



## 94<sup>th</sup> ARFTG Microwave Measurement Conference

Grand Hyatt, San Antonio, TX, USA, **January 26-29, 2020**

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

### TECHNICAL PROGRAM AGENDA: MONDAY JAN 27

#### Session A: 5G, internet of things (IoT), and over the air (OTA) measurement & calibration- Chair Rusty Myers

1:00 PM ARFTG-94 Welcome

1:10-1:50 A1: EM Simulation and Validation Challenges for 5G Systems (Invited Paper)

1:50-2:10 A2: OTA G/T Measurements of Active Phased Array Antennas using a Vector Network Analyzer

2:10-2:30 A3: Using Active Load-Pull with Modulated Signals to Optimize Power and Linearity

#### Coffee Break: 2:30-3:50

#### Poster Session: 2:30-3:30

P1: An Interferometric Characterization Technique for Extreme Impedance Microwave Devices

P2: Inter-laboratory comparison of S parameter measurements with dynamic uncertainty evaluation

P3: A Method to Remove the Effects of LO Drift from Vector Network Analyzer Measurements

P4: A Novel True-Mode Balanced Measurement using Mixed-mode Power waves

P5: Vector Network Analyzer Calibration Standards with Precision SMPS connectors for Electro-Optical Modulators

P6: Analysis and Performance Evaluation of Novel Microstrip Patch Antenna Based on Two Parasitic Ring Resonators and Partial Ground Plane for Multiband Applications

P7: Design of a WR10 Rotary Joint with two 3D-printed TE01 Mode Transducers

#### Session B: On-Wafer and mm-Wave Measurements- Chair Jeffrey Jargon

3:50-4:10 B1: Broadband 220 GHz network analysis: structures and performance

4:10-4:30 B2: Calibration Substrate Design for Accurate mm-Wave Probe-Tip Calibration

4:30-4:50 B3: In-Situ Calibration and De-Embedding Test Structure Design for SiGe HBT On-Wafer Characterization up to 500 GHz

4:50-5:10 B4: An interlaboratory study of the reproducibility of on-wafer S parameter measurements from 140 GHz to 220 GHz

### TECHNICAL PROGRAM AGENDA: TUESDAY, JAN 28

#### Session C: Special Topics- Chair Jon Martens

8:00-8:40 C1: RF and Quantum Computing (Invited Paper)

8:40-9:00 C2: Arbitrary wideband Open-loop active load-pull measurement using Unequally Spaced Multi-Tone stimulus

9:00-9:20 C3: Developing Models for a 0.8 mm Coaxial VNA Calibration Kit within the NIST Microwave Uncertainty Framework

#### Poster Session and Coffee Break : 9:20-10:15 (see above)

#### Joint Plenary Session with RWW: 10:00-12:00

#### Session D: Material Measurements- Chair David Blachham

1:50-2:10 D1: Waveguide Probe Calibration Method for Permittivity and Loss Characterization of Viscous Materials

2:10-2:30 D2: Free-Space Characterization of Radar Absorbing Non-Magnetic Materials in the W-Band

2:30-2:50:D3: Terahertz Experimental Measurements of Human Breast Tissue

#### Coffee Break : 2:50-3:40

#### Session E: Device Characterization and Modelling- Chair Leonard Hayden

3:40-4:00 E1: Measurement of the Channel Temperature of a GaN Microwave Power Transistor During Pulsed I-V Excitation

4:00-4:20 E2: Characterization of Thermal and Trapping Time Constants in a GaN HEMT

4:20-4:40 E3: De-mystifying AM-PM characteristics through the definition of the complex Transducer Gain  $\hat{G}_T$

4:40-5:00 E4: Device Noise Parameter Characterization: Towards Extraction Automation

#### Closing Notes : 5:00-5:10