



# COMCAS 2019

International Conference on Microwaves,  
Communications, Antennas and Electronic Systems

David Intercontinental Hotel  
4-6 November 2019, Tel Aviv, Israel

# PRELIMINARY CONFERENCE PROGRAM

[www.comcas.org](http://www.comcas.org)

## Welcome to IEEE COMCAS 2019

COMCAS 2019 continues the tradition of providing a multidisciplinary forum for the exchange of ideas, research results, and industry experience in areas such as communications, antennas, Radar, RF and Microwave Circuits and Systems, and Bio-medical Engineering.

Following the previous COMCAS conferences, we expect more than 1700 participants from about 40 countries around the world.

IEEE COMCAS 2019 will deal with issues including: Innovations in Technology, Digital AESA Radar, MW Circuits modeling and Simulation, Space Oriented technology, Thermal Management, Advanced Packaging, 5G and "Internet of Things" communications.

We welcome the IEEE Electronic Packaging Society (EPS) to COMCAS 2019 and thank them for providing a Packaging and Thermal Management program Track, which addresses issues of critical interest to the electronic industry, such as Design & Reliability, Heterogeneous Integration, WLP, Flip Chip, new Materials & Processes, and an in-depth exploration of thermal management challenges and opportunities.

IEEE COMCAS 2019 will host the IEEE Young Professionals event, WIE Session (Women in Engineering) and COMCAS WirelessApps session.

Attractive workshops (invited sessions) and seminars are also very important part of the IEEE COMCAS 2019 and are included in the 3 days registration.

We welcome you; scientists, engineers, managers, and researchers from academic and industry to register and be part of this fascinating conference, share knowledge and interact with leading companies and experts. You will enjoy our warm hospitality and the beautiful Mediterranean coast of Tel Aviv.



**Shmuel Auster, IEEE COMCAS  
General Chair**



**Amir Boag, IEEE COMCAS Technical  
Program Chair**

## SPEAKERS

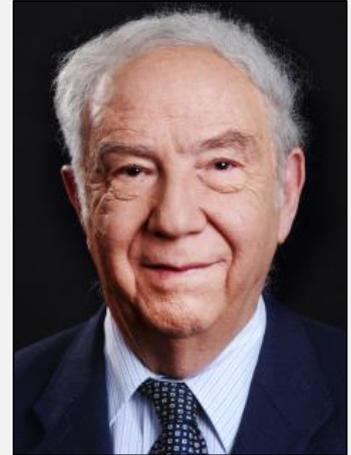
### KEYNOTE SPEAKERS



**Dr. Avram Bar-Cohen**  
Raytheon  
USA



**Prof. Richard D. Gitlin**  
University of South Florida  
USA



**Prof. Yoram Palti**  
NovoCure  
Israel



**Prof. Theodore (Ted) S. Rappaport**  
NYU-Tandon  
USA



**Dr. Hava T. Siegelmann**  
DARPA  
USA



**Dr. Avraham Suhami**  
Elscent Tomography  
Israel

**FOR FURTHER DETAILS – CLICK HERE**

## INVITED SPEAKERS



**Prof. Constantine A. Balanis**  
Arizona State University  
USA



**Dr. Matteo Bassi**  
Infineon Technologies  
Austria



**Prof. Andrea Bevilacqua**  
University of Padova  
Italy



**Dr. Rick S. Blum**  
Lehigh University  
USA



**Prof. Wolfgang Bösch**  
Graz Univ. of Technology  
Austria



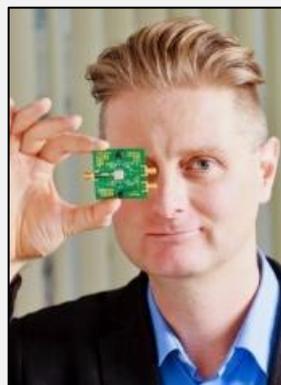
**Dr. Charles F. Campbell**  
Qorvo  
USA



**Prof. Larry Dunleavy**  
Univ. of South Florida  
USA



**Prof. Yonina Eldar**  
Weizmann Inst. of Science  
Israel



**Prof. Frank Ellinger**  
Technische Univ. Dresden  
Germany



**Prof. Caleb Fulton**  
University of Oklahoma  
USA



**Dr. Markus Gardill**  
InnoSenT GmbH  
Germany



**Prof. Roberto D. Graglia**  
Politecnico di Torino  
Italy



**Dr. Erich N. Grossman**  
NIST  
USA



**Dr. Amelie Hagelauer**  
University of Erlangen  
Germany



**Prof. Yejun He**  
College of Electronics &  
Info. Eng., China

## INVITED SPEAKERS



**Dr. Sherry Hess**  
AWR Group NI  
USA



**Dr. Vadim Issakov**  
Infineon Technologies AG  
Germany



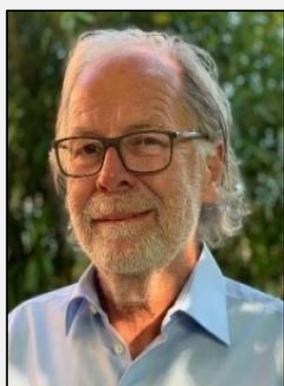
**Prof. Yogendra Joshi**  
Georgia Inst. of Technology  
USA



**Prof. Ingmar Kallfass**  
University of Stuttgart  
Germany



**Dr. Allen Katz**  
The College of New Jersey  
USA



**Dr. Rudolf Lachner**  
Consultant  
Germany



**Prof. Andrea Massa**  
University of Trento  
Italy



**Dr. Kumar Vijay Mishra**  
US Army Research Lab.  
USA



**Dr. Dmitri Mogilevtsev**  
National Acad. of Sciences  
Belarus



**Dr. Ivan Ndip**  
Fraunhofer IZM  
Germany



**Prof. Alexander I. Nosich**  
National Acad. of  
Sciences  
Ukraine



**Prof. Giacomo Oliveri**  
University of Trento  
Italy



**Dr. Mario Pauli**  
Karlsruhe Inst. of Tech.  
Germany



**Prof. Zoya Popovic**  
University of Colorado  
USA



**Prof. Sembiam R. Rengarajan**  
California State University  
USA

## INVITED SPEAKERS



**Dr. Vishal Riché**  
InnoSent GmbH  
Germany



**Prof. Paolo Rocca**  
University of Trento  
Italy



**Dr. Andrej Rumiantsev**  
MPI Corporation  
Taiwan



**Prof. Shlomo Shamai**  
Technion  
Israel



**Prof. Jeffrey H. Shapiro**  
Massachusetts Inst. of Tech  
USA



**Prof. Hjalti H. Sigmarsson**  
University of Oklahoma  
USA



**Dr. Mark S. Spector**  
Naval Research  
USA



**Mr. Nino Srour**  
US Army Research Lab.  
USA



**Prof. Almudena Suárez**  
University of Cantabria  
Spain



**Dr. Horst Theuss**  
Infineon Technologies AG  
Germany



**Prof. Mei Song Tong**  
Tongji University  
China



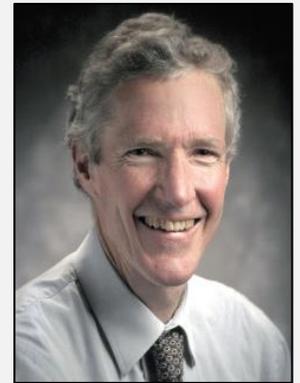
**Dr. Piergiorgio L. E. Uslenghi**  
University of Illinois  
USA



**Dr. Jeff Walling**  
MCCI  
Ireland



**Dr. Hua Wang**  
Georgia Tech Electronics  
USA



**Dr. Mark E. Weber**  
University of Oklahoma  
USA



**Mr. Marc K. Weinstein**  
LLP  
USA

### Young Professionals in Automotive

November 4, Hall 5, 16:10-18:00

Young Professionals Israel continues a great tradition of organising the most attractive events as a part of IEEE COMCAS conference. This time Young Professionals go Automotive, bringing you a YP in Automotive event. If you are interested in this fascinating field of industry and research and if you want to meet the automotive industry leaders and discuss with them the most relevant automotive developments, you surely need to attend the YP in Automotive. We proudly host Mr. Omer Keilaf, CEO, Innoviz Technologies, Mr. Kobi Morenko, CEO, Arbe, Mr. Avi Bakal, CEO, TriEye and Mr. Orr Davon, CEO, Hailo. The participation is free of charge and the walk-ins are most welcome!

### Alpha Girls – What Does It Take to Break Into the C-Suite

November 5, Hall 5, 09:00-10:50

Inspired by the recent book Alpha Girls: The Women Upstarts Who Took on Silicon Valley's Male Culture and Made the Deals of a Lifetime by Julian Guthrie, this panel will discuss what it takes to move up the management chain and eventually into the C-suite\* in a male-dominated tech world. Alpha Girls is the story of four women who succeeded in Silicon Valley venture capital. Five tips extracted from the book will be discussed and debated: your family doesn't need you every second, humor works wonders, don't sit on the sidelines, find out about the locker room talk, and don't enable underachievement. Do these tips apply equally as well to men and women? Are there differences between academia and industry? Join the panel session to hear the wisdom shared by leading high tech women and share your own experiences.

\*C-Suite: group of officers of a business organization who have the word "chief" in their titles.

### **Unconventional Array Design for New Generation Communications and Sensing Systems**

**Andrea Massa, Giacomo Oliveri, Paolo Rocca, University of Trento, Italy**      **November 6, Royal H, 09:00-16:20**

Antenna arrays are a key technology in several Electromagnetics applicative scenarios, including satellite and ground wireless communications, MIMO systems, remote sensing, biomedical imaging, radar, wireless power transmission, and radioastronomy. The objective of the short course is therefore to provide the attendees the fundamentals of Antenna Array synthesis, starting from intuitive explanations to rigorous mathematical and methodological insights about their behavior and design. Moreover, recent synthesis methodologies will be also discussed with particular emphasis on unconventional architectures for complex communications and radar systems within a new optimality framework.

### **Recent Developments and Future Trends in Digital Phased Arrays**

**Caleb Fulton, University of Oklahoma, USA**      **November 5, Grand C, 11:10-13:00**

In the last three decades, digital phased array technology has evolved from demonstrations in narrow-band testbeds to mature, full-scale system developments. This tutorial will outline work done on several intermediate programs in the United States, specifically focusing on modeling and general theory, architectural aspects, calibration considerations, and dynamic range issues in these modern systems. Details will be provided on a number of testbeds and engineering demonstrators, particularly from the University of Oklahoma, ranging from a mid-scale cylindrical array to future development opportunities at scales beyond 10,000 elements. Finally, future research opportunities will be discussed.

