Outputs and Interactions - Surface and Microanalysis Science Division

1. Publications

1a. Publications in Print

Armstrong, J.T., "***Propagation of Errors in the Precision and Accuracy of Quantitative Electron Microbeam Analysis,"*** Microscopy and Microanalysis 7, (suppl. 2) 670-671.

Armstrong, J.T., "***Uncertainties in the Correction Equations for Quantitative Microbeam Analysis: Filling in the Black Holes in the Periodic Table***," in Proc. of the 6th European Workshop on Modern Development and Applications in Microbeam Analysis, 288, (2000).

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Etz, E.S., Hurst, W.S., and Feldman, A., ***"Correlation of the Raman Spectra with the Thermal Conductivity of a Set of CVD Diamond Wafer***," J. Mater. Res. 16 (No. 6), pp. 1694-1711 (2001).

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Fletcher, R.A. and Bright, D.S., "***Shape Factors of ISO 12103-A3 (Medium Test Dust)***," Filtration and Separation 37, No. 9, 49-56 (2000).

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Roberson, S.V., Sehgal, A., Fahey, A.J., and Karim, A., ***"Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS) for High Throughput Characterization of Bio-Surfaces,"*** International Conference on Secondary Ion Mass Spectrometry

Scott, J.H., ***"Characterization of Dielectric Films by Spectrum-Line Imaging,"*** Second International Conference on Microelectronics and Interfaces, Advanced Emerging Metrology and Nanoscience, Emerging Metrology (2001).

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Verkouteren, J.R., Marinenko, R.B., and Bright, D.S., ***"Microstructural Characterization of Zirconia Coatings with Electron Microprobe Wavelength Dispersive Compositional Mapping,"*** 2001 Proceedings of Materials Research Society, Volume 645E, M9.7.,2000 Fall Meeting, on MRS web site, (2001).

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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)

Armstrong, J.T., Marinenko, R.B., Levin, I., Blendell, J., Bouldin, C.P., Schenk, P.K., Ritter, J.J., and Kaiser, D.L., "***Fabrication and Electron Microprobe Characterization of Barium-Strontium-Titanate (BST) Films***," American Institute of Physics Special Publication (in press).

Coakley, K.J., Chen-Mayer, H., Lamaze, G.P., Simons, D.S., and Thompson, P.E., ***"Calibration of a Stopping Power Model for Silicon Based on Analysis of Neutron Depth Profiling and Secondary Ion Mass Spectrometry Measurements,"*** Nuclear Instruments and Methods in Physics Research B. (in press)

Conny, J.M., and Slater, J.F., ***"Black Carbon and Organic Carbon in Aerosol Particles from Crown Fires in the Canadian Boreal Forest,"*** J. Geophys. Res. (in press).

Girvin, S.M., and Jach, T., "***Formalism for the Quantum Hall Effect: Hilbert Space of Analytic Functions,"*** in Physics in the Noncommutative World I: Field Theories, M. Li and Y.S. Wu, Eds., Rinton Press (in press).

Hubbard, C.R., Enright, G., Gabe, E., Evans, H., Finger, L., DeTitta, G., Siegrist, T., Armstrong, J.T., Cook, L.P., Wong-Ng, W., and Leavenson, M.S., "***Standard Reference Material (SRM 1990) for Single Crystal Diffractometer Alignment***," Advances in X-Ray Analysis (in press).

Jach, T., Bright, D.S., Durbin, S., Bakulin, A., Srajer, G., Haskel, D., Stagarescu, C., and Pedulla, J., ***"Wide-Field X-Ray Microscopy with Kirkpatrick-Baez Optics,"*** Proceedings of the SPIE 46th Annual Symposium on Optical Science and Technology (in press).

Kaiser, D.L., Ritter, J.J., Levin, I., Schenck, P.K., Blendell, J.E., Bouldin, C., Marinenko, R.B., Armstrong, J.T., and Beratan, H., "***Ultra-Thin Barium-Strontium-Titanate (BST) Thin Films Fabricated by Metalorganic Deposition***," in Proc. of the 2000 Materials Research Society Fall Meeting (in press).

Klinedinst, D.B. and Currie, L.A., "***Radiocarbon Blank Correction: Methodologies and Limitations in a Major Urban Study of Carbonaceous Aerosols***," Nucl. Inst. Meth. Phys. Res. (in press).

Marinenko, R.B., "***Status of Microanalysis Standards at the National Institute of Standards and Technology***," Microbeam Analysis 2000, Institute of Physics Conference Series No. 165 (in press).

Marinenko, R.B., Armstrong, R.B., Kaiser, D.L., Ritter, J.J., Schenk, P.K., Bouldin, C., and Levin, I., "***Manufacture and Electron Microprobe Characterization of Barium-Strontium-Titanate (BST) Films***," in Proc. of the Characterization and Metrology for Ultra Large Scale Integration Technology (in press).

