2006 Winter Conference on Plasma Spectrochemistry

Tucson, Arizona, January 8 – 14, 2006

Program

Sunday, January 8, 2005

6:00 **Welcoming Reception. Sponsored by Varian, Inc.**

Monday, January 9, 2005

08:00 **PL01 MODERN SPECTROSCOPIC DETECTORS.** M. Bonner Denton, University of Arizona, Department of Chemistry, P.O. Box 210041, Tucson AZ 85721, mbdenton@u.arizona.edu

SY01 Clinical ICP-MS for Biomonitoring and Chemical Terrorism Preparedness: Trace Element Analysis

Kathleen Caldwell, Chair

09:00 **IL01 TRACE ELEMENT SPECIATION IN ENVIRONMENTAL MEDICINE: ARSENIC AND DEPLETED URANIUM AS EXAMPLES.** Jose A. Centeno, U.S. Armed Forces Institute of Pathology (AFIP), Department of Environmental Infectious Diseases Sciences, 6825 16th St. NW, Washington DC 20306-6000, centeno@afip.osd.mil; Todor I. Todorva, Simina Lal, and Hanna Xu

09:30 **IL02 THE GOOD, THE BAD AND THE UGLY -- UNDERSTANDING ELEMENT METABOLISM BY STABLE ISOTOPE TECHNIQUES.** Thomas R. Walczyk, ETH Zürich, Laboratory of Human Nutrition, Schmeizbergstrasse 7, LFV D19.3, CH-8092 Zürich, Switzerland, thomas.walczyk@ilw.agrl.ethz.ch

10:00 **Break. Sponsored by Savillex Corporation**

10:20 **M01 BIOMONITORING OF TRACE AND TOXIC METAL EXPOSURES IN THE U.S. POPULATION: ANALYTICAL METHODS AND EXPOSUER RESULTS.** Robert L. Jones, Centers for Disease Control and Prevention (CDC), NCEH DLS ITN, 4770 Buford Hwy NE Mail Stop F-18, Atlanta GA 30341-3724, rljones@cdc.gov; Kathleen L. Caldwell, Jeff Jarrett, Ge Xiao, Olga Piraner, and Carl Verdon

10:40 **M02 ANALYSIS OF CLINICAL SPECIMENS BY ICP-MS: SELECTING APPROPRIATE SAMPLE INTRODUCTION SYSTEMS FOR BLOOD AND URINE.** Patrick J. Parsons, New York State Department of Health, Trace Elements Laboratory, Wadsworth Center, PO Box 509, Albany NY 12201-0509, pparsons@wadsworth.org; Christopher D. Palmer, Miles Lewis, Derek Miller, and Michael Minnich

11:00 **M03 A MIXED-MODE APPROACH TO THE ANALYSIS OF 13 ELEMENTS IN URINE USING INDUCTIVELY COUPLED PLASMA DYNAMIC REACTION CELL MASS SPECTROMETRY.** Jeffery M. Jarrett, Centers for Disease Control and Prevention (CDC), NCEH DLS ITN, 4770 Buford Hwy NE Mail Stop F-18, Atlanta GA 30341-3724, jjarrett@cdc.gov; Ge Xiao, Gulcheckra Shakirova, Kathleen L. Caldwell, and Robert L. Jones

11:20 **M04 ANALYSIS OF BLOOD, SERUM, AND TISSUES USING HR-ICP-MS AND PFA MICRO-FLOW NEBULIZER AND SPRAY CHAMBER.** Anastasia K. Skipor, Rush University Medical Center, Orthopedic Surgery, 760 Cohn Research Building, 1753 West Congress Parkway, Chicago IL 60612-3833, anastasia_k_skipor@rush.edu; Joshua J. Jacobs

11:40 **M05 HIGH PRODUCTIVITY MEASUREMENTS OF TRACE ELEMENTS IN URINE USING A NEW ION-OPTICS DESIGN ICP-MS FOR HIGH STABILITY AND LOWER DETECTION LIMITS.** Simon Nelms, Thermo Electron Corporation, ICP-MS Facility, Ion Path, Road Three, Winsford Cheshire CW7 3BX, United Kingdom, simon.nelms@thermo.com; Bill Spence, Phil Shaw, and Martin Nash

SY02 Clinical ICP-MS for Biomonitoring and Chemical Terrorism Preparedness: Stable Isotope and Speciation Analyses

Robert L. Jones, Chair

1:00 **IL03 ICP-MS COMPLEMENTS MOLECULAR MS TECHNIQUES FOR INVESTIGATING PROTEIN POST-TRANSLATIONAL MODIFICATIONS.** Alfredo Sanz-Medel, University of Oviedo, Faculty Chemistry, Department of Physical and Analytical Chemistry, c/ Julian Claveria, 8, E-33006 Oviedo, Spain, asm@correo.uniovi.es; M. Montes, J. Ruiz, E. del Castillo, and A. Pereira

1:30 **IL04 ARSENIC SPECIATION IN BIOLOGICAL SAMPLES: A JOB FOR MOLECULAR SPECTROMETRY?** Jörg Feldmann, University of Aberdeen, Department of Chemistry, Meston Walk, Old Aberdeen AB24 3UE Scotland, United Kingdom, j.feldmann@abdn.ac.uk

2:00 **M06 METHYLMERCURY ($MeHg^{+}$) AND INORGANIC MERCURY (Hg^{2+}) DETERMINATION IN BLOOD BY GC-ICP-MS.** Olivier X.F. Donard, Université de Pau et des Pays de l'Adour, Laboratoire de Chimie-Analytique, Bio-Inorganique et Environnement, 2, Av. Pierre Angot, F-64230 Pau, France, olivier.donard@univ-pau.fr; S. McSheehy, J. Dumont, H. Garraud, J.-C. Leblanc, V. Sirot, Steven Christopher, W.C. Davis, P. Shaw, M. Nash

2:20 **M07 ANALYSIS OF THREE MERCURY SPECIES IN WHOLE BLOOD USING INDUCTIVELY COUPLED PLASMA DYNAMIC REACTION CELL MASS SPECTROMETRY.** Kathleen L. Caldwell, Centers for Disease Control and Prevention (CDC), NCEH DLS ITN, 4770 Buford Hwy NE Mail Stop F-18, Atlanta GA 30341-3724, klc7@cdc.gov; Robert L. Jones, Carl Verdon, and Olga Piraner

2:40 **M08 SPECIATION OF ARSENICALS IN CLINICAL SAMPLES BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) COUPLED TO ICP-MS.** Carl Verdon, Centers for Disease Control and Prevention (CDC), NCEH DLS ITN, 4770 Buford Hwy NE Mail Stop F-18, Atlanta GA 30341-3724, cverdon@cdc.gov; Marj Fresquez, Kathleen L. Caldwell, and Robert L. Jones