### **Supply-Modulated Power Amplifiers for Efficiency Enhancement**

**Zoya Popović, University of Colorado at Boulder, USA**      **November 5, Room 3, 11:10-13:00**

Supply modulation (envelope tracking) can improve PA efficiency if both the PA and the envelope modulator (dynamic supply) are efficient and the dynamic supply has a slew rate that corresponds to many times the signal bandwidth. For very wideband signals, continuous supply modulators in switching operation have degraded efficiency and other approaches are proposed with average (reduced slew rate) tracking. This in turn introduces nonlinearities and pre-distortion is required, which typically negatively impacts either efficiency or output power. The increasing demand for the same PA to amplify simultaneous signals over a wide RF bandwidth compounds the difficulty of obtaining efficiency and linearity simultaneously, over a range of output power levels. This tutorial will overview the benefits and challenges of supply-modulated efficient PAs through examples ranging from a hybrid 2-4 GHz octave-bandwidth PA for amplifying multiple widely spaced carriers, to X-band MMIC PAs with GaN MMIC discrete supply modulators, and a 18-25 GHz MMIC GaN PA for >200 MHz bandlimited noise signals with reduced slew-rate tracking and analog predistortion for gain linearization.

### **Wireless Powering- From Harvesting $\mu\text{W}/\text{CM}^2$ to KW Capacitive Powering for Vehicles**

**Zoya Popović, University of Colorado at Boulder, USA**      **November 4, Room 3, 14:00-15:50**

This tutorial overviews wireless power transfer for power levels from  $\mu\text{W}$  to kW. The ultra-low power density application is in far-field harvesting at GHz frequencies for unattended wireless sensors and IoT devices. Several examples will be shown, including harvesting sidelobes from a 4.3GHz altimeter radar antenna on a Boeing 737 aircraft for powering health-monitoring aircraft sensors. At the high power levels, near-field capacitive power transfer is chosen in the 6 MHz range for powering stationary vehicles and vehicles in motion. In this case, over 85% efficiency is achieved for 1kW of capacitive power transfer while meeting safety standards in the vicinity of the vehicle through a near-field phased array approach. Other approaches, such as power beaming and multi-mode shielded wireless powering will also be discussed.

### **Advances in the Linearization of Microwave and Millimeter-wave Power Amplifiers**

**Prof. Allen Katz, The College of New Jersey, USA**

**November 5, Room 3, 09:00-10:50**

This talk provides the various tradeoffs involved in the decision to include linearization in the design of microwave and millimeter-wave power amplifiers. Emphasis will be placed on efficiently producing linear power over very wide (multi-GHz and octave) bandwidths and at frequencies to 100 GHz and above. The latest developments in power amplifier technology, including millimeter-wave GaN devices will be considered. The application of linearization to linear photonic transmission systems will also be considered.

### **Stand on the Antennas and Propagation Standards**

**November 4, Room 5, 14:00-15:50**

**Vikass Monebhurrun, SUPELEC, France; Lars Foged, MVG, Italy; Vince Rodriguez, Satimo, France**

The IEEE Antennas and Propagation Standards Committee (AP-S/SC), sponsored by the IEEE Antennas and Propagation Society (AP-S), develops and maintains standards that are within the fields of antennas and propagation. The objective of the short course is to disseminate information about the standards developed for antennas, propagation and electromagnetics applications, and to encourage their use.

### **Non-Linear GaN Models and Model-Based RFMW PA Design**

**Prof. Larry Dunleavy, Modelithics, USA**

**November 4, Room 3, 14:00-15:50**

An up-to-date survey of large signal (LS) and nonlinear models for power amplifier design will be presented, emphasizing on compact LS models for GaN models suitable for power amplifier design. Behavioral LS models will be presented along with advantages and disadvantages as compared to compact models. Important developments in related technologies that have had significant impact on large signal modeling, such as automated small and large signal network analyzers, wafer probe capability, and harmonic balance simulator software, will also be discussed.

### **Design of Broadband, Linear, and High-Efficiency Mm-Wave Power Amplifiers by**

**Prof. Hua Wang, Georgia Institute of Technology, USA**

**November 5, Room 3, 14:20-16:10**

With 5G communication just around the corner, there is a rapidly increasing need for high-performance mm-Wave power amplifiers. However, these next-generation mm-Wave PAs are often expected to deliver nearly "perfect" performance. They should offer large output power to ensure sufficient link budget, broad bandwidth to support multi-standard communication or frequency reconfigurability/agility, high peak and back-off efficiency for energy saving, and also inherent linearity for Gbit/s complex modulations with minimum or even no digital pre-distortions (DPD). It is noteworthy that in conventional design notions a given PA design should simply take trade-offs among these performance aspects, instead of trying to achieve all of them. Interestingly, this somehow unreasonable quest for "perfect" mm-Wave PAs has recently stimulated a new wave of mm-Wave PA innovations at both circuit levels and architecture levels, which have substantially advanced the state of the art. In this talk, we will first present the design fundamentals of power amplifiers with an emphasis for wireless communication applications. The state of the art of mm-Wave PAs in different device technologies will be reviewed based on the "Georgia-Tech Power Amplifiers Performance Survey." We will next present several recent mm-Wave PA designs that feature various design techniques and innovations at both circuit-level (nonlinearity compensation, continuous-mode operations, broadband harmonic tuning) and architecture-level (such as Doherty and outphasing PAs). We will also showcase several mm-Wave PA/antenna co-design examples that exploit new antenna structures as a new design paradigm to further enhance mm-Wave PA output power and efficiency.

# PROGRAM AT A GLANCE

MONDAY, NOVEMBER 4

Hall	Grand Ballroom								
09:20	<b>Plenary Session</b> Lifelong Learning in Nature and Machines Dr. Hava T. Siegelmann, DARPA, USA								
09:55	<b>Plenary Session</b> Wireless Beyond 100 GHz: Opportunities and Challenges for 6G and Beyond Prof. Theodore (Ted) S. Rappaport, NYU-Tandon, USA								
10:30	Coffee Break & Visit the Exhibition								
11:00	<b>Plenary Opening Session</b> Welcome Address: Shmuel Auster, COMCAS General Chair Amir Boag, COMCAS TPC Chair Magdalena Salazar Palma, IEEE Region 8 Director 2019 Avram Bar-Cohen, IEEE EPS President 2019 Harvey Freeman, IEEE COMSOC President 2016/17 Roberto Graglia, IEEE APS President 2015								
11:30	<b>Plenary Session</b> Tumor Treating Fields (TTFields) from Theory to Clinical Practice Prof. Yoram Palti, NovoCure, Israel								
12:05	<b>Plenary Session</b> Wireless Power Beaming - the Future is Now Dr. Avram Bar-Cohen, Raytheon – Space and Airborne Systems, USA								
12:40	Lunch & Visit the Exhibition								
Hall	Grand A	Grand B	Grand C	Royal H	Royal I	Royal J	Room 3	Room 4	Room 5
14:00	Innovative Responses to Comm. Challenges	Circuits and Systems for Comm.	Phased Array & Multistatic Radar Systems	Slotted Arrays 1	Antennas in Radio Astronomy	Signal Processing & Imaging 1	Simulation-Based GaN PA Design	Computational EM Techniques for Nanoscale Modeling	IEEE Antenna Standards
15:50	Coffee Break & Visit the Exhibition								
16:10	Future Comm. Technologies & Develop. Directed to Industry	Integrated Sensors for Radar/Lidar Applications	Radar Systems and Applications I	Slotted Arrays 2	Reflector Antennas	Signal Processing & Imaging 2	Wireless Powering	Computational EM 2	Young Professionals in Automotive
18:00	Welcome Reception - Sponsored by Keysight Technologies & Interlligent								

## TUESDAY, NOVEMBER 5

Hall	Grand A	Grand B	Grand C	Royal H	Royal I	Royal J	Room 3	Room 4	Room 5
09:00	Enhanced Comm. Technologies	Power Amplifiers	Radar Systems and Applications II	Antenna Arrays	Biomedical Engineering 1	Quantum & Nano EM 1	Linearization of Microwave & Millimeter-wave Power Amplifiers	TBA	Women in Engineering
10:50	Coffee Break & Visit the Exhibition								
11:10	New Approaches for Comm. and Sensors Systems	RFIC/mmW IC	Tutorial: Digital Phased Arrays 1	MIMO and Adaptive Antenna Arrays	Biomedical Engineering 2	MIMO and Adaptive Antenna Arrays	Supply-Modulated Power Amplifiers for Efficiency Enhancement	TBA	Meta-materials
13:00	Lunch & Visit the Exhibition								
Hall	Grand A	Grand B	Grand C	Royal H	Royal I	Royal J	Room 3	Room 4	Room 5
14:20	TBA	Circuits and Techniques	Tutorial: Digital Phased Arrays 2	Antenna Analysis in Time Domain and Beamforming	Biomedical Engineering 3	Future of Comm.	Design of Broadband, Linear, and High-Efficiency Mm-Wave Power Amplifiers	Intellectual property	PT1: Packaging & Thermal
16:20	Interactive Forum (Poster Session + Happy Hour)								

## WEDNESDAY, NOVEMBER 6

Hall	Royal H	Royal I	Royal J	Room 3	Room 4	Room 5
09:00	Short Course: Unconventional Array Design 1	Passive Devices and Techniques	Network Organization and Interference Mitigation	Propagation and Modeling	Metamaterials 2	Packaging & Thermal Management 2
10:50	Coffee Break					
11:10	Short Course: Unconventional Array Design 2	LO Signal Generation and Distribution	Wireless Network Characterization and Routing	Antenna Design & Manufacturing	Metamaterials 3	Packaging & Thermal Management 3
13:00	Lunch					
Hall	Royal H	Royal I	Royal J	Room 3	Room 4	Room 5
14:20	Short Course: Unconventional Array Design 3	Stability Analysis of Microwave Circuits	Signal Processing & Imaging 3	Scattering and Diffraction	Wireless Power Transfer	Packaging & Thermal Management 4
16:10	Short Break					
Hall	Royal H		Royal I		Royal J	
16:20	<b>Plenary Session</b> Velocity Tomography Imaging and Tumor Treatment Planning Dr. Avraham Suhami, Elscint Tomography, Israel					
16:55	<b>Plenary Session</b> Wireless Century Perspective: 5G/IoT and a Vision for 6G/IoE Prof. Richard D. Gitlin, University of South Florida, USA					
17:30	Closing (Raffle of GoPro Quadcopter)					

# DETAILED PROGRAM

MONDAY, NOVEMBER 4 | 09:20-12:40 | GRAND BALLROOM

Time	GRAND A	GRAND B	GRAND C
	Plenary Keynote Presentations 1		
09:20	<i>Lifelong Learning in Nature and Machines</i> Hava T. Siegelmann, DARPA, USA		
09:55	<i>Wireless Beyond 100 GHz: Opportunities and Challenges for 6G and Beyond</i> Theodore Rappaport, New York University & NYU WIRELESS, USA		
10:30	Coffee Break & Visit the Exhibition		
	Plenary Opening Session		
11:00	Welcome Address: Shmuel Auster, COMCAS General Chair Amir Boag, COMCAS TPC Chair Magdalena Salazar Palma, IEEE Region 8 Director 2019 Avram Bar-Cohen, IEEE EPS President 2019 Harvey Freeman, IEEE COMSOC President 2016/17 Roberto Graglia, IEEE APS President 2015		
	Plenary Keynote Presentations 2		
11:30	<i>Tumor Treating Fields (TTFields) from Theory to Clinical Practice</i> Yoram Palti, NovoCure, Israel		
12:05	<i>Wireless Power Beaming - the Future is Now</i> Avi Bar Cohen, Raytheon, USA		
12:40	Lunch & Visit the Exhibition		