Michaels, C.A., Dentinger, C.J., Richter, L.J., Cavanagh, R.R., and Stranick, S.J., "***Nanoparticle Imaging with Near-Field Scanning Optical Microscopy***," Materials Characterization (in press).

Powell, C.J., and Jablonski, A., ***"Electron Effective Attenuation Lengths for Applications in Auger-Electron Spectroscopy and X-Ray Photoelectron Spectroscopy,"*** Surface and Interface Analysis, (In Press)

Powell, C.J., Conny, J.M., and Jablonski, A., ***"Some Issues in Quantitative X-Ray Photoelectron Spectroscopy and Auger-Electron Spectroscopy,"*** Proceedings of

Symposium on State-of-the-Art Application of Surf. & Interface Anal. Meth. to Environ. Mat. Inter. In Honor of J.E. Castle's 65th year. (In Press)

Robins, L.H., Armstrong, J.T., Vaudin, M.D., Bouldin, C.P., Woicik, J.C., Paul, A.J., Thurber, W.R., Miyano, K.E., Parker, C.A., Roberts, J.C., Bedair, S.M., Piner, E.L., Reed, M.J., El-Masry, N.A., Donovon, S.M., and Pearton, S.J., "***Optical and Structural Studies of Compositional Inhomogeneity in Strain-Relaxed Indium Gallium Nitride Films***," in Proc. of the 27th International Symp. on Compound Semiconductors (in press).

Scott, J.H. and Windsor, E.S., "***Chemical and Structural Characterization of Ultrathin Dielectric Films Using Analytical Electron Microscopy***," Materials Research Society Symposium Proceedings (in press).

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Small, J.A., Newbury, D.E., and Armstrong, J.A., ***"Electron-Induced X-Ray Emission,"*** in Handbook of X-ray Spectrometry, 2nd edition, R. Van Greiken and A. Markowicz, eds., Marcel Dekker Inc., NY (in press).

Shimizu, R. and Powell, C.J., "***The Development of Standards for Surface Analysis by ISO Technical Committee 201 on Surface Chemical Analysis***," Surf. and Interface Anal. (in press).

Verkouteren, J.R., Small, J.A., and Michael, J.R., ***"Comparison of Laboratory-Based X-Ray Microdiffraction and Electron Backscatter Diffraction for Phase Identification,"*** Advances in X-Ray Analysis 44, (in press).

2. Talks

Armstrong, J.T., ***"Propagation of Errors in the Precision and Accuracy of Quantitative Electron Microbeam Analysis,"*** Microscopy and Microanalysis 2001 Meeting, Long Beach, CA, August 7, 2001.

Bright, D.S., ***"Catalysis Particle Site and Shape Analysis in SEM Micrographs, using Lispix,"*** Scientific Design, Littleferry, NJ, August 4, 2001. Invited

Buntin, S.A., ***"Effects of Hydrogen and Hydrocarbon Adsorption on the Oxidation of Si(100) by Atomic Oxygen,"*** American Chemical Society Meeting, San Diego, CA, April 2, 2001.

Buntin, S.A., "***Surface and Interface Characterization with Laser-Based Diagnostics: REMPI, NSOM and VR-SFG,"*** Chemistry Department at University of Delaware, Newark, Delaware, April 9, 2001. Invited

Cavanagh, R.R., ***"Near-Field Optical Microscopy: From Phenomena to Science and Applications,"*** Chemistry and Physics Department, Drexel University, Philadelphia, PA, May 16, 2001. Invited

Cavanagh, R.R., ***"The Surface and Microanalysis Science Division at NIST,"*** PittCon 2001, New Orleans, LA, March 5, 2001.

Chi, P.H., ***"Roughness Reduction on Depth Profiling of Cu Films with Sample Rotation,"*** SIMS Workshop, Phoenix, AZ, May 13, 2001.

Conny, J.M., ***"Black Carbon and Organic Carbon in Aerosol Particles from Crown Fires in the Canadian Boreal Forest,"*** North Atlantic Research Strategy for Tropospheric Ozone Conference, Queretaro, Mexico, October 25, 2000.

Conny, J.M., ***"Challenges in Sampling and Analyzing Atmospheric Compounds: II Aerosols,"*** CSTL Research Seminar, July 12, 2001.

Currie, L.A., ***"Isotope Metrology for Authentication of Polymers Produced from Renewable Feedstocks,"*** World Chemistry Conference, Brisbane, Australia, July 3, 2001. Invited

Currie, L.A., "***Chemical and Seasonal Patterns of Fossil and Biomass Carbonaceous Particles Transformed to Summit, Greenland,"*** Carbonaceous Particle Conference, San Juan , Puerto Rico, November 28, 2000.