3:00 **Break**

3:20 **M09 ANALYTICAL METHOD DEVELOPMENT FOR SELENIUM-CONTAINING PROTEINS OF CLINICAL INTEREST.** Mariana Arce-Osuna, CENAM, Km 4.5 Carr. a los Cués, El Marqués, Querétaro 76241, México, marce@cenam.mx; Stephen E. Long, David M. Bunk, and Peter C. Uden

3:40 **M10 LABELING OF PROTEINS WITH ELEMENTAL TAGS AND QUANTITATIVE DETECTION BY LASER ABLATION ICP-MS.** Norbert Jakubowski, Institute for Analytical Sciences (ISAS), Bunsen-Kirchhoff-Str. 11, P.O. Box 10 13 52, D-44013 Dortmund, Germany, jakubowski@ansci.de; Ingo Feldmann, Arunachalam Venkatachalam, Andreas Manz, Peter H. Roos, and Christine Köhler

4:00 **M11 BREAKING THROUGH IN SINGLE SHOT ANALYSIS OF BIOLOGICAL SAMPLE SURFACES AND ON GELS BY NANOSCALE NEAR FIELD LA-ICP-MS: A NEW DIMENSION IN QUANTITATIVE NANOIMAGING.** J. Sabine Becker, Research Centre Jülich, Central Department for Chemical Analysis, D-52425 Jülich, Germany, s.becker@fz-juelich.de; A. Gorbunoff, M. Zoriy, M. Kayser, A. Izmer, C. Pickhardt, H.-J. Dietze, and W. Pompe

4:20 **M12 CALIBRATION OF LA-ICP-MS MEASUREMENTS OF LEAD IN BONES USING NEW YORK STATE CANDIDATE REFERENCE MATERIALS.** David Bellis, New York State Department of Health, Wadsworth Center, PO Box 509, Albany NY 12201-0509, dbellis@wadsworth.org; Katherine M. Hetter, Patrick J. Parsons, Joseph Jones, and Dula Amarasiriwardena

4:40 **M13 ULTRA LOW LEVEL QUANTITATION AND RATIO DETERMINATION OF URANIUM ISOTOPES IN SYNTHETIC HUMAN URINE USING ISOTOPIC DILUTION-INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY (ID-ICP-MS).** David N. Kurk, DoD - US Army CHPPM, MCHB-TS-LRD, 5158 Blackhawk Road, Aberdeen Proving Ground - EA MD 21010-5403, david.kurk@amedd.army.mil; Christine Kurk

5:00 **M14 MOLECULAR DETECTION BY ATOMIC SPECTROSCOPY: MICRO-VOLUME IMMUNO-ASSAYS BY ITV-ICP-MS (IN-TORCH VAPORIZATION-INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY).** Vassili Karanassios, University of Waterloo, Department of Chemistry, Waterloo ON N2L 3G1, Canada; vkaranassios@uwaterloo.ca; B. Eshaque, H.R. Badiei, B. Cheyene, and G. Chatzis

5:30 **PD01 Panel Discussion: Clinical ICP-MS for Biomonitoring and Chemical Terrorism Preparedness.** Patrick Parsons, New York State Department of Health, Trace Element Laboratory, Wadsworth Center, PO Box 509, Albany NY 12201-0509, pparsons@wadsworth.org

6:30 **Exhibition Opening and Reception. Sponsored by *Journal of Analytical Atomic Spectrometry* Celebrating 21 Years of Publishing**

Tuesday, January 10, 2005

SY03 Elemental Speciation Analyses

Sponsored by CEM Corporation

Olivier Donard, Chair

08:00 **PL02 SPECIATION ANALYSIS BY PLASMA SPECTROMETRY -- THE BEGINNING OF THE END, OR ….** Kevin A. Francesconi, Karl-Franzens University Graz, Institute of Chemistry - Analytical Chemistry, Universitätsplatz 1, A-8010 Graz, Austria, kevin.francesconi@uni-graz.at

09:00 **IL05 ICP, ELECTROSPRAY AND MALDI: PARTNERS FOR METALLOMICS BY MASS SPECTROMETRY.** Ryszard Lobinski, Equipe de Chimie Analytique Bioinorganique, CNRS UMR 5034 Helioparc, 2, Av. Pierre Angot, F-64053 Pau-Pyrénées, France, ryszard.lobinski@univ-pau.fr

09:30 **IL06 SELENIUM: EAT IT TO LIVE, EAT IT TO DIE -- IS THERE A HAPPY MEDIUM?** Joseph Caruso, University of Cincinnati, Department of Chemistry, PO Box 210037, Cincinnati OH 45221-0172, joseph.caruso@uc.edu

10:00 **Break. Sponsored by CEM Corporation**

10:20 **T01 SIMULTANEOUS IDENTIFICATION OF NEW Se-GLUTATHIONE COMPOUNDS IN SELENIZED YEAST AQUEOUS EXTRACTS BY ON-LINE HPLC WITH ICP-MS AND ELECTROSPRAY MS/MS DETECTION.** Heidi Goenaga Infante, LGC Limited, Queens Road, Teddington, Middlesex TW11 CLY, United Kingdom, heidi.goenaga-infante@lgc.co.uk; Gavin O'Connor

10:40 **T02 IMAGING AND ADME STRATEGIES FOR CHARACTERIZATION OF SELENODRUG IN PRE-CLINICAL RESEARCH.** Josephine Bunch, University of Sheffield, Centre for Analytical Sciences, Department of

Chemistry, Sheffield S3 7HF, United Kingdom, c.w.mcleod@sheffield.ac.uk; Cameron McLeod, Sarah Stokes, Alan G. Cox, R. Mead, and P. Shaw

11:00 **T03 COMPARISON OF CE AND CAPILLARY LC HYPHENATED TO COLLISION-CELL ICP-MS FOR THE INVESTIGATION OF METALLOPROTEINS: STUDY OF Cu, Zn-SUPEROXIDE DISMUTASE IN RED BLOOD CELLS.** Maria Montes Bayón, University of Oviedo, Department of Physical and Analytical Chemistry, c/Julian Claveria 8, E-33006 Oviedo, Spain, montesmaria@uniovi.es; Daniel Pröfrock, Alfredo Sanz Medel, and Andreas Prange

