

Process Measurements Division

1. Publications

Afridi, M. Y., Suehle, J. S., Zaghoul, M. E., Tiffany, J. E. and Cavicchi, R. E., ***“Implementation of CMOS compatible conductance-based micro-gas-sensor system,”*** Proc. of the European Conference on Circuit Theory and Design: Circuit Paradigm in the 21st Century (in press).

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Cavicchi, R.E., Walton, R.M., Aquino-Class, M.I., Allen, J.D., and Panchapakesan, B., ***“Spin-on Nanoparticle Tin Oxide for Microhotplate Gas Sensors,”*** Sensors and Actuators B, Chemical 77, p. 145-154 (2001).

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Davis, R.W., Moore, E.F., Maslar, J.E., Burgess, D.R., Kremer, D.M., Ehrman, S.H., "**A Numerical/Experimental Investigation of Microcontamination in a Rotating Disk Chemical Vapor Deposition Reactor,**" Proc. Intl. Conf. on Characterization and Metrology for ULSI Technology Conf., (D.G. Seiler et al, eds.) Amer. Inst. of Physics 550, p.292-296 (2001)

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Tiffany, J.E., Cavicchi, R.E., and Semancik, S., "***Microarray Study of Temperature Dependent Sensitivity and Selectivity of Metal/Oxide Sensing Interfaces,***" Proc. of SPIE (in press).

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Widmann, J.F., Presser, C., and Leigh, S.D., "***Extending the Dynamic Range of Phase Doppler Interferometry Measurements,***" Atomization and Sprays (in press).

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Widmann, J.F., Presser, C., and Papadopolous, G., "***Benchmark Database for Input and Validation of Spray Combustion Models: Inlet Air Characterization,***" AIAA 2001-1116, Am. Inst. Aero. Astro., Washington, DC (2001).

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Wilhelm, J., Gillis, K.A., Mehl, J.B., and Moldover, M.R., "***An Improved Greenspan Acoustic Viscometer***," *Intl J. of Thermophysics* (in press).

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Yeh, T.T., and Espina, P.I., "***Special Ultrasonic Flowmeters for In-Situ Diagnosis of Swirl and Cross Flow***," Proc. ASME Fluids Engineering Division Summer Meeting, FEDSM2001-18037 (2001).

2. Talks

Abbott, P.J., "***Vacuum Metrology at NIST***," Korean Vacuum Society Intl. Symposium on Nano Device and Display Technology, Seoul, Korea, February 23, 2001. Invited

Abbott, P.J., "***Pressure and Vacuum Standards at NIST***," Electro-Technical Laboratory, Tsukuba, Japan, March 27, 2001. Invited

Barker, S.L.R., "***Fabrication, Derivatization and Applications of Plastic Microfluidic Devices***," SPIE Intl. Symp. on Environmental and Industrial Sensing, Boston, MA, November 6, 2000.

Berg, R.F., "***Critical Point Measurements on the Space Shuttle***," Northern Virginia Community College, Annandale, VA, September 21, 2001. Invited

Berg, R.F., "***Model of a Quartz Capillary Transfer Standard for Flow***," Primary Low Gas Flow Standards Meeting, Laboratoire National D'Essais, Paris, France, September 24, 2001.

Cavicchi, R.E., "***Microarray Study of Temperature Dependent Sensitivity and Selectivity of Metal/Oxide Sensing Interfaces***," SPIE Intl. Symp. on Environmental and Industrial Sensing, Boston, MA, November 7, 2000.

Cavicchi, R.E., "***Microhotplate Gas Sensor Arrays***," 222nd American Chemical Society National Meeting, Chicago, IL, August 30, 2001.

Davis, R.W., "***A Numerical/Experimental Investigation of Microcontamination in a Rotating Disk CVD Reactor***," Annual Conference of the Amer. Assoc. for Aerosol Research, St. Louis, MO, November 7, 2000.

Espina, P. I., "***The Flow Metrology Program at the National Institute of Standards and Technology***," University of Puerto Rico, Mayagüez Campus, Mechanical Engineering Department, October 23, 2000.

Espina, P. I., "***Overview of NIST***," University of Puerto Rico, Mayagüez Campus, October 24, 2000.