Currie, L.A., ***"What Do Entropy and Skewed Environmental Background Distributions Have in Common: A 85Kr Case Study,"*** Teledyne-Brown Engineering, Knoxville, TN, November 14, 2000.

Etz, E.S., ***"Chromium-Doped Luminescent Glasses for Raman Intensity Calibration with 785 nm Laser Excitation,"*** Microscopy and Microanalysis 2001 Conference, Long Beach, CA, August 6, 2001.

Fahey, A.J., ***"Characterization of Electron Multiplier Post Acceleration Using Pulse Height Distributions,"*** SIMS Workshop, Phoenix, AZ, May 13, 2001.

Fahey, A.J., ***"Investigation of Unusual Composite Particles: ToF-SIMS for U-Isotope Analysis and as a Make-Shift FIB Preparation for the FEG-SEM,"*** Cocoa Beach, FL, May 16, 2001.

Fletcher, R.A., ***"Measurements for Gas Mask Verification,"*** NIST, Gaithersburg, MD, October 11, 2000.

Fletcher, R.A., ***"Measurement and Comparison of Diesel Exhaust and Diffusion Flame Particles by Laser Microprobe Mass Spectrometry,"*** American Association for Aerosol Research, St. Louis, MO, November 7, 2000.

Fletcher, R.A., ***"Methodology for Field-Calibration of PM 2.5 Monitors,"*** EPA Science Advisory Board Public Committee Meeting, Research Triangle Park, NC, January 22, 2001.

Gadzuk, J.W., ***"Scanning Tunneling Spectroscopy via Adsorbate Resonances: Kondo vs. Non-Magnetic Systems,"*** Boston AVS Meeting, October 2, 2000.

Gadzuk, J.W., ***"Are Quantum Corrals, STM Mirages, and Fano Resonances in Kondo Systems Interesting?"*** NIST Surface Science Lunch Bunch, February, 2001.

Gadzuk, J.W., ***"Fano Profiles in STM Spectroscopy of Single and Corraled Kondo Adsorbates,"*** Seattle APS Meeting, March 13, 2001.

Gadzuk, J.W., "***Fano Profiles in Field Emission and STM Spectrocopy of (Kondo?) Adsorbates,"*** Harvard Smithsonian Astrophysical Institute, June 16, 2001.

Gillen, J.G., ***"Surface Analysis with Energetic Cluster Ions,"*** PittCon, New Orleans, LA, March 5, 2001.

Gillen, J.G., ***"Secondary Ion Mass Spectrometry Using Cluster Primary Ion Beams,"*** University of Central Florida, FL, March 14, 2001.

Gillen, J.G., ***"Spatially Resolved SIMS Analysis of High Explosives,"*** SIMS Workshop, Phoenix, AZ, May 13, 2001.

Gillen, J.G., ***"Recent Advances in SIMS at NIST and Cluster Ion Beams for Surface Analysis,"*** College Park, MD, April 4, 2001. Invited

Jach, T.J., ***"Grazing Incidence X-Ray Photoemission Spectroscopy-A Method to Study Gate Dielectric Films on Si,"*** NSLS User Seminar, National Synchrotron Light Source, Brookhaven National Laboratory, November 3, 2000. Invited

Jach, T.J., ***"Grazing Incidence X-Ray Photoemission Spectroscopy: A Method to Study Gate Dielectric Films on Si,"*** Engineering Seminar, Cirent Semiconductor, Lucent Bell Laboratories, Orlando, FL, January 22, 2001. Invited

Jach, T.J., ***"Grazing Incidence X-Ray Photoemission Spectroscopy: A Method to Study Gate Dielectric Films on Si,"*** NIST Center for Neutron Research Seminar, Reactor Building, NIST, January 30, 2001. Invited

Jach, T.J., ***"Grazing Incidence X-Ray Photoemission Spectroscopy: A Method to Study Gate Dielectric Films on Si,"*** 29th Annual Applied Vacuum Science and Technology Symposium and Surface Analysis 2001 Conference, University of Central Florida, Orlando, FL, March 12, 2001. Invited

Jach, T.J., ***"Wide-Field X-Ray Microscopy with Kirkpatrick-Baez Optics,"*** Gordon Conference on X-Ray Physics, Connecticut College, New London, CT, July 23, 2001.

Jach, T.J., ***"Wide-Field X-Ray Microscopy with Kirkpatrick-Baez Optics,"*** Conference X-Ray Micro and Nano-Focusing: Applications and Techniques, The International Symposium on Optical Science and Technology, Society of Photo-Optical Instrumentation Engineers 46th Annual Meeting, San Diego, CA, July 30, 2001.

Klinedinst, D.B., ***"Consistent Methodologies for Determining Relating and Disseminating Light Stable Isotopic Measurement Results: The Carbon Dioxide Example,"*** American Geophysical Union, Boston, MA, May 29, 2001.

