

Outputs and Interactions – Process Measurements Division

1. Publications

1a. Publications in Print

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 (III), p. 381-384 (2001).

Afridi, M.Y., Suehle, J.S., Zaghoul, M.E., Berning, D.W., Hefner, A.R., Semancik, S., and Cavicchi, R.E., ***“A Monolithic Implementation of Interface Circuitry for CMOS Compatible Gas-Sensor System,”*** Proc. 2002 IEEE Intl. Symposium on Circuits and Systems, Vol. 2, p. II/732 (2002).

Avedisian, C.T., Presser, C., and Gupta, A.K., ***“Observations of Soot in the Combustion of Methanol/Toluene Spray Flames,”*** J. of Propulsion and Power 4, Vol. 18, p. 781-787 (2002).

Barker, S.L., Tarlov, M.J., Ross, D.J., Waddell, E.A., and Locascio, L.E., ***“Fabrication, Derivatization and Applications of Plastic Microfluidic Devices,”*** Proc. of SPIE Intl. Soc. For Optical Engineering, Vol. 4205, p. 112-118, (2001).

Benz, S. P., Martinis, J. M., Nam, S. W., Tew, W. L. , White, D. R., ***“A New Approach to Johnson Noise Thermometry using a Josephson Quantized Voltage Source for Calibration”***, Proc. TEMPMEKO 2001, Vol. 1, p. 37-45 (2002).

Berg, R.F., and Tison, S.A., ***“Two Primary Standards for Low Flows of Gases,”*** Proc. of 5th International Symposium on Fluid Flow Measurement, on CD (2002).

Blevins, L., Fernandez, G., Mulholland, G., Davis, R.W., Moore, E.F., Steel, E., and Scott, J., ***“COSMIC: Carbon Monoxide and Soot in Microgravity Inverse Combustion,”*** Proc. 6th NASA Intl. Microgravity Combustion Workshop, NASA/CP-2001-210826, p. 177-180 (2001).

Campbell, S.A., He, B., Smith, R.C., Ma, T., Hoilen, N., Taylor, C.J., and Gladfelter, W.L., ***“Group IVB Metal Oxides High Permittivity Gate Insulators Deposited from Anhydrous Metal Nitrates,”*** Proc. IEEE Transactions on Electron Devices, Vol. 48, p. 2348-2356 (2001).

Cormier, J.G., Hodges, J.T., and Drummond, J.R., ***“On the Application of Quantitative Cavity Ring Down Spectroscopy to Measurements of Line Shapes and Continuum Absorption,”*** Proc. 16th Intl. Conf. Spectral Line Shapes Vol. 12, AIP Conf. Proc. 645, p. 401-412 (ed. Christina Back (2002)).

Crocker, D.S., Widmann, J.F., and Presser, C., ***“CFD Modeling and Comparison with Data from the NIST Reference Spray Combustor,”*** Proc. 2001 ASME Intl. Mechanical Engineering Conference & Exhibition, Vol. 1, HTD-24236 (on CD), Am. Soc. Mech. Eng. (2001).

DesJardin, P.E., Presser, C., Disimile, P.J., and Tucker, J.R., "***A Droplet Impact Model for Agent Transport in Engine Nacelles,***" Proc. 12th Halon Options Technical Working Conf. (HOTWC-2002), on CD, NIST Special Publication 984 (R.G. Gann, P.A. Peneke, eds.) (2002).

Driver, R.G., and Schmidt, J.W., "***NCSL Pressure Comparison at 0.69 MPa (1200 psi) and 1.4 MPa (200 psi),***" Proc. of NCSL Conf. 2000, on CD, (2002).

Fellmuth, B., Head, D., Pavese, F., Szmyra-Grzebyk, Tew, W. L. , "***Special Problems when Realizing the Triple Point e-H₂ as a Defining Fixed Point of the ITS-90,***" Proc. TEMPMEKO 2001, Vol. 1, p. 403-411 (2002).

Furukawa, G.T., and Strouse, G.F., "***Investigation of the Non-Uniqueness of the ITS-90 in the Range 660 °C to 962 °C,***" Proc. TEMPMEKO 2001, Vol. 1, p. 553-558 (2002).

Gillis, K.A., Hurly, J.J., and Moldover, M.R., "***Accurate Measurements of Thermodynamic and Transport Properties of Industrial Gases with Acoustic Resonators,***" Proc. 17th Intl. Congress on Acoustics, on CD (2002).

Green, D.S., Looney, J.P., and Rubloff, G.W., "***Application of CW-CRDS to Monitor and Control Chemical Vapor Deposition,***" Proc. IEEE/LEOS Summer Topicals 2000, Optical Sensing in Semiconductor Manufacturing, p. 15-16 (2001).

Gupta, A.K., Megerle, M., Charagundla, S.R., and Presser, C., "***Spray Flame Characteristics with Steam-Assisted Atomization,***" Advances in Chemical Propulsion: Science to Technology (G.D. Roy, Ed.), CRC Press, Boca Raton, FL, p. 261-274 (2001).

Hagwood, C.H. Miiller, A.P., and Lee, A., "***Bayesian Methods in Calibration,***" Proc. NCSL Intl. 2001 Workshop and Symposium, on CD, (2001).

Huang, P.H., Scace, G.E., and Hodges, J.T., "***Referencing Dilution-Based Trace Humidity Generators to Primary Humidity Standards,***" Proc. TEMPMEKO 2001, Vol. 1, p. 573-578 (2002).

Huang, P.H., "***Repeatability and Reproducibility Uncertainty in the Measurement of Trace Moisture Generated Using Permeation-Tubes,***" Proc. 4th Intl. Symposium on Humidity and Moisture, Vol. 1, p. 45-54 (2002).

Huang, P.H., "***The Moisture Content of the Air in Equilibrium with Certain Desiccants,***" Proc. 4th Intl. Symposium on Humidity and Moisture, Vol. 1, p. 108-113 (2002).

Hurly, J.J., "***Thermophysical Properties of Chlorine from Speed-of-Sound Measurements,***" Intl. J. of Thermophysics 23, p. 455-475 (2002).

Hurly, J.J., "***Thermophysical Properties of Nitrogen Trifluoride, Ethylene Oxide, and Trimethyl Gallium, from Speed-of-Sound Measurements,***" Intl. J. of Thermophysics 23, p. 667-696 (2002).

Hurst, W.S., Hodes, M.S., Bowers, W.J., Bean, V.E., Maslar, J.E., and Smith, K.A., ***“Optical Flow Cell and Apparatus for Solubility, Salt Deposition and Raman Spectroscopic Studies in Aqueous Solutions near the Water Critical Point,”*** J. of Supercritical Fluids 22, p. 157-166 (2002).

Indekeu, J.O., Posazhennikova, A.I., Ross, D., Bonn, D., and Meunier, J., ***“Crossover from First-Order to Critical Wetting in Methanol on Alkanes,”*** J. of Physics Condensed Matter 14 (19), p. 4777-4783 (2002).

Johnson, T.J., Ross, D., and Locascio, L.E., ***“Rapid Microfluidic Mixing,”*** Analytical Chemistry 74, Vol. 1, p. 45-51 (2002).

