TECHNICAL AGENDA

Thursday, December 4

0800 to 0810  Welcome
Conference Chair: Ron Ginley, NIST

0810 to 0930  Session A: Remote Sensing and Noise Measurements
Session Chair: Mohamed Sayed, MMS

ThA-1  INVITED: CubeSat-based Radiometer Systems from Millimeter-wave to Terahertz: Enabling Frequent Global Observations of the Earth’s Atmosphere
0810-0850  S. C. Reising, Colorado State University, Fort Collins, Colorado, United States

ThA-2  Comparison of Noise-Parameter Measurement Strategies: Simulation Results for Amplifiers
0850-0910  J. Randa, NIST, Boulder, Colorado, United States

ThA-3  On-wafer Differential Noise Figure Measurement without Couplers on a Vector Network Analyzer
0910-0930  Y. Andee1,2, A. Siligaris1,2, F. Graux3, F. Danneville4, 1Univ. Grenoble Alpes, Grenoble, France, 2CEA, Grenoble, France, 3Rohde&Schwarz France, Meudon-la-Forêt, France, 4IEMN, Villeneuve d'Ascq, France

0930 to 1100  Break – Exhibits and Interactive Forum
Session Chair: Mitch Wallis, NIST

ThP-01  Evaluation and Validation of a National WR-15 (50 to 75 GHz) Power Measurement System
0930-1100  X. Cui1, Y. Meng2, Y. Shan2, W. Yuan1, C. Ma1, Y. Li1, 1National Institute of Metrology, Beijing, China, 2National Metrology Centre, Singapore, Singapore

ThP-02  A Near-Field Scanning Microwave Microscope for Measurement of the Permittivity and Loss of High-Loss Materials
1100-1230  A. P. Gregory1, J. F. Blackburn1, K. Lees1, R. N. Clarke1, T. E. Hodgetts2, S. M. Hanham3, N. Klein3, 1National Physical Laboratory, Teddington, United Kingdom, 2Consultant on behalf of the National Physical Laboratory, Teddington, United Kingdom, 3Imperial College, London, United Kingdom

ThP-03  Measurement Uncertainty in Waveguide VNA Calibrated by Offset Short Calibration with Oversized Waveguide Aperture at Sub-millimeter Wave Frequency
1230-1300  M. Horibe, R. Kishikawa, AIST, Tsukuba, Japan
ThP-04 Broadband Dielectric Spectroscopy Calibration Using Calibration Liquids with Unknown Permittivity
S. Liu1, I. Ocket2, P. Barmuta3, T. Markovic1, A. Lewandowski3, D. Schreurs1, B. Nauwelaers1, 1University of Leuven, Heverlee, Belgium, 2Interuniversity Microelectronics Center, Heverlee, Belgium, 3Warsaw University of Technology, Warsaw, Poland

ThP-05 Progress Towards a NIST Microwave Brightness Standard for Remote Sensing
D. Houtz, D. K. Walker, D. Gu, National Institute of Standards and Technology, Boulder, United States

ThP-06 Development of an Automated Unintended Radiated Emission (URE) Radio Frequency (RF) Measurement System
J. E. Friedel1, A. P. Burr1, V. V. Nguyen2, 1Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division, Indian Head, United States, 2Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division, Indian Head, United States

1100 to 1200  Session B: mm-Wave and THz Measurements
Session Chair: Jon Martens, Anritsu

ThB-1 Novel Flexible Dielectric Waveguide for Millimeter and Sub-Millimeter Frequencies – Design and Characterization
1100-1120 H. Nickel, J. Zovo, Spinner GmbH, Feldkirchen-Westerham, Germany

ThB-2 Evaluating the Effect of Using Precision Alignment Dowels on Connection Repeatability of Waveguide Devices at Frequencies from 750 GHz to 1.1 THz
1120-1140 N. Ridler1, R. Clarke2, 1National Physical Laboratory, Teddington, United Kingdom, 2University of Leeds, Leeds, United Kingdom

ThB-3 Accuracy and Repeatability of Automated Non-Contact Probes for On-wafer Characterization
1140-1200 C. Caglayan, G. C. Trichopoulos, K. Sertel, ElectroScience Laboratory, Columbus, United States