Klouda, G.A., ***"Resuspension of Urban Dust for Production of a PM 2.5 Filter Standard Reference Material,"*** North Atlantic Research Strategy for Tropospheric Ozone Conference, Queretaro, Mexico, October 25, 2000.

Klouda, G.A., ***"Biogenic Contributions to Ambient VOC,"*** South Coast Air Quality Management District Conference, Los Angeles, CA, February 13, 2001.

Klouda, G.A., ***"Chanllenges in Sampling and Analyzing Atmospheric Compounds,"*** CSTL Research Seminar, NIST, July 12, 2001.

Marinenko, R.B., ***"Status of Microanalysis at the National Institute of Standards and Technology,"*** International Union of Microbeam Analysis Societies, Kailua-Kona, HI, July 13, 2000.

Marinenko, R.B., ***"Useful Lead and Bismuth Standards for Quantitative Electron Probe Microanalysis,"*** Microscopy and Microanalysis Conference, Philadelphia, PA, August 15, 2000.

Marinenko, R.B., ***"Microstructional Characterization of Yttria Doped Zirconia Coatings with Electron Microprobe Wavelength Dispersive Compositional Mapping,"*** MRS Fall Conference, Boston, MA, November 27, 2000.

Marinenko, R.B., ***"Microscopy and Microanalysis Standards,"*** Pitt Con, New Orleans, LA, March 5, 2001.

Marinenko, R.B., ***"Evaluation of a Lead Lanthanum Zirconium Titanate Specimen for Use as an Electron Microprobe Reference Material,"*** Microscopy and Microanalysis 2001 Meeting, Long Beach, CA, August 7, 2001.

Michaels, C.A., ***"Nanoscale Spectroscopy with a Scanning Near-Field Infrared Microscope,"*** American Physical Society National Meeting, Seattle, WA, March 01, 2001.

Michaels, C.A., ***"Chemical Imaging with Scanning Near-Field Infrared Microscopy and Spectroscopy,"*** NSLS Infrared Microspectroscopy Workshop, Upton, NY, May 01, 2001. Invited

Michaels, C.A., ***"Chemical Imaging with Scanning Near-Field Infrared Microscopy and Spectroscopy,"*** International Workshop on Infrared Microspectrometry, CA, September 12, 2001. Invited

Newbury, D.E., ***"Low Vacuum Scanning Electron Microscopy: A View from the Perspective of the Conventional SEM,"*** Materials Research Society, Boston, MA, November 29, 2000. Invited

Newbury, D.E., ***"Microanalysis to Nanoanalysis: Measuring Composition at High Spatial Resolution,"*** AXCELIS Corporation, Rockville, MD, December, 15, 2000. Invited

Newbury, D.E., ***"Advances In Non-Conventional X-Ray Spectrometry: Silicon Drift Detectors and Microcalorimetry,"*** Laboratory for Physical Sciences, University of Maryland and the National Security Agency, College Park, Maryland, January 24, 2001. Invited

Newbury, D.E., ***"New Developments in X-Ray Spectrometry: Silicon Drift Detectors and Microcalorimeters,"*** Australian Microbeam Analysis Society Conferences, The University of Sydney, Sydney, Australia, February, 12, 2001. Invited

Newbury, D.E., ***"X-Ray Microanalysis of Rough Specimens,"*** Australian Microbeam Analysis Society Conference, The University of Sydney, Sydney, Australia, February, 14, 2001. Invited

Newbury, Dale E. ***"X-ray Microanalysis in the Variable Pressure/Environmental Scanning Electron Microscope",*** Variable Pressure/Environmental Scanning Electron Microscope Roadmap Workshop, Leura, NSW, Australia, Feb. 17, 2001. Invited

Newbury, D.E., ***"Status of New X-Ray Detectors,"*** Cocoa Beach, FL, May 2, 2001.

Newbury, Dale E. ***"Low Voltage Scanning Electron Microscopy and Microanalysis",*** Microscopy and Microanalysis 2001 Conference, Long Beach, CA, Aug. 7, 2001. Invited

Newbury, Dale E. ***"Diagnostics for Assessing Spectral Quality for X-ray Microanalysis in Low Voltage and Variable Pressure Scanning Electron Microscopy",*** Microscopy and Microanalysis 2001 Conference, Long Beach, CA, Aug. 8, 2001. Invited

Powell, C.J., ***"Effects of Elastic-Electron Scattering on Measurements of Silicon Dioxide Film Thicknesses by X-Ray Photoelectron Spectroscopy,"*** 47th International Symposium of the American Vacuum Society, Boston, MA, October 3, 2000.