Espina, P. I., "***Tele-Calibration of Gas Flow Meters***," Measurement Science Conference, Anaheim, California, January 18, 2001. Espina, P. I., "***SIM Flow Comparison Efforts***," Measurement Science Conference, Anaheim, California, January 19, 2001.

Espina, P. I., "***SIM MWG-Flow Efforts***," 2nd CIPM CCM WGFF Meeting, Istanbul, Turkey, April 2, 2001.

Espina, P. I., "***Inter-laboratory Comparison Program among North American Natural Gas Flow Calibration Facilities***," GTI MTAG Meeting, San Antonio, Texas, April 10, 2001.

Espina, P. I., "***The Flow Metrology Program at the National Institute of Standards and Technology***," ISA, Central New Jersey Section, Princeton, NJ, May 17, 2001.

Espina, P. I., "***SIM MWG-Flow Efforts***," NCSL International 2001, Washington DC, August 1, 2001.

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Garrity, K.M. ***“Thermocouple Thermometry,”*** 2001 Regional Measurement Assurance Program Training, Gaithersburg, MD, March 21-22, 2001.

Hall, J. M. ***“Ultrasonic Anemometer Testing at NIST,”*** Measurement Science Conference, Anaheim, California, January 19, 2001.

Hodges, J.T., ***“Cavity Ring-Down Spectroscopy and Quantitative Measurements of Gas Phase Concentration,”*** IFPAC 2001, Amelia Island, FL, January 21-24, 1001.

Huang, P.H., ***“Humidity Measurements,”*** 2001 Regional Measurement Assurance Program Training, Gaithersburg, MD, March 21-22, 2001.

Huang, P.H., ***“Measuring Techniques for Quantifying the Performance of Dilution-Based Trace Moisture Generators,”*** TEMPMEKO 2001, Berlin, Germany, June 19, 2001.

Huang, T.H. ***“New Immobilization Methods for DNA Analysis,”*** Merck Research Colloquium, Bucknell University, Lewisburg, PA, December 6, 2000. Invited

Huang, T.H. ***“Immobilization of DNA Copolymers on Microhotplates for DNA Melting and Hybridization Reaction,”*** 198th Meeting of The Electrochemical Society, Phoenix, AZ, October 24, 2000.

Hurst, W., ***“Standards for Calibration of Raman Spectral Intensity,”*** 15th Annual IFPAC (International Forum for Process Analytical Chemistry), Amelia Island, FL, January 21, 2001.

Johnson, A.N., ***“A First Principles Method for Predicting Critical Nozzle Performance for Various Gases,”*** Measurement Science Conference, Anaheim, CA, January 19, 2001.

Kremer, D., ***“In Situ Gas Phase Optical Measurements of Silane Decomposition in a Thermal Chemical Vapor Deposition Reactor,”*** 199th Meeting of the Electrochemical Society, Washington, DC, March 26, 2001.

Lee, A., ***“Recent Activities in Pressure and Vacuum Metrology at NIST and Areas of Italy-US Cooperation,”*** Cooperation in Metrology, Equivalence of the National Standards and Dissemination of SI Units Meeting, Turin, Italy, November 16, 2000.

Looney, J.P., ***“A Quantitative Test of Slip-Flow Theory using the Spinning Rotor Gauge,”*** American Vacuum Society Meeting, Boston, MA, October 4, 2000.

Maslar, J.E., ***“A Numerical/Experimental Investigation of Microcontamination in a Rotating Disk Chemical Vapor Deposition Reactor,”*** AIChE Annual Meeting, Los Angeles, CA, November 17, 2000.

Maslar, J.E., ***“In Situ Determination of GaAs Free Carrier Concentration and Temperature by Raman Spectroscopy,”*** 10th Biennial Workshop on Organometallic Vapor Phase Epitaxy, San Diego, CA, March 12, 2001.

Maslar, J.E., ***“Non-Destructive, Non-Contact Optical Measurement of Majority Carrier Properties in Compound Semiconductors,”*** Compound Semiconductor Manufacturing Expo, Boston, MA, July 10, 2001.

Mattingly, G.E., ***“Current Status of the New CIPM Working Group for Fluid Flow,”*** Working Group Chairmen meeting of the Consultative Committee for Mass and Related Quantities, NPL, Teddington, United Kingdom, October 12, 2000.

