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Session A: RF/Microwave Applications to Bioengineering/Biomedicine

Chair: James Booth, NIST

Microwaves in Biomedical Science — A Path Forward (INVITED)

W. D. Hunt, Georgia Institute of Technology, Atlanta, United States

Sensor-on-CMOS Dielectric Characterization Using Temperature Modulation

J. Chien, A. M. Niknejad, University of California, Berkeley, Berkeley, United States

Broadband Single-Cell Detection with a Coplanar Series Gap

X. Ma, X. Du, C. Multari, Y. Ning, C. Palego, X. Luo, V. Gholizadeh, X. Cheng, J. C. Hwang, Lehigh University, Bethlehem, United States

Optimized Matching of an Implantable Medical Device Antenna in Different Tissue Medium Using Load Pull Measurements

P. Li, L. Zhang, F. Liu, J. Amely-Velez, St. Jude Medical, Sylmar, United States

Session B: Characterization of Flexible Substrates

Chair: Mitch Wallis, NIST

Microwave Characterization of Ink-Jet Printed CPW on PET Substrates

A. Sahu[1], V. Devabhaktuni[1], A. Lewandowski[2], P. Barmuta[2], T. M. Walllis[3], M. Shkunov[4], P. H. Aaen[4], [1]University of Toledo, Toledo, United States, [2]Warsaw University of Technology, Nowowiejska, Poland, [3]NIST, Boulder, United States, [4]University of Surrey, Guildford, United Kingdom

Measurement Methods for the Permittivity of Thin Sheet Dielectric Materials

J. Kim, J. Kang, J. Park, T. Kang, Korea Research Institute of Standards and Science, Daejeon, Republic of Korea

Session C: Nonlinear Measurements, Modeling, and Linearization

Chair: Dominique Schreurs, KU Leuven

Frequency-scalable nonlinear behavioral transistor model from single frequency X-parameters based on time-reversal transformation properties (INVITED)

D. E. Root[1], R. M. Biernacki[1], M. Marcu[1], M. Koh[3], P. J. Tasker[2], [1]Keysight Technologies, Santa Rosa, United States, [2]Cardiff University, Cardiff, United Kingdom, [3]M/A-COM Technology Solutions, Belfast, United Kingdom

Automatic Feed-Forward Cancellation of Modulated Harmonic

H. Yu1, V. Ratnasamy[1], P. Roblin[1], M. Rawat[2], C. Xie[3], [1]The Ohio State University, Columbus, United States, [2]Indian Institute of Technology, Roorkee, India, [3]Rockwell Collins, Cedar Rapids, United States

Enhanced PHD Model Extraction by Improving Harmonic Response Superposition During Extraction

D. T. Bespalko, S. Boumaiza, Emerging Radio Systems Group, Waterloo, Canada

Session D: Novel Measurement Techniques and Applications

Chair: Leonard Hayden, Qorvo

Towards Faster, Swept, Time-Coherent Transient Network Analyzer Measurements

J. Martens, E. Vayner, J. Tu, Anritsu, Morgan Hill, United States

Hurdles to On-Wafer Harmonic Measurements

K. J. Muhonen, Qorvo, Greensboro, United States

A compact measurement set-up for envelope-tracking RF PAs with calibrated sensing of baseband V/I at the supply terminal

J. Couvidat[1,2], G. Gibiino[1,3], G. Pailloncy[4], M. Vanden Bossche[4], A. Ghiotto[2], D. Schreurs[1], [1]KU Leuven, Leuven, Belgium, [2]University of Bordeaux, Talence, France, [3]University of Bologna, Bologna, Italy, [4]National Instruments, Zaventem, Belgium

Session E: Millimeter-wave and Terahertz Measurements and Calibration

Chair: Dave Blackham, Keysight

Continuing Challenge of Improving Measurement Accuracy in Terahertz Vector Network Analyzers - The Taming of "Terahertz Vector Network Analyzers" (INVITED)

M. Horibe, National Institute of Advanced Industrial Science and Technology (AIST) - National Metrology Institute of Japan (NMIJ), Tsukuba, Japan

Performance assessment of VNA calibration schemes for millimeter-wave and submillimeter-wave frequencies, using the 33 GHz-50 GHz band

K. Drazil, A. Pavlis, M. Hudlicka, Czech Metrology Institute, Prague, Czech Republic

An IQ-Steering Technique for Amplitude and Phase Control of mm-Wave Signals

A. Visweswaran[1,2], C. de Martino[1], E. Sirignano[1], M. Spirito[1], [1]Delft University of Technology, Delft, Netherlands, [2]IMEC, Leuven, Belgium

Session F: Calibration and Verification

Chair: Jon Martens, Anritsu

The Impact of Knowing the Impedance of the Lines Used in the TRL Calibration on the Load-Pull Characterization of Power Transistors

M. A. Pulido-Gaytan[1], J. A. Reynoso-Hernandez[1], M. d. Maya-Sanchez[1], J. R. Loo-Yau[2], [1]Cicese, Ensenada, Mexico, [2]Cinvestav, Zapopan, Mexico

Improved RSOL Planar Calibration via EM Modelling and Reduced Spread Resistive Layers

M. Spirito[1], L. Galatro[1], G. Lorito[2], T. Zoumpoulidis[2], F. Mubarak[3,1], [1]Delft University of Technology, Delft, Netherlands, [2]Iszgro Diodes BV, Delft, Netherlands, [3]Van Swinden Laboratorium , Delft, Netherlands

Calibration/Verification Standards for Measurement of Extremely High Impedance

M. Haase, K. Hoffmann, Czech technical university in Prague, Prague, Czech Republic

Evaluation and Modeling of Measurement Resolution of A Vector Network Analyzer for Extreme Impedance Measurements

F. Mubarak[1,2], R. Romano[2], M. Spirito[2], [1]Van Swinden Laboratorium (VSL), Delft, Netherlands, [2]Delft University of Technology, Delft, Netherlands

Interactive Forum

Chair: Ken Wong, Keysight Technologies

Uncertainty Analysis in Coplanar Waveguide with Unscented Transformation

A. A. Savin[1], V. G. Guba[2], O. N. Bykova[2], [1]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation, [2]NPK TAIR, a subsidiary of Copper Mountain Technologies, Tomsk, Russian Federation

Comparison Analysis of VNA Residual Errors Estimation Algorithms with Time Domain Separation

A. A. Savin[1], V. G. Guba[2], O. N. Bykova[2], [1]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation, [2]NPK TAIR, a subsidiary of Copper Mountain Technologies, Tomsk, Russian Federation

Impedance Standard Substrate Fabricated by Screen Printing Technology

M. Horibe, R. Sakamaki, AIST, Tsukuba, Japan

Joint Self-Heating and RF Large Signal Characterization

F. J. Martinez-Rodriguez[1,2], P. Roblin[1], J. I. Martinez-Lopez[2], [1]The Ohio State University, Columbus, United States, [2]Universidad Nacional Autónoma de México, Coyoacan, Mexico