Powell, C.J., ***"Quantitative Auger Electron Spectroscopy and X-Ray Photoelectron Spectroscopy: Resources and Uncertainties,"*** Workshop at the 47th International Symposium of the American Vacuum Society, Boston, MA, October 3, 2000. Invited

Powell, C.J., ***"New Definitions of Electron Effective Attenuation Lengths,"*** University of Central FL, Orlando, FL, March 13, 2001

Powell, C.J., ***"Some Issues in Quantitative X-Ray Photoelectron Spectroscopy and Auger Electron Spectroscopy,"*** 199th Meeting of the Electrochemical Society, Washington, DC, March 26, 2001. Invited

Powell, C.J., ***"Linkages Between Versailles Project on Advanced Materials and Standards, Technical Working Area 2 on Surface Chemical Analysis and Standards Development Organizations,"*** Versailles Project on Advanced Materials and Standards Workshop on Linkages Between VAMAS and Standards Development Organizations, NIST, Gaithersburg, MD, April 9, 2001.

Richter, L.J., ***"Determination of Molecular Structure at Polymer Interfaces,"*** 47th Annual American Vacuum Society, Boston, MA, October 2, 2000.

Roberson, S.V., ***"New Directions in Organic Surface Characterization at NIST,"*** Howard University, Washington, DC, October 01, 2000. Invited

Roberson, S.V., ***"TOF SIMS in Combinatorial Methodology Searching Compositional Space,"*** SIMS Workshop, Phoenix, AZ, May 13, 2001.

Robey, S.W., ***"Kinetic Instabilities During Plasma Etching of GaAs (001),"*** American Physical Society Meeting, Seattle, WA, March 13, 2001.

Scott, J.H., ***"Characterization of Dielectric Films by Spectrum-Line Imaging,"*** American Vacuum Society, San Jose, CA, February 7, 2001.

Scott, J.H., "***Accuracy of HRTEM Gate Oxide Thickness Measurements,"*** MRS Meeting, San Francisco, CA, April 18, 2001.

Scott, J.H., ***"Valence Mapping of Manganese Oxide Particles Using Energy-Filtered Transmission Electron Microscopy,"*** MRS Meeting, San Francisco, CA, April 19, 2001.

Scott, J.H., ***"Spectrum Imaging in the Analytical Electron Microscope,"***Cocoa Beach, FL, May 1, 2001.

Scott, J.H., ***"Chemical Characterization in the Analytical Electron Microscope,"*** Laboratory for Physical Sciences, University of Maryland, College Park, MD, May 30, 2001.

Simons, D.S., ***"Secondary Ion Mass Spectrometry in Semiconductor Metrology,"*** Pacific Northwest National Laboratory, Richland, WA, October 17, 2000.

Simons, D.S., ***"Advanced detector options for the Cameca IMS-4F,"*** Cocoa Beach, FL, May 3, 2001.

Simons, D.S., ***"Reference Materials for SIMS-What we have now and what we need,"*** 14th Annual Secondard Ion Mass Spectroscopy Workshop, Phoenix, AZ, May 15, 2001.

Small, J.A., ***"Electron Backscatter Diffraction of sub 500 nm Particles,"*** Cocoa Beach, FL, May 1, 2001.

Small, J.A., ***"Electron Backscatter Diffraction (EBSD) of Sub 500 nm Particles,"*** Microscopy and Microanalysis Conference, Long Beach, CA, August 9, 2001.

Stranick, S.J., ***"Nano-optics for Chemical and Material Analysis on the Nanoscale,"*** Dow Chemical, Freeport, TX, February 27, 2001. Invited

Stranick, S.J., ***"Nano-optics for Chemical and Material Analysis on the Nanoscale,"*** Dow Chemical, Midland, MI February 28, 2001. Invited

Stranick, S.J., ***"Scanning Near-Field Infrared Microscopy and Spectroscopy With a Broad Band Laser Source,"*** ACS National Meeting, San Diego, CA, April 2, 2001 Invited

Stranick, S.J., ***"Near-field Scanning Optical Microscopy and Spectroscopy,"*** Institute of Optics Colloquium series, University of Rochester, Rochester, NY, April 18, 2001. Invited

Stranick, S.J., ***"Near-field Scanning Optical Microscopy and Spectroscopy,"*** Kodak Research Labs, Rochester, NY, April 19, 2001. Invited

Stranick, S.J., ***"Near-Field Spectroscopy for Material and Chemical Analysis,"*** Nuclear Plant Program Conference, Cocoa Beach, FL, May 4, 2001.