11:20 **T04 ON-LINE COUPLING OF GEL ELECTROPHORESIS (GE) AND INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY (ICP-MS) FOR THE DETERMINATION OF LARGE BIOMOLECULES.** Jörg Bettmer, Johannes Gutenberg-Universität Mainz, Institute of Inorganic and Analytical Chemistry, Duesbergweg 10-14, D-55099 Mainz, Germany, bettmer@uni-mainz.de; Wolfram Brüchert, and Andreas Helfrich

11:40 **T05 ELEMENTAL SPECIATION ANALYSIS OF ENVIRONMENTAL SAMPLES BY CAPILLARY ELECTROPHORESIS ICP-MS (CE-ICP-MS).** Noel Casey, The Ohio State University, Department of Geological Sciences, 125 S. Oval Mall, 275 Mendenhall, Columbus OH 43212, casey.171@osu.edu; Sara Plowman, Rufus Nicks, Susan V. Olesik, and John W. Olesik

SY04 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses of Pharmaceutical Materials

Sponsored by Bristol-Myers Squibb Company

Nancy S. Lewen, Chair

1:00 **IL07 NUTRACEUTICAL/BOTANICAL PRODUCTS: CHALLENGES FOR PRODUCERS, REGULATORS, AND (MOSTLY) ANALYTICAL CHEMISTS.** R. Kenneth Marcus, Clemson University, Department of Chemistry, Biosystems Research Complex, Clemson SC 29634-1905, marcusr@clemson.edu; Jacob L. Venzie, Joaudimir Castro, and M.V. Balarama Krishna

1:30 **T06 ICP-AES HEAVY METALS TESTING -- METHOD DEVELOPMENT AND REPORTING CHALLENGES FOR THE USP HEAVY METAL TEST <231> REPLACEMENT.** Jeffrey W. Weber, Pfizer Global Manufacturing, 7000 Portage Road, Mail Stop 1593-89-2 South, Portage MI 49001, jeffrey.w.weber@pfizer.com; John W. Manski

1:50 **T07 THE USE INDUCTIVELY COUPLED PLASMA-OPTICAL EMISSION SPECTROSCOPY (ICP-OES) FOR THE DETERMINATION OF HEAVY AND TRACE METALS IN ACTIVE PHARMACEUTICAL INGREDIENTS (API).** Martha Schenkenberger, Bristol-Myers Squibb, Pharmaceutical Research Institute, One Squibb Drive, Bldg. 101. Rm B18, New Brunswick NJ 08903-0191, m.schenkenberger@bms.com

2:10 **T08 EVALUATION OF SAMPLE PREPARATION TECHNIQUES FOR THE ANALYSIS OF RESIDUAL METALS IN ACTIVE PHARMACEUTICAL INGREDIENT (API) BY INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY (ICP-MS).** Matthew A. Lorenz, Pfizer Global Research and Development, Analytical Research and Development, 2800 Plymouth Road, Ann Arbor MI 48105, matthew.lorenz@pfizer.com; Peter D.A. Angus, and Gregory K. Webster

2:30 **T09 APPLICATIONS OF LASER ABLATION INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY IN THE PHARMACEUTICAL INDUSTRY.** Tim Shelbourn, Eli Lilly and Company, Lilly Corporate Center, Drop Code 3828, Indianapolis IN 46285, montgomery_robert@lilly.com; Tim Shelbourn

3:00

Poster Session

Clinical Analyses; Dietary Supplements, Nutraceutical and Pharmaceutical Analyses; Elemental Speciation Analyses

PT01 Poster Session: Clinical Analyses

3:00 **TP01 ANALYSIS OF TOTAL ARSENIC, TOTAL SELENIUM, AND TOTAL CHROMIUM IN URINE BY ICP-DRC-MS.** William J. McShane, Battelle (Atlanta Analytical Chemistry Group), Centers for Disease Control and Prevention, 4770 Buford Hwy, MS F-47, Atlanta GA 30341-3724, wmm9@cdc.gov; Dan Paschal

3:00 **TP02 DETERMINATION OF SELENOSUGARS IN HUMAN URINE: HPLC-ICP-MS *VERSUS* ATMOSPHERIC PRESSURE CHEMICAL IONIZATION TANDEM MASS SPECTROMETRY.** Spiros A. Pergantis, University of Crete, Department of Chemistry, Environmental Chemical Processes, Heraklion, 71409 Crete, Greece, spergantis@chemistry.uoc.gr; Sofia Letsiou, Volker Nischwitz, Pedro Traar, and Kevin A. Francesconi

3:00 **TP03 URINARY IODINE AND MERCURY BY ICP-DRC-MS USING COLLISIONAL FOCUSING.** Ge Xiao, Centers for Disease Control and Prevention (CDC), NCEH DLS ITN, 4770 Buford Hwy NE Mail Stop F-18, Atlanta GA 30341-3724, gxiao@cdc.gov; Kathleen L. Caldwell, Robert L. Jones

3:00 **TP04 USE OF INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY TO MEASURE URINARY IODINE IN EQUIP.** Amir Makhmudov, Centers for Disease Control and Prevention (CDC), 4770 Buford Hwy, Mailstop F-18, Atlanta GA 30341-3724, amakhmudov@cdc.gov; Kathleen L. Caldwell, and Robert L. Jones

3:00 **TP05 FEASIBILITY STUDY: ISOTOPIC URANIUM ANALYSIS IN URINE USING THE FINNIGAN NEPTUNE MULTI-ION-COUNTING MC-ICPMS.** Johannes Schwieters, Thermo Electron (Bremen) GmbH, Hanna-Kunath-Str. 11, D-28199 Bremen, Germany, johannes.schweiters@thermo.com; Claudia Boumans, and Meike Hamester

3:00 **TP06 ARSENIC SPECIATION IN URINE AND BLOOD REFERENCE MATERIALS BY ICP-DRC-MS.** Todor I. Todorov, Armed Forces Institute of Pathology (AFIP), Department of Environmental Infectious Diseases Sciences, 6825 16th St. N.W., Washington DC 20306, todorovt@afip.osd.mil; Florabel G. Mullick, Jose A. Centeno, and John W. Ejnik

3:00 **TP07 MULTIELEMENT ANALYSIS OF URINE USING INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY WITH DIRECT SAMPLE INTRODUCTION.** Michael G. Minnich, New York State Department of Health, Trace Elements Laboratory, Wadsworth Center, P.O. Box 509, Albany NY 12201-0509, mminnich@wadsworth.org; Derek C. Miller, and Patrick J. Parsons

3:00 **TP08 ARSENIC SPECIATION IN URINE WITH ISOCRATIC HPLAC-ICP-MS.** Kenneth R. Neubauer, PerkinElmer Life and Analytical Sciences, 710 Bridgeport Avenue, M/S 219, Shelton CT 06484-4794, kenneth.neubauer@perkinelmer.com; Pamela A. Perrone, and Wilhad M. Reuter