Mattingly, G.E., ***“The New CIPM Working Group for Fluid Flow: Strategies, Structures, Schedules, and Status,”*** Measurement Science Conference, Anaheim, CA., January 19, 2001.

Mattingly, G.E., ***“The New CIPM Working Group for Fluid Flow: Strategies, Structures, Status, and Schedules,”*** Measurement of Fluid Flow in Closed Conduits Meeting of the ASME, Gaithersburg, MD, April 19, 2001.

Mattingly, G.E., ***“Improving the Acceptability of Flow Measurements,”*** American Society of Mechanical Engineers Spring Meeting, New Orleans, LA, May 30, 2001. Invited

Mattingly, G.E., ***“Establishing the Degree of Equivalence of National Flow Measurement Standards Maintained by the National Metrology Institutes,”*** Flow 2001, Prague, Czech Republic, June 19, 2001.

Mattingly, G.E., ***“The New CIPM Working Group for Fluid Flow: Objectives, Strategies, Status, and Schedules,”*** NCSLI Conference, Washington, DC, August 1, 2001.

Mattingly, G.E., ***“Improving the Acceptability of Flow Measurements,”*** ISA/IMEKO Conference, Millennium Series, Houston, TX, Sept. 11, 2001. Invited

Meyer, C.W., ***“Uncertainty Budgets for SPRT Calibrations at the Defining Fixed Points,”*** CCT Working Group 3/Euromet Workshop on Uncertainties in Measurement and Calibration Measurement Capabilities (CMCs) in the Field of Thermometry, Berlin, Germany, February 5, 2001.

Moldover, M.R., ***“Standards of Temperature, Pressure, and Transport Properties from Ab Initio Calculations for Helium,”*** University of Delaware, Physics Dept., Newark, DE, December 8, 2000. Invited

Pipino, A. C., ***“Evanescent Wave Cavity Ring-Down Spectroscopy for Trace Water Detection,”*** SPIE Conference on Advanced Environmental and Chemical Sensing Technology, Boston, MA, November 5, 2000.

Pipino, A.C., ***“Evanescent Wave Cavity Ring-Down Spectroscopy,”*** IFPAC-2001, Amelia Island, FL, January 24, 2001. Invited

Pipino, A.C., ***“Evanescent Wave Cavity Ring-Down Spectroscopy,”*** DOW Chemical Corporation, Freeport, TX, March 21, 2001. Invited

Presser, C., ***“Highlights of the NIST Benchmark Spray Combustion Database,”*** John Zink Company, Tulsa, OK, March 6, 2001. Invited

Presser, C., ***“Measurements and Numerical Predictions of Liquid Agent Dispersal Around Solid Obstacles,”*** Halon Optics Technical Working Conference, Albuquerque, NM, April 24, 2001.

Presser, C., ***“Burst Splitting Detection in Phase Doppler Interferometry,”*** 14th Annual Conference on Liquid Atomization and Spray Systems, 14th Annual Conference on Liquid Atomization and Spray Systems, Dearborn, MI, May 22, 2001.

Presser, C., ***“Characterization of the Inlet Air for the NIST Benchmark Spray Combustion Database,”*** 14th Annual Conference on Liquid Atomization and Spray Systems, Dearborn, MI, May 23, 2001.

Ripple, D.C., ***“Variations in the Thermoelectric Behavior of Palladium Following Heat Treatment,”*** TEMPMEKO 2001, Berlin, Germany, June 19, 2001.

Ross, D.J., ***“Measurement and Control of Electroosmotic Flow in Plastic Microchannels,”*** American Physical Society, Washington, DC, November 19, 2000.

Ross, D.J., ***“Design, Fabrication and Characterization of Plastic Microfluidic Systems,”*** IFPAC, Amelia Island, FL, Jan 21, 2001.

Savage, N.O., ***“Sol-Gel Tin-Oxide Gas Sensors for the Detection of Trichloroethylene,”*** Mid-Atlantic Regional Meeting of the American Chemical Society, Towson, MD, May 31, 2001.

Scace, G.E., ***“Uncertainty of the NIST Low Frost-Point Humidity Generator,”*** TEMPMEKO 2001, Berlin, Germany, June 21, 2001.

Schmidt, J.W., ***“A Primary Dead-Weight Tester for Pressures (35-175) kPa in Gage Mode,”*** National Physical Laboratory, New Delhi, India, February 10, 2001.

Semancik, S., ***“Efficient Microarray Studies of Temperature-Dependent Materials Processing and Performance,”*** NIST Non-Contact Thermometry National Workshop, NIST, Gaithersburg, MD, October 16, 2000.

Semancik, S., ***“Microarray Studies of the Formation and Properties of Oxide Films and Metal/Oxide Interfaces,”*** 2nd Intl. Workshop on Oxide Surfaces, Taos, NM, January 15, 2001. Invited

Semancik, S., ***“Microarray Studies for Efficient Processing, Testing, and Optimization of Sensing Materials,”*** 199th Meeting of the Electrochemical Society, Washington, DC, March 27, 2001.

Semancik, S., ***“Development of an Application-Tunable Gas Microsensor Array Technology,”*** Workshop on Aircraft Fire Detection, NIST, Gaithersburg, MD, March 29, 2001. Invited

Semancik, S., ***“Microarray Studies of Processing and Gas Sensing Performance for Oxide Films,”*** 103rd Annual Meeting of the American Ceramics Society, Indianapolis, IN, April 24, 2001. Invited

Semancik, S., ***“Microhotplate Array Studies of the Processing and Performance of Gas Sensing Thin Films,”*** Industrial Candidates Meeting of the NIST Combinatorial Methods Center, Gaithersburg, MD, July 10, 2001.

Sobolewski, M.A., ***“Using Radio-Frequency Electrical Measurements as a Plasma Diagnostic,”*** 53rd Gaseous Electronics Conference, Houston, TX, October 25, 2000. Invited

Sobolewski, M.A., ***“Determining Ion Flux and Ion Energies from RF Electrical Measurements,”*** SEMATECH RF Plasma Processing Technology Forum, Sunnyvale, CA, November 1, 2000. Invited

Sobolewski, M.A., ***“Determining Ion Current and Ion Energies from Radio-Frequency Current and Voltage Measurements,”*** Plasma Etch Users Group of the Northern California Chapter of the American Vacuum Society, Santa Clara, CA, June 14, 2001. Invited

Steffens, K.L., ***“Planar Laser-Induced Fluorescence Investigation of Fluorocarbon Plasmas,”*** 47th Intl. Symp. of the American Vacuum Society, Boston, MA, October 3, 2000.

Steffens, K.L., ***“PLIF Investigation of CF₂ in Fluorocarbon Etching Plasmas with and without Si Wafers,”*** 53rd Annual Gaseous Electronics Conference, Houston, TX, October 26, 2000.

Strouse, G.F., ***“Thermometric Fixed Points, Resistance Thermometers, and Digital Thermometers,”*** 2001 Regional Measurement Assurance Program Training, Gaithersburg, MD, March 21-22, 2001.

Strouse, G.F., ***“New NIST Mercury Triple-Point Cells,”*** TEMPMEKO 2001, Berlin, Germany, June 19, 2001.

Strouse, G.F., ***“Small Fixed-Point Cells for Use in Dry Well Block Calibrators,”*** TEMPMEKO 2001, Berlin, Germany, June 21, 2001.

Strouse, G.F., ***“Investigation of the Non-Uniqueness of the ITS-90 in the Range 660 °C to 962 °C,”*** TEMPMEKO 2001, Berlin, Germany, June 21, 2001.

Tarlov, M.J., ***“New Approaches for Detecting Hybridization of Immobilized DNA,”*** Biomaterials-The New Frontiers: Biomedical, Bioelectric, Bioanalytical, University of Delaware, Newark, DE, October 20, 2000. Invited

Tarlov, M.J., ***“Molecular and Biomolecular Electronics Research at NIST,”*** 1st Intl. Conf. on Molecular Electronics and Bioelectronics (M&BE1), Hyogo, Japan, March 6, 2001. Invited

Taylor, C.J. and Semancik, S., "**Microhotplate Arrays as Microdeposition Substrates for Materials Exploration**," Poster Presentation, Gordon Research Conference on Chemistry of Electronic Materials, Connecticut College, New London, CT, June 2001.

Tew, W. L. , "**Stable Isotope Geochemistry and the ITS-90**," 6th Italy-USA Bilateral Seminar, Torino, Italy, November 17, 2000.

Tew, W. L. , "**A New Approach to Johnson Noise Thermometry using a Josephson Quantized Voltage Source for Calibration**," TEMPMEKO 2001, Berlin, Germany, June 21, 2001. Invited

van Zee, R.D., "**Precision Measurements Using Laser Spectroscopy**," Center for Analysis of Structures and Interfaces, City College of New York, New York, NY, February 21, 2001.
Invited

van Zee, R.D., "**Molecular Electronics for Metrologists**," Annual DARPA Meeting, Santa Fe, NM, March 6, 2001.

van Zee, R.D., "**Moletronics at NIST**," Hewlett Packard Laboratories, San Jose, CA., May 29, 2001. Invited

Vaughn, C. D., "**Liquid in Glass Thermometry**," 2001 Regional Measurement Assurance Program Training, Gaithersburg, MD, March 21-22, 2001.

Whetstone, J.W., "**Solid State Chemical Sensor R&D**," IFPAC 2001, Amelia Island, FL, January 21-24, 2001.

Widmann, J.F. "**Doppler Burst Splitting: Implications for Droplet Cluster Studies**," 6th Intl. Congress on Optical Particle Characterization, Brighton, United Kingdom, April 2-5, 2001.

Widmann, J.F., "**Benchmark Database for Input and Validation of Spray Combustion Models: Inlet Air Characterization**," 39th AIAA Aerospace Sciences Meeting & Exhibit, Reno, NV, January 8-11, 2001.

Widmann, J.F., "**Effect of Burst-Splitting Events on Phase Doppler Interferometry Measurements**," 39th AIAA Aerospace Sciences Meeting & Exhibit, Reno, NV, January 8-11, 2001.

Yeh, T.T., "**An Intelligent Ultrasonic Flow Meter for Improved Flow**," IEEE Instrumentation and Measurement Technology Conference, Budapest, Hungary, May 21, 2001.

Yeh, T. T. "**Special Ultrasonic Flowmeters for In-Situ Diagnosis of Swirl and Cross Flow**," ASME Fluids Engineering Division Summer Meeting, New Orleans, LA, May 31, 2001.

3. Cooperative Research and Development Agreements (CRADAs) and Consortia

Advanced Ultrasonic Flow Meter, P.I. Espina

Daniel Industries, Inc. (CRADA)

High Temperature Microhotplate-Based Gas Sensor Arrays, S. Semancik

Boston Microsystems, Inc. (CRADA)

Investigation of the Detection of Halogens (Cl, Br, I) Carbon Monoxide and Carbon Dioxide (CO/CO₂), A.C.R. Pipino

Informed Diagnostics, Inc. (CRADA)

Research and Development in Advanced Semiconductor Manufacturing Technology, K.G. Kreider

International SEMATECH, Inc. (Consortia)

4. Patent Awards and Applications

Locascio, L.E., Ross, D.J., Tarlov, M.J., and Barker, S.L.R., “Polyelectrolyte Derivatization of Microfluidic Devices,” (NIST Docket No. 00-031, Patent Pending)

Johnson, T.J., Waddell, E.A., Ross, D.J., Locascio, L.E., “Surface Charge Modification Within Preformed Microchannels to Modulate Flow and Fabrication of Microarrays by Laser Ablation in Performed Polymer Microchannels,” (NIST Docket No. 01-005 and 01-006, Patent Pending)

Pipino, A.C.R., “Sensitive and Selective Chemical Sensor with Nanostructured Surfaces,” (NIST Docket No. 01-001, U.S. Provisional Patent Application Serial No. 60,260,501, Patent Pending)

Pipino, A.C.R., Hodges, J.T., “Sensitive and Selective Biosensor Employing Nanostructured Surfaces,” (NIST Docket No. 01-002, Patent Pending)

Ross, D.J., Locascio, L.E., “Simplified Methods for Electrokinetic Focusing in Microfluidic Devices,” (NIST Docket No. 01-029, Patent Pending)

5. SRM Activities

1750	Standard Platinum Resistance Thermometer (completed)
2114	ISO-Octane Liquid Density (completed)
211d	Toluene Liquid Density (completed)

6. SRD Activities

SRD 60 was converted into the web-based NIST ITS-90 Thermocouple Database (Project Leader: D.C. Ripple)

7. Calibrations/Special Tests

Company names to be added to those from OMS:

Ford Motor Company

Key Technologies

8. Committee Assignments

P.J. Abbott

AVS Recommended Practices Standards Committee
AVS Recommended Practices Subcommittee on Ionization Gauge Calibration

M.J. Carrier

NIST Information Technology Services Planning Team

R.E. Cavicchi

NIST Research Advisory Committee

R.W. Davis

Combustion Institute Program Review
Subcommittee

R.G. Driver

CSTL Diversity Committee

P.I. Espina

CIPM Consultative Committee on Mass and Related Quantities
WG Fluid Flow, Delegate
Gas Technology Institute MTAG
SIM TWG10: Flow and Related Quantities, Chair
NORAMET TC: Mechanical Area
ISA Flow Technology Committee, Chair

K.M. Garrity

ASTM E020 Temperature Measurement
ASTM SC.04 Thermocouples

K.A. Gillis

NIST Information Technology Services Planning Team
NIST Scientific Computing Working Group

P.H. Huang

SEMI Gases Committee
SEMI SC.02 Gases/Semiconductor
SEMI WG.02 Moisture Measurements in Gases
CIPM International Committee on Weights and Measures
CCT Consultative Committee on Thermometry
Chair, WG.06, Humidity Measurements and Standards
ASTM D022 Sampling and Analysis of Atmospheres
ASTM SC.09 ISO Tag for ISO/TC146 (Air Quality)
ASTM SC.11 Meteorology

J.J. Hurly

Semiconductor Equipment and Materials International (SEMI), International Standards, Gases Committee

Semiconductor Equipment and Materials International (SEMI), International Standards, Facilities Committee

W.S. Hurst

ASTM E013 Molecular Spectroscopy

ASTM SC.08 Raman Spectroscopy

K.G. Kreider

ASTM E020 Temperature Measurement

ASTM SC.02 Radiation Thermometry

ASTM SC.04 Thermocouples

A. Lee

CIPM Consultative Committee on Mass and Related Quantities, Delegate

Low Pressure Working Group

Medium Pressure Working Group

High Pressure Working Group

Combustion Institute, 27th Symposium (International) on Combustion, Program Review Subcommittee

SEMI, MFC Test Methods Task Force

SEMI, Pressure Measurement Task Force

NIST Diversity Advisory Board

CSTL Diversity Committee, Chair

J.P. Looney

AVS 43rd National Symposium Program Committee

AVS Vacuum Technology Division Executive Committee, Past Chair

AVS Recommended Practices Committee on Spinning Rotor Gages, Chair

CIPM Consultative Committee on Mass and Related Quantities, Low Pressure Working Group

G.E. Mattingly

ASME C008 Measurement of Fluid Flow in Closed Conduits

ASME SC.1 Determination of Uncertainties

ASME SC.06 Glossary of Terms for Flow Measurements

ASME SC.14 Flow Measurement by Weighing and Volumetric Techniques, Chair

ASME SC.15 Installation Effects

ASME SC.16 Vortex Shedding Flow Meters

ASME SC.19 Flow Conditioning

ASME SC.22 Critical Flow Meters

ASME SC.23 Small Bore Orifice Meters

IMEKO TC-09 Flow Measurement

US TAG for ISO/TC30 Measurement of Fluids Committee

C.W. Meyer

ASTM E020 Temperature Measurement
ASTM SC.03 Resistance Thermometers
ASTM SC.04 Thermocouples
ASTM SC.06 New Thermometers and Techniques
CIPM International Committee on Weights and Measures
CCT Consultative Committee on Thermometry
WG.03 International Traceability in Temperature Measurements

A.P. Müller

ASTM E037 Thermal Measurements
ASTM SC.01 Test Methods and Recommended Practices
ASTM WG.17 Thermal Expansion
AVS Recommended Practices Subcommittee on Thermal Conductivity Gauging
AVS C0009 Low Pressure Gauges
CIPM Consultative Committee on Mass and Related Quantities, Medium Pressure Working Group
CIPM Consultative Committee on Mass and Related Quantities, Low Pressure Working Group

M.R. Moldover

NASA Review Panel, Fluid Dynamics Discipline Working Group
NASA Review Panel, Fundamental Processes Discipline Working Group
CIPM International Committee on Weights and Measures
CCT Consultative Committee on Thermometry
WG.04 Thermodynamic Temperature Determination and Extension of ITS-90 to Lower Temperatures

D. Olson

NCSL Recommended Intrinsic/Derived Standards Practice Committee on Deadweight Pressure Gauges

C. Presser

AIAA Terrestrial Energy Systems Technical Committee
ASME HTD Committee on Heat Transfer in Energy Systems
ASME FACT Committee for Academic and Industrial Research
AIAA C004 Computational Fluid Dynamics Committee on Standards
ASTM E029 Particle Size Measurement
ASTM SC.03 International Cooperation on Terminology, Standards, and Methods
ASTM SC.04 Liquid Particle Measurement
ASTM SC.05 Reference Materials
Combustion Institute Program Review Subcommittee
ILASS Diesel and Automatic Spray Technical Committee
ILASS Computation and Modeling Technical Committee
JANAF Modeling and Simulation Subcommittee

D.C. Ripple

ASME C019 Performance Test Codes
ASME SC.03 Temperature Measurement, Chair
CIPM International Committee on Weights and Measures
CCT Consultative Committee on Thermometry
WG.03 International Traceability in Temperature Measurements
ASTM E020 Temperature Measurement
ASTM SC.04 Thermocouples, Secretary

J.W. Schmidt

CIPM Consultative Committee on Mass and Related Quantities, High Pressure Working Group
NCSL Recommended Intrinsic/Derived Standards
NCSL Dead-Weight Pressure Gauge RISP Committee

S. Semancik

Program Committee, 9th International Meeting on Chemical Sensors

G.F. Strouse

ASTM E020 Temperature Measurement
ASTM SC.03 Resistance Thermometers
ASTM SC.06 New Thermometers and Techniques
ASTM SC.07 Fundamentals in Thermometry
CIPM International Committee on Weights and Measures
CCT Consultative Committee on Key Comparisons
WG.08 Calibration and Measurement Capability
SIM MWG3 Thermometry

M.J. Tarlov

AVS Biochemical Interfaces Steering Committee
CSTL Colloquium Committee

W.L. Tew

ASTM E020 Temperature Measurement
ASTM SC.03 Resistance Thermometers
ASTM SC.06 New Thermometers and Techniques
ASTM SC.07 Fundamentals in Thermometry
IEC TC065 Industrial Process Measurements and Control
IEC SC65B Elements of Systems
IEC WG05 Temperature Sensors

R.D. van Zee

CSTL Colloquium Committee Chair

C.D. Vaughn

ASTM E020 Temperature Measurement
ASTM SC.05 Liquid-in-Glass Thermometers and Hydrometers, Secretary

T.T. Yeh

ASME MFC Subcommittee 9, Ultrasonic Flowmeters

ASME Fluids Engineering Division Summer Meeting, Section Co-Chair

9. Editorships

C. Presser

Combustion, Fire, and Computational Modeling of Industrial Combustion Systems, FACT-Vol. 23, HTD-Vol. 367, Am. Soc. Mech. Eng., NY (2000).

10. Seminars

November 1, 2000

Steve Doty and Doug Faison, NIST NVLAP

“NVLAP, An Overview of the Calibration Laboratory Accreditation Program” (Division Sponsor: D. Ripple)

November 2, 2000

Dr. Nicholae Bârsan, Institute of Physical & Theoretical Chemistry, University of Tubingen, Germany

“Thick Films Sensing Layers on Micro-Machined Substrates; A Novel Concept in Gas Sensing with Metal Oxides-Base Sensors” (Division Sponsor: S. Semancik)

November 16, 2000

Prof. Howard Fairbrother, Johns Hopkins University, Baltimore, MD

“Polymer Surface Reactions” (Division Sponsor: M. Tarlov)

November 16, 2000

Pamela Moore, University of Strathclyde and the National Engineering Laboratory, Glasgow, Scotland, UK

“Modeling of Installation Effects on Transit Time Ultrasonic Flow Meters in Circular Pipes” (Division Sponsor: P. Espina)