Time	GRAND A	GRAND B	GRAND C
	CS1: Innovative Responses to Communications Challenges	DC1: Circuits and Systems for Communication	SR1: Phased Array and Multistatic Radar Systems
14:00-14:20	<b><i>Interactive Energy Management for Web Integrated Smart Homes</i></b> Bhagya Nathali Silva (Kyungpook National University, Korea); Murad Khan (Sarhad University of Sciences and Information Technology, Peshawar, Pakistan); Kyuchang Lee, Yongtak Yoon, Muhammad Diyan, Jihun Han and Ki Jun Han (Kyungpook National University, Korea)	<b><i>High System Gain E-Band Link in a Wideband Aircraft-to-Ground Data Transmission</i></b> Ingmar Kallfass (University of Stuttgart, Germany)	<b><i>Advances in mutual coupling-based calibration in digital phased array systems</i></b> Caleb Fulton (University of Oklahoma, USA)
14:20-14:40	<b><i>Enhancing Tracking Accuracy with Exploitation of Mobile Unit Orientation and Antenna Pattern</i></b> Gaddi Blumrosen (Bar Ilan University, Israel)	<b><i>Pre-PA Delay-Line Based FIR Filter for Self-Interference Cancellation in Full Duplex Wireless Systems</i></b> Nimrod Ginzberg (Technion, Israel); Dror Regev (Toga Networks A Huawei Company, Israel); Emanuel Cohen (Technion Institute of Technology, Israel)	<b><i>Multistatic MIMO OFDM Radar for Drone Detection</i></b> Mario Pauli (Karlsruhe Institute of Technology, Germany)
14:40-15:00	<b><i>Gaussian Diamond Primitive Relay with Oblivious Processing</i></b> Asif Katz (Technion - Israel Institute of Technology, Israel); Michael Peleg (Rafael Ltd. & Technion - Israel Institute of Technology, Electrical Engineering, Israel); Shlomo (Shitz) Shamai (The Technion, Israel)	<b><i>Analysis and Design of an Asymmetric Doherty Power Amplifier at 2.6 GHz using GaAs pHEMTs</i></b> Valentin Grams, Andres Seidel and Paul Stärke (Technische Universität Dresden, Germany); Jens Wagner (Technische Universität Dresden & Chair for Circuit Design and Network Theory, Germany); Frank Ellinger (Technische Universität Dresden, Germany)	<b><i>Meteorological Phased Array Radar Research at NOAA's National Severe Storms Laboratory</i></b> Mark Weber (NOAA OAR National Severe Storms Laboratory, USA)
15:00-15:20	<b><i>An Online Shaping Scheme for ADC ENOB Reduction in ISI Channels</i></b> Or Levi and Dan Raphaeli (Tel Aviv University, Israel)	<b><i>Optimisation of a Doherty power amplifier based on dual-input characterisation</i></b> Anna Piacibello (University of Roma Tor Vergata, Italy); Roberto Quaglia (Cardiff University, United Kingdom (Great Britain)); Vittorio Camarchia, Chiara Ramella and Marco Pirola (Politecnico di Torino, Italy)	<b><i>MIMO radar for monitoring applications</i></b> Vishal Riche (InnoSent GmbH, Germany)
15:20-15:40	<b><i>MMW coherence detection for the 5th generation of cellular communication</i></b> Moti Ben Laish (Ben Gurion University of the Negev, Israel); Daniel Rozban (Ariel University & Ariel University, Israel); Amir Abramovich (Ariel University, Israel); Yitzhak Yitzhaky and Natan Kopeika (Ben-Gurion University of the Negev, Israel); Avihai Aharon (Ariel University & Ben-Gurion University, Israel)	<b><i>A Dual-Gate Downconverter for H-Band Employing an Active Load</i></b> Christopher Grötsch (University of Stuttgart, Germany); Sandrine Wagner and Laurenz John (Fraunhofer IAF, Germany); Ingmar Kallfass (University of Stuttgart, Germany)	<b><i>Array-Level Approach to Nonlinear Equalization</i></b> Nicholas Peccarelli (Advanced Radar Research Center & University of Oklahoma, USA)

Time	ROYAL H	ROYAL I	ROYAL J
	AD: Special Session - Slotted Arrays 1	AP7: Special Session - Antennas in Radio Astronomy	SP1: Signal Processing & Imaging 1
14:00-14:30	<b><i>Advances in Slotted Waveguide Array Antenna Technology</i></b> Sembiam R. Rengarajan (California State University, USA)	<b><i>Astronomical Technologies and Satellite Communications</i></b> Massimiliano Tordi (EIE Group Srl, Italy); Gianpietro Marchiori (EIE Group Srl, USA); Gianpietro De Lorenzi and Francesco Rampini (EIE Group Srl, Italy); Rosario Cimmino (EIE Group Srl, USA); Matteo Spinola (EIE Group Srl, Italy)	<b><i>Cyber Attacks on Internet of Things Sensor Systems for Inference</i></b> Rick Blum (Lehigh University, USA)
14:30-14:50	<b><i>Millimeter-wave Two-dimensional Broadband Planar Array Composed of Partially Parallel-feeding Two-line Slotted Waveguides fed by Tournament Feeding Circuit</i></b> Kunio Sakakibara (Nagoya Institute of Technology, Japan)	<b><i>From ALMA to Super-ALMA</i></b> Gianpietro Marchiori (EIE Group Srl, USA); Francesco Rampini, Massimiliano Tordi, Matteo Spinola and Riccardo Bressan (EIE Group Srl, Italy)	<b><i>Multi-level Off grid DOA estimation of sparse arrays Using OMP algorithm</i></b> Neela Pavani, Swathi Vakkalagadda and Pushyami Padidam (National Institute of Technology, Andhra Pradesh, India); Kishore Kumar Puli (National Institute of Technology Andhra Pradesh, India)
14:50-15:10	<b><i>Progress of Perpendicular-Corperate Feed for a Multi-Layer Parallel-Plate Slot Array Antenna</i></b> Jiro Hirokawa, Hisanori Irie and Takashi Tomura (Tokyo Institute of Technology, Japan)	<b><i>FAST A+: A Cost Effective Plan for Expanding FAST</i></b> Di Li (National Astronomical Observatories, Chinese Academy of Sciences, P.R. China)	<b><i>Advanced Real-Time Strategies for Direction Finding in Rapidly Changing Scenario</i></b> Paolo Rocca (University of Trento, Italy); Mohammad Hannan (ELEDIA Research Center, University of Trento, Italy); Giacomo Oliveri (University of Trento & ELEDIA Research Center, Italy)
15:10-15:30	<b><i>Compensation for Asymmetrical Slot Fields in the Design of SIW Slot Arrays</i></b> Soumya Sheel (Queensland University of Technology, Australia)	<b><i>The Suffa project and high capacity channels for deep space communications systems incorporating cryogenic elements</i></b> Vyacheslav Vdovin (Nizhniy Novgorod State Technical University & IAP RAS, Russia); Yurii Artemenko (Lebedev Physical Institute RAS, USA)	<b><i>Estimation of the Channel and I/Q Imbalances with ZCZ Sequences and Superimposed Training</i></b> Israel Alejandro Arriaga-Trejo (Consejo Nacional de Ciencia y Tecnología & Autonomous University of Zacatecas, Mexico)
15:30-15:50	<b><i>Overview of RLSA Antenna Design and Optimization Techniques developed at the University of Siena</i></b> Santi Concetto Pavone (Università degli Studi di Catania, Italy); Matteo Albani (University of Siena, Italy)	<b><i>Simulation and Analysis of Radiation Pattern of Multi-Reflector Radio Telescope Using the MLPO Algorithm</i></b> Michael Lebedev and Vladimir Khaikin (The Special Astrophysical Observatory, RAS, Russia); Christine Letrou (TELECOM SudParis, France); Amir Boag (Tel Aviv University, Israel)	<b><i>Mode Selection of Wideband Acoustic Signals Using Time-Frequency (Warping) Analysis for Single Hydrophone. Comparison with Array Filtering in Variable Medium</i></b> Boris Katsnelson (University of Haifa, Israel)

Time	ROOM 3	ROOM 4	ROOM 5
	T1: Simulation-Based GaN PA Design: From Understanding Non-Linear Models to Complete PA Design Flows	CEM1: Special Session - Computational Electromagnetics Techniques for Nanoscale Modeling	STA: Short Course: IEEE Standards
14:00-14:30	<i>Simulation-Based GaN PA Design: From Understanding Non-Linear Models to Complete PA Design Flows</i> Larry Dunleavy (Modelithics, USA)	<i>Terahertz Range Elementary Dipole Excitation of a Thin Dielectric Disk Sandwiched between Two Graphene Covers: Integral Equation Analysis</i> Alexander I. Nosich (IRE NASU, Ukraine)	<i>Stand on the Antennas and Propagation Standards</i> Vikass Monebhurrun (SUPELEC, France); Lars Foged (Microwave Vision Italy, Italy); Vince Rodriguez (NSI-MI Technologies, LLC. & IEEE-EMC Board of Directors, USA)
14:30-14:50		<i>Bright and Dark Supermodes of Twin Dielectric Nanowire Photonic Molecule Excited by a Modulated Electron Beam</i> Dariia O. Yevtushenko (Institute of Radio-Physics and Electronics NASU, Ukraine)	
14:50-15:10		<i>Scattering by an all-dielectric metasurface including a periodic arrangement of arbitrary scatterers</i> Dimitrios K. Gerontitis and Nikolaos L. Tsitsas (Aristotle University of Thessaloniki, Greece)	
15:10-15:30		<i>Highly-directive systems inspired by physical bounds on scattering processes</i> Iñigo Liberal (Public University of Navarre, Spain)	
15:30-15:50		<i>A Technique for Nanoscale Modeling of Uniaxial Spheroids</i> Georgios Kolezas and Grigorios Zouros (National Technical University of Athens, Greece); Gerasimos Pagiatakis (School of Pedagogical & Technological Education (ASPETE), Greece); John Roumeliotis (National Technical University of Athens, Greece)	
15:50-16:10	Coffee Break & Visit the Exhibition		