Kobata, T., Schmidt, J.W., and Olson, D.A., ***“Characterization of a Controlled-Clearance Piston Gauge using the Heydemann-Welch Model,”*** Proc. of the Society of Instrument and Control Engineers, on CD (2002).

Kreider, K.G., Allen, D.W., Chen, D.H., DeWitt, D.P., Meyer, C.W., and Tsai, B.K., ***“Effects of Wafer Emissivity on Lightpipe Radiometry in RTP Tools,”*** Proc. 9th Intl. Conf. on Advanced Thermal Processing of Semiconductors, p. 163-168 (2001).

Kreider, K.G., Chen, D.H., DeWitt, D.P., Kimes, W.A., Meyer, C.W., and Tsai, B.K., ***“Wafer Emissivity Effects on Lightpipe Radiometry in RTP,”*** ECS Proc., Rapid Thermal Processing Technologies III, Vol. 2002-11, p. 273-281 (2001).

Mangum, B.W., Furukawa, G.T., Kreider, K.G., Meyer, C.W., Moldover, M.R., Ripple, D. C., Strouse, G.F., Tew, W.L., Saunders, R.D., Johnson, B.C., Yoon, H.W., and Gibson, C.E., ***“The Kelvin and Temperature Measurements,”*** J. of Res. of the National Institute of Standards and Technology 106, p. 105-149 (2001).

Mangum, B.W., Strouse, G.F., and Guthrie, W.F., ***“CCT-K3: Key Comparison of Realizations of the ITS-90 over the Range 83.8058 K to 933.473 K,”*** NIST Technical Note 1450, p. 393 (2002)

Mangum, B.W., Strouse, G.F., Guthrie, W.F., Pello, R., Stock, M., Renaot, E., Hermier, Y., Bonnier, G., Marcarino, P., Gam, K.S., Kang, K.H., Kim, Y.-G., Nicholas, J.V., White, D.R., Dransfield, T.D., Duan, Y., Qu, Y., Connolly, J., Rusby, R.L., Gray, J., Sutton, G.J.M., Head, D.I., Hill, K.D., Steele, A., Nara, K., Tegeler, E., Noatsch, U., Heyer, D., Fellmuth, B., Thiele-Krivoj, B., Duris, S., Pokhodun, A.I., Moiseeva, N.P., Ivanova, A.G., de Groot, M. J., and Dubbeldam, J. F., ***“Summary of Comparison of Realizations of the ITS-90 Over the Range 83.8058 K to 933.473 K: CCT Key Comparison 3,”*** Metrologia 39, p. 179-205 (2002).

Maslar, J.E., Hurst, W.J., Bowers, W.J., and Hendricks, J.H., ***“In-Situ Raman Spectroscopic Investigation of Zirconium-Niobium Alloy Corrosion Under Hydrothermal Conditions,”*** J. of Nuclear Materials 298, p. 239-247 (2001).

Maslar, J.E., Hurst, W.S., Bowers, W.J., and Hendricks, J.H., and Aquino, M.I., ***“In Situ Raman Spectroscopic Investigation of Nickel Hydrothermal Corrosion,”*** *Corrosion* 58, No. 3, p. 225-231 (2002).

Maslar, J.E., Hurst, W.S., Bowers, W.J., and Hendricks, J.H., ***“In Situ Raman Spectroscopic Investigation of Stainless Steel Hydrothermal Corrosion,”*** *Corrosion* 58, No. 9, p. 739-747 (2002).

Maslar, J.E., Hurst, W.S., Kremer, D.M., and Ehrman, S.H., ***“In Situ Gas-Phase Optical Measurements of Silane Decomposition in a Thermal Chemical Vapor Deposition Reactor,”*** *Electrochemical Society Proc.*, Vol. 2001-13, p. 168-175 (2001).

Mattingly, G.E., ***“Flow Measurement Proficiency Testing,”*** *Flow Measurement-Practical Guides for Measurement and Control*, 2nd Edition (Spitzer, D.W. editor) ISA-The Instrumentation, Systems, and Automation Society, p. 761-778 (2001).

Meyer, C.W., ***“Effects of Extraneous Radiation on the Performance of Lightpipe Radiation Thermometers,”*** *Proc. TEMPMEKO 2001*, Vol. 2, p. 937-942 (2002).

Miiller, A.P., Bergoglio, M., Bignell, N., Fen, K.M.K., Hong, S.S., Jousten K., Mohan, P., Redgrave, F.J., and Sardi, M., ***“Final Report on Key Comparison CCM. P-K4 of Absolute Pressure Standards from 1 Pa to 1000 Pa,”*** *Metrologia* 39, Tech. Suppl. 07001 (2002)

Miiller, A.P., Cignolo, G., Fitzgerald, M.P., and Perkin, M.P., ***“Final Report on Key Comparison CCM. P-K5 of Differential Pressure Standards from 1 Pa to 1000 Pa,”*** *Metrologia* 39, Tech. Suppl. 07002 (2002).

Olsen, K.G., Ross, D.J., and Tarlov, M.J., ***“Immobilization of DNA Gel Plugs in Microfluidic Channels,”*** *Analytical Chemistry* 74, Vol. 6, p. 1436-1441 (2002).

Olson, D.A., and Kobata, T., ***“Automating the Calibration of Two Piston Gage Pressure Balances,”*** *Proc. 2002 NCSL Intl. Workshop & Symposium*, on CD (2002).

Olson, D.A., ***“Capabilities and Uncertainties of the Piston Gage Pressure Standards at NIST,”*** *Proc. Advances in High Pressure Science and Technology*, p. 21-26 (2001).

Panchapakesan, B., Devoe, D., Cavicchi, R.E., and Semancik, S., ***“Nanoparticle Engineering and Control of Tin Oxide Microstructures for Chemical Microsensor Applications,”*** *J. of Nanotechnology* 12, Vol. 3, p.336-349 (2001).

Pipino, A.C., and Hodges, J.T., ***“Evanescent Wave Cavity Ring-Down Spectroscopy: A Future Technology for Process Sensing,”*** *J. of Process Analytical Chemistry* 7 (1), p. 21 (2002).

Presser, C., Widmann, J.F., and Papadopoulos, G., ***“Liquid Agent Transport Around Solid Obstacles,”*** *Proc. 12th Halon Options Technical Working Conf. (HOTWC-2002)*, on CD, NIST Special Publication 984 (R.G. Gann, P.A. Peneke, eds.) (2002).

Presser, C., Widmann, J.F., DesJardin, P.E., and Gritzko, L.A. "**Measurement and Numerical Prediction of Homogeneous Turbulent Flow over a Cylinder: A Baseline for Droplet-Laden Flow Studies**," AIAA 2002-0905, Am. Inst. Aero. Astro. (2002).

Pugmire, D.L., Waddell, E.A., Haasch, R., Tarlov, M.J., and Locascio, L.E., "**Surface Characterization of Laser Ablated Polymers Used for Microfluidics**," Analytical Chem. 74, Vol. 4, p. 871-878 (2002).

Ripple, D.C., and Burns, G.W., "**Variations in the Thermoelectric Behavior of Palladium Following Heat Treatment**," Proc. TEMPMEKO 2001, Vol. 1, p. 61-66 (2002)

Ripple, D.C., Tew, W.L., and Strouse, G.F., "**The Role of High-Purity Noble Metals in Precision Thermometry**," Proc. SICON 01: Sensors for Industry Conf., p. 12-17 (2001).