Stranick, S.J., ***"Nano-optics for Chemical and Material Analysis on the Nanoscale"*** National Security Agency- University of Maryland, Laboratory For Physical Sciences, College Park, MD, May 30, 2001. Invited

Stranick, S.J., ***"Scanning Near-Field Infrared Microscopy and Spectroscopy With a Broad Band Laser Source,"*** Advanced Vibrational Spectroscopy, ICAVS-1, Turku, Finland, August 19, 2001. Invited

Stranick, S.J., ***"Chemical Imaging with Near-Field Scanning Optical Microscopy"*** SPE ANTEC 2001 Dallas, TX, May 9, 2001. Invited

Stranick, S.J., ***"Nano-optics for Chemical and Material Analysis on the Nanoscale,"*** Coco Beach, FL, May 4, 2001.

Verkouteren, J.R., ***"Phase Identification in Heated Thermal Barrier Coatings using MXRD combined with Elemental X-ray Mapping,"*** MRS Fall Conference, Boston, MA, November 27, 2000.

Verkouteren, J.R., ***"Identification of Tremolite-Actinolite Asbestos,"*** EPA Asbestos Conference, Oakland, CA, May 24, 2001.

Verkouteren, R.M., ***"NIST Metrology for Isotope Ratio Measurements of Carbon Dioxide,"*** International Congress Center, National Institute for Environmental Studies, Tsukuba, Japan, November 9, 2000.

Verkouteren, R.M., ***"Isotope Metrology for Authentication of Polymers Produced from Renewable Feedstocks,"*** PittCon 2001, New Orleans, LA, March 5, 2001.

Verkouteren, R.M., ***"NIST Activities in Support of the Coordinated Federal Particulate Matter Research Program,"*** PittCon 2001, New Orleans, LA, March 5, 2001.

Wight, S.A., ***"A micro-gas delivery system for in-situ CVD in the ESEM,"*** Microanalysis Research Society 2000 Fall Meeting, Boston, MA, November 27, 2000.

Wight, S.A., ***"Beam Profile Measurements with the Phosphor Imaging Plate,"*** University of Sydney, Sydney, Australia, February 16, 2001.

Wilson, P.T., ***"Molecular Order at Polymer Interfaces Measured by Broad-Bandwidth Vibrationally-Resolved Sum Frequency Generation Spectroscopy,"*** American Physical Society, Seattle, WA, March 13, 2001.

Wilson, P.T., ***"Molecular or"Molecular Order at Polymer Interfaces Measured by Broad-Bandwidth Vibrationally-Resolved Sum Frequency Generation Spectroscopy,"*** Quantum Electronics and Lasers Symposium, Baltimore, MD, May 10, 2001.

Windsor, E.S., ***"SRM 482: Revisited After 30 Years,"*** Microscopy and Microanalysis Conference 2001, Long Beach, CA, August 7, 2001.

Zeissler, C.J., ***"Applications of Special Methods for Contamination Assessment,"*** Radiochemistry Technical Working Group, Los Alamos, NM, November 8, 2000. Invited

Zeissler, C.J., ***"Cleanroom Issues at NIST: Lessons Learned,"*** Cocoa Beach, FL, April 30, 2001. Invited

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

None

4. Patents Issued

None

5. Measurement Services

5a. SRM Activities (Certificates issued in FY2001)

5b. SRD Activities

SRD 20 X-Ray Photoelectron Spectroscopy Database (Version 3.1 released April, 2001)
SRD 64 Electron Elastic-Scattering Cross-Section Database (Version 2.0 released in April, 2000)
SRD 71 Electron Inelastic-Mean-Free-Path Database (Version 1.1 released December, 2000)
SRD 77 Database for Trace Atmospheric Constituents
SRD 82 Electron Effective Attenuation-Length Database (Version 1.0 released September, 2001)

5c. Calibrations

6. Committee Assignments

Armstrong, J.T.
Advisory Group for ISO/TC202 on Microbeam Analysis (Member)
ASTM E-42 on Surface Analysis (Member)
ASTM E-42 on Terminology (Member)
ASTM E42.03 on Auger-Electron Spectroscopy and X-Ray Photoelectron Spectroscopy (Member)
ASTM E42.15 Electron Probe Microanalysis/Electron Microscopy (Member)
ASTM E42.96 US Tag for ISO/TC202/SC2 on Microbeam Analysis (Member)

Buntin, S.A.
American Chemical Society, Division of Physical Chemistry (Executive Committee Member)

Conny, J.M.
ASTM D-22 Sampling and Analysis of Atmospheres (Member)

Currie, L.A.
DOD (AFTAC), RPP Panel (Member)
IUPAC Analytical Chemistry Division Committee (Associate Member)
IUPAC, Chemistry and the Environment Division, Commission on Fundamental Environmental Chemistry, Subcommittee on Environmental Interphases (Member)
Review Committee for Multi-Agency Radiological Laboratory Analytical Protocols (Member)

International Steering Committee for Black Carbon Reference Materials (Member)