Time	GRAND A	GRAND B	GRAND C
	CS2: Future Communications Technologies & Developments Directed to Industry	DC2: Integrated Sensors for Radar/Lidar Applications	SR2: Radar Systems and Applications I
16:10-16:30	<p><b><i>Polar Codes: Overview, Recent Research and Challenges</i></b></p> <p>Yejun He (Shenzhen University, P.R. China)</p>	<p><b><i>High Resolution Radar Imaging for Breast Cancer Detection: Trends and Challenges</i></b></p> <p>Matteo Bassi and Daniel Oloumi (Infineon Technologies AG, Villach, Austria); Andrea Bevilacqua (University of Padova, Italy)</p>	<p><b><i>Signal Analysis and Radar Cooperation using Automotive Radar System Architectures</i></b></p> <p>Markus Gardill (InnoSenT GmbH, Germany)</p>
16:30-16:50		<p><b><i>16:40 A Highly-Integrated 60 GHz Receiver for Radar Applications in 28 nm Bulk CMOS</i></b></p> <p>Radu Ciocoveanu (Infineon Technologies AG / Friedrich-Alexander University Erlangen-Nuremberg (FAU), Germany); Robert Weigel (Friedrich-Alexander Universität Erlangen-Nürnberg, Germany); Vadim Issakov (Infineon Technologies AG, Germany)</p>	<p><b><i>Present state and future trends in automotive radar</i></b></p> <p>Rudolf Lachner (Rudolf Lachner Consulting, Germany)</p>
16:50-17:10		<p><b><i>17:00 mm-wave and UWB CMOS 65nm SoC for radar applications</i></b></p> <p>Nadav Mazor and Naftali Chayat (Vayyar, Israel)</p>	<p><b><i>Recent Advances in Joint Radar-Communications Processing</i></b></p> <p>Kumar Vijay Mishra (The University of Iowa, USA)</p>
17:10-17:30		<p><b><i>17:20 Monolithic 3D-LiDAR Architecture Based on CMOS Silicon-Photomultiplier (SiPM)</i></b></p> <p>Ayal Eshkoli (Technion, Israel); Yael Nemirovsky (Technion_Institute of Technology, Israel)</p>	<p><b><i>Novel approaches to expand detection coverage of fixed Unattended Ground Sensor systems</i></b></p> <p>Nino Srour (US Army Research Laboratory, USA)</p>
15:30-15:50			<p><b><i>Ambiguity Function Based Radar Waveform Classification and Unsupervised Adaptation Using Deep CNN Models</i></b></p> <p>Pavel Itkin and Nadav Levanon (Tel Aviv University, Israel)</p>

Time	ROYAL H	ROYAL I	ROYAL J
	AP2: Slotted Arrays 2	AP1: Reflector Antennas	SP2: Signal Processing & Imaging 2
16:10-16:30	<p><b>A 1-D Steerable Beam Slotted Waveguide Antenna Employing Non-Conventional Aperiodic Array Architecture for mm-wave Line-Of-Sight MIMO</b></p> <p>Marianna Ivashina and Thomas Eriksson (Chalmers University of Technology, Sweden); Robert Rehammar (Bluetest AB &amp; Chalmers University of Technology, Sweden); Shi Lei (China Academy of Space Technology, Sweden); Carlo Bencivenni (Gapwaves AB, Sweden); Rob Maaskant (CHALMERS, Sweden)</p>	<p><b>Results of the radio optical modeling and application of the new radio holography method of the RATAN-600 radio telescope surface diagnosis</b></p> <p>Mikhail Lebedev (Special Astrophysical Observatory of Russian Academy of Sciences, Russia); Vladimir Khaikin (The Special Astrophysical Observatory, RAS, Russia); Nina Ovchinnikova and Anatoly Ripak (Special Astrophysical Observatory of Russian Academy of Sciences, Russia)</p>	<p><b>Advanced Microwave Imaging with Compressive Processing - Concepts, Methods, and Applications</b></p> <p>Andrea Massa (University of Trento, Italy); Nicola Anselmi (ELEDIA Research Center, Italy); Giacomo Oliveri (University of Trento &amp; ELEDIA Research Center, Italy); Marco Salucci (ELEDIA Research Center, Italy)</p>
16:30-16:50	<p><b>Accurate Equivalent Circuit Model for Centred Inclined Coupling Slots in Planar Slotted Waveguide Array Feeds</b></p> <p>Soumya Sheel (Queensland University of Technology, Australia)</p>	<p><b>Aperture field recovery of a reflector radio telescope using Phase shifting holography</b></p> <p>Mikhail Lebedev (Special Astrophysical Observatory of Russian Academy of Sciences, Russia); Vladimir Khaikin (The Special Astrophysical Observatory, RAS, Russia); Anatoly Ripak (Special Astrophysical Observatory of Russian Academy of Sciences, Russia); Gary Junkin (Autonomous University of Barcelona, Spain)</p>	<p><b>16:40 moving target detection and imaging using a single channel SAR</b></p> <p>Ariel Gaibel (Tel Aviv University &amp; IDF, Israel); Amir Boag (Tel Aviv University, Israel)</p>
16:50-17:10	<p><b>Overview of High Frequency Electronics Integration Concepts for Gap waveguide based High Gain Slot Antenna Array</b></p> <p>Ashraf Uz Zaman, Abbas Vosoogh and Jian Yang (Chalmers University of Technology, Sweden)</p>	<p><b>Radiation Characteristics of Gregorian Antennas with Resonant Size Reflectors</b></p> <p>Oleg I Sukharevsky, Sergey Nechitaylo and Vitaliy Vasilets (Ivan Kozhedub Kharkiv National University of Air Forces, Ukraine)</p>	<p><b>17:00 Up-conversion MMW imaging system based on Glow Discharge Detector row attached to commercial contact image sensor</b></p> <p>Lidor Kahana (Ariel University, Israel)</p>
17:10-17:30	<p><b>Method-of-Moment analysis of slender elliptic slots</b></p> <p>Giuseppe Mazzarella, Giorgio Montisci and Alessandro Fanti (University of Cagliari, Italy)</p>	<p><b>Design and Analysis of Single Beam Parabolic Reflector Antenna in LTCC for Millimeter Wave Automotive Radar</b></p> <p>Dong Park (Member, Korea)</p>	<p><b>17:20 Pure Play Ultrasonic 3D Positioning System with Unsynchronized Beacons and Receivers</b></p> <p>Guy Dascalu, Omer Movshovits and Alon Eilam (Technion - Israel Institute of Technology, Israel)</p>
17:30-17:50	<p><b>Gain Optimization Methods for SIW Leaky-Wave Antennas With Transverse Slots</b></p> <p>Thomas Vaupel (Fraunhofer FHR, Germany)</p>		<p><b>17:40 Performance Analysis of Imaging Algorithms for Landmine Detection</b></p> <p>Rishitha Chitteti, Vishnuvardhan Reddy Y and Lakshmi Durga Edara (National Institute of Technology, Andhra Pradesh, India); Kishore Kumar Puli (National Institute of Technology Andhra Pradesh, India)</p>

Time	ROOM 3	ROOM 4	ROOM 5
	T2: Wireless Powering - from Harvesting $\mu\text{W}/\text{cm}^2$ to kW Capacitive Powering for Vehicles	CEM2: Computational Electromagnetics 2	YP: Young Professionals in Automotive
16:10-16:40	<i>Wireless powering- from harvesting <math>\mu\text{W}/\text{cm}^2</math> to kW capacitive powering for vehicles</i> Zoya Popović (University of Colorado at Boulder, USA)	<i>High-Order Modeling for Computational Electromagnetics</i> Roberto D Graglia (Politecnico di Torino, Italy)	<b>16:10 Opening remarks</b> Aleksy Dyskin (Inxpect Systems Engineering, Israel)
16:40-17:00		<i>MFIE-Based Formulation Using Double-Layer Modeling for Perfectly Conducting Objects</i> Sadri Guler, Hande Ibili and Ozgur Ergul (Middle East Technical University, Turkey)	<b>16:15 Our vision to autonomous driving</b> Omer Keilaf (Innoviz Technologies, Israel)
17:00-17:20		<i>Comparison of Two Convergent Numerical Methods for Solving the Problem of Wave-Scattering by a Dielectric Rod with a Conformal Strip of Graphene</i> Sergii V. Dukhopelnykov (Usikov Institute for Radiophysics and Electronics NASU & V. N. Karazin Kharkiv National University, Ukraine)	<b>16:45 Bringing the power of radar to autonomous driving</b> Koby Morenko (Arbe Robotics, Israel)
17:20-17:40		<i>Combining Physical Optics and Method of Equivalent Currents to create unique near-field propagation and scattering technique for automotive radar applications</i> Tarun K Chawla (Remcom, USA)	<b>17:15 Invisible Light, Invisible Data: Leveraging SWIR to Solve the Visibility Challenge For ADAS and AV</b> Avi Bakal (TriEye, Israel)
17:40-18:00		<i>Method of Analytical Regularization Based on the Static Part Inversion in the H-Wave Scattering by a PEC Strip Grating on Top of a Dielectric Substrate</i> Fedir Yevtushenko (Institute of Radio-Physics and Electronics NASU, Ukraine); Sergii V. Dukhopelnykov (Usikov Institute for Radiophysics and Electronics NASU & V. N. Karazin Kharkiv National University, Ukraine)	<b>17:45 The Need for Efficient Deep Learning Processor for ADAS and Autonomous Driving</b> Orr Danon (Hailo, Israel)
18:00	<b>WELCOME RECEPTION</b>		

Time	GRAND A	GRAND B	GRAND C
	CS3: Enhanced Communications Technologies	DC3: Special Session on Power Amplifiers	SR3: Radar Systems and Applications II
09:00-09:20	<p><b>Maximal Entropy Reduction Algorithm for SAR ADC Clock Compression</b> Arkady Molev-Shteiman (Huawei Technologies, USA); Xiao-Feng Qi (Futurewei Technologies, Inc., USA)</p>	<p><b>9:00 Reconfigurable Power Amplifiers</b> Charles Campbell (Qorvo, USA)</p>	<p><b>Aspects of automotive radar systems</b> Wolfgang Boesch (Graz University of Technology &amp; Institute of Microwave and Photonic Engineering, Austria)</p>
09:20-09:40	<p><b>Interference-Free Space-Time Block Codes with Directional Beamforming for Future Networks</b> Kelvin Anoh (University of Bolton, United Kingdom (Great Britain)); Bamidele Adebisi (Manchester Metropolitan University, United Kingdom (Great Britain)); Sumaila Mahama (University of York, United Kingdom (Great Britain)); Andrew Gibson (Manchester Metropolitan University, United Kingdom (Great Britain)); Haris Gacanin (Nokia Bell Labs, Belgium)</p>	<p><b>9:35 Efficient and Linear GaN Power Amplifiers for Broadband High PAPR Signals</b> Zoya Popović (University of Colorado at Boulder, USA)</p>	<p><b>Test and Evaluation of Cognitive EA systems - Requirements for future test systems</b> Dan Pleasant (Keysight Technologies, USA)</p>
09:40-10:00	<p><b>SVM based method for multi-equalizer optimization</b> Benjamin R Taub (Mellanox Technnologies, Israel)</p>		<p><b>Contactless Gas Mixture Measurements Using Distributed and Synchronized Low-Cost Millimeter-Wave FMCW Radar Sensors</b> Andreas Och (DICE GmbH &amp; Co KG, Austria &amp; Friedrich-Alexander University of Erlangen-Nuremberg, Germany); Jochen Schrottenecker (Intel Austria GmbH, Austria); Stefan Schuster (Voestalpine Stahl GmbH &amp; Institute for Communications and Information Engineering, Austria); Patrick Hölzl (DICE GmbH &amp; Co KG, Austria); Philipp Freidl (Infineon Technologies Austria AG, Austria); Robert Weigel (Friedrich-Alexander Universität Erlangen-Nürnberg, Germany)</p>
10:00-10:20	<p><b>A Direct-Conversion Digital Beamforming Array Receiver with 800 MHz Bandwidth/Channel at 28 GHz using Xilinx RF SoC</b> Najath Mohomed Akram, Sravan Pulipati, Viduneth Ariyaratna, Udara Silva, Elias A. Alwan and Arjuna Madanayake (Florida International University, USA); Soumyajit Mandal (Case Western Reserve University, USA); Theodore Rappaport (New York University &amp; NYU WIRELESS, USA)</p>	<p><b>10:10 CMOS Power Amplifiers and Transmitters: The Evolution from 'Digital-Friendly' RF to 'Digital' RF</b> Jeffrey Walling (University of Utah, USA)</p>	<p><b>No-contact High-Frequency Large-Bandwidth GPR scanner for floor investigation</b> Massimiliano Pieraccini and Lapo Miccinesi (University of Florence, Italy))</p>
10:20-10:40			<p><b>Partially coherent radar</b> Vitali Kozlov (Tel Aviv University, Israel); Rony Komissarov (Tel Aviv University, Israel); Dmitry Filonov and Pavel Ginzburg (Tel Aviv University, Israel)</p>