3:00 **TP09 MULTI-ELEMENT METHOD FOR SERUM SELENIUM, MANGANESE AND VANADIUM ANALYSIS BY ICP-DRC-MS.** Olga Piraner, Centers for Disease Control & Prevention (CDC), NCEH DLS ITN, 4770 Buford Hwy NE Mail Stop F-18, Atlanta GA 30341-3724, opiraner@cdc.gov; Kathleen L. Caldwell, and Robert L. Jones

3:00 **TP10 COMPARISON BETWEEN ICP-MS AND AAS FOR THE DETERMINATION OF Pb, Cd and Hg IN BLOOD: LONG-TERM PERFORMANCE IN EXTERNAL QUALITY ASSESSMENT PROGRAMS.** Christopher D. Palmer, New York State Department of Health, Lead Poisoning/Trace Metals Laboratory, Wadsworth Center Empire State Pla, Albany NY 12201-0509, palmer@wadsworth.org; Ciaran M. Geraghty, Miles E. Lewis, Jr, and Patrick J. Parsons

3:00 **TP11 DIRECT ANALYSIS OF FREE COPPER IN SERUM BY ULTRACENTRIFUGATION AND ICP-MS.** James J. Travis, ARUP Laboratories, Institute for Clinical and Experimental Pathology, 500 Chipeta Way, Salt Lake City UT 84108-1221, james.travis@aruplab.com; J. Warren Hunt, and Gwendolyn A. McMillin

3:00 **TP12 STRATIFICATION OF ARSENIC SPECIES IN RODENTIA WHOLE BLOOD.** Russ Gerads, Applied Speciation and Consulting, LLC, 953 Industry Drive, Tukwila WA 98188, russ@appliedspeciation.com; Hakan Gürleyük

3:00 **TP13 CONTAMINATION OF BLOOD PRODUCTS AND OTHER SOLUTIONS ADMINISTERED INTERVENOUSLY.** Barry Sampson, Charing Cross Hospital, Trace Element Laboratory, Clinical Chemistry, Fulham Palace Rod, London W6 8RF, United Kingdom, b.sampson@imperial.ac.uk

3:00 **TP14 PROBLEMS ASSOCIATED WITH MEASUREMENT OF WHOLE BLOOD MANGANESE BY ICPMS.** Barry Sampson, Charing Cross Hospital, Trace Element Laboratory, Clinical Chemistry, Fulhm Palace Rod, London W6 8RF, United Kingdom, b.sampson@imperial.ac.uk

3:00 **TP15 INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY (ICPMS) AS A TOOL IN HUMAN EXPOSURE STUDIES -- PRESENTATION OF VARIOUS APPLICATIONS FOR THE DETERMINATION OF SELECTED METALS IN THE MATRIX BLOOD.** Rob Ritsema, National Institute of Public Health and the Environment RIVM, Laboratory for Environmental Monitoring LVM, P.O. Box 1, A. van Leeuwenh. 9, NL-3720 BA Bilthoven, The Netherlands, rob.ritsema@rivm.nl; Petra Krystek

3:00 **TP16 THE ANALYSIS OF LEAD IN BLOOD BY INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** Stacey L. Sandstrom, Kansas Department of Health and Environmental Laboratories, Forbes Field Bldg. 740, Topeka KS 66620, ssandstr@kdhe.state.ks.us; Jon Brady, Skylar Martin-Brown

3:00 **TP17 SELENOPROTEIN CHARACTERIZATION STUDIES IN HUMAN SERUM.** Sarah Stokes, University of Sheffield, Centre for Analytical Sciences, Department of Chemistry, Sheffield S3 7HF, United Kingdom, c.w.mcleod@sheffield.ac.uk; Sarah Stokes, and Cameron McLeod

3:00 **TP18 MEASUREMENT OF ACTINIDES (U, Th, Pu, AND Am) IN AIR FILTER SAMPLES BY HPLC-ICP-MS IN CASE OF R/N INCIDENTS.** Ana Paula Packer, Health Canada, Radiation Protection Bureau, 775 Brookfield Rd, Ottawa ON K1A 1C1, Canada, dominic_lariviere@hc-sc.gc.ca; Dominic Lariviere, Chunsheng Li, Stephen Kiser, and R. Jack Cornett

3:00 **TP19 SOLUBILITY BEHAVOUR OF METALS IN PARTICULATE MATTER EMISSIONS.** Denis Bérubé, Health Canada, Environmental Health Centre, 080083, Tunney's Pasture, Ottawa ON K1A OL2, Canada, denis_berube@hc-sc.gc.ca

3:00 **TP20 ANALYSIS OF ORGANOPHOSPHOROUS CHEMICAL WARFARE AGENT DEGRADATION PRODUCTS BY GC-ICPMS.** Douglas D. Richardson, University of Cincinnati, Department of Chemistry, Mail Location 0172, Cincinnati OH 45221-0172, richard2@email.uc.edu; Joseph A. Caruso

3:00 **TP21 FIRST INVESTIGATIONS ABOUT THE DETERMINATION OF METHYLMERCURY AND INORGANIC MERCURY IN HUMAN NAILS BY GC-ICPMS.** Petra Krystek, National Institute of Public Health and the Environment RIVM, Laboratory for Environmental Monitoring LVM, P.O. Box 1, A. van Leeuwenh. 9, NL-3720 BA Bilthoven, The Netherlands, petra.krystek@rivm.nl; Paulo Favaro

3:00 **TP22 USE OF AN INDUCTIVELY HEATED VAPORIZER FOR Hg ANALYSIS IN HAIR USING ICP-MS, AF AND AA.** Eric D. Salin, McGill University, Department of Chemistry, 801 Sherbrooke St. W., Montreal QC H3A 2K6, Canada, eric.salin@mcgill.ca; Rebecca Lam, and David Duford

3:00 **TP23 DETERMINATION OF ^{241}Am IN FECAL ASHES BY QUADRUPOLE INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** Mechthild Burow, Research Centre Jülich, Department for Safety and Radiation Protection, Postfach 1913, D-52425 Jülich, Germany, m.burow@fz-juelich.de; P. Ostapczuk, R. Flucht, and R. Hille

3:00 **TP24 LASER ABLATION-ICP-MS OF RAT BRAIN SECTIONS FOR ELEMENTAL SPATIAL DISTRIBUTION AND QUANTITATION.** Brian P. Jackson, Dartmouth College, Departments of Chemistry and Earth Sciences, Steele, Rm 221, Hanover NH 03755, brian.p.jackson@dartmouth.edu; Steve Harper, Jane Flinn, and Laura Smith