January 31, 2001

Sivaram P. Gogineni, Innovative Scientific Solutions, Inc., Dayton, OH

“Analysis of Transition Process in a Forced Wall Jet Using High Resolution PIV and 3D-DNS” (Division Sponsor: G. Mattingly)

March 14, 2001

Shawn P. Mulvaney, Dept. of Chemistry, Pennsylvania State University, University Park, PA

“SERS-Based Sensing Platforms: Multi-Layer Thin Films and Core-Shell Structures” (Division Sponsor: M. Tarlov)

April 10, 2001

Prof. Lawrence Sita, Dept. of Chemistry, University of Maryland, College Park, MD

“Control of Electron Transport via Self-Assembled Molecular Constructs,” (Division Sponsor: R. van Zee)

April 18, 2001

Reggie Williams, Rolls Royce, Indianapolis, IN

“Fluidic Injection Exhaust Nozzle Research,” (Division Sponsor: A. Johnson)

May 14, 2001

Dr. David Kittelson, Dept. of Mechanical Engineering, Univ. of Minnesota, Minneapolis, MN

“Particle Emissions from Diesel and Spark Ignition Engines,” (Division Sponsor: J. Whetstone)

May 16, 2001

Gloria Thomas, Dept. of Chemistry, Louisiana State University, Baton Rouge, LA
“Capillary and Microdevice Technology for Genetic Applications,” (Division Sponsor: M. Tarlov)

May 23, 2001

Karl Booksh, Dept. of Chemistry and Biochemistry, Arizona State University, Tempe, AZ
“Chemometrics for Instrument Design and Calibration,” (Division Sponsor: S. Semancik)

June 11, 2001

Michael Rider, Dept. of Chemistry, University of South Carolina, Columbia, SC
“Atomic Spectroscopy-Making Chemical Measurements at Temperatures as Hot as the Sun,”
(Division Sponsor: S. Semancik)

June 13, 2001

Kevin Denis, Northeastern University, Boston, MA
“A MEMS Scanning Fabry-Perot Interferometer with Feedback Control,” (Division Sponsor: S. Semancik)

June 18, 2001

Owen Thomas, Dept. of Chemistry, Johns Hopkins University, Baltimore, MD
“Understanding the Electronic Structure of Metal Containing Clusters through Mass Spectrometry and Negative Ion Photoelectron Spectroscopy,” (Division Sponsor: S. Semancik)

July 11, 2001

Hui Meng, Dept. of Mechanical & Aerospace Engineering, State University of New York, Buffalo, NY, “Development of Holographic Particle Image Velocimetry,” (Division Sponsor: G. Mattingly)

July 13, 2001

Anna Karion, The Aerospace Corporation, El Segundo, CA
“Shear Flows of Granular Materials,” (Division Sponsor: P. Espina)

July 17, 2001

Douglas C. Meier, Dept. of Chemistry, Texas A&M University, College Station, TX
“Infrared Reflection Absorption Spectroscopy: A Versatile Tool for Surface Analysis.”
(Division Sponsor: S. Semancik)

August 1, 2001

Alan Steele, Barry Wood, and Rob Douglas, National Research Council, Ottawa, Canada
“Probability Calculus for Metrology: Statistics, Equivalence, and the MRA” (Division Sponsor: G. Strouse)

11. Conferences/Workshops/Sponsored or Co-Sponsored Sessions

December 6, 2000

AVS Mid-Atlantic Chapter Meeting-Invited Speaker, Joseph Strosio, "A Low Temperature STM System for the Study of Quantum and Spin Electronic Systems," (P.J. Abbott)

March 26-30, 2001

Precision Thermometry Workshop, Gaithersburg, MD (D.C. Ripple)

April 18, 2001

Symposium on Fluid Science, Gaithersburg, MD (R.F. Berg, K.A. Gillis, & R.D. Mountain)

August 14-15, 2001

NIST Fixed-Point Cell Mini Workshop, Gaithersburg, MD (G.F. Strouse & S.L. Cooper)

September 17-20, 2001

Vacuum Gage Calibrations using the Spinning Rotor Gauge, Short Course given at Arnold Air Force Base, Manchester, TN (P.J. Abbott)