Etz, E.S.
ASTM E-13 Molecular Spectroscopy (Member)
ASTM E-13.08 Raman Spectroscopy (Member)
Microbeam Analysis Society of America, Executive Council (Secretary)
U.S. Expert to the Task Force on Analytical Database to the Verification Division of the Organization for the Prohibition of Chemical Weapons (OPCW)

Fahey, A.J.
NASA Planetary Instrument Definitions Proposal Review Panel
ASTM E-42 Surface Analysis (Member)
ASTM E-42.06 Secondary Ion Mass Spectrometry (Member)

Fletcher, R.A.
NFPA T2.9 Contamination Control Committee
U.S. TAG ISO/TC 131 Fluid Power Systems (Technical Advisor)
U.S. TAG ISO/TC 131SC6 on Contamination Control and Hydraulic Fluids
(Technical Advisor)

Gadzuk, J.W.
International Advisory Committee, International Conference on Vibrations at Surfaces

Gillen, J.G.
ASTM E42 Surface Analysis
ASTM E42.06 Subcommittee on Secondary Ion Mass Spectrometry (Chairman)

Klouda, G.A.
Equal Employment Opportunity Officer

Marinenko, R.B.
Advisory Group for ISO TC202 on Microbeam Analysis (Member)
ASTM E42 Surface Analysis
ASTM E42.15 Electron Probe Microanalysis/Electron Microscopy (Member)
ASTM E42.96 US TAG for ISO TC202/SC2 on Microbeam Analysis (Member)
Microbeam Analysis Society, Editor of MicroNews (Newsletter, pub. 3xyr)

Newbury, D.E.
CSTL/837: Committee to Organize Workshops on Limits to Accuracy in Quantitative Electron Probe Microanalysis
Technical Program Committee for the 2001 Microscopy and Microanalysis Conference
Technical Program Committee for the 2002 Microscopy and Microanalysis Conference
SCANNING: Technical Program Committee for the 2002-2003 Conferences
ASTM E42 Surface Analysis (Member)
ISO TC202 on Microbeam Analysis (Member)

Powell, C.J.
ASTM Committee E-42 on Surface Analysis (Member)
ASTM Subcommittee E-42.02 on Terminology (Member)
ASTM Subcommittee E-42.03 on Auger-Electron Spectroscopy and X-Ray Photoelectron Spectroscopy (Member)
Executive Committee, Applied Surface Science Division of the American Vacuum Society (Member)
International Advisory Board, European Conference on Application of Surface and Interface Analysis (Member)
International Program Committee, 5th International Workshop on Auger Spectroscopy and Electron Structure (Member)
ISO/TC 201 Surface Chemical Analysis (Delegate)
ISO/TC 201/SC5 Auger Electron Spectroscopy (Chair)
Organizing Committee, 9th Topical Conference on Quantitative Surface Analysis (Chairman)
Professional Societies Subcommittee for NBS/NIST Centennial (CSTL Representative and Co-Chairman)
Report Committee on Elastic Scattering of Electrons and Positrons, International Commission on Radiation Units and Measurement (Member)
SEMATECH Analytical Laboratory Managers Council (Member)
Subcommittee 5 on Auger Electron Spectroscopy of ISO/TC 201 (Chairman)
Surface Chemical Analysis Technical Working Area, Versailles Project on Advanced Materials and Standards (U.S. Representative and Chairman)
Technical Committee 201 on Surface Chemical Analysis of the International Organization for Standards (U.S. Delegate)
U.S. Technical Advisory Group for ISO/TC 201 on Surface Chemical Analysis (Member)
International Advisory Committee, Second International Symposium on Practical Surface Analysis (Member).

Roberson, S.V.
ASTM E42.06 Secondary Ion Mass Spectrometry

Scott, J.H.
ISO/Technical Committee 202/Subcommittee 3 (Secretary)
ASTM E42.15 Electron Probe Microanalysis/Electron Microscopy (Member)
ASTM E42.96 US Tag for ISO/TC202/SC2 on Microbeam Analysis (Member)

Simons, D.S.
ASTM E-42 Surface Analysis
ASTM E42.06 Secondary Ion Mass Spectrometry
ISO TC201 Surface Chemical Analysis – SC6 Secondary Ion Mass Spectrometry (Chairman of U.S. Delegation)

Small, J.A.
Advisory Group for ISO TC202 on Microbeam Analysis (Member)

ASTM E42-15 Electron Probe Microanalysis/Electron Microscopy (Chair)
ASTM E42-96, US TAG for ISO TC202 Microbeam Analysis (Chair)
ASTM E42-96.04, Subcommittee on General Procedures (Acting Chairman)
Long Range Planning Committee for Microbeam Analysis Society (Chair)
ASTM D22 Sampling and Analysis of Atmospheres (Member)
ASTM D22-05 Indoor Air (Member)
ASTM D22-05.01 Working Group Asbestos (Member)