3:00 **TP25 IMAGING OF ELEMENTS IN BIOLOGICAL TISSUES: APPLICATION OF LA-ICP-MS IN MEDICINE RESEARCH.** Myroslav V. Zoriy, Research Centre Jülich GmbH, Central Department of Analytical Chemistry, Postfach 1913, D-52425 Jülich, Germany, m.zoriy@fz-juelich.de; J. Sabine Becker, Markus Dehnhardt, and Karl Zilles

3:00 **TP26 LASER CAPTURE MICRODISSECTION -- A POWERFUL SAMPLING TOOL FOR LASER ABLATION OF TISSUE.** Cameron McLeod, University of Sheffield, Centre for Analytical Sciences, Department of Chemistry, Sheffield S3 7HF, United Kingdom, c.w.mcleod@sheffield.ac.uk; R.W. Hutchinson, A.G. Cox, and J. Denton

3:00 **TP27 TRACER STUDIES ON TAU PROTEINS BY LA-ICP-MS AND MALDI-FTICR-MS AFTER GEL ELECTROPHORESIS.** J. Susanne Becker, University of Konstanz, Department of Chemistry, Laboratory of Analytical Chemistry, D-78457 Konstanz, Germany, susanne.becker@uni-konstanz.de; Miroslav V. Zoriy, Michael Przybylski, and J. Sabine Becker

3:00 **TP28 DIRECT ANALYSIS OF THIN LAYER CHROMATOGRAPHY PLATES BY LASER ABLATION INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** Eric D. Salin, McGill University, Department of Chemistry, 801 Sherbrooke St. W., Montreal QC H3A 2K6, Canada, eric.salin@mcgill.ca; Josiane P. Lafleur

3:00 **TP29 THE POTENTIAL OF GEL ELECTROPHORESIS COUPLED TO ICP-SFMS IN PHOSPHOROUS SPECIATION.** Wolfram Brüchert, Johannes Gutenberg-Universität Mainz, Institute of Inorganic and Analytical Chemistry, Duesbergweg 10-14, D-55099 Mainz, Germany, bruechew@uni-mainz.de; Jörg Bettmer

3:00 **TP30 GOLD NANOPARTICLES AND THEIR BIOCONJUGATES: CHARACTERISATION BY ICP-MS HYPHENATED TECHNIQUES.** Jörg Bettmer, Johannes Gutenberg-Universität Mainz, Institute of Inorganic and Analytical Chemistry, Duesbergweg 10-14, D-55099 Mainz, Germany, bettmer@uni-mainz.de; Andreas Helfrich, and Wolfram Brüchert

3:00 **TP31 DUAL-LABEL CALCIUM ISOTOPE RATIO MEASUREMENTS USING A SINGLE-COLLECTOR HR-ICP-MS.** James Guthrie, University of Missouri Research Reactor, Research Park Drive, Columbia MO 65211, guthriejm@missouri.edu; Joe Kyger, Joni Bramon, J. David Robertson, Barry Higgins, and Laura Hillman

3:00 **TP32 MULTIPLEX ASSAYS WITH ICP-MS.** Dmitry Bandura, University of Toronto, Institute for Biomaterials and Biomedical Engineering, 80 St. George St., Toronto, ON M5G 3H6, Canada, dmitry.bandura@utoronto.ca; O. Ornatsky, V.I. Baranov, S.D. Tanner, and J. Dick

3:00 **TP33 STUDIES OF PLUTONIUM BIOASSAY IN HUMAN TOOTH ENAMEL USING SECTOR FIELD ICPMS.** Michael E. Ketterer, Northern Arizona University, Department of Chemistry and Biochemistry, Box 5698, Flagstaff AZ 86011-5698, michael.ketterer@nau.edu; Brighid S. Corcoran, Joshua W. Robinson, Cassabdra Brooks, and Sheng Yu

3:00 **TP34 DETERMINATION OF THE ELEMENTAL DISTRIBUTION OF RARE EARTH ELEMENTS, ALUMINIUM AND MAGNESIUM IN BONE LIKE MATERIALS AND IMPLANT ALLOYS BY LA-ICP-MS, PIXIE AND μ-XRF.** Susan Gruhl, University of Hannover, Institute of Inorganic Chemistry, Callinst. 9, D-30167 Hannover, Germany, susan.gruhl@acc.uni-hanover.de; Marco Lange, Frank Witte, Jürgen Vogt, and Carla Vogt

3:00 **TP35 ELEMENTAL PROFILE AND SPECIATION IN THE BENIGN, RWPE-1, AND MALIGNANT PROSTATIC CELL LINES RWPE-2 AND LNCaP.** Heather R. Trenary, University of Cincinnati, Department of Chemistry, P.O. Box 210037, Cincinnati OH 45221-0172, trenarhr@email.uc.edu; Allison Krentz, Katie DeNicola, Alvaro Puga, and Joseph A. Caruso

3:00 **TP36 METALLOPROTEOMICS BY SIZE EXCLUSION CHROMATOGRAPHY AND ICPMS.** Viorica Lopez-Avila, Agilent Technologies, 3500 Deer Creek Road, Palo Alto CA 94304, viorica_lopez-avila@agilent.com; Kirk Lokits, Joe Caruso, and William Robinson

PT02 Poster Session: Dietary Supplements, Nutraceutical and Pharmaceutical Analyses
Sponsored by Bristol-Myers Squibb Company

3:00 **TP37 DETERMINATION OF ARSENIC SPECIES IN DIETARY STAPLES CONTAINING LOW LEVELS (<30 μG/KG) OF TOTAL ARSENIC.** Chad L. Robins, U.S. Food and Drug Administration, Forensic Chemistry Center, 6751 Steger Dr, Cincinnati OH 45237-3097, chad.robins_c@ora.fda.gov; John R. Urban, Melaine Allen, and Douglas T. Heitkemper

3:00 **TP38 DETERMINATION OF ARSENIC SPECIES IN FOOD AND DIETARY SUPPLEMENTS BY LIQUID CHROMATOGRAPHY COUPLED WITH MASS SPECTROMETRY.** Sang-Ho Nam, Mokpo National University, Department of Chemistry, Chnonam 534-729, South Korea, shnam@mokpo.ac.kr; Joung Hae Lee

3:00 **TP39 DEVELOPMENT AND USE OF AN INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROMETRY (ICP-AES) METHOD FOR ANALYSIS OF HEAVY METALS IN COMMERCIAL BOTANICAL SAMPLES.** Joaudimir Castro, Clemson University, 102 Biosystems Research Complex, 51 New Cherry Street, Clemson SC 29634-1905, jcastro@clemson.edu; Julia E. Cooper, and R. Kenneth Marcus