Time	ROYAL H	ROYAL I	ROYAL J
	AP3: Antenna Arrays	BM1: Biomedical Engineering 1	QEM1: Special Session - Quantum & Nano EM 1
09:00-09:20	<p><b><i>Optimal Trade-Off Phased-Arrays for Future Generation Radars and Communication Systems</i></b>                      Andrea Massa (University of Trento, Italy); Nicola Anselmi (ELEDIA Research Center, Italy); Giorgio Gottardi (ELEDIA Research Center, University of Trento, Italy); Robert Mailloux (ELEDIA Research Center, Italy); Giacomo Oliveri (University of Trento &amp; ELEDIA Research Center, Italy); Lorenzo Poli (ELEDIA Research Center, University of Trento, Italy); Paolo Rocca (University of Trento, Italy)</p>	<p><b><i>Synthetic Biology - when biology and electronics meet</i></b>                      Ramez Daniel (Israel Institute of Technology, Israel)</p>	<p><b><i>The Quantum Illumination Story</i></b>                      Jeffrey H Shapiro (Massachusetts Institute of Technology, USA)</p>
09:30-09:50	<p><b><i>On the Optimal Positioning of Antennas in the Microwave Personnel Screening System with Inverse Synthetic Aperture</i></b>                      Andrey Zhuravlev and Vladimir Razevig (Bauman Moscow State Technical University, Russia); Ge Dong (Tsinghua University, P.R. China)</p>	<p><b><i>Design of a Compact "Multi-Media" UWB Antenna for Microwave Medical Imaging</i></b>                      Steve Kruppa (Elsclint Tomography, Israel)</p>	<p><b><i>Quantum emission between the weak and strong coupling regimes</i></b>                      Iñigo Liberal (Public University of Navarre, Spain)</p>
09:50-10:10	<p><b><i>Spatial Suppression of Jamming Signals in Extreme Conditions</i></b>                      Yefim S. Poberezhskiy (Consultant, Communications &amp; Signal Processing, USA); Gennady Y. Poberezhskiy (Raytheon Space and Airborne Systems, USA)</p>	<p><b><i>SAW and BAW Wireless Resonator Temperature Sensors for Surgery</i></b>                      Sergey Bogoslovsky (JSC RADAR MMS, Russia); Gennady Sapozhnikov (JSC Radar mms, Russia); Ivan Antsev (JSK Radar mms, Russia); Sergei Zhgoon and Alexander Shvetsov (National Research University MPEI, Russia)</p>	<p><b><i>Quantum Noise Radar: Assessing Quantum Correlations</i></b>                      Dmitri Mogilevtsev (Institute of Physics, National Academy of Sciences of Belarus, Belarus); Gregory Slepian and Amir Boag (Tel Aviv University, Israel)</p>
10:10-10:30	<p><b><i>Computational Analysis of Nanoantenna Arrays for Nanoparticle Detection</i></b>                      Goktug Isiklar and Ozgur Ergul (Middle East Technical University, Turkey)</p>	<p><b><i>Innovative Machine Learning Techniques for Biomedical Imaging</i></b>                      Marco Salucci and Davide Marcantonio (ELEDIA Research Center, Italy); Maokun Li (Tsinghua University, P.R. China); Giacomo Oliveri (University of Trento &amp; ELEDIA Research Center, Italy); Paolo Rocca and Andrea Massa (University of Trento, Italy)</p>	<p><b><i>A Comparison Criterion Among Different Planar Nanoantennas for Rectenna Application Design: The Cases for Dipole, Bowtie, Spiral and Log-Periodic</i></b>                      Nelmo Cyriaco Silva and Luiz Kretly (UNICAMP, Brazil)</p>
10:30-10:50	<p><b><i>Optimization of Thinned Antenna Phased Arrays for Low Sidelobe Level</i></b>                      Rotem Gal Katzir (Ben Gurion University of the negev, Israel); Reuven Shavit (Ben-Gurion University, Israel)</p>	<p><b><i>Optimization of transmitted power of horn antenna for biomedical applications</i></b>                      Shailendra Rajput, Konstantin Komoshvili, Stella Aronov, Ayan Barbora, Praveen Patnaik, Jacob Levitan and Asher Yahalom (Ariel University, Israel)</p>	<p><b><i>Interaction of Nano-Rectenna with Thermal Light: Quantum-Optical Theory for Solar Cell Applications</i></b>                      Timor Gilad, Amir Boag and Gregory Slepian (Tel Aviv University, Israel)</p>

Time	ROOM 3	ROOM 4	ROOM 5
	T3: Advances in the Linearization of Microwave and Millimeter-wave Power Amplifiers	Industrial Presentations	WIE: Women in Engineering
09:00-09:20	<p><i>Advances in the Linearization of Microwave and Millimeter-wave Power Amplifiers</i></p> <p>Allen Katz (The College of New Jersey, USA)</p>		<p><b>9:00-9:10</b>  <b>Welcome Message:</b>                      Dr. Amelie Hagelauer (University of Erlangen, Germany)</p> <p><b>9:10-9:50</b>  <b>Invited talk:</b>                      Prof. Yonina Eldar (Weizmann Institute of Science, Israel)</p>
09:30-09:50			<p><b>9:50-10:40</b>  <b>Panel: Alpha Girls – What Does It Take to Break Into the C-Suite</b>  <b>Moderator:</b>                      Ayelet Gradman (AGPR, Israel)</p>
09:50-10:10			<p><b>10:40-10:50</b>  <b>Concluding Remarks</b>                      Dr. Sherry Hess (AWR Group, National Instruments, USA)</p>
10:10-10:30			
10:30-10:50			
10:50-11:10	Coffee Break & Visit the Exhibition		

Time	GRAND A	GRAND B	GRAND C
	CS4: New Approaches for Communications and Sensors Systems	DC4: RFIC/ mmW IC	DA1: Tutorial: Digital Phased Arrays 1
11:10-11:30	<p><b>11:10 A Study of Interference Distributions in Millimeter Wave Cellular Networks</b> Alireza Alizadeh and Mai Vu (Tufts University, USA); Theodore Rappaport (New York University &amp; NYU WIRELESS, USA)</p>	<p><b>Energy-efficient RF- and Millimeter-Wave ICs and Frontends for Communications</b> Frank Ellinger (Technische Universität Dresden, Germany)</p>	<p><b>Recent developments and future trends in Digital Phased arrays</b>  Caleb Fulton (University of Oklahoma, USA)</p>
11:30-11:50	<p><b>11:32 Coexistence Testing of 5G with Radar/Satellite</b> Raymond Chen (Keysight Technologies, USA)</p>		
11:50-12:10	<p><b>11:54 User-Centric Approaches for Next-Generation Self-Organizing Wireless Communication Networks Using Machine Learning</b> Chetana V Murudkar and Richard D. Gitlin (University of South Florida, USA)</p>	<p><b>Trends in MW Front-End technologies</b> Wolfgang Boesch (Graz University of Technology &amp; Institute of Microwave and Photonic Engineering, Austria)</p>	
12:10-12:30	<p><b>12:16 Broadcast Approach for the Information Bottleneck Channel</b> Shlomo (Shitz) Shamai (The Technion, Israel); Avi Steiner (Technion, Israel)</p>	<p><b>Low-Power K-Band LNA in 45 nm SOI CMOS</b> Vadim Issakov (Infineon Technologies AG, Germany); Radu Ciocoveanu (Infineon Technologies AG / Friedrich-Alexander University Erlangen-Nuremberg (FAU), Germany)</p>	
12:30-12:50	<p><b>12:38 Power Allocation Schemes for AF/DF Relaying based Green Cooperative Network using DE and IWO</b> Kiran Kumar Gurralla (NIT Andhra Pradesh, India); Kamma Navya (National Institute of Technology, Andhra Pradesh, India); Elishetti Ramakrishna (National Institute Of Technology Andhra Pradesh, India); Muthyam Sravya (NIT Andhra Pradesh, India)</p>	<p><b>A 300 GHz Quadrature Down-Converter S-MMIC for Future Terahertz Communication</b> Iulia Dan, Christopher Grötsch and Benjamin Schoch (University of Stuttgart, Germany); Sandrine Wagner, Laurenz John and Axel Tessmann (Fraunhofer IAF, Germany); Ingmar Kallfass (University of Stuttgart, Germany)</p>	

