc.</i></p>	<p>WE4I: Predistortion and Reconfigurability for 5G Systems Chair: Vittorio Camarchia, <i>Politecnico di Torino</i> Co-Chair: Kate Remley, <i>National Institute of Standards and Technology</i></p>	
<p>WE4F-1: A Failsafe High Power Transmit-Receive Switch/Limiter MMIC Charles Campbell; <i>QORVO, Inc.</i></p>	<p>WE4G-1: A Bang-Bang PD Based Phase Noise Filter With 23 dB Noise Suppression Tongning Hu; <i>University of California, Davis</i>; Shilei Hao; <i>University of California, Davis</i>; Jane Gu; <i>University of California, Davis</i>; Bo Yu; <i>University of California, Davis</i>; Jinbo Li; <i>University of California, Davis</i>; Yu Ye; <i>University of California, Davis</i></p>	<p>WE4H-1: Ultra-Small Aperture Terminals for SATCOM on-the-Move Applications Julio Navarro; <i>MTT-S</i></p>	<p>WE4I-1: Digital Predistortion of Amplitude Varying Phased Array Utilising Over-the-Air Combining Nuutti Tervo; <i>University of Oulu</i>; Janne Aikio; <i>University of Oulu</i>; Tommi Tuovinen; <i>University of Oulu</i>; Timo Rahkonen; <i>University of Oulu</i>; Aarno Pärssinen; <i>University of Oulu</i></p>	15:40-16:00
<p>WE4F-2: First Demonstration of Broadband W-Band and D-Band GaN MMICs for Next Generation Communication Systems Moyer Harris; <i>Hughes Research Laboratories</i>; Hasan Sharifi; <i>Hughes Research Laboratories</i>; David Brown; <i>Hughes Research Laboratories</i>; Miroslav Micovic; <i>Hughes Research Laboratories</i>; Ara Kurdoghlian; <i>Hughes Research Laboratories</i>; Robert Nagele; <i>Hughes Research Laboratories</i></p>	<p>WE4G-2: Current Reuse Triple-Band Signal Source for Multi-Band Wireless Network-on-Chip Joseph Baylon; <i>Washington State University</i>; Sheikh Nijam Ali; <i>Washington State University</i>; Pawan Agarwal; <i>Washington State University</i>; Srinivasan Gopal; <i>Washington State University</i>; Deukhyoun Heo; <i>Washington State University</i></p>	<p>WE4H-2: 3GPP ACLR Measurements for Millimeter-Wave Wireless Backhaul Link With Self-Heterodyning Mixing Simone Maier; <i>Bell Labs</i>; Heinz Schlesinger; <i>Bell Labs</i>; Stefan Woerner; <i>Nokia Bell Labs</i>; Dieter Ferling; <i>Nokia Bell Labs</i>; Xin Yu; <i>Nokia Bell Labs</i>; Gerhard Luz; <i>Nokia Bell Labs</i>; Andreas Pascht; <i>Nokia Bell Labs</i></p>	<p>WE4I-2: A Two-Stage Analog Cancellation Architecture for Self-Interference Suppression in Full-Duplex Communications Xin Quan; <i>University of Electronic Science and Technology of China</i>; Ying Liu; <i>University of Electronic Science and Technology of China</i>; Wensheng Pan; <i>University of Electronic Science and Technology of China</i>; Youxi Tang; <i>University of Electronic Science and Technology of China</i>; Kai Kang; <i>University of Electronic Science and Technology of China</i></p>	16:00-16:20
<p>WE4F-3: Investigation of Direct-Coupled Amplifier Topologies for Wireless Communication Systems Using Normally-On mHEMT Technology Laurenz John; <i>Fraunhofer Institute for Applied Solid State Physics</i>; Thomas Merkle; <i>Fraunhofer IAF</i>; Christian Friesicke; <i>Fraunhofer IAF</i>; Axel Tessmann; <i>Fraunhofer IAF</i>; Arnulf Leuther; <i>Fraunhofer IAF</i>; Matthias Ohlrogge; <i>Fraunhofer IAF</i>; Roger Lozar; <i>Fraunhofer IAF</i>; Michael Schlechtweg; <i>Fraunhofer IAF</i>; Thomas Zwick; <i>Karlsruhe Institute of Technology</i></p>	<p>WE4G-3: A Low Phase Noise Quadrature Phase Oscillator with Frequency Pulling Suppression Technique Ping-Yi Wang; <i>National Tsing Hua University</i>; Guan-Yu Su; <i>National Tsing Hua University</i>; Yin-Cheng Chang; <i>National Tsing Hua University</i>; Da-Chiang Chang; <i>National Chip Implementation Center</i>; Shawn S. H. Hsu; <i>National Tsing Hua University</i></p>	<p>WE4H-3: Full-Duplex Channel Measurement and Analysis Based on High Dynamic Channel Sounding System Wen Zhu; <i>Keysight Technologies</i>; Zhimeng Zhong; <i>Huawei Technologies Co., Ltd.</i>; Hongwei Kong; <i>Keysight Technologies</i></p>	<p>WE4I-3: Analysis of Broadband Power Combiners and Coupled Antenna With Stochastic Load Matching in a Random Field for mm-Wave Applications Sidina Wane; <i>NXP Semiconductors</i>; Damienne Bajon; <i>ISAE-Universite Fédérale de Toulouse</i>; Thanh Vinh Dinh; <i>NXP Semiconductors</i>; Dominique Lesenechal; <i>NXP Semiconductors</i>; Johannes Russer; <i>NXP Semiconductors</i>; Peter Russer; <i>Technische Universität München</i></p>	16:20-16:40
<p>WE4F-4: 80 nm InGaAs MOSFET W-Band Low Noise Amplifier Arnulf Leuther; <i>Fraunhofer IAF</i>; Thomas Merkle; <i>Fraunhofer IAF</i>; Matthias Ohlrogge; <i>Fraunhofer IAF</i>; Frank Bernhardt; <i>Fraunhofer IAF</i>; Lukas Czornomaz; <i>IBM Research - Zurich</i>; Axel Tessmann; <i>Fraunhofer IAF</i></p>	<p>WE4G-4: A Chip Set of Low Phase Noise MMIC VCOs at C, X and Ku Band in InGaP-GaAs HBT Technology for Satellite Telecommunications Corrado Florian; <i>University di Bologna</i>; Sara D'Angelo; <i>MEC srl</i>; Davide Resca; <i>M.E.C. s.r.l.</i>; Francesco Scappaviva; <i>MEC srl</i></p>	<p>WE4H-4: k-Space Tomography for Spatial-Spectral Monitoring in Cellular Networks Dennis Prather; <i>University of Delaware</i>; Janusz Murakowski; <i>University of Delaware</i>; Garrett Schneider; <i>University of Delaware</i>; Shouyuan Shi; <i>University of Delaware</i>; Dylan Ross; <i>University of Delaware</i></p>	<p>WE4I-4: Reconfigurable High Efficiency Power Amplifier With Tunable Coupling Coefficient Based Transformer for 5G Applications Sheikh Nijam Ali; <i>Washington State University</i>; Pawan Agarwal; <i>Washington State University</i>; Joe Baylon; <i>Washington State University</i>; Deukhyoun Heo; <i>Washington State University</i></p>	16:40-17:00