3:00 **TP40 HIGH PERFORMANCE LIQUID CHROMATOGRAPHY - PARTICLE BEAM/GLOW DISCHARGE MASS SPECTROMETRY (HPLC-PB/GD-MS) ANALYSIS OF GREEN TEA EXTRACT.** Joaudimir Castro,

Clemson University, 102 Biosystems Research Complex, 51 New Cherry Street, Clemson SC 29634-1905, jcastro@clemson.edu; Jacob L. Venzie, and R. Kenneth Marcus

3:00 **TP41 INVESTIGATION ON CHEMICAL ASSOCIATION OF ESSENTIAL AND TOXIC ELEMENTS IN COMMERCIALLY AVAILABLE SEAWEEDS USING SEC-ICP-MS.** Allison N. Krentz, University of Cincinnati, Department of Chemistry, P.O. Box 210037, Cincinnati OH 45221-0172, bruninan@email.uc.edu; Monika Shah, and Joseph A. Caruso

3:00 **TP42 DUAL-COLUMN CONFIRMATION OF ARSENIC SPECIATION IN TISSUE EXTRACTS BY IC-ICP-MS.** Hakan Gürleyük, Applied Speciation and Consulting, LLC, 953 Industry Drive, Tukwila WA 98188, hakan@appliedspeciation.com; Russ Gerads

3:00 **TP43 ANALYSIS AND SPECIATION OF METALS IN TRADITIONAL CHINESE MEDICINES.** Xiaoru Wang, First Institute of Oceanography, State Oceanic Administration, LoShan Science Park, No. 6 Xian Xia Ling Rd, LoShan Di, QingDao 266061, China, xrwang2003@yahoo.com.cn; Frank S.C. Lee

PT03 Poster Session: Elemental Speciation Analyses

3:00 **TP44 TRACE ELEMENTS IN BIOLOGICAL SAMPLES BY CLOUD POINT EXTRACTION AND ISOTOPE DILUTION HR-ICP-MS.** Maria Fernanda Giné Rosias, Centro de Energia Nuclear na Agricultura CENA-USP, Universidade de Sao Paulo, Av. Centerárlo 303, CEP 13400-970, Piracicaba SP, Brazil, mfgine@cena.usp.br; Edson L. Silva, Aparecida F. Patreze, Jorge E.S. Sarkis, and Maurício H. Kakazu

3:00 **TP45 DETECTION AND QUANTIFICATION OF A THIO-ARSENOSUGAR IN MARINE MOLLUSKS BY IC-ICP-MS WITH AN EMPHASIS ON THE INTERACTION OF ARSENOSUGARS WITH SULFIDE.** Sean D. Conklin, US Environmental Protection Agency, National Exposure Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati OH 45268, conklin.sean@epa.gov; Patricia A. Creed, and John T. Creed

3:00 **TP46 HYDRIDE GENERATION WITH A COLLISON/REACTION CELL ICP-MS FOR THE DETERMINATION OF LOW LEVEL ARSENIC SPECIES IN FOODS.** John R. Urban, U.S. Food and Drug Administration, Forensic Chemistry Center, 6751 Steger Dr, Cincinnati OH 45237-3097, jurban@ora.fda.gov; Chad Robins, Melanie Allen, and Douglas T. Heitkemper

3:00 **TP47 TOTAL *VS.* BIOACCESSIBLE ARSENIC IN RICE-BASED INFANT FOOD PRODUCTS.** Nohora V. Shockey, U.S. Food and Drug Administration, Forensic Chemistry Center, 6751 Steger Dr., Cincinnati OH 45237, nohora.shockey@fda.gov; Douglas T. Heitkemper

3:00 **TP48 A RPHPLC-ICPMS TECHNIQUE FOR STUDYING SPECIATION OF CADMIUM-PHYTOCHELATINS AND THEIR LONG DISTANCE ROOT-TO-SHOOT TRANSPORT IN GENETICALLY MODIFIED *ARADIDOPSIS THALIANA*.** Baki B.M. Sadi, University of Cincinnati, Department of Chemistry, Analytical Division Mail Box 017, Cincinnati OH 45221-0172, sadibm@email.uc.edu; Anne P. Vonderheide, Jodi R. Shann, and Joseph A. Caruso

3:00 **TP49 INVESTIGATION OF THE SELENIUM AND MERCURY COMPLEX IN THE (*ALLIUM FISTULOSUM*) GREEN ONION PLANT.** Scott E. Afton, University of Cincinnati, Department of Chemistry, Cincinnati OH 45221-0172, joseph.caruso@uc.edu; Santha Yathavakila, Monika Shah, and Joseph Caruso

3:00 **TP50 SELENIUM VOLATILES AS PROXY TO THE METABOLIC PATHWAYS OF SELENIUM IN GENETICALLY MODIFIED AND WILD TYPE *BRASSICA JUNCEA* PLANTS.** Kevin M. Kubachka, University of Cincinnati, Department of Chemistry, Mail Location 0172, Cincinnati OH 45221-0172, kubachk@email.uc.edu; Juris Meija, Danika L. LeDuc, Norman Terry, and Joseph A. Caruso

3:00 **TP51 STUDYING THE DISTRIBUTION PATTERN OF SELENIUM IN FOOD.** Valeria Gergely, Corvinus University of Budapest, Department of Applied Chemistry, Villanyi ut 29-33, H-1118 Budapest, Hungary, valeria.gergely@stud.uni-corvinus.hu; Maria Montes-Bayón, Kevin M. Kubachka, Alfredo Sanz-Medel, Peter Fodor, and Joseph A. Caruso

3:00 **TP52 CHARACTERIZATION OF SELENIUM VOLATILES IN ENRICHED GREEN ONIONS (*ALLIUM FISTULOSUM*) USING GAS CHROMATOGRAPHY COUPLED TO INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY AND TIME OF FLIGHT MASS SPECTROMETRY.** Monika Shah, University of Cincinnati, Department of Chemistry, Mail Location 0172, Cincinnati OH 45221-0172, shahma@email.uc.edu; Juris Meija, Scott Afton, and Joseph A. Caruso

3:00 **TP53 SYNERGISTIC EFFECT OF SELENIUM ON MERCURY ACCUMULATION IN *GLYCINE MAX* (SOYA BEANS).** Santha K.V. Yathavakilla, University of Cincinnati, Department of Chemistry, P.O. Box 210037, Cincinnati OH 45221-0172, joseph.caruso@uc.edu; Joseph A. Caruso