Ripple, D.C., and Burns, G.W., "**Standard Reference Material 1749: Au/Pt Thermocouple Thermometer**," NIST SP-260-134 (2002).

Ripple, D.C., "**Review of Traceable Temperatures and Temperature Measurement**," IEEE Instrumentation and Measurement Magazine (2002).

Ross, D., Gaitan, M., and Locascio, L.E., "**Temperature Measurement and Control in Microfluidic Systems**," Proc. of Micro Total Analysis Systems 2001, p. 239-241 (2001).

Ross, D., and Locascio, L.E., "**Microfluidic Temperature Gradient Focusing**," Analytical Chemistry 75 (11), p. 2556-2564 (2002).

Scace, G.E., and Hodges, J.T., "**Uncertainty of the NIST Low Frost-Point Humidity Generator**," Proc. TEMPMEKO 2001, Vol. 1, p. 597-602 (2002).

Sobolewski, M.A., Wang, Y.C., and Goyette, A.N., "**Measurements and Modeling of Ion Energy Distributions in High-Density, Radio-Frequency Biased CF₄ Discharges**," J. of Applied Physics 91 (10), p. 6303-6314 (2002).

Strouse, G.F. and Lippiatt, J., "**Small Fixed-Point Cells for Use in Dry Well Block Calibrators**," Proc. TEMPMEKO 2001, Vol. 2, p. 783-788 (2002).

Strouse, G.F., "**New NIST Mercury Triple-Point Cells**," Proc. TEMPMEKO 2001, Vol. 1, p. 453-458 (2002).

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, Vol. 4205, p. 240-247 (2001).

van Zee, R.D., and Looney, J.P., "**Preface to Cavity-Enhanced Spectroscopies**," Cavity-Enhanced Spectroscopies, Academic Press (2002).

Vaughn, C.D., and Strouse, G.F., “*Overview of the NIST Industrial Thermometer Calibration Laboratory*,” Proc. TEMPMEKO 2001, Vol. 2, p. 629-634 (2002).

Widmann, J.F., Presser, C., and Leigh, S.D., “*Extending the Dynamic Range of Phase Doppler Interferometry Measurements*,” Atomization and Sprays 4, Vol. 18, p. 781-787 (2002).

Widmann, J.F., Presser, C., and Leigh, S.D., “*Improving Phase Doppler Volume Flux Measurements in Low Data Rate Applications*,” Measurement Science Technology 12, p. 1180-1190 (2001).

Widmann, J.F., Presser, C., and Leigh, S.D., “*Identifying Burst Splitting Events in Phase Doppler Interferometry Measurements*,” Atomization and Sprays 6, Vol. 11, p. 711-733 (2001).

Widmann, J.F., and Presser, C., “*A Benchmark Experimental Database for Multiphase Combustion Model Input and Validation*,” Combustion and Flame 1 and 2, Vol. 129, p. 47-86 (2002).

Widmann, J.F., and Presser, C., “*Measuring Droplet Arrival Times using Phase Doppler Interferometry*,” Proc. 15th Annual Conf. on Liquid Atomization and Spray Systems (ILASS Americas '02), p. 231-235 (2002).

Wright, J. D., “*Laboratory Primary Standards, in Flow Measurement: Practical Guides for Measurement and Control*,” 2nd edition, Spitzer, D. W., ed., The Instrumentation, Systems, and Automation Society, Research Triangle Park, North Carolina, p. 731-760, (2001).

1b. Manuscripts in review

(manuscripts that have been approved by the NIST internal review process and submitted for publication, but have not yet appeared in print)

Berg, R.F., and Cignolo, G., “*NIST-IMGC Comparison of Gas Flows Below 1 Liter per Minute*,” Metrologia (in press).

Ehrlich, C.D., and Schmidt, J.W., “*IUPAC Experimental Thermodynamics Volume VI: Measurement of the Thermodynamic Properties of Single Phases: CH. 3 Pressure; b) Piston Gauges*,” Experimental Thermodynamics Intl. Union of Pure and Applied Chemistry (in press).

Hurly, J.J., and Moldover, M.R., “*Progress Report: Thermophysical Properties of Semiconductor Manufacturing Process Gases*,” Proc. of SEMICOM West 2000: Workshop on Gas Distribution Systems (in press).

Hurly, J.J., “*The Thermophysical Properties of Process Gases via Acoustics*,” Semiconductor Intl. (in press).

Kreider, K.G., Kimes, W.A., Meyer, C.W., Ripple, D.C., Tsai, B.K., Chen, D.H., and DeWitt, D.P., "**Calibration Radiation Thermometers in Rapid Thermal Processing Tools using Si Wafers with Thin Film Thermocouples**," Proc. 8th Symposium on Temperature (in press).

Kremer, D.M., Davis, R.W., Moore, E.F., Maslar, J.E., Burgess, D.R., and Ehrman, S.H., "**An Investigation of Particle Dynamics in a Rotating Disk Chemical Vapor Deposition Reactor**," J. of the Electrochemical Society (in press).

Kremer, D.M., Davis, R.W., Moore, E.F., and Ehrman, S.H., "**A Numerical Investigation of the Effects of Gas-Phase Particle Formation on Silicon Film Deposition from Silane**," J. of Crystal Growth (in press).

Kremer, D.M., Davis, R.W., Moore, E.F., and Ehrman, S.H., "**A Numerical Investigation of Aerosol Dynamics in a Wall-less Reactor**," Aerosol Science and Technology (in press).

Lehman, S.Y., Bertness, K.A., and Hodges, J.T., "**Detection of Trace Water in Phosphine with Cavity Ring-Down Spectroscopy**," J. of Crys. Growth (in press).

Meyer, C.W., and Tew, W.L., "**The NIST Low Temperature ITS-90 Realization and Calibration Facilities**," Temperature: Its Measurement and Control in Science and Technology (in press).

Moldover, M.R., Marsh, K.N., Barthel, J.M., and Buchner, R., "**Relative Permittivity and Refractive Index**," Intl. Union of Pure and Applied Chemistry (in press).

Nam, S.W., Benz, S.P., Martinis, J.M., Dresselhaus, P., Tew, W.L., and White, D.R., "**A Ratiometric Method for Johnson Noise Thermometry Using a Quantized Voltage Noise Source**," Temperature: Its Measurement and Control in Science and Industry (in press).

Nam, S.W., Benz, S., Dresselhaus, P., Tew, W.L., White, D.R., and Martinis, J.M., "**Johnson Noise Thermometry Measurements Using a Quantized Voltage Noise Source for Calibration**," IEEE Transactions on Instrumentation and Measurement (in press).

Ross, D., and Locascio, L.E., "**Temperature Gradient Focusing**," Proc. of MicroTas 2002 Conference (in press).

Semancik, S. and Cavicchi, R.E., "**Micromachined Arrays as Sensor Platforms and Materials Research Tools**," Proc. of 3rd Intl. Aviation Security Technology Symp. (in press).

Steffens, K.L., and Sobolewski, M.A., "**The Effect of Changing the Electrode Gap on the Spatial and Electrical Properties of O₂/CF₄ Plasmas**," J. of Vacuum Science and Technology (in press).