WEDNESDAY

INTERACTIVE FORUM



15:40–17:10 | Wednesday, 7 June 2017

Hawai'i Convention Center: Overlook Concourse

<p>WEIF1-1: Generalized Langevin Theory for Josephson Parametric Amplification Waldemar Kaiser; <i>Technische Universität München</i>; Michael Haider; <i>Technische Universität München</i>; Johannes Russer; <i>Technische Universität München</i>; Peter Russer; <i>Technische Universität München</i>; Christian Jauschek; <i>Technische Universität München</i></p>	<p>WEIF1-7: A Fully Integrated High Gain 85–106 GHz Packaged Receiver Module in CMOS 65 nm for FMCW Radar Samuel Jameson; <i>Tel Aviv University</i>; Aviv Marks; <i>Tel Aviv University</i>; Eran Socher; <i>Tel Aviv University</i></p>	<p>WEIF1-13: N-ZERO Direct Conversion Wireless Sensor Based on Six-Port Structures Rashid Mirzavand Boroujeni; <i>University of Alberta</i>; Mohammad Mahdi Honari Kalateh; <i>University of Alberta</i>; Pedram Mousavi; <i>University of Alberta</i></p>	<p>WEIF1-19: Development of a Reconfigurable Low Cost Multi-Mode Radar System for Contactless Vital Signs Detection Farhan Quaiyum; <i>University of Tennessee</i>; Lingyun Ren; <i>University of Tennessee</i>; Sabikun Nahar; <i>University of Tennessee</i>; Farnaz Foroughian; <i>University of Tennessee</i>; Aly Fathy; <i>University of Tennessee</i></p>
<p>WEIF1-2: Generation of Multi-Gigabit/s OFDM Signals at W-Band With a Graphene FET MMIC Mixer Omid Habibpour; <i>Chalmers University of Technology</i>; Dhecha Nopchinda; <i>Chalmers University of Technology</i>; Zhongxia Simon He; <i>Chalmers University of Technology</i>; Niklas Rorsman; <i>Chalmers University of Technology</i>; Herbert Zirath; <i>Chalmers University of Technology</i></p>	<p>WEIF1-8: A Monostatic Coded Aperture Reflectometer for Imaging at Submillimeter-Wavelengths Michael Eller; <i>University of Virginia</i>; Noah Sauber; <i>University of Virginia</i>; Alexander Arsenovic; <i>University of Virginia</i>; Souheil Nadri; <i>University of Virginia</i>; Linli Xie; <i>University of Virginia</i>; Robert Weikle; <i>University of Virginia</i></p>	<p>WEIF1-14: Flexible Coupled Microwave Ring Resonators for Contactless Microbead Assisted Volatile Organic Compound Detection Zahra Abbasi; <i>University of Alberta</i>; Mohammad Hossein Zarifi; <i>University of Alberta</i>; Pooya Shariaty; <i>University of Alberta</i>; Zaher Hashisho; <i>University of Alberta</i>; Mojgan Daneshmand; <i>University of Alberta</i></p>	<p>WEIF1-20: A Single-Chip Wireless Microelectrode Array for Neural Recording and Stimulation Alice Yi-Szu Jou; <i>Purdue University</i>; Hengying Shan; <i>Purdue University</i>; Hossein Pajouhi; <i>Purdue University</i>; Ming-Shiuan Tsai; <i>Purdue University</i>; Shabnam Ghotbi; <i>Purdue University</i>; Qiuyu Wu; <i>Purdue University</i>; Alexander A. Chubykin; <i>Purdue University</i>; Saeed Mohammadi; <i>Purdue University</i></p>
<p>WEIF1-3: W-Band Phase Shifter Based on Optimized Optically Controlled Carbon Nanotube Layer Dmitry Lyubchenko; <i>Kungliga Tekniska Högskolan</i>; Ilya Anoshkin; <i>Kungliga Tekniska Högskolan</i>; Irina Nefedova; <i>Aalto University</i>; Joachim Oberhammer; <i>KTH Royal Institute of Technology</i>; Antti Räisänen; <i>Aalto University</i></p>	<p>WEIF1-9: A Fully Integrated Injection-Locked Picosecond Pulse Receiver for 0.29 psrms-Jitter Wireless Clock Synchronization in 65 nm CMOS Babak Jamali; <i>Rice