3:00 **TP54 ARSENIC SPECIATION IN CARROT EXTRACTS WITH AN EMPHASIS ON THE DETECTION OF MMA(III) AND MMTA.** Santha K.V. Yathavakilla, University of Cincinnati, Department of Chemistry, P.O. Box 210037, Cincinnati OH 45221-0172, joseph.caruso@uc.edu; Michael Fricke, Patricia Creed, Douglas Heitkemper, Nohora Vela, Carol Schwegel, John Creed, and Joseph A. Caruso

3:00 **TP55 ON-LINE PRECONCENTRATION OF TELLURIUM ON IRON(III) - MODIFIED CELLULOSE ION EXCHANGERS.** Alexandra Lásztity, L. Eötvös University, Department of Inorganic and Analytical Chemistry, P.O. Box 32, H-1518 Budapest 112, Hungary, lasztity@para.chem.elte.hu; Katalin Zih-Perényi, and Éva Bertalan

3:00 **TP56 INVESTIGATION OF METALLOPROTEINS IN *BERTHOLLETIA EXCELSA* (BRAZIL NUTS) BY CHROMATOGRAPHIC AND MASS SPECTROMETRIC TECHNIQUES.** Sarath B. Jayasinghe, University of Cincinnati, Department of Chemistry, Mail Location 0172, Cincinnati OH 45221-0172, joseph.caruso@uc.edu; Joseph A. Caruso

3:00 **TP57 MULTIDIMENSIONAL CHROMATOGRAPHY INTERFACED WITH INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY FOR SPECIATION OF ZINC METALLOPROTEINS.** Shrimati A. Balram, University of Connecticut, Department of Chemistry, 55 N. Eagleville Road, Storrs CT 06269-3060, shrimati.balram@uconn.edu; Lee Lee Chung, Danielle Cleveland, Anthony Palermo, Lauren Quattrochi, Clare Yannette, Michael Morrison, Douglas Chin, Phuong Nguyen, Heather Molyneux, Hedley Freake, and Robert Michel

3:00 **TP58 SEPARATION AND DETERMINATION OF Fe-CONTAINING PROTEINS *VIA* LIQUID CHROMATOGRAPHY-PARTICLE BEAM/HOLLOW CATHODE-OPTICAL EMISSION SPECTROSCOPY (LC-PB/HC-OES).** Tim M. Brewer, Clemson University, 102 Biosystems Research Complex, 51 New Cherry Street, Clemson SC 29634-0973, tbrewer@clemson.edu; R. Kenneth Marcus

3:00 **TP59 IDENTIFICATION OF METALS ASSOCIATED TO BIOMOLECULES IN PINE NUT (*PINUS PINEA*) BY SIZE-EXCLUSION-REVERSED-PHASE HPLC/ICPMS FOLLOWED BY ELECTROSPRAY Q-TOF MASS SPECTROMETRY.** José Luis Gómez-Ariza, Universidad de Heulva, Dpto. Química y Ciencia de los Materiales, Campus de El Carmen, E-21007 Huelva, Spain, ariza@uhu.es; A. Arias-Borrego, and T. García-Barrera

3:00 **TP60 DETERMINATION OF HALOGENATED SOLVENTS IN OLIVE OIL BY TWO-DIMENSIONAL ON-LINE COUPLING USING ECD AND ICP-MS AFTER SPME-GC SEPARATION.** José Luis Gómez-Ariza, Universidad de Heulva, Dpto. Química y Ciencia de los Materiales, Campus de El Carmen, E-21007 Huelva, Spain, ariza@uhu.es; T. García-Barrera, and F. Lorenzo

3:00 **TP61 MULTI-ELEMENT PROFILING IN MUSSEL (*MYTILUS GALLOPROVINCIALIS*) BY SEC-ICP-MS AND IDENTIFICATION OF METALLOBIOMOLECULES BY ESI-QQ-TOF.** José Luis Gómez-Ariza, Universidad de Heulva, Dpto. Química y Ciencia de los Materiales, Campus de El Carmen, E-21007 Huelva, Spain, ariza@uhu.es; F. Lorenzo, and T. García-Barrera

3:00 **TP62 THE DEVELOPMENT AND APPLICATION OF AN IC-ICP-MS METHOD FOR THE SPECIATION OF METHYLTINS.** Lisa S. Milstein, RTI International, Trace Inorganics Department, 3040 Cornwallis Road, Research Triangle Park NC 27709-2194, lmilstein@rti.org; Jason M. Perlmutter, Frank X. Weber, Michael A. Levine, Keith E. Levine, Peter M. Grohse, William F. Gutknecht, Virginia C. Moser

3:00 **TP63 USE OF COMPLEMENTARY MASS SPECTROMETRIC TECHNIQUES IN THE STUDY OF REMEDIAL BY-PRODUCTS OF THE BROMINATED FLAME RETARDANTS.** Anne P. Vonderheide, University of Cincinnati, Department of Biological Sciences, 731 Rieveschl Hall, Cincinnati OH 45221-0006, pawleca@email.uc.edu; Sabrine Mueller, Juris Meija, Kevin Mueller, Rajiv Soman, Brian Kinkle, Joseph A. Caruso, and Jodi Shann

WS01 Workshop on New Plasma Instrumentation, Sample Preparation and Accessories: ICP-AES

Isaac B. Brenner and Robert I. Botto, CoChair

3:15 **WS101 SETTING THE SCENE -- CHALLENGES FOR PLASMA BASED INSTRUMENTATION AND METHODOLOGIES.** Isaac (Joe) Brenner, Environmental Analytical Services, 9 Dishon Street, Apartment 9, Malkha, Jerusalem 96956, Israel, brenner@cc.huji.ac.il; Robert I. Botto

3:35 **WS102 RIDE THE WAV -- A TRIP FROM SAMPLE TO RESULTS THROUGH ACTIVAnalyst.** Albert Brennsteiner, Horiba Jobin Yvon Inc., 3880 Park Avenue, Edison NJ 08820, albert_brennsteiner@jobinyvon.com; Cendrine Dubuisson, Emmanuel Fretel, Odile Hirsch, Jean-Michel Mermet, and Olivier Rogerieux

3:55 **WS103 A NEW HIGH PERFORMANCE COST EFFECTIVE ICP ARRAY DETECTOR ICP-OES: THE TELEDYNE LEEMAN LABS PRISM.** David Pfeil, Teledyne Leeman Labs, 6 Wentworth Dr., Hudson NH 03051, dpfeil@teledyne.com; Peter G. Brown, and Manuel Almeida