Stranick, S.J.
American Chemical Society, Frontiers of Chemistry Organization Committee for 2002 German-American Symposium (Chairman)
NFO-7 Near-Field Optics and Related Techniques (Co-Chairman)

Steel, E.B.
ASTM D22 Sampling and Analysis of Atmospheres (Member)
ASTM D22.05 Indoor Air

Turner, S.
ASTM D22 Sampling and Analysis of Atmospheres (Member)
ASTM D22.07 Sampling and Analysis of Asbestos (Member)

Verkouteren, J.R.
International Center for Diffraction Data (ICDD), Secretary, Ceramics Subcommittee

Verkouteren, R.M.
IAEA C14 Consultant on Reference Materials and Analytical Quality of Isotope Analysis of Water and Environmental Samples
IAEA C14.WG2: Reference Materials and Intercomparisons
OSTP/CENR Air Quality Research Subcommittee

Wight, S.A.
ASTM Committee E-42 on Surface Analysis
ASTM E42.15 Electron Probe Microanalysis/Electron Microscopy (Member)
ASTM E42.96 U.S. TA/ISO/TC202 Microbeam Analysis (Member)

7. Editorships

Powell, C.J.
Applied Surface Science (Editorial Board)
Journal of Electron Spectroscopy and Related Phenomena (Editorial Board)
Surface and Interface Analysis (Editorial Board)

Stranick, S.J.

Anisotropic Nanoparticles-Synthesis, Characterization and Applications," MRS Proeedings Volume 635
Encyclopedia of Nanosciences and Nanotechnology," (Editorial Board)

Zeissler, C.J.
Journal of Research of the National Institute of Standards and Technology (Editorial Board)

8. Seminars

October 19, 2000
Mid-Atlantic Microbeam Analysis Society Meeting
Jim Bentley, "Energy-Filtered TEM,"
Oak Ridge National Laboratory
John Hanchar, "Electron Microprobe Dating Minerals"
Department of Earth and Environmental Sciences, George Washington University

December 5, 2000
A.S. Carasso, Mathematical and Computational Sciences Division
"Image Deblurring and the Heat Equation," (Division Sponsor: D. Bright)

March 5, 2001
Dr. Fritz Keilmann
Max-Planck-Institut fuer Biochemie, Martinsried, Germany, "Apertureless Near-Field Microscopy," (Division Sponsor: S. Stranick)

March 23, 2001
Robert A. Cary
Sunset Laboratory Inc., Forest Grove, Oregon
"Speciated Carbon Analysis of Atmospheric Aerosols by a Thermal/Optical Method," (Division Sponsor: George Klouda)

March 29, 2001
James Kushmerick
"Scanning Probe Spectroscopy"
(Division Sponsor: S. Buntin)

May 31, 2001
Philip D.P. Taylor
Institute for Reference Materials and Reference Measurements
JRC-European Commission, Geel, Belgium
"No SI Please, We're Isotope Measurement People"
(Division Sponsor: Michael Verkouteren)

June 28, 2001
David F. Padowitz

"STM Studies of Molecular Electronic Properties and Self Assembly"
(Division Sponsor: Steve Buntin)

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

Fletcher, R.A.
"The Application of Chemistry to the Examination of Works of Art," Dr. Suzanne Quillen Lomax, Willow Tree Inn, Gaithersburg, MD, May 7, 2001.

CCG Chemical Biological Defense Workshop, NIST, Gaithersburg, MD, October 11, 2000.

Gillen, J.G.
13th Annual Workshop on Secondary Ion Mass Spectrometry, Phoenix, AZ, May 13-16, 2001.

Stranick, S.J.
ACS Session, Near-Field Spectroscopy: A Tool for Nanoanalysis, ACS National Meeting, San Diego, CA, April 2, 2001

"Anisotropic Nanoparticles-Biological Applications," Microanalysis Research Society Conference, 2000.

Verkoutern, R.M.
NIST-NOAA-Industry Workshop on Atmospheric Measures and Standards, Gaithersburg, MD, September 6-7, 2001

APN(Asia-Pacific Network for Global Change Research) Workshop on Inter-Calibration of Isotope Ratio Measurement for Atmospheric CO2, Tsukuba, Japan, November 9-10, 2000

10. Other

Powell, C.J.
Cooperative Project "Quantitative Surface Analysis for Catalysts by Electron Spectroscopy" under U.S. Japan Civil Industrial Technologies Arrangement (U.S. Project Leader)

Crada

"Characterization and Modeling of Polymeric Systems Interphases" with Dow Chemical Company, PPG Industries, Inc., and Visteon (an Enterprise of Ford Motor Company) Chris Michaels, Charles Han, Tinh Nguyen, Nick Martys, Sonya Roberson and Marlon Walker