Strouse, G.F., and Hill, K.D., "**Performance Assessment of Resistance Ratio Bridges used for the Calibration of SPRTs**," Temperature: Its Measurement and Control in Science and Industry, 7, (in press).

Strouse, G.F., ***“Internal Measurement Assurance for the NIST Realization of the ITS-90 from 83.8 K to 1234.93 K,”*** Temperature: Its Measurement and Control in Science and Industry (in press).

Tarlov, M.J., and Steel, A.B., ***“DNA-Based Sensors,”*** Biomolecular Films: Design, Function, and Applications (in press).

Taylor, C.J. and Semancik, S., ***“The Use of Microhotplate Arrays as Microdeposition Substrates for Materials Exploration,”*** Chemistry of Materials 14 (4), p. 1671-1677 (2002).

Tew, W.L., Steele, A.G., and Pavese, F., ***“Archival and Theoretical Considerations for Isotopic Dependence in the e-H₂ Fixed Points,”*** Proc. TEMPMEKO 2001, Vol. 1, p. 429-435 (2002).

Tew, W.L., and Meyer, C.W., ***“Recent Results of NIST Realizations of the ITS-90 Below 84 K,”*** Temperature: Its Measurement and Control in Science and Industry (in press).

Wright, J.D., and Johnson, A., ***“Design and Uncertainty Analysis for a PVTt Gas Flow Standard,”*** J. of Res. of the National Institute of Standards and Technology (in press).

Yeh, T.T., Johnson, A., Espina, P.I., and Yende, N., ***“Error Free Liquid Flow Diverters for Calibration Facilities,”*** Proc. ASME FEDSM'02 (in press).

2. Talks

Abbott, P.J., ***“Status Report for Key Comparison CCM.P-K3 in the Range 10⁻⁶ to 10⁻³ Pa,”*** BIPM, Sevres, France, May 21, 2002.

Abbott, P.J., ***“Apparatus for the Calibration of Gaseous Leaks into Atmospheric Pressure,”*** National Conference of Standards Laboratories Intl. (NCSLI) Conference, San Diego, CA, August 7, 2002.

Berg, R.F., ***“New Methods to Measure Gas Flow Rates at the National Institute of Standards and Technology,”*** Instituto de Metrologia “Gustavo Colonnetti,” Torino, Italy, October 1, 2001.

Berg, R.F., ***“Transfer Standard for Low Rates of Gas Flow,”*** AVS 48th Intl. Symposium, San Francisco, CA, November 1, 2001.

Berg, R.F., ***“Polymer-Like Viscosity Near the Critical Point of Xenon,”*** University of Virginia, Physics Dept., November 8, 2001. Invited.

Berg, R.F., ***“Two Primary Standards for Low Flows of Gases,”*** 5th Intl. Symposium on Fluid Flow Measurement, Washington, DC, April 8, 2002. Invited.

Berg, R.F., ***“Quartz Capillary Transfer Standard for Gas Flows Below 1 SLM,”*** 5th Intl. Symposium on Fluid Flow Measurement, Washington, DC, April 9, 2002. Invited.

Berg, R.F., "***Oscillations of a Cylinder in a Shear-Thinning, Viscoelastic Fluid,***" Poster Presentation, Thermo-2002, University of Maryland, College Park, MD, April 19, 2002.

Berg, R.F., "***Polymer-Like Viscosity Near the Critical Point of Xenon,***" Center for Nonlinear Science, Los Alamos National Laboratory, Los Alamos, NM, April 29, 2002.

Berg, R.F., "***Oscillations of a Cylinder in a Shear-Thinning, Viscoelastic Fluid,***" Center for Nonlinear Science, Los Alamos National Laboratory, Los Alamos, NM, April 29, 2002.

Cavicchi, R.E., "***Differential Scanning Microcalorimeter,***" 9th Intl. Meeting on Chemical Sensors, Boston, MA, July 7, 2002.

Cavicchi, R.E., "***Sensing in the Liquid Phase by Bubble Nucleation,***" 9th Intl. Meeting on Chemical Sensors, Boston, MA, July 8, 2002.

Chang, R.F., "***Stability of the Effective Accommodation Coefficient of Spinning Rotor Gauges,***" National Conference of Standards Laboratories Intl. (NCSLI) Conference, San Diego, CA, August 7, 2002.

Chang, R.F., and Looney, J.P., "***Analysis of Flow Rate and its Uncertainties for the Bellows Flowmeter,***" National Conference of Standards Laboratories Intl. (NCSLI) Conference, San Diego, CA, August 7, 2002.

Cormier, J.G., "***Measuring Spectral Line Shapes and Continuum Absorption Using Cavity Ring-Down Spectroscopy,***" 16th Intl. Conf. on Spectral Line Shapes, Berkley, CA, June 4, 2002. Invited.

Cormier, J.G., "***Accurate Water Vapor Continuum Absorption Coefficients Obtained using Cavity Ring-Down Spectroscopy,***" NATO Advanced Research Workshop, Fonterraud, France, April 30, 2002. Invited.

Espina, P. I., "***SIM Metrology Working Group for Flow and Related Quantities,***" MSC, Anaheim, CA, January 25, 2002. Invited.

Espina, P. I., "***WGFF Air Flow (Low Pressure),***" 3rd WGFF Meeting, Arlington, VA, April 11, 2002. Invited.

Espina, P. I., "***Retos que Enfrenta la Comunidad Metrológica Internacional en Materia de Medición de Flujo de Fluidos,***" Primer Seminario Latinoamericano de Medición de Flujo de Hidrocarburos, Querétaro, Mexico, May 27, 2002. Invited.

Espina, P. I., "***Round-Robin Testing Project to Review the Performance of North American Meter Calibration Facilities,***" CEESI, Ventura, IA, June 12, 2002. Invited.

Hodges, J.T., "***Development of a Frequency-Locked Cavity Ring-Down Spectroscopy System for Measurements of Trace H₂O,***" George Washington University Chemistry Seminar, Washington, DC, November 2, 2001. Invited.

Hodges, J.T., "***Single-Mode Cavity Ring-Down Spectroscopy of Trace H₂O in High-Purity Gases,***" Pittcon 2002, New Orleans, LA, March 18, 2002.

Hodges, J.T., "***Measurement of H₂O Concentration in High-Purity Process Gases using Single-Mode Cavity Ring-Down Spectroscopy,***" Semicon West 2002, San Francisco, CA, July 23, 2002.

Huang, P.H., "***Repeatability and Reproducibility Uncertainty in the Measurement of Trace Moisture Generated by Permeation Tubes,***" 4th Intl. Symposium on Humidity and Moisture, Taipei, Taiwan, September 16, 2002.

Huang, P.H., "***The Moisture Content of the Air in Equilibrium with Certain Desiccants,***" 4th Intl. Symposium on Humidity and Moisture, Taipei, Taiwan, September 18, 2002.

Huang, T.H., Cavicchi, R.E., and Tarlov, M.J., "***Surface Immobilized DNA Probes on Silicon Microhotplates and Their Applications in DNA Analysis,***" Minisymposium on NIST Research in the Biological Sciences, Gaithersburg, MD, November, 7, 2001. Invited.

Hurly, J.J., "***Thermophysical Properties of Helium from Theory: A New Standard,?***" AICHE Annual Meeting, Reno, NV, November 7, 2001.