Time	ROYAL H	ROYAL I	ROYAL J
	AP4: MIMO and Adaptive Antenna Arrays	BM2: Biomedical Engineering 2	QEM2: Special Session - Quantum & Nano EM 2
11:10-11:30	<p><b>MIMO Antenna with Coupling Grounding Structure for 5G Mobile Applications</b> Zhouyou Ren and Anping Zhao (Shenzhen Sunway Communication Co., Ltd, P.R. China)</p>	<p><b>Deep Learning for Analysis and Synthesis of Dense and Multicolor Localization Microscopy</b> Yoav Schechmann (Technion, Germany)</p>	<p><b>Two quantum effects applied to optical imaging</b> Radek Lapkiewicz (University of Warsaw, Poland)</p>
11:30-11:50	<p><b>Sparse Optimization of Device-Embedded Antenna Arrays for Beamforming Applications</b> Daniel Silverstein and Yehuda Leviatan (Technion, Israel)</p>	<p><b>Electric field array detector for millimeter wave assistance on brain tumor resection</b> Vera Carolina Cardoso (Universidade do Minho, Portugal); Hugo Dinis and Paulo Mendes (University of Minho, Portugal)</p>	<p><b>Merging the Quantum Realm with Induced Electromagnetic Fields</b> Dor Gabay and Amir Natan (Tel Aviv University, Israel); Ali Yilmaz (University of Texas at Austin, USA); Amir Boag (Tel Aviv University, Israel)</p>
11:50-12:10	<p><b>Active Cancellation Limitation Analysis for Full Duplex Systems with a Single Antenna</b> Pavel Vilner (Technion &amp; Mellanox, Israel); Emanuel Cohen (Technion Institute of Technology, Israel)</p>	<p><b>Comparison of Image Reconstruction Algorithms using Compressive Sensing</b> Praizy Diana, Pala Sonia and Shashipriya Polepally (National Institute of Technology, Andhra Pradesh, India); Kishore Kumar Puli (National Institute of Technology Andhra Pradesh, India)</p>	<p><b>Quantum Antenna Emission as a Strong Coupling with Photonic Reservoir</b> Alexei Komarov and Gregory Slepian (Tel Aviv University, Israel)</p>
12:10-12:30	<p><b>LOS Classification of UAV-to-Ground Links in Built-Up Areas</b> Eran Greenberg (RAFAEL, Israel); Amitay Bar and Edmund Klodzh (Rafael, Israel)</p>	<p><b>Efficient Probes for Ultra-high-field Magnetic Resonance Microscopy Based on Coupled Ceramic Resonators</b> Stanislav Glybovski, Sergei Kurdjumov and Pavel Belov (ITMO University, Russia); Elizaveta Nenasheva (Ceramics Co. Ltd, Russia); Andrew Webb (Leiden University Medical Center, The Netherlands); Marine Moussu and Marc Dubois (Institut Fresnel, France); Stefan Enoch (CNRS &amp; Institut Fresnel, France); Redha Abdeddaim (Aix Marseille University, France); Luisa Ciobanu and Boucif Djemai (DRF/I2BM/Neurospin/UNIRS, France)</p>	<p><b>Electrically Driven Vacuum Rabi Oscillations as a Potential Quantum-Optical Device</b> Ilay Levie and Gregory Slepian (Tel Aviv University, Israel)</p>
12:30-12:50	<p><b>Excitation Faults Detection in Relatively Large Planar Array Antennas, Measured in Short Antenna Ranges</b> Alexander Georgiev Toshev (Pro Patria Electronics, Hungary)</p>	<p><b>Parameter-free MRI Reconstruction from Sub-Nyquist Acquisition</b> Efrat Shimron (Technion, Israel)</p>	<p><b>Metallic and dielectric nanoantennae to control field-matter interaction in nanophotonics</b> Sergey Gaponenko (National Academy of Sciences of Belarus, Belarus)</p>

Time	ROOM 3	ROOM 4	ROOM 5
	T4: Supply-Modulated Power Amplifiers for Efficiency Enhancement	TBA	MM1: Special Session - Metamaterials
11:10-11:35	<p><i>Supply-modulated power amplifiers for efficiency enhancement</i></p> <p>Zoya Popović (University of Colorado at Boulder, USA)</p>		<p><i>Superdirective dielectric spherical multilayer antennae</i></p> <p>Alexey A. Shcherbakov (ITMO University &amp; Moscow Institute of Physics and Technology, Russia); Konstantin Ladutenko, Igor Sushencev and Pavel Belov (ITMO University, Russia)</p>
11:35-12:00			<p><i>Limitations of Nonlinear Electromagnetic Isolators</i></p> <p>David Fernandes (University of Coimbra - Instituto de Telecomunicações, Portugal); Mario Silveirinha (Universidade de Lisboa - Instituto de Telecomunicações, Portugal)</p>
12:00-12:20			<p><i>Antenna-Filter-Antenna Based Transmitarray with Beamsteering Capability</i></p> <p>Irina Munina (St. Petesburg Electrotechnical University LETI, Russia); Dmitry E Zelenchuk (Queen's University of Belfast, United Kingdom (Great Britain)); Pavel A. Turalchuk (St. Petesburg Electrotechnical University LETI, Russia)</p>
12:20-12:40			<p><i>Optically switchable scanning antenna</i></p> <p>Dmitry Filonov (Tel Aviv University, Israel); Anna Mikhailovskaya and Dmitry A Dobrykh (ITMO University, Russia); Alexey P. Slobozhanyuk (ITMO University &amp; Australian National University, Russia); Pavel Ginzburg (Tel Aviv University, Israel)</p>
12:40-13:00			<p><i>Volumetric Metamaterials versus Curved Impedance Surfaces in Scattering Applications</i></p> <p>Sergei Kosulnikov (School of Electrical Engineering, Tel Aviv University, Israel); Dmitry Filonov and Pavel Ginzburg (Tel Aviv University, Israel)</p>
13:00-14:20	Lunch & Visit the Exhibition		

Time	GRAND A	GRAND B	GRAND C
	Poster Session Setup	DC5: Circuits and Techniques	DA2: Tutorial: Digital Phased Arrays 2
14:20-14:40		<p><b><i>An X-Band Quasi-Circulator GaAs MMIC</i></b>                      Laila F Marzall (University of Colorado Boulder, USA); Zoya Popović (University of Colorado at Boulder, USA)</p>	
14:40-15:00		<p><b><i>An RF Voltage Detector with Low Harmonic Feedback for Antenna Tuning Switches</i></b>                      Oguzhan Oezdamar and Amelie Hagelauer (University of Erlangen-Nuremberg, Germany); Robert Weigel (Friedrich-Alexander Universität Erlangen-Nürnberg, Germany); Valentyn Solomko (Infineon Technologies, Germany)</p>	
15:00-15:20		<p><b><i>Thermal-aware GaN/Si MMIC design for space applications</i></b>                      Chiara Ramella and Marco Pirola (Politecnico di Torino, Italy); Andrea Reale (Università degli Studi di Roma - Tor Vergata, Italy); Paolo Colantonio (University of Roma Tor Vergata, Italy); Vittorio Camarchia (Politecnico di Torino, Italy); Anna Piacibello and Rocco Giofrè (University of Roma Tor Vergata, Italy); Matthias Auf der Maur (University of Rome Tor Vergata, Italy); Mariarcangela Ramundo (Università degli Studi di Roma - Tor Vergata, Italy)</p>	
15:20-15:40		<p><b><i>A Novel Double Balanced Architecture with VSWR Immunity for High Efficiency Power Amplifier</i></b>                      Kimon Vivien (ESIEE Paris, France); Geneviève Baudoin and Olivier Venard (ESYCOM - ESIEE, France)</p>	
15:40-16:00		<p><b><i>18-24 GHz compact single stage amplifier with <math>13 \pm 0.5</math> dB gain, OP3dBc of +19 dBm and 19% PAE for radar applications in Tower 180 nm CMOS</i></b>                      Samuel Jameson, Nadav Buadana, Eli Szulc, Avraham Sayag, Isaac Sarusi, Ofer Shaham and Amitay Wolfman (Rafael, Israel)</p>	

Time	ROYAL H	ROYAL I	ROYAL J
	AP6: Antenna Analysis in Time Domain and Beamforming	BM3: Biomedical Engineering 3	CS5: Future of Communications
14:20-14:40	<p><b><i>Space-Time Coding through Time-Modulated Arrays - State-of-the-Art and Recent Trend/Advances</i></b>                      Paolo Rocca (University of Trento, Italy); Lorenzo Poli (ELEDIA Research Center, University of Trento, Italy); Shiwen Yang (University of Electronic Science and Technology of China (UESTC), P.R. China)</p>	<p><b><i>Detection of Peripheral Artery Stenosis Utilizing Wavelet Coherence Analysis</i></b>                      Amit Livneh (Technion-Israel Institute of Technology, Israel)</p>	<p>Yitzhak Irving Kalet (Columbia University, USA)</p> <p>Shlomo Shamai (Technion, Israel)</p> <p>Yossi Pinchasi (Ariel University, Israel)</p> <p>Yejun He (Shenzhen University, China)</p>
14:50-15:10	<p><b><i>Temporal Switching for Wideband Impedance Matching and Non-reciprocity</i></b>                      Yakir Hadad (Tel-Aviv University, Israel); Amir Shlivinski (Ben-Gurion University of the Negev, Israel)</p>	<p><b><i>Development of a 24 GHz Front-End and first test measurements for Breathing and Heartbeat Monitoring inside a Cot</i></b>                      Eric Lemmer and Daniel Schmiech (Hochschule Trier, Germany); Simon Müller (Trier University of Applied Sciences, Germany); Aly Marnach (Hochschule Trier, Germany); Rene Thull (University of Trier, Germany); Andreas R. Diewald (Hochschule Trier, Germany)</p>	
15:10-15:30	<p><b><i>A New Analytical and Numerical Method for Describing the Response of a Linear Antenna for Pulse Excitation Submission</i></b>                      Józef Małeckki (Polish Naval Academy, Poland); Anna Witenberg (UTP University of Science and Technology, Poland); Maciej Walkowiak (University of Science and Technology in Bydgoszcz, Poland)</p>	<p><b><i>Separation of Two Close Targets in CW-Radar Measurement in the Example of Respiration Monitoring</i></b>                      Lorenz Dirksmeyer, Daniel Schmiech and Andreas R. Diewald (Hochschule Trier, Germany)</p>	
15:30-15:50	<p><b><i>Echo generation by SVO</i></b>                      Amedeo Capozzoli, Claudio Curcio and Angelo Liseno (Università di Napoli Federico II, Italy)</p>	<p><b><i>Early Diagnosis of Internal Hemorrhage via Deep Neural Network Inference of Radio Signals</i></b>                      Shye Shapira (InnerSight, Israel); Ofir Tal (Innersight, Israel)</p>	
15:50-16:00	<p><b><i>SVO optimality in Near-Field Antenna Characterization</i></b>                      Amedeo Capozzoli, Claudio Curcio and Angelo Liseno (Università di Napoli Federico II, Italy)</p>		

Time	ROOM 3	ROOM 4	ROOM 5
	T5: Design of Broadband, Linear, and High-Efficiency Mm-Wave Power Amplifiers	IP: Intellectual property	PT1: Packaging & Thermal Management 1
14:20-14:55	<i>Design of Broadband, Linear, and High-Efficiency Mm-Wave Power Amplifiers</i> Hua Wang (Georgia Institute of Technology, USA)		<i>Thermal Challenges for Future Military Platforms</i> Mark Spector (ONR, USA)
14:55-15:10			<i>Modeling the thermal performance of a packaged MEMS thermal sensor at wide pressure range for IoT applications</i> Moshe Avraham, Dima Shlenkevitch, Sara Stolyarova and Tanya Blank (Technion, Israel); Yael Nemirovsky (Technion_Israel institute of Technology, Israel); Ayal Shabtay (Technion, Israel)
15:10-15:25			<i>Thermal Simulations of Pulsed GaN HEMT Devices</i> Raoul Guggenheim and Lior Rodes (Rafael Advanced Defense Systems, Israel)
15:25-15:40		15:30 <i>Using intellectual property to protect innovations in a global marketplace</i> Marc Weinstein (Xsensus Intellectual Property LLP, USA)	<i>Thermal Aspects of High Power Microelectronics Systems Implementation in Aviation Applications</i> Adi Amir (Rafael, Israel)
15:40-15:55			<i>Electrooptical Packaging</i> Galit Zilberman (Elbit ISTAR, Israel)
15:55-16:10			<i>Vertically Aligned Carbon Nanotubes for Thermal Packaging Applications</i> Asaf Yaakobovitz (Ben Gurion University of the Negev, Israel)

16:20-18:00 | ROYAL J  
Interactive Forum (Poster Session + Happy Hour)

Time	ROYAL H	ROYAL I	ROYAL J
	UA1: Short Course: Unconventional Array Design 1	DC6: Passive Devices and Techniques	CS6: Network Organization and Interference Mitigation
09:00-09:20	<p><b>Short Course: Unconventional Array Design for New Generation Communications and Sensing</b></p> <p>Andrea Massa (University of Trento, Italy); Giacomo Oliveri (University of Trento &amp; ELEDIA Research Center, Italy); Paolo Rocca (University of Trento, Italy)</p>	<p><b>Moving Beyond S-Parameter Files: Advanced Scalable and 3D EM Models for Passive Devices</b></p> <p>Larry Dunleavy (Modelithics, USA)</p>	<p><b>RRP: Reinforced Routing Policy Architecture for MANET routing</b></p> <p>Aviel Glam (Rafael Advance Defense Systems Ltd., Israel); Barak Farbman (Rafael &amp; Technion - Israel Institute of Technology, Israel); Ariel Shleifer (Ben Gurion uni, Israel)</p>
09:20-09:40			<p><b>Recent Advances in mm-wave Characterization, Calibration and de-embedding techniques</b></p> <p>Andrej Rumiantsev (MPI Corporation, Germany)</p>
09:40-10:00		<p><b>Improving the accuracy and quality of wireless coverage measurements using Autonomous Drones and Wheeled Robots</b></p> <p>Jay A Weitzen (University of Massachusetts Lowell &amp; Airvana, USA); Joshua Watts, Rachel Wakim, Emi Aoki, Sivly Lay and Naye Yoni (University of Massachusetts Lowell, USA)</p>	
10:00-10:20		<p><b>Additive manufacturing of low-loss full-metal K- and Ka-band passive waveguide components</b></p> <p>Tomislav Debogovic (SWISSto12 SA, Switzerland); Santiago Capdevila (SWISSto12, Switzerland); Alexandros I. Dimitriadis, Mathieu Billod and Emile de Rijk (SWISSto12 SA, Switzerland); Lionel Simon (Swissto12 SA, Switzerland); Esteban Menargues (SWISSto12, Switzerland)</p>	<p><b>Location-Domain Channel Representation for Estimating Distributed MIMO Channels</b></p> <p>Arkady Molev-Shteiman (Huawei Technologies, USA); Xiao-Feng Qi (Futurewei Technologies, Inc., USA); Laurence Mailaender (Huawei Technologies &amp; Alcatel-Lucent, USA)</p>
10:20-10:50	<p><b>Two Planar Devices for Extracting Capacitance per Unit Length</b></p> <p>Nina B. Popovic (University of Colorado at Boulder &amp; National Institute of Standards and Technology, USA); Eric Marks (University of Maryland, USA); Aaron Hagerstrom, James Booth, Edward Garboczi, Nathan Orloff and Christian Long (National Institute of Standards and Technology, USA)</p>	<p><b>Studying an Optimal Approach to Distribute Signals through Fiber-Wireless Fronthaul Network</b></p> <p>Mikhail Belkin (MIREA - Russian Technological University, Moscow, Russian Federation); Tatiana Bakhvalova and Alexander Sigov (MIREA - Russian Technological University, Russia)</p>	

Time	ROOM 3	ROOM 4	ROOM 5
	AP11: Propagation and Modeling	MM2: Metamaterials 2	PT2: Packaging & Thermal Management 2
09:00-09:20	<i>Directional Gain Measurements at 28 GHz for 90% Indoor Coverage</i> Dmitry Chizhik (Nokia US, USA)	<i>Circular Metasurfaces for Curvilinear Radiating Elements</i> Constantine A. Balanis (Arizona State University, USA)	<i>Pushing the Borders of Fan Out Wafer Level Packaging</i> Horst Theuss (Infineon Technologies AG, Germany)
09:20-09:40	<i>Over-the-City UAVs Swarm Communications Channel Model</i> Eran Greenberg (RAFAEL, Israel); Edmund Klodzh (Rafael, Israel)	<i>Analysis of Composite Structures Involving Near-Zero-Index Materials</i> Yesim Koyaz, Hande Ibili, Bariscan Karaosmanoglu and Ozgur Ergul (Middle East Technical University, Turkey)	<i>09:35 CT Detectors - Design Challenges</i> Raffy Goshen (Philips Healthcare, Israel)
09:40-10:00	<i>Propagation and Time-of-Arrival of VLF Pulses in the Earth-Ionosphere Waveguide</i> Sherman Marcus (Technion - Israel Institute of Technology, Israel); Eran Greenberg (RAFAEL, Israel); Ariel Epstein (Technion - Israel Institute of Technology, Israel)	<i>Metasurfaces for Radar Cross-Section Reduction</i> Constantine A. Balanis and Anuj Y. Modi (Arizona State University, USA)	<i>09:50 Flip Chip Ball Grid Array (FCBGA) package development for a high bandwidth switch</i> Nuphar Lipkin (Mellanox, Israel)
10:00-10:20	<i>Modelling Large-Scale Signal Fading in Urban Environment Based on Fuzzy Inference System</i> Segun I Popoola (Manchester Metropolitan University & Covenant University, United Kingdom (Great Britain)); Aderemi A. Atayero (Covenant University, Nigeria); Bamidele Adebisi (Manchester Metropolitan University, United Kingdom (Great Britain)); Abigail O Jefia (Covenant University, Nigeria); Kingsley Ogbeide (Landmark University, Nigeria); Andrew Gibson (Manchester Metropolitan University, United Kingdom (Great Britain))	<i>Numerical Modeling of Tunable Multilayer Graphene-Based Metamaterials, Metasurfaces and Metadevices for Nanophotonics</i> Alexander M. Lerer (Southern Federal University, Russia)	<i>10:05 GlassTomer - Innovative Lightweight Hermetic Seal</i> Leeor Gorstein (Hermatron, Israel)
10:20-10:50	<i>Sea Surface Electromagnetic Scattering Characteristics of JONSWAP Spectrum Influenced by its Parameters</i> XiaoLin Mi (Shanghai Institute of Radio Equipment, P.R. China)	<i>4D Scatterers based on Optically Reconfigurable Volumetric RF Metamaterials</i> Dmitry Filonov (Tel Aviv University, Israel); Dmitry A Dobrykh and Anna Mikhailovskaya (ITMO University, Russia); Pavel Ginzburg (Tel Aviv University, Israel)	<i>Design for Reliability for Microelectronic Packages Manufactured in Low Volumes</i> Jonathan Rothschild and Tatyana Schwierz-Iosefzon (Rafael, Israel)
			<i>10:35 Intel First Coreless Package Qualification</i> Roman Rechter (Intel, Israel)

Time	ROYAL H	ROYAL I	ROYAL J
	UA2: Short Course: Unconventional Array Design 2	DC7: LO Signal Generation and Distribution	CS7: Wireless Network Characterization and Routing
11:10-11:30		<i>Low-Phase Noise Bipolar VCOs for Integrated 5G Front-ends</i> Andrea Bevilacqua (University of Padova, Italy)	<i>An Efficient Traffic Control Management in the Smart City</i> Itai Dabran and Ben Hunter (Technion, Israel)
11:30-11:50			<i>Intrusion Detection System Model Implementation against DDOS attacks</i> Maria Nenova and Kiril Kassev (Technical University of Sofia, Bulgaria)
11:50-12:10		<i>Challenges in the analysis of innovative oscillator-based circuits for radar, RFID and reconfigurable systems</i> Almudena Suarez (University of Cantabria, Spain)	<i>Analysis and Mitigation of Passive Intermodulation (PIM) Effects on Throughput of LTE and 5G Basestations</i> Dongwei Yuan (North China Electric Power University, P.R. China); Ming Huang (ERICSSON, P.R. China)
12:10-12:30		<i>Transformer-Coupled Octa-Core 60 GHz Push-Push VCO in a 45-nm RF-SOI CMOS Technology</i> Johannes Rimmelspacher (Infineon Technologies AG, Germany); Robert Weigel (Friedrich-Alexander Universität Erlangen-Nürnberg, Germany); Vadim Issakov (Infineon Technologies AG, Germany)	<i>Handling traffic loads in a smart junction by social priorities</i> Nadav Voloch (Ben Gurion University of the Negev, Israel); Orly Barzilai, Orna Lavi Steiner, Zohar Fine, Eran Brayer and Idan Proshtisky (The College of Academic Studies, Or Yehuda, Israel)
12:30-12:50		<i>Considerations on 120GHz LO Signal Generation and Distribution for Highly-Integrated Multi-Channel Radar Transceivers</i> Andrea Bilato (University of Padova & Infineon Technologies AG, Italy); Andrea Bevilacqua (University of Padova, Italy); Vadim Issakov (Infineon Technologies AG, Germany)	<i>An Investigation of Flexible Waveform Numerologies for 5G V2I Cellular Networks from a Physical Layer Perspective</i> Viktor Stoynov, Dimitriya Mihaylova, Zlatka Valkova-Jarvis, Georgi Iliev and Vladimir K. Poulkov (Technical University of Sofia, Bulgaria)

Time	ROOM 3	ROOM 4	ROOM 5
	AP13: Antenna Design & Manufacturing	MM3: Metamaterials 3	PT3: Packaging & Thermal Management 3
11:10-11:30	<b><i>Design of Advanced Reflectarrays for Future Satellite Applications</i></b> Andreas Ericsson, Min Zhou, Stig Sørensen, Niels Vesterdal, Michael F. Palvig, Oscar Borries, Jakob Rosenkrantz de Lasson, Tonny Rubæk, Peter Meincke and Erik Jørgensen (TICRA, Denmark)	<b><i>Metamaterial-by-Design - A Paradigm for the Industrial Synthesis of EM Manipulation Devices</i></b> Giacomo Oliveri (University of Trento & ELEDIA Research Center, Italy); Angelo Gelmini and Giorgio Gottardi (ELEDIA Research Center, University of Trento, Italy); Marco Salucci (ELEDIA Research Center, Italy)	<b><i>Role of Electronic Packaging in 5G</i></b> Ivan Ndir (Fraunhofer IZM, Germany)
11:30-11:50	<b><i>Selective Metallization of Graphene-based Polymers for Volumetric 3D-printed Antennas</i></b> Pavel Ginzburg and Dmitry Filonov (Tel Aviv University, Israel)	<b><i>Microwave Response of a Microstrip Circuit Embedding Carbon Nanotube Films</i></b> Antonio Maffucci (University of Cassino and Southern Lazio & National Institute of Nuclear Physics, INFN-LNF, Italy); Marco Donald Migliore (University of Cassino, Italy); Fulvio Schettino (Università degli Studi di Cassino, Italy); Daniele Pinchera (University of Cassino, Italy); Alesia Paddubbskaya (Belarusian State University, Belarus); Sarah Sabilia (University of Cassino and Southern Lazio, Italy)	<b>11:45 High precision dry and fluxless die eutectic bonding process</b> Lior Miller (Rafael, Israel)
11:50-12:10	<b><i>An Optimized Design for Compact Patch Antenna Using Artificial Electromagnetic Structure</i></b> Meisong Tong, Meng Meng Li, Guochun Wan and Li Zhang (Tongji University, P.R. China)	<b><i>Retrieval of Polarizability Matrix for Metamaterials</i></b> Quang Nguyen (United States CDC Army Research Laboratory, USA); Kumar Vijay Mishra (The University of Iowa, USA); Amir I Zaghloul (US Army Research Laboratory & Virginia Tech, USA)	<b>12:00 Understanding Variation in MEMS Gyroscopes</b> Dean Spicer (Micralyne, Canada)
12:10-12:30	<b><i>A Novel Sensor Based on Microstrip Patch Antenna for Detecting Different Gases in Circular Pipe</i></b> Meisong Tong, Yun Jie Mao, Qing Xu and Xu Shi (Tongji University, P.R. China)	<b><i>IFF Dipole over a PMC ground</i></b> Uriel Odes (Ben Gurion University & ELTA Systems, Israel)	<b>12:15 High Conductivity Die Attach and Shielding Solutions for RF Devices</b> Ruud de Wit (Henkel, The Netherlands)
12:30-13:00	<b><i>An Improved Broadband Circularly Polarized Cross-Dipole Antenna With An AMC Reflector</i></b> Wei HE, Yejun He, Long Zhang and Sai-Wai Wong (Shenzhen University, P.R. China)	<b><i>Quasi-Optical Theory and Numerical Simulation of Surface-Wave Bragg Resonators for Terahertz Frequency Range</i></b> Andrey M. Malkin, Alexander Sergeev and Segrey Fil'chenkov (Institute of Applied Physics RAS, Russia)	<b><i>PCB Surface Finish Impact to Losses at High Frequencies</i></b> Alexander Ippich (Isola, Germany)
13:00-14:20	<b>Lunch</b>		
			<b>12:45 Additive Manufacturing of Electronics</b> Ziv Cohen (Nano Dimension)

Time	ROYAL H	ROYAL I	ROYAL J
	UA3: Short Course: Unconventional Array Design 3	T6: Stability Analysis of Microwave Circuits	CS7: Wireless Network Characterization and Routing
14:20-14:40		<i>Stability analysis of microwave circuits</i> Almudena Suarez (University of Cantabria, Spain)	<i>Machine Learning for Detecting Anomalies in SAR Data</i> Yuval Haitman, Stanley R. Rotman and Itay Berkovich (Ben-Gurion University of the Negev, Israel)
14:40-15:00			<i>Digital Doppler Effect Generation with CORDIC Algorithm for Radar Target Simulations</i> Manuel Steins (LaROS & Hochschule Trier, Germany); Andreas R. Diewald (Hochschule Trier, Germany)
15:00-15:20			<i>Detection of Water Inclusions in Honeycomb Composite Products by a Holographic Radar</i> Sergey Ivashov (Bauman Moscow State Technical University, Russia); Margarita Chizh (Bauman Moscow State Technical University & Remote Sensing Laboratory, Russia); Andrey Zhuravlev and Vladimir Razevig (Bauman Moscow State Technical University, Russia)
15:20-15:40			<i>A Variable Step Perturb and Observe Algorithm for Maximum Power Point Tracking Based on Modified Newton-Raphson Method</i> Jorge Carvalho (University of Campinas, Brazil); Luiz C. Kretly (Unicamp, Brazil)
15:40-16:00			<i>Submillimeter-wave Imaging: Applications and Technologies</i> Erich Grossman (NIST, USA)

Time	ROOM 3	ROOM 4	ROOM 5
	RCS: Scattering and Diffraction	WPT: Wireless Power Transfer	PT4: Packaging & Thermal Management 4
14:20-14:50	<b><i>Exact Geometrical Optics Scattering by Metallic Structures with Sharp Edges Subjected to Multiple Plane Waves Illumination</i></b> Piergiorgio L.E. Uslenghi (University of Illinois at Chicago, USA)	<b><i>Metasurface for Wireless Power Transfer to Multiple Receivers</i></b> Mingzhao Song, Pavel Belov and Polina Kapitanova (ITMO University, Russia)	<b><i>Thermal Management of Heterogeneous Microsystems</i></b> Yogendra Joshi (Georgia Institute of Technology, USA)
14:50-15:10	<b><i>RCS Resonances for Canonical Structures</i></b> Yury Shestopalov (University of Gävle, Sweden)	<b><i>Non-Linear Diode Rectifier Analysis for Multi-Tone Wireless Power Harvesting</i></b> Ana Lopez Yela and Daniel Segovia-Vargas (Universidad Carlos III de Madrid, Spain); Zoya Popović (University of Colorado at Boulder, USA); Alberto López Yela (University Carlos III of Madrid, Spain)	<b><i>14:55 Enhanced Cooling of Electronic Chips Using Combined Diamond Coating and Microfluidics</i></b> Gilad Yossifon (Technion, Israel)
15:10-15:30	<b><i>Method of Total Fields for Diffraction Problems between Different Media</i></b> Husnu Deniz Basdemir (Cankaya University, Turkey)	<b><i>Practical Issues with Unloaded Resonant Inductive WPT Link Operating in Load-Independent Regime</i></b> Yotam Frechter and Yegal Darhovsky (BGU, Israel); Alon Kuperman (Ben-Gurion University of the Negev, Israel)	<b><i>Supercritical CO2 as cooling fluid for high power devices</i></b> Anatoly Parahovnik and Yoav Peles (University of Central Florida, USA)
15:30-15:50	<b><i>Reactive Surfaces as Half-Duals of PECs/PMCs</i></b> Raphael Kastner (Tel Aviv University, Israel)	<b><i>Efficient Modeling of DC- RF module of Space Solar Power Satellite with Improved Antenna design and Metasurface</i></b> Amit Baghel and Shashank Kulkarni (IIT Guwahati, India); Sisir Kumar Nayak (Indian Institute of Technology Guwahati, India)	<b><i>15:25 Enhancing the efficiency of Electronic Cooling Devices by Bio-coatings</i></b> Ali Kosar, Abdolali Khalili Sadaghiani, Soroush Niazi, Taher Abbasiasl, Veysel Kaya and Ozlem Kutlu (Sabanci University, Turkey)
15:50-16:10	<b><i>Depolarization Diversity</i></b> Alan Frid (Shamoon College of Engineering, Israel); Yehuda Ben-Shimol (Ben-Gurion University of the Negev, Israel); Nathan Blaunstein (Ben-Gurion University of the Negev, Beer-Sheva, Israel)	<b><i>Square Slotted Patch Antenna for 2.45 GHz Far-field Wireless Power Transfer</i></b> Shashank Kulkarni and Amit Baghel (IIT Guwahati, India); Sisir Kumar Nayak (Indian Institute of Technology Guwahati, India)	<b><i>15:40 Database for life cycle temperatures and cooling system operation frequencies</i></b> Amiad Asias (Rafael, Israel)
			<b><i>15:55 Development of a PCM-Based Thermal Capacitor with AM Lattice Heat Spreader</i></b> Michael Koenig (Rafael, Israel)
Short Break			

Time	ROYAL A	ROYAL B	ROYAL C
	KN3: Plenary Keynote Presentations 3		
16:20	<b>Velocity Tomography Imaging and Tumor Treatment Planning</b> Avraham Suhami (Elscint, Israel)		
16:55	<b>Wireless Century Perspective: 5G/IoT (Internet of Things) and a Vision for 6G/IoE (Internet of Everything)</b> Richard D. Gitlin (University of South Florida, USA)		
	CL: Closing Plenary Session		
17:30			

דמי הרשמה (כולל מע"מ)

קטגוריית רישום	הרשמה מוקדמת תשלום עד 01.10.2019	הרשמה מאוחרת תשלום מ 02.10.2019
<b>שלושה ימים</b>		
משתתף	₪ 1,620	₪ 1,920
חברי IEEE, לשכת המהנדסים, אילטם ומרצים	₪ 1,400	₪ 1,670
סטודנטים*	₪ 970	₪ 1,145
<b>יומיים</b>		
משתתף	₪ 1,350	₪ 1,500
חברי IEEE, לשכת המהנדסים, אילטם ומרצים	₪ 1,150	₪ 1,350
סטודנטים*	₪ 715	₪ 825
<b>יום אחד</b>		
משתתף	₪ 1,100	₪ 1,220
חברי IEEE, לשכת המהנדסים, אילטם ומרצים	₪ 940	₪ 1,080
סטודנטים*	₪ 605	₪ 700
סטודנטים מוזל**	₪ 350	₪ 405

\* מיועד לסטודנטים לתואר ראשון או שני, בכפוף לאישור המזכירות בה הוא/היא לומד/ת במערכת מלאה. כמו כן מיועד לסטודנטים דוקטורנטים לתואר שלישי מאוניברסיטאות המחקר (תל אביב, טכניון, בן גוריון, ירושלים, ויצמן, חיפה או אריאל) המאושרות על ידי המל"ג ובכפוף להצגת תעודת מילגאי.

דמי הרישום כוללים

משתתף/ חבר, מלא או יומיים:	דמי הרשמה ליום אחד / סטודנט:	דמי הרשמה לסטודנט מוזל:
• כניסה להרצאות	• כניסה להרצאות	• כניסה להרצאות
• כניסה לתערוכה	• כניסה לתערוכה	• כניסה לתערוכה
• תיק הכנס	• תיק הכנס	• תיק הכנס
• תכנית הכנס	• תכנית הכנס	• תכנית הכנס
• USB מאמרים	• USB מאמרים	• USB מאמרים
• ארוחות צהרים, כיבוד וקפה	• ארוחות צהרים, כיבוד וקפה	• כיבוד וקפה
• קבלת פנים		

אופן התשלום

- כרטיס אשראי: ויזה | מאסטרקארד | ישראלכרט | אמריקן אקספרס | דינרס
- העברה בנקאית: לזכות ארטרא בע"מ, חשבון 262200/12 בבנק לאומי, סניף מס' 624, רח' עמק הברכה, תל אביב
- התחייבות: לזכות ארטרא בע"מ, ממוסדות שיש להם הסדר תשלומים עם חב' ארטרא.
- המחאה: לזכות ארטרא בע"מ. נא לשלוח בצירוף טופס רישום לכתובת: חברת ארטרא, יגאל אלון 94, ת"א 6789139



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Depart from Tel Aviv to discover the whole of Israel... from sea to desert, from mountains to high-tech cities, Israel offers you endless experiences in a short drive away.

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