University</i>; Aydin Babakhani; <i>Rice University</i></p>	<p>WEIF1-15: Single-Chip Dynamically Time-Frequency Multiplexed Phase- and Self-Injection-Locked CMOS Vital-Sign Sensor Ping-Hsun Wu; <i>Industrial Technology Research Institute</i></p>	<p>WEIF1-21: A Hybrid Computer Vision and Wi-Fi Doppler Radar System for Capturing the 3-D Hand Gesture Trajectory With a Smartphone Mu-Cyun Tang; <i>National Sun Yat-sen University</i>; Chien-Lun Chen; <i>National Sun Yat-sen University</i>; Min-Hui Lin; <i>National Sun Yat-sen University</i>; Fu-Kang Wang; <i>National Sun Yat-sen University</i>; Chia-Hung Yeh; <i>National Sun Yat-sen University</i>; Tzzy-Sheng Horng; <i>National Sun Yat-sen University</i></p>
<p>WEIF1-4: Dual-Mode Filters in Equilateral Triangular Waveguides With Wide Spurious-Free Response Ana Morán-López; <i>Universidad Autónoma de Madrid</i>; Juan Córcoles; <i>Universidad Autónoma de Madrid</i>; Jorge Ruiz-Cruz; <i>Universidad Autónoma de Madrid</i>; José Montejo-Garai; <i>Universidad Politécnica de Madrid</i>; Jesús Rebollar; <i>Universidad Politécnica de Madrid</i></p>	<p>WEIF1-10: Application of the Phase Coherence Method for Imaging With Sparse Multistatic Line Arrays Bessem Baccouche; <i>Fraunhofer ITWM</i>; Wolfgang Sauer-Greff; <i>University of Kaiserslautern</i>; Ralph Urbansky; <i>University of Kaiserslautern</i>; Fabian Friederich; <i>Fraunhofer ITWM</i></p>	<p>WEIF1-16: Microwave Transmission Approach for Dynamic Dielectric Detection at Brain Functional Site Xing Jiang; <i>Guilin University of Electronic Technology</i>; Zhe Geng; <i>Guilin University of Electronic Technology</i></p>	
<p>WEIF1-5: High-Isolation Diplexer on Triple-Mode Cavity Filters Lin Jing-yu; <i>South China University of Technology</i>; Wong Sai-Wai; <i>South China University of Technology</i>; Zhu Lei; <i>University of Macau</i></p>	<p>WEIF1-11: A Low-Cost, Orientation-Insensitive Microwave Water-Cut Sensor Printed on a Pipe Surface Muhammad Akram Karimi; <i>King Abdullah University of Science and Technology</i>; Muhammad Arsalan; <i>Saudi Aramco</i>; Atif Shamim; <i>King Abdullah University of Science and Technology</i></p>	<p>WEIF1-17: Impacts of RF Shimming on MRI Induced Heating for Implantable Medical Lead in 3T Birdcage Coil Qi Zeng; <i>University of Houston</i>; Qingyan Wang; <i>University of Houston</i>; Jianfeng Zheng; <i>University of Houston</i>; Wolfgang Kainz; <i>US Food and Drug Administration</i>; Ji Chen; <i>University of Houston</i></p>	
<p>WEIF1-6: V-Band Rotary Joint With Low Loss Over Wide Bandwidth Hermann Sequeira; <i>Johns Hopkins University</i>; Perry Malouf; <i>Johns Hopkins University</i></p>	<p>WEIF1-12: A Cost-Effective Wearable Vital-Sign Sensor With Self-Oscillating Active Antenna Based on Envelope Detection Technique Chao-Hsiung Tseng; <i>National Taiwan University of Science and Technology</i>; Jyun-Kai Huang; <i>Wistron Neweb Corporation</i>; Li-Te Yu; <i>National Taiwan Univ. of Sci. & Tech.</i>; Chih-Lin Chang; <i>Wistron Neweb Corporation</i></p>	<p>WEIF1-18: Wirelessly Powered Implantable Pacemaker With On-Chip Antenna Yuxiang Sun; <i>Rice University</i>; Brian Greet; <i>Baylor College of Medicine/Texas Heart Institute</i>; David Burkland; <i>Baylor College of Medicine/Texas Heart Institute</i>; Mathews John; <i>Texas Heart Institute</i>; Mehdi Razavi; <i>Texas Heart Institute</i>; Aydin Babakhani; <i>Rice University</i></p>	