1200 to 1300  Lunch
1300 to 1320  ARFTG Business Meeting

1320 to 1440  Session C: Measurements for Communications Technology and Nonlinear Applications
Session Chair: Dave Blackham, Keysight

ThC-1 INVITED: Free-Field Measurements of Integrated Wireless Devices in Reverberation Chambers
1320-1400 K. Remley, NIST, Boulder, United States
ThC-2  On High Frequency / mm-Wave IMD Measurements with Small Tone Spacing
1400-1420  J. Martens, Anritsu, Morgan Hill, United States

ThC-3  A Test Set-up for the Analysis of Multi-Tone Intermodulation in Microwave Devices
1420-1440  J. Teyssier, J. Sombrin, R. Quéré, S. Laurent, G. Francis, XLIM-cnrs, Brive la Gaillarde, France, XLIM- Labex, Limoges, France, CNES, Toulouse, France

1440 to 1600  Break – Exhibits and Continuation of the Interactive Forum

Session Chair: Mitch Wallis, NIST

1600 to 1700  Session D: On-wafer measurements
Session Chair: Peter Aaen, University of Surrey

ThD-1  Via-Adjusted Microstrip Launch for Sub-Terahertz Wafer Probing
1600-1620  K. Jung, J. Ebner, Cascade Microtech Inc., Beaverton, United States

ThD-2  Adaptive Estimation of Complex Calibration Residual Errors of Wafer-Level S-Parameters Measurement System
1620-1640  A. A. Savin, V. G. Guba, A. Rumiantsev, B. D. Maxson, S. Schubert, U. Arz, Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation, NPK Tair, Tomsk, Russian Federation, MPI Corporation, Chu-Pei City, Taiwan, Copper Mountain Technologies, Indianapolis, United States, Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

ThD-3  LZZM: An Extension of the Theory LZZ Calibration Technique
1640-1700  M. A. Pulido-Gaytan, J. A. Reynoso-Hernandez, A. Zarate-de Landa, J. R. Loo-Yau, M. C. Maya-Sanchez, Cicese, Ensenada, Mexico, Cinvestav, Guadalajara, Mexico

Friday, December 5

0800 to 0920  Session E: Materials Characterization
Session Chair: Mitch Wallis, NIST

FrE-1  INVITED: Noncontact Conductivity and Dielectric Measurement for High Throughput Roll-to-Roll Nanomanufacturing
0800-0840  N. Orloff, NIST, Boulder, United States

FrE-2  Study of Reflection Effect at Fixture Interfaces on Permittivity Measurements using the Transmission/Reflection Method
0840-0900  Y. Kato, M. Horibe, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan
FrE-3  Free-space Reconstruction of the Electrical Properties of Carbon Nanotube Composites in the Q-band
0900-0920  A. M. Hassan, J. Obrzut, E. J. Garboczi, National Institute of Standards and Technology, Gaithersburg, United States

0920 to 1040  Break – Exhibits

1040 to 1200  Session F: Calibration and Verification
Session Chair: Nick Ridler, NPL

FrF-1  A Calibration Procedure for Electronic Calibration Units
1040-1100  J. Stenarson¹, C. Eiø², K. Yhland¹, ¹SP Technical Research Institute of Sweden, Boras, Sweden, ²NPL National Physical Laboratory, Teddington, Middlesex, United Kingdom

FrF-2  Offset-Shorts Vector-Network-Analyzer Calibration with Simultaneous Modeling of Calibration Standards
1100-1120  A. Lewandowski¹, W. Wiatr¹, P. Barmuta², ¹Warsaw University of Technology, Warsaw, Poland, ²KU Leuven, Leuven, Belgium

FrF-3  Two-Port Calibration Insensitive to Flange Misalignment
1120-1140  A. Arsenovic¹, R. M. Weikle², J. Hesler¹, ¹Virginia Diodes, Charlottesville, United States, ²University of Virginia, Charlottesville, United States

FrF-4  Residual Error Analysis of a Calibrated Vector Network Analyzer
1140-1200  F. A. Mubarak, VSL, Delft, Netherlands

1200 to 1300  Lunch