Hurst, W.S., "***NIST Intensity Standards for Raman Spectroscopy,***" Intl. Forum for Process Analytical Chemistry (IFPAC), San Diego, CA, January 25, 2002. Invited.

Hurst, W.S., "***In Situ Raman Spectroscopic Investigation of Corrosion of Selected Metals and Alloys Under Hydrothermal Conditions,***" 5th Intl. Conf. on Solvothermal Reactions, East Brunswick, NJ, July 23, 2002. Invited.

Johnson, A. N., "***Temperature Characterization of the 25.9 m³ PVTt Primary Standard,***" 5th Intl. Symposium on Fluid Flow Measurement (5th ISFFM), Arlington, VA, April 9, 2002.

Kreider, K.G., "***Wafer Emissivity Effects on Lightpipe Radiometry in RTP,***" 201st Electrochemical Society Meeting, Philadelphia, PA, June 15, 2002.

Kreider, K.G., "***Application of Thermocouple Wafers in RTP Temperature Measurements,***" 10th Intl. Conf. on Advanced Thermal Processing of Semiconductors, Vancouver, Canada, September 26, 2002.

Maslar, J.E., "***Structural Characterization of Homoepitaxial Gan Layers Using Raman Spectroscopy,***" Intl. Workshop on Bulk Nitride Semiconductors, Amazonas, Brazil, May 22, 2002.

Maslar, J.E., "***In Situ Characterization of Gas-Phase Nucleated Silicon Particles Formed via Silance Pyrolysis in a Thermal Chemical Vapor Deposition Reactor,***" Nanoparticles and Nanostructure through Vapor Phase Synthesis Conference, Pascoli, Italy, June 19, 2002.

Maslar, J.E., "***Some NIST Efforts in Support of Advanced IC Interconnect Development,***" University of Maryland, College Park, MD, July 17, 2002. Invited.

Maslar, J.E., ***“In Situ Raman Spectroscopic Investigation of Corrosion of Selected Metals and Alloys Under Hydrothermal Conditions,”*** Seoul National University, Seoul, Korea, August 22, 2002. Invited.

Maslar, J.E., ***“Non-Contact Determination of Free Carrier Concentration in N-Type GaSb and GaInAsSb,”*** 5th Intl. Conf. on Mid-Infrared Optoelectronic Materials and Devices, Annapolis, MD, September 9, 2002.

Mattingly, G.E., ***“CIPM Working Group for Fluid Flow-Plans & Progress,”*** Measurement Science Conference, Anaheim, CA, January 25, 2002. Invited.

Mattingly, G.E., ***“Flow Measurement Key Comparisons: Statistical Design & Analysis Basis for Multiple-Meter Transfer Standards,”*** Measurement Science Conference, Anaheim, CA, January 25, 2002.

Mattingly, G.E., ***“CIPM Working Group for Fluid Flow-Key Comparison Plans,”*** EUROMET Flow Measurement Committee Annual Meeting, Poitiers, France, March 7, 2002. Invited.

Mattingly, G.E., ***“CIPM Working Group for Fluid Flow-Plans & Progress,”*** 5th Intl. Symposium on Fluid Flow Measurement, Washington, DC, April 8, 2002. Invited.

Mattingly, G.E., ***“Flow Measurement Proficiency Testing for Establishing Traceability to National Flow Standards,”*** DoE Workshop on Instruments, Controls, and Human-Machine Interface, Gaithersburg, MD, May 16, 2002. Invited.

Mattingly, G.E., ***“CIPM Working Group for Fluid Flow-Key Comparison Plans and Status,”*** Consultative Committee for Mass and Related Quantities (CCM) Meeting, BIPM, Paris, France, May 23, 2002.

Mattingly, G.E., ***“CIPM Working Group for Fluid Flow: Plans, Progress and Reactions from BIPM,”*** Pigar Ruhrgas, Dorster, Germany, May 28, 2002. Invited.

Meyer, C.W., ***“Remote Temperature Measurements of Very Small Surfaces using Phosphor Crystals,”*** ASTM E20 Meeting, Dallas, TX, November 5, 2002. Invited.

Miiller, A.P., ***“Overview of Two CCM Key Comparisons in Low Pressure (1 – 1000 Pa) – How Good are MEMS Sensors as Transfer Standards?”*** 48th IVC/AVS Intl. Symposium, San Francisco, CA, November 1, 2001.

Miiller, A.P., ***“Key Comparisons CCM.P-K4 and CCM.P-K5 of Pressure Standards in the Range 1 Pa – 1000 Pa,”*** BIPM, Sevres, France, May 21, 2002.

Moldover, M.R., ***“Acoustic Resonators for Measuring the Thermodynamic and Transport Properties of Process Gases and for Calibrating Thermometers,”*** 142nd Meeting of the Acoustical Society of America, Ft. Lauderdale, FL, December 3, 2001. Invited

Olson, D., and Kobata, T., ***“Automating the Calibration of Two Piston Gage Pressure Balances,”*** National Conference of Standards Laboratories Intl. (NCSLI) Conference, San Diego, CA, August 7, 2002.

Pipino, A.C.R., "***Ultra-High-Q Minicavity Chemical Sensors***," SPIE Photonic West, San Jose, CA, January 23, 2002. Invited.

Pipino, A.C.R., "***Chemical Sensing With Miniature High-Finesse Optical Resonators***," Spectroscopy Society of Pittsburgh, Duquesne University, PA, March 20, 2002. Invited.

Pipino, A.C.R., "***Evanescent Wave Cavity Ring-Down Spectroscopy***," Georgetown University, Dept. of Chemistry, Washington, DC, March 12, 2002. Invited.

Pipino, A.C.R., "***Evanescent Wave Cavity Ring-Down Spectroscopy***," Pittcon, New Orleans, LA, March 22, 2002. Invited.

Presser, C., Widmann, J.F., DesJardin, P.E., and Gritzo, L.A., "***Measurement and Numerical Prediction of Homogeneous Turbulent Flow over a Cylinder: A Baseline for Droplet-Laden Flow Studies***," 40th AIAA Aerospace Sciences Meeting & Exhibit, Reno, NV, January 16, 2002.

Presser, C., "***Liquid Agent Dispersal Around Solid Obstacles***," 12th Halon Options Technical Working Conference (HOTWC-2002), Albuquerque, NM, May 1, 2002.

Ripple, D.C., "***Progress in Primary Acoustic Thermometry at NIST: 273K to 505K***," NCSLI 2002 Workshop and Symposium, San Diego, CA, August 6, 2002.

Ross, D.J., "***Temperature Gradient Focusing***," Labautomation 2002, Palm Springs, CA, January 29, 2002. Invited.

Ross, D.J., "***Temperature Measurement and Control in Microfluidic Systems***," Micro Total Analysis Systems 2001, October 23, 2001.

Ross, D.J., "***Temperature Gradient Focusing***," SmallTalk 2002, San Diego, CA, July 29, 2002.

Savage, N.O., Gillen, G., Tarlov, M.J., Cavicchi, R.E., Semancik, S., "***Organosilane-templated Deposition of Metal Oxide Sensing Films on Microhotplates***," 9th Intl. Meeting on Chemical Sensors, Boston, MA, July 7-10, 2002.