4:15 **WS104 DESIGNING AN ICP-OES FOR MAXIMUM PRODUCTIVITY AND PERFORMANCE.** Doug Shrader, Varian, Inc., 2700 Mitchell Drive, Walnut Creek CA 94598, doug.shrader@varianinc.com; Andrew Ryan, Michelle Cree, and Steve Wall

4:35 **WS105 CONTINUUM SOURCE FLAME AAS *VS.* SEQUENTIAL ICP-AES FOR ANALYSIS OF COMPLEX ENVIRONMENTAL, GEOLOGICAL, AND INDUSTRIAL SAMPLES.** Andrea Glomb, Analytik Jena AG, Konrad-Zuse-Strasse 1, D-07745 Jena, Germany, w.schrader@analytik-jena.de; Abdrea Glomb, Alf Liebmann, and Gerhard Schlemmer

5:30 **PD02 Panel Discussion: Remaining Challenges in Speciation Analysis** Michael Sperling, EVISA, University of Münster, Corrensstrasse 30, D-48149 Münster, Germany, MichaelSperling@swol.net

Wednesday, January 11, 2005

SY05 Laser Assisted Plasma Spectrochemistry

Gary M. Hieftje, Chair

08:00 **PL03 LASER AS SAMPLING, DIAGNOSTIC AND ANALYTICAL TOOLS IN PLASMA SPECTROSCOPY.** Nicoló Omenetto, University of Florida, Department of Chemistry, Gainesville FL 32611, omenetto@chem.ufl.edu

09:00 **IL08 LA-ICP-MS -- FS *VERSUS* NS LASER ABLATION FOR NON-MATRIX-MATCHED QUANTIFICATION.** Detlef Günther, ETH Swiss Federal Institute of Technology, Laboratory of Inorganic Chemistry, ETH Hönggerberg HCI G113, CH-8093 Zürich, Switzerland, guenther@inorg.chem.ethz.ch; Joachim Kock, Jorge Pisonero, Markus Wälle, Ivana Kroslakova, and Hans-Rudolf Kuhn

09:30 **IL09 LASER ABLATION'S ROLE IN LIBS AND ICP-MS: ISSUES FOR FUTURE IMPROVEMENTS.** Richard E. Russo, Lawrence Berkeley National Laboratory, Mail Stop 70-193A, Berkeley CA 94720, rerusso@lbl.gov

10:00 **Break**

10:20 **W01 RECENT ADVANCES IN MODELLING LASER-ASSISTED MICRO-SAMPLING OF METALS: BRIDGING THE GAP BETWEEN THEORY AND EXPERIMENT.** Davide Bleiner, University of Antwerp (UIA), PLASMANT Research Group, Universiteitsplein 1, B-2610 Wilrijk - Antwerp, Belgium, davide.bleiner@ua.ac.be; Zhaoyang Chen, and Annemie Bogaerts

10:40 **W02 AN INVESTIGATION OF THE RESONANT LASER ABLATION PHENOMENON FOR TRACE METAL ANALYSIS DETECTED BY PLASMA OPTICAL AND MASS SPECTROMETERS.** Robert G. Michel, University of Connecticut, Department of Chemistry, 55 N. Eagleville Road, Storrs CT 06269-3060, robert.g.michel@uconn.edu; Danielle Cleveland

11:00 **W03 SIMULTANEOUS LA-ICP-MS AND LIBS ANALYSIS FOR MATERIAL CHARACTERIZATION.** Christopher Latkoczy, ETH Zürich, Laboratory of Inorganic Chemistry, ETH Hönggerberg HCI G111, Wolfgang-Pauli-Strasse 10, CH-8093 Zürich, Switzerland, latkoczy@inorg.chem.ethz.ch; Thierry Ghislain, Detlef Günther, and Patrik Schmutz

11:20 **W04 LASER ABLATION PLASMA SPECTROSCOPY AND LASER INDUCED BREAKDOWN SPECTROSCOPY IN THE ANALYSIS OF POWDERED AND LAYERED MATERIALS.** Viktor Kanicky, Masaryk University in Brno, Laboratory of Atomic Spectrochemistry, Dept Analytical Chem, Kotlarska 2, CZ-61137 Brno, South Moravia, Czech Republic, viktork@chemi.muni.cz; Marketa Hola, Linda Zaoralkova, Tomas Vaculovic, Tereza Ctvrtnickova, Ales Hrdlicka, Karel Novotny, Marie Pistekova, and Vitezslav Otruba

11:40 **W05 DEVELOPMENT OF LASER ABLATION ICP-MS FOR ULTRA SHALLOW JUNCTION (USJ) IMPLANT DOSE MEASUREMENT.** Fuhe Li, Air Liquide Electronics -, Balazs Analytical Services, 46409 Landing Parkway, Fremont CA 94538, fli@balazs.com; Scott Anderson

SY06 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses of Petroleum Materials and Organic Solvents

Robert I. Botto, Chair

1:00 **IL10 ADVANCES IN ICP-AES AND ICP-MS TECHNOLOGIES FOR MATERIAL CHARACTERIZATION IN THE PETROLEUM INDUSTRY.** J. David Hwang, Chevron Energy Technology Company, 100 Chevron Way, 50-1110A, Richmond CA 94082, jdhw@chevron.com

1:30 **IL11 ELEMENTAL TRACE AND ELEMENTAL SPECIES ANALYSIS OF PETROLEUM PRODUCTS BY ICP-IDMS.** Klaus G. Heumann, Johannes Gutenberg - University Mainz, Institute of Inorganic Chemistry and Analytical Chemistry, Duesbergweg 10-14, D-55099 Mainz, Germany, heumann@mail.uni-mainz.de; Sergei F. Boulyga, and Jens Heilmann

2:00 **W06 INTRODUCTION OF PETROLEUM PRODUCTS IN ICP, A METHODICAL APPROACH.** Charles-Phillip Lienemann, Institut Français de Pétrole IFP-Lyon, Direction Physique et Analyse, F-69390 Vernaison, France, charles.lienemann@ifp.fr; Sebastien Dreyfus, Christophe Pecheyran, Alain Prinzhofer, Caroline Magnier, and Olivier F.X. Donard

2:20 **W07 DETERMINATION OF ELEMENTAL "BAD ACTORS" (As, Hg AND Si) IN PETROCHEMICAL SAMPLES USING ICP-AES AND ICP-MS.** Robert Botto, ExxonMobil Chemical Company, Analytical Services Laboratory, 4500 Bayway Drive, Baytown TX 77520, bob.i.botto@exxonmobil.com

2:40 **W08 ULTRA TRACE ANALYSIS IN CRUDE OILS AND ITS FRACTIONS: MAJOR ADVANCES IN PETROLEUM GEