Monday April 24, 2017

7:00 — Continental Breakfast

	M1A	Active Circuits Chairs: Mohamed Sayed and James Culver Location: Sawgrass Ballroom	Authors		M1B	Measurement Techniques Chairs: Larry Dunleavy and Xiaoguang Liu Location: Horizon Ballroom	Authors
8:00	Invited	A System and Technology Perspective on Future 5G mm-Wave Communication Systems	Mohamed M. Abdin, W. Joel, D. Johnson, and T. Weller, University of South Florida, USA	8:00	Invited	Practice Considerations for 60 GHz Up/Down Converter in Manufacturing Environments	Yuenie Lau, OML, Inc.
8:30	Invited	THz and mm-Wave Signal Generation, Amplification and Radiation in Silicon	Omeed Momeni, University of California Davis, USA	8:30	Invited	An overview of measurement techniques for radio frequency nanotechnology	T. Wallis and P. Kabos, National Institute of Standards and Technology, USA
9:00	Invited	Design to Production RFIC technology details	Jim Paviol, Qualcomm	9:00		Bridging the Gap in Noise Spectral Density Measurements Derived from Flicker and Noise Figure Measurement Systems	Kevin Kellogg, L. Dunleavy, S. Skidmore, H. Morales, and Carson White, Modelithics, USA
9:30		Gilbert Cell Mixer Design based on a novel systematic approach for nanoscale technologies	Giovanni Piccinni et al., Politecnico di Bari, Italy	9:30		Addressing Performance Differences in Horizontal and Vertical Orientation Mounting of Multi-Layer Capacitors	Hetvi Patel, L. Levesque, H. Morales, and L. Dunleavy, Modelithics, USA

9:50 — Break

10:20 — Exibitors' Spotlight
Sea Oats Ballroom

Panel Session
The Push and Pull of Technology Solutions for 5G
Sea Oats Ballroom

10:40

Moderators:
Larry Dunleavy , Ph.D., Modelithics Inc.
Mike Hallman, Microwave Journal

Panelists:
Paul Colestock, Ph.D., Director Exploratory Design Group, Global Foundries
Bror Peterson, Principle System Engineer, Qorvo
Takao Inoue, Ph.D., Wireless Solutions Architect, AWR Group, National Instruments
Vincent Pelicia, VP of Business Development, Anokiwave
Moray Rumney, Keysight Technologies

The development of technology solutions for 5G communications are already well underway in parallel with development of the standard. 5G promises unpredented high speed mobile and wireless data rates and utilizatin of frequencies into the mm-wave spectrum. 5G represents a strong, yet still not completely defined, market pull for new and cost effective technology solutions.

This pull is driving advances in semiconductors, circuit design, test and simulation, heterogenous integration and packaging. Various commercial interests no doubt have incentive to push their own specific technology solutions to be adopted as this new market unfolds.

This panel will allow speakers to present their vision for 5G Technology evolution and discuss their perspective on the push and pull of the solutions required to realize the promise of 5G for practical applications.

12:15 — Lunch Break

	M3A	Passive Devices Chairs: Hjalti Sigmarsson and Joel Johnson Location: Sawgrass Ballroom				Tutorial: Flexible Radio Access Beyond 5G: A Future Projection Location: Horizon Ballroom	
13:30	Invited	Electromagnetic Band-Gap (EBG) Surfaces and their applications	Constantine Balanis Arizona State University, USA	13:30		Today's wireless services and systems have come a long way since the rollout of the conventional voice-centric cellular systems. The demand for wireless access in voice and multi-media applications has increased tremendously. In addition to these, new application classes like extreme mobile broadband communication, ultra reliable and low latency communications, massive machine type communications, and Internet of Things have gained significant interest recently for 5G. The trend on the variety and the number of mobile devices along with the mobile applications will certainly continue beyond 5G, creating a wide range of technical challenges such as cost, power efficiency, spectrum efficiency, extreme reliability, low latency, robustness against diverse channel conditions, cooperative networking capability and coexistence, dynamic and flexible utilization of wireless spectrum. In order to address these technical challenges, 5G waveforms and radio access technologies (RATs) should be much more flexible. For 5G to succeed, numerous waveform alternatives have been explored to best meet its various technical requirements. In this tutorial, we will discuss the potential directions to achieve further flexibility in RATs beyond 5G. In this context, a framework for developing flexible waveform, numerology, and frame design strategies will be discussed along with sample	Huseyin Arslan, Ph.D., IEEE Fellow Professor, University of South Florida, USA
14:10	Invited	Microwave sensors based on symmetry properties and metamaterial concepts: a review of some recent developments	Javier Mata, L. Su, and F. Martín, Universidad Autónoma de Barcelona, Spain				
14:40		A Time-Splitting Cooperative Spectrum Sharing Amplify-and-Forward Relaying Protocol With Energy Harvesting Cognitive User	Mansi Peer et al., Indraprastha Institute of Information Technology, India				
15:00		Radio frequency Energy Harvesting using Series Resonant Circuit	Martín Javier Martínez Silva, M.S. Ruiz Palacios, A. Rodriguez-Diaz, and L. Machuca-Rincon, University of Guadalajara, Mexico				

15:30

Interactive Forum
Student Posters
Student Paper Competition

18:00

Award Banquet in Sea Oats Ballroom
Presentation of Henning Award
Guest Speaker: Dr. Linda Katehi
"Sustainability and the 4th Industrial Revolution"

EXHIBITION 10:00am-5:00pm Seahorse room

Interactive Forum

Title	Authors
A New Design of Wilkinson Power Divider Using Radial Stubs Featuring Size Reduction and Bandwidth Enhancement with Physical Isolation	Tso-Jung Chang, Ting-Jui Huang, and Heng-Tung Hsu, National Chiao Tung University, Taiwan
Link Failure Recovery via Diversity Coding in 5G Fronthaul Wireless Networks	Nabeel Sulieman, Kemal Davaslioglu, and Richard D. Gitlin, University of South Florida, USA
The Optimum Received Power Levels of Uplink Non-Orthogonal Multiple Access (NOMA) Signals	Faeik Al Rabee, Kemal Davaslioglu, and Richard D. Gitlin, University of South Florida, USA
The Case for Adaptive SATCOMM systems - An ITU Propagation Modelling Approach	Jeffrey White and Ivica N. Kostanic, Florida Institute of Technology, USA
Comparison of Coherent and Non-Coherent Scattering Models for Stratified Media	Michael Grady and Thomas Weller, University of South Florida, USA
Optimized Power Management Circuit for RF Energy Harvesting System	Majdi Ababneh, Samuel Perez, and Sylvia Thomas, University of South Florida, USA
Extended Saleh Model for Behavioral Modeling of Envelope Tracking Power Amplifiers	Haider Al kanan, Fu Li, and Felice Francesco Tafuri, Portland State University, USA
Fully Integrated LTE-Band CMOS Tunable Power Amplifier	Seyyed Babak Hamidi Perchehkolaei and Debasis Dawn, North Dakota State University, USA
mm-Wave Tunable Colpitts Oscillators based on FinFETs	Yunus Kelestemur, Soumyasanta Laha, Savas Kaya, and Avinash Kodi, Ohio University, USA
A Miniature 800-1100-MHz Tunable Filter with High-Q Ceramic Coaxial Resonators and Commercial RF-MEMS Tunable Digital Capacitors	Hao Wang, Akash Anand, and Xiaoguang Liu, University of California Davis, USA
Phase-Shift Steer a Uniform Circular Array in the Fourier-Series Domain	Jeffrey O. Coleman and William Dorsey, Naval Research Laboratory, USA
2-10 GHz Multisection 2-Way Wilkinson Power Divider with Enhanced Port Match and Isolation	Oguzhan Kizilbey, Suheyb Bozdemir, and Siddik Yarman, Tubitak Bilgem, Turkey
Effect of an Impaired I/Q Modulator in the Structure of a Behavioral Model for Power Amplifiers	Maria J. Madero-Ayora, Carlos Crespo-Cadenas, Javier Reina-Tosina, and Juan A. Becerra-Gonzalez, University of Seville, Spain
Method of Extraction of Virtual X-parameters for a 500W Internally Matched Device	N. Craig, V. Zomorrodian, and Ahmed Birafane, Qorvo

Tuesday April 25, 2017

Continental Breakfast

	T1A	Power Amplifiers Chairs: Morten Olavsbråten and Kelvin Yuk Location: Sawgrass Ballroom	Authors
8:00	Invited	Design of a 4-way Chireix amplifier using a nonlinear embedding device model (Invited)	Patrick Roblin, Taylor Wallis Barton, Hsiu-Chen Chang, Chenyu Liang, and William Sear, Ohio State University, USA
8:30		Gate Control of a Two-Stage GaN MMIC Amplifier for Amplitude and Phase Linearization	Gregor Lasser, M. Duffy, M. Olavsbråten, and Z. Popović, Univ. of Colorado, Boulder, USA
8:50		Design of a High Power, Wideband Power Amplifier Using AlGaN/GaN HEMT	Jeffrey Tan, K. Yuk, and G. Branner, University of California, Davis, USA
9:10		A 5-GHz Class-E3F2 Power Amplifier with 51% PAE and 21-dBm Output Power on 65nm CMOS	Matthew Love, M. Thian, and A. Grebennikov, Queens University Belfast, UK
9:30		Design of an Efficient Wideband (1-5GHz) 10W PA in GaN Technology using Harmonic Tuning	Morten Olavsbråten et al., Norwegian University of Science and Technology, Norway

	T1B	Antennas Chairs: Xiaoguang Liu and Larry Dunleavy Location: Horizon Ballroom	Authors
8:00	Invited	Using Electro-optic Field Mapping for Design of Dual-band Circularly Polarized Active Phased Arrays	Linda Katehi, University of California Davis, USA
8:30		Far Field Measurements of Small Angle Carbon Fiber Misalignments	William C. Wilson, J. Moore, and P. Juarez, NASA Langley Research Center, USA
8:50		SOCP Design of Monopulse Sum and Difference Beams for a Uniform Circular Array	William Dorsey and Jeffrey O. Coleman, US Naval Research Laboratory, USA
9:10		Embedded 6 GHz 3D-Printed Half-Wave Dipole Antenna Array	Derar Fayez Hawatmeh and T. Weller, University of South Florida, USA
9:30		A Cavity-Backed Slot ESPAR E-Plane Array	Wei Ouyang and X. Gong, University of Central Florida, USA

Break

Plenary Speaker: Paul Colestock
The impact of Silicon as an emerging technology for 5G Circuits and System Solutions
Sea Oats Ballroom

Plenary Speaker: Prof. Zoya Popovic
PA Design for Future Wireless Systems
Sea Oats Ballroom

Lunch

	T3A	Wireless Communications Chairs: Craig Sapashe and Joel Johnson Location: Sawgrass Ballroom	
13:30		Base Station Prediction and Proactive Mobility Management in Virtual Cells using Recurrent Neural Networks	Dilranjan Wickramasuriya et al., University of South Florida, USA
13:50		Fast Beam Discovery for mmWave Cellular Networks	Mohammed Jasim and N. Ghani, University of South Florida, USA
14:10		Dynamic Utilization of Low-Altitude Platforms in Aerial Heterogeneous Cellular Networks	Mostafa Helmy, Z.E Ankarali, M. Siala, T. Baykas, and H. Arslan, University of South Florida, USA
14:30		Impulse Radio Ultrawideband D2D-Based Localization for Ultra-dense 5G Networks	Akeem Aderibigbe Adebomehin and S.D. Walker, University of Essex, United Kingdom
14:50		Secure Key Management for 5G Physical Layer Security	Asim Mazin, K. Davaslioglu, and R.D. Gitlin, University of South Florida, USA

	T3B	Reconfigurable Devices and Circuits Chairs: Hjalti Sigmarsson and Wesley Allen Location: Horizon Ballroom	
13:30	Invited	Novel Approaches to Design Tunable Devices	Cedric Quendo, R. Allanic, D.L. Berre, and Y. Quéré, Lab-STICC - UBO Brest, France
14:00		Open-Loop Temperature-Compensated Tuning of a 2-Pole Absorptive Bandstop Filter	Wesley Allen and D. Peroulis, Purdue University, USA
14:20		Single-Mode-Dual-Band to Dual-Mode-Single-Band Bandpass Filter with Liquid Metal	Sarah McClung, S. Saeedi, and H. Sigmarsson, University of Oklahoma, USA
14:40		Comparison of Bias-Voltage and Reflection-Coefficient Based Reconfiguration of a Tunable-Varactor Matching Network for Adaptive Amplifiers	L. Lamers et al., Baylor University, USA
15:00		Design of All Passive Blocker-Tolerant Reconfigurable RF Front-end Filter	Md Naimul Hasan, M. Nafe, and X. Liu, University of California Davis, USA

	T4A	Passive Devices Chairs: Thomas Weller and Hjalti Sigmarsson Location: Sawgrass Ballroom	
15:30	Invited	Exploiting behavioral modelling formulations for nonlinear analytical circuit design and improved frequency scalability	Monica Fernandez-Barciela, M.R. Moure, M. Casbon, A. Pelaez-Perez, and Paul J Tasker, University of Vigo, Spain
16:00		A S/C-Band High Q Resonator Architecture for Direct Print Additive Manufacturing	Derar Fayez Hawatmeh and T. Weller, University of South Florida, USA
16:30		A 2-30 W S-Band Plasma-Based Switch	Abbas Semnani, S. Macheret, and D. Peroulis, Purdue University, USA
17:00		Strategies for Improved Linearization in BAW Multiplexer Modules	Susanne Kreuzer et al., BAW R&D, Qorvo, Apopka, FL/USA
		Ku-band Additive Manufactured Multilayer Dielectric Rod Waveguide	Denise Lugo, R. Ramirez, J. Castro, J. Wang, and T. Weller, University of South Florida, USA

IEEE Young Professional Workshop
Horizon Ballroom
17:00-18:30

EXHIBITION 9:00am-4:00pm Seahorse room