INDUSTRY-HOSTED RECEPTION & PAU HANA WITH THE PROS



17:00–18:00 | Wednesday, 7 June 2017
Hawai'i Convention Center, Exhibit Hall

The Industry-Hosted Reception will take place in the Exhibit Hall. This is a great opportunity for all attendees, guests, and exhibitors to network! We look forward to seeing you there!



Pau Hana with the Pros

Pau hana (Hawaiian, literal translation: finished work) is a time to relax and socialize after a productive day. Join us during the Industry-Hosted Reception and meet some of the titans of the microwave community. This is your chance to share a casual conversation and have a drink with these Pros:



Dr. Constantine Balanis
Arizona State University



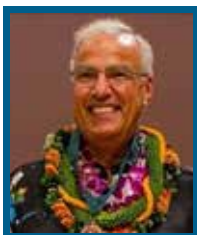
Dr. Zoya Popovic
University of Colorado, Boulder



Dr. Steve Cripps
Cardiff University



Dr. Gabriel Rebeiz
University of California, San Diego



Dr. Magdy Iskander
University of Hawai'i

WEDNESDAY



MTT-S AWARDS BANQUET



18:30–21:30 | Wednesday, 7 June 2017

Hilton Hawaiian Village Waikiki Beach Resort, Coral Ballroom

The MTT-S Awards Banquet program includes dinner, entertainment, and technical and service awards presented by the MTT-S Awards Committee. After-dinner entertainment will feature *'ukulele* virtuoso Taimane Gardner described as the "female Carlos Santana" who performed with the legendary Don Ho at age 14.

Please join us in congratulating this year's award winners!