Scace, G.E., "***Using Saturator-Based Primary Trace Humidity Standards to Calibrate Water Permeation Tubes***," Pittcon 2002, New Orleans, LA, March 18, 2002.

Semancik, S., "***Application-Tunable Microsensors: Multicomponent Research for New Measurement Technology***," 48th Intl. Symposium of the American Vacuum Society and 11th Intl. Conference on Solid Surfaces," San Francisco, CA, October 28, 2001.

Semancik, S., "***Micromachined Arrays as Sensor Platforms and Materials Research Tools***," 3rd Intl. Aviation Security Technology Symposium, Atlantic City, NJ, November 28, 2001.

Semancik, S., "***Development of MEMS-Based Microsensors for Chemical Agents***," 16th Intl. Forum for Process Analytical Chemistry (IFPAC), San Diego, CA, January 23, 2002.

Semancik, S., ***“The Use of Micromachined Arrays for Efficient Materials Processing/Performance Studies,”*** 4th Intl. Symposium on Combinatorial Approaches for New Materials Discovery, San Diego, CA, January 24, 2002.

Semancik, S., ***“The Use of MEMS Devices for Chemical Sensor Research,”*** Chemistry Colloquium, Naval Research Laboratory, Washington, DC, March 14, 2002.

Semancik, S., ***“Development of Thin Film MEMS Microsensors for Detecting Chemical Hazards,”*** American Vacuum Soc. Topical Conf. of Understanding & Operating in Threat Environments,” Monterey, CA, May 2, 2002.

Semancik, S., ***“Nanostructured Films for Chemical Sensing,”*** NIST Nanotechnology Open House, Gaithersburg, MD, June 20, 2002.

Semancik, S., ***“MEMS Device Platforms for Efficient Screening and Optimization of Sensing Film Microstructure,”*** 9th Intl. Mtg. On Chemical Sensors, Boston, MA, July 9, 2002.

Sobolewski, M.A., ***“Ion Energy Distributions in RF-Biased, High-Density Discharges in CF₄,”*** 54th Annual Gaseous Electronics Conference, University Park, PA, October 12, 2001.

Sobolewski, M.A., ***“Measurements and Models of Ion Energy Distributions in High-Density, Radio-Frequency-Biased CF₄/Ar Discharges,”*** American Vacuum Society 48th Intl. Symposium, San Francisco, CA, October 30, 2001.

Sobolewski, M.A., ***“Measurements and Models of Ion Energy Distributions in High-Density, Radio-Frequency-Biased CF₄ Discharges,”*** 4th Intl. Workshop on Fluorocarbon Plasmas, Grenoble, France, March 20, 2002.

Sobolewski, M.A., ***“Is There an Optimal Frequency for RF Substrate Bias in High-Density Plasma Reactors,”*** Plasma Etch Users Group of the Northern California Chapter of the American Vacuum Society, Santa Clara, CA, May 9, 2002. Invited.

Sobolewski, M.A., ***“Using Radio-Frequency Electrical Measurements as Plasma Diagnostic,”*** 29th Intl. Conference on Plasma Science, Banff, Canada, May 29, 2002.

Steffens, K.L., ***“Investigations in Fluorocarbon Plasmas using Planar Laser-Induced Fluorescence,”*** 54th Annual Gaseous Electronics Conference, University Park, PA, October 11, 2001. Invited.

Strouse, G.F., ***“Traceability,”*** ASTM E20 Meeting, Dallas, TX, November 5, 2002. Invited.

Tarlov, M.J., ***“DNA Immobilized in Two and Three Dimensions,”*** Department of Chemical Engineering, Columbia University, New York, NY, November 13, 2001.

Tarlov, M.J., ***“DNA Microdiagnostics,”*** Gordon Research Conference on Chemistry at Interfaces, Connecticut College, New London, CT, July 8, 2002.

Thomas, G., ***“Capillary and Microdevice Electrophoretic Tools for Genetic Analyses,”*** Morgan State University, Baltimore, MD, March 1, 2002. Invited.

Thomas, G., “*A Chemist’s Role in the Human Genome Project*,” Southern University College of Sciences, Dept. of Chemistry, Baton Rouge, LA, March 21, 2002. Invited.

van Zee, R.D., “*Moletronics for Metrologists II: One Year’s Progress*,” DARPA Moletronics Meeting, Chandler, AZ, January 15, 2002. Invited.

Whetstone, J.R. “*Chemical Sensing with Microsensor Arrays*,” 16th Intl. Forum for Process Analytical Chemistry (IFPAC), San Diego, CA, January 22, 2002.

Whetstone, J.R., “*Thermodynamic Measurement Standards at NIST*,” INEN, Quito, Ecuador, February 6, 2002.

Wright, J. D., “*Piston Prover Gas Flow Standards in the NIST Fluid Flow Group*,” LNE Gas Metrology Symposium, France, September 26, 2001 (delivered by R. Berg). Invited.

Wright, J. D., “*Comparison of Gas Flow Standards: NMIJ and the NIST Fluid Flow Group*,” LNE Gas Metrology Symposium, France, September 26, 2001 (delivered by R. Berg). Invited.

Wright, J. D., “*Progress Report on a New Primary Gas Flow Standard for 1 SLM to 2000 SLM*,” LNE Gas Metrology Symposium, France, September 26, 2001 (delivered by R. Berg). Invited.

Wright, J. D., “*Gas Flow Measurement in the NIST Fluid Flow Group*,” NIST Gas Metrology Group, Analytical Chemistry Division, Chemical Science and Technology Laboratory, NIST, Gaithersburg, MD, December 7 2001. Invited.

Wright, J. D., “*A Primary Gas Flow Standard for 1 SLM to 2000 SLM*,” 5th International Symposium on Fluid Flow Measurement (5th ISFFM), Arlington, VA, April 9, 2002.

Yeh, T.T., “*Error Free Liquid Flow Diverters for Calibration Facilities*,” 2002 Fluids Engineering Division Summer Meeting, ASME, Montreal, Canada, July 12, 2002.

Zangmeister, C., “*Chemistry of Alkali Halide and Ice Surfaces: Characterization of Reactions Relevant to Atmospheric Chemistry*,” ACS Annual Conference on Surface and Colloid Chemistry, Ann Arbor, MI, June 24, 2002. Invited.

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

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)

Johnson, T.J., Ross, D.J., and Locascio, L.E., "Microfluidic Flow Manipulation Device," (Non-Provisional Application Filed)

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)

Tarlov, M.J., Ross, D.J., and Olsen, K.E., "Bio-Affinity Gel Plugs in Microfluidic Channels," (NIST Docket No. 02-004, Non-Provisional Application Filed)

Thomas, O., Cavicchi, R.E., and Tarlov, M.J., "Fast Transient Microscale Heating for Chemical and Biochemical Detection," NIST Docket No. 02-006PA, Provisional Application Filed)

Zangmeister, C.D., van Zee, R.D., "Selective Electroless Attachment of Contacts to Electrochemically-Active Molecules," (NIST Docket No. 02-008, Provisional Application Filed).

5. Measurement Services

5a. SRM Activities

SRM 2241 Relative Intensity Correction Standard for Raman Spectroscopy: 785 nm Excitation (completed)

5b. SRD Activities

None.

5c. Calibrations

Abbott Laboratories
Accurate Calibration Inc.
Agilent Technologies
Air Products & Chemicals Inc.
Alcan International Limited
Alcatel Vacuum Products, INC.
Alcoa Inc.
Alstom Power Inc.
AppMet Inc.
ARi Industries Inc.
Arizona Public Service Company
Arnold AFB
ASL, Inc.
AW Company, Ltd.
Barber-Colman Company
Baxter Healthcare Corporation
Bechtel BWXT Idaho, LLC
Bechtel SAIC Company, LLC
Bionetics/AFPSL
Bios
Boeing Commercial Airplane Group
Boeing Company
Boeing North American, Inc.
Brooklyn Thermometer Company Inc
Burns Engineering, Inc.
BWXT Y-12, L.L.C.
Cal-Corr Services & Repairs
Calvert Cliffs Nuclear
Carpenter Specialty Alloys
Casade Regional Blood Services
Chandler Engineering
CI Systems Ltd.
City of Tacoma Environmental Services
Cleveland Electric Laboratories
Climatronics Corporation
Clinton Power Station
Conax Buffalo Technologies LLC
Conrad Kacsik Instrument Systems, Inc.
Consumers Energy
Control Solutions Ltd., LLC
Department of Agriculture
Detroit Edison
DH Instruments
DHHS/FDA/CDRH/OSM
Drift River / WFR Metering
Duke Energy Corporation
Duke Engineering & Services
Duro-Sense Corp
Eastman Kodak Company
Emerson Electric Company
Energy Northwest
Engelhard-Clal
Environmental Systems Corp.
EVCO Technology
Ever Ready Thermometer Co. Inc
Exelon Energy Company
FL Dept of Environ. Protection
Fleming Associates, Inc.
Flow Technology, Inc.
FMC Energy Systems
Furnace Parts, LLC
G & G Metering Services Ltd.
GE Industrial Systems
General Eastern Instruments
Geocorp Industrial Controls
Granville-Phillips Helix Technology Corp.
Grotto Incorporated
Hart Scientific, Inc.
Henry Troemner LLC
HERMetic, Inc.
Honeywell
Honeywell FM&T
Honeywell Inc.,SGP
Howmet Corporation
ICL Calibration Laboratories, Inc
IES A Kele Company
Istituto Politecnico
Intech Automation Systems Corporation
InterMet Systems
Intersil
Isotech
Jim Beam Brands Company
JMS Southeast, Incorporated
Johnson Gage & Inspection, Inc.
Johnson Matthey
Kahn Companies

Kaman Aerospace Corporation
Kanomax USA, Inc.
Kanthal
Kelly Completion Services LLC
Krum International Corp
Kulas Systems Inc.
Kurz Instrument, Inc.
LDS Vacuum Products, Inc.
Leico Industries Inc.
Liquid Measurement & Controls, Inc.
Lockheed Martin Aeronautics Company
Lockheed Martin Astronautics
Lockheed Martin Corporation
Marine Corps Logistics Base
Marlin Manufacturing Corp.
McDonnell Douglas Corporation
Medi-Flex Hospital Products, Inc.
MEECO, Inc.
Meter Engineers, Inc.
Middle River Aircraft Systems
Miller Wire & Cable
MillerTech Instrument Corp
Millipore Corporation
Minnesota Department of Public Safety
Mississippi Space Services
MJ Research, Inc.
MKS Instruments, Inc.
Modern Instrument Co. Inc.
Motion Industries Inc.
MVM Enterprises
Mykrolis Corp
Mykrolis Corporation
NASA/Kennedy Space Center
National Research Council Canada
Naval Air Weapons Station
Naval Surface Warfare Center
Navy Aviation Depot, North Island
Navy Primary Standards Laboratory
Navy Standards Laboratory
Nebraska Health System
Newport News Shipbuilding
NH Dept of Agriculture
Omega Engineering, Inc.
OSHA
P&W CT. Cal-UTC SBS
Pemberton Fabricators Inc

Pennsylvania Power & Light Company
Philip Morris USA
Philip Services Corp.
Pond Engineering, Inc.
PPL Susquehanna, LLC
Pratt & Whitney (The Bernd Group, Inc.)
Precision Surveillance Corp.
Pressurements Limited
Primary Standards North America Inc.
Production Systems Inc.
Pyco Inc.
Pyromation, Inc.
Pyrometric Service Company
Raytheon Company
RH Systems
Rice Lake Weighting Systems
Rolock of California, Inc.
Rosemount Aerospace, Inc.
Rothe Joint Venture LP
Sandelius Instruments, Inc.
Sandia National Laboratories
Santa Barbara Infrared, Inc.
Sensing Devices, Inc.
Smith Systems Operation
South Carolina Electric & Gas Co.
Southern California Edison Co.
Special Metals Corporation
Spectrodyne Inc
Stanford Research Systems
State of Florida
Stillings Instrument Systems Company
Teledyne Electronic Technologies -
Hastings
Tennessee Valley Authority
TEW America, Inc.
Thermo Electric Wire & Cable L.L.C.
Thermodynamic Sensors
Thermometrics
Thunder Scientific Corp.
Tiger Optics LLC
Tobacco Industry Testing Lab
TRANSCAT
TRW Space & Electronics
US Army Aviation and Missile Command
US Army TMDE Support-Region 1
US Geological Survey

Vacuum Technology Incorporated
Vaisala Inc.
Varian Vacuum Technologies
Verizon
Watlow

Watson Cogeneration Company
Willson Scientific Glass, Inc.
Wyeth-Ayerst Pharmaceuticals
Wyle Laboratories

6. Committee Assignments

P.J. Abbott

AVS Recommended Practices Standards Committee
AVS Recommended Practices Subcommittee on Ionization Gauge Calibration
CIPM C002 Consultative Committee on Mass and Related Quantities
SC.04 Low Pressure

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
NCSL Intrinsic and Derived Standards Committee, Deadweight Pressure Gauges

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
NORAMET TC: Mechanical Area
ISA Flow Technology Committee

K.M. Garrity

ASTM E020 Temperature Measurement
SC.04 Thermocouples

K.A. Gillis

NIST Information Technology Services Planning Team
NIST Scientific Computing Working Group

P.H. Huang

ASTM D022 Sampling and Analysis of Atmospheres
SC.09 ISO Tag for ISO/TC146 (Air Quality)
SC.11 Meteorology
CIPM International Committee on Weights and Measures
CCT Consultative Committee on Thermometry
WG.06 Humidity Measurements and Standards, Chair
SEMI C012 Test Methods and Recommended Practices
SC.02 Gases/Semiconductor
WG.02 Moisture Measurements in Gases

J.J. Hurly

SEMI C012 Gases
SEMI C014 Facilities

W.S. Hurst

ASTM E013 Molecular Spectroscopy
SC.08 Raman Spectroscopy

K.G. Kreider

ASTM E020 Temperature Measurement
SC.02 Radiation Thermometry
SC.04 Thermocouples

A. Lee

CIPM C002 Consultative Committee on Mass and Related Quantities
SC.02 High Pressure
SC.04 Low Pressure
SC.06 Medium Pressure
Combustion Institute, 27th Symposium (International) on Combustion, Program Review
Subcommittee
NIST Diversity Advisory Board
CSTL Diversity Committee, Chair