Award Title	Award Description
Honorary Life Member	John Barr IV Recognizes an individual of national and international prominence, who has performed outstanding service to the profession and the Society, whose contributions, technical or otherwise, have made an important impact in the field of interest of the Society, who has been an elected member of the Administrative Committee, an MTT-S member for at least 10 years, and has been elected IEEE Fellow.
Microwave Career Award	Robert Trew Recognizes a career of meritorious achievement and outstanding technical contribution by an individual in the field of microwave theory and techniques.
Distinguished Service Award	John Barr IV Recognizes an individual who has given outstanding service for the benefit and advancement of the MTT-S.
Distinguished Educator Award	Umesh K. Mishra Recognizes a distinguished educator in the field of microwave engineering and science who best exemplifies the special human qualities of Fred Rosenbaum, who considered teaching a high calling and demonstrated his dedication to the Society through tireless service.
Microwave Pioneer Award	C. P. Wen Recognizes an individual or team, not exceeding three persons, having made outstanding pioneering technical contributions that advance microwave theory and techniques, which are described in an archival paper published at least 20 years prior to the year of the award.
Microwave Application Award	Anand Gopinath Recognizes an individual or team of no more than five individuals for an outstanding application of microwave theory and techniques.
Outstanding Young Engineer Award	Dietmar Kissinger and Hua Wang Recognizes an outstanding young MTT-S member who has distinguished him/herself through achievement(s), which may be technical (within the MTT-S Field of Interest), may be exemplary service to the MTT-S, or may be a combination of both.
Microwave Prize	Konstantin Statnikov, Janusz Grzyb, Bernd Heinemann, and Ullrich R. Pfeiffer , for their paper entitled: "160-GHz to 1-THz Multi-Color Active Imaging With a Lens-Coupled SiGe HBT Chip-Set," IEEE Transactions on Microwave Theory and Techniques, vol. 63, no. 2, pp. 520–532, Feb. 2015. Recognizes, on an annual basis, the most significant contribution by a published paper to the field of interest of the MTT-S.
MWCL "Tatsuo Itoh" Award	Cheng Guo, Xiaobang Shang, Michael J. Lancaster, and Jun Xu for their paper entitled: "A 3-D Printed Lightweight X-Band Waveguide Filter Based on Spherical Resonators," IEEE Microwave and Wireless Components Letters, vol. 25, no. 7, pp. 442–444, Jul. 2015. Recognizes, on an annual basis, the most significant contribution in a paper published in the IEEE Microwave and Wireless Component Letters in the year preceding the award.



The IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year does not exceed one-tenth of one percent of the total voting Institute membership. The accomplishments that are being honored have contributed importantly to the advancement or application of engineering, science and technology, bringing the realization of significant value to society.

Eight MTT-S members who were evaluated by our Society were elected to the grade of Fellow, effective 1 January 2017:

William Deal	for contributions to solid state submillimeter wave and terahertz amplifiers
Tian-Wei Huang	for contributions to design and development of millimeter-wave CMOS RFICs
Kenji Itoh	for contributions to microwave harmonic mixers and applications to mobile terminal devices
Agnieszka Konczykowska	for contributions to development of very high-speed circuits
Donald Lie	for contributions to high linearity and high efficiency silicon RF power amplifiers for broadband wireless applications
Dimitrios Peroulis	for contributions to MEMS-based tunable filters
Vesna Radisic	for contributions to millimeter- and submillimeter-wave sources, amplifiers, and monolithic integrated circuits
Sorin Voinigescu	for contributions to silicon and silicon-germanium microwave and millimeter-wave devices and integrated circuits

In addition, ten other MTT-S members were elected to the grade of Fellow in 2017 after their qualifications were evaluated by other IEEE societies or councils:

Filiberto Bilotti (AP)	for contributions to metamaterials for electromagnetic and antenna applications
Payam Heydari (SSC)	for contributions to silicon-based millimeter-wave integrated circuits and systems
Akimasa Hirata (EMC)	for contributions to safety assessment and standardization of human exposure to electromagnetic fields
Kenichi Kagoshima (AP)	for contributions to antennas for satellite communication and mobile wireless access systems
Steven Koester (ED)	for contributions to group-IV electronic and photonic devices
Cyril Luxey (AP)	for the development of small antennas, multi-antenna system integration, and high performance mm-wave systems
Daniel Oates (ASC)	for contributions to high-temperature superconductors and applications to RF receiver technology
Tomas Palacios (ED)	for contributions to gallium nitride electron devices and two-dimensional materials
Charles Rhoads (AP)	for leadership in low cost and high performance array antenna technologies
Zhongxiang Shen (AP)	for contributions to 3D frequency selective structures and slot antennas