J.P. Looney

AVS Vacuum Technology Division Executive Committee
AVS Recommended Practices Committee on Spinning Rotor Gages
CIPM C002 Consultative Committee on Mass and Related Quantities
SC.04 Low Pressure

G.E. Mattingly

ASME C008 Measurement of Fluid Flow in Closed Conduits
SC.06 Glossary of Terms for Flow Measurements
SC.14 Flow Measurement by Weighing and Volumetric Techniques, Chair
SC.15 Installation Effects
SC.16 Vortex Shedding Flow Meters

SC.19 Flow Conditioning
SC.22 Critical Flow Meters
SC.23 Small Bore Orifice Meters
CIPM C002 Consultative Committee on Mass and Related Quantities
 WG.09 Fluid Flow, Chair
IMEKO TC-09 Flow Measurement
US TAG for ISO/TC30 Measurement of Fluids Committee

C.W. Meyer

ASTM E020 Temperature Measurement
CIPM International Committee on Weights and Measures
 CCT Consultative Committee on Thermometry
 WG.03 Uncertainties

A.P. Müller

ASTM E037 Thermal Measurements
 SC.01 Test Methods and Recommended Practices
 WG.17 DSC Calibration
AVS Recommended Practices Subcommittee on Thermal Conductivity Gauging
AVS C0009 Low Pressure Gauges
CIPM C002 Consultative Committee on Mass and Related Quantities
 SC.02 High Pressure
 SC.04 Low Pressure, Chairman
 SC.06 Medium Pressure

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

CIPM C002 Consultative Committee on Mass and Related Quantities
 SC.02 High Pressure
NCSL Intrinsic and Derived Standards Committee, Deadweight Pressure Gauges

C. Presser

AIAA Terrestrial Energy Systems Technical Committee
AIAA Computational Fluid Dynamics Committee on Standards
ASME HTD Committee on Heat Transfer in Energy Systems
ASME FACT Committee for Academic and Industrial Research
ASTM E029 Particle Size Measurement
 SC.03 International Cooperation on Terminology, Standards, and Methods
 SC.04 Liquid Particle Measurement

SC.05 Reference Materials

Combustion Institute Program Review Subcommittee
ILASS Diesel and Automatic Spray Technical Committee
ILASS Computation and Modeling Technical Committee
JANAF Interagency Propulsion Committee, Modeling and Simulation Subcommittee

D.C. Ripple

ASME C019 Performance Test Codes
 SC.03 Temperature Measurement, Chair
ASTM E020 Temperature Measurement
 SC.04 Thermocouples, Secretary
CIPM International Committee on Weights and Measures
 CCT Consultative Committee on Thermometry
 WG.01 International Traceability in Temperature Measurements, Chair

J.W. Schmidt

NCSL 144 Intrinsic and Derived Standards
 SC.01 Consensus Standards Committee on Dead-Weight Pressure Gauges

S. Semancik

Program Committee, 9th International Meeting on Chemical Sensors

G.F. Strouse

ASTM E020 Temperature Measurement
 SC.03 Resistance Thermometers
 SC.06 New Thermometers and Techniques
 SC.07 Fundamentals in Thermometry
CIPM International Committee on Weights and Measures
 CCT Consultative Committee on Thermometry
 WG.07 Key Comparisons
SIM InterAmerican System of Metrology
 TC Technical Committee
 MWG3 Temperature, Chair

M.J. Tarlov

AVS Biochemical Interfaces Steering Committee
CSTL Colloquium Committee

W.L. Tew

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

C.D. Vaughn

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

J.R. Whetstone

ISA C002 Standards and Practices Board

T.T. Yeh

ASME MFC Subcommittee 9, Ultrasonic Flowmeters

7. Editorships

R. D. van Zee and J.P. Looney

Cavity-Enhanced Spectroscopies, Vol. 40, Experimental Methods in the Physical Sciences, Academic Press, Boston, MA (2002).

8. Seminars

October 24, 2001

Steve Allison, Oak Ridge National Laboratory, Knoxville, TN
“Non-Contact Thermometry Based on Fluorescence” (Division Sponsor: C. Meyer)

November 27, 2001

Tom Avedisian, Sibley School of Mechanical & Aerospace Engineering, Cornell University, Ithaca, NY
“Bubble Nucleation in Thermal Ink Jet Printers” (Division Sponsor: C. Presser)

December 18, 2001

Tim Johnson, NIST Microfluidics Group (839.04)
“Passive Fluid Manipulation Within Microfluidic Devices” (Division Sponsor: M. Tarlov)

March 26, 2002

Sara Brazill, Dept. of Chemistry, University of California, Riverside, CA
“The Implementation of a Frequency Based Electrochemical Detection System for the Analysis of Biomolecules” (Division Sponsor: M. Tarlov)

June 11, 2002

Jeremiah Mbindyo, Pennsylvania State University, Pittsburgh, PA
“Metal Nanowires: Nanoscale Interfaces for Engineering Nanoscale Electronic Devices and Sensors” (Division Sponsor: S. Semancik)

June 13, 2002

Jeremy Pietron, Naval Research Laboratory, Washington, DC
“Using Three Dimensions in Nanostructured Mesoporous Catalysts” (Division Sponsor: S. Semancik)

July 19, 2002

Corinne Lengsfeld, University of Denver, Denver, CO
“Manipulating Poly (*l*-lactic acid) Particle Size Using Gas-Like Mixing in the Precipitation with a Compressed Antisolvent Process” (Division Sponsors: A. Lee & C. Presser)

August 1, 2002

Frank Pfefferkorn, Purdue University,
“Laser-Assisted Machining of Zirconia Ceramics” (Division Sponsor: S. Semancik)

August 8, 2002

Dimitri Routkevitch, Nanomaterials Research LLC, Longmont CO
“Robust Ceramic Gas Microsensor Platform from Anodic Alumina” (Division Sponsor: S. Semancik)

August 27, 2002

Eric May, University of Western Australia, Perth, Australia
“An Improved Microwave Apparatus for Phase Behavior Measurements in Lean Gas Condensate Fluids” (Division Sponsor: M. Moldover)

August 29, 2002

Michael Musick, Siloam Technology, LLC, Cincinnati, OH
“Applications of Nanoparticles: New Building Blocks for Materials and Reagents for Bioanalytical Chemistry” (Division Sponsor: S. Semancik)

September 4, 2002

Guofeng Li, Georgia Institute of Technology, School of Chemistry & Biochemistry, Atlanta, GA
“Electrochemical Functionalization of Conducting Polymers Towards Chemical Sensing Applications” (Division Sponsor: S. Semancik)

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

November 15, 2001

ASME International Mechanical Engineering Congress & Exposition, New York, NY
(C. Presser)

January 16, 2002

AIAA Aerospace Sciences Meeting, Reno, NV (C. Presser)

March 18-22, 2002

Precision Thermometry Workshop, Gaithersburg, MD (K. Garrity, C. Meyer, K. Kreider, D. Ripple, G. Strouse, W. Tew, C. Vaughn)

May 16, 2002

15th Annual Conference on Liquid Atomization and Spray Systems (ILASS Americas '02), Madison, WI (C. Presser)

August 20-21, 2002

ITS-90 Fixed-Point Cell Mini-Workshop, Gaithersburg, MD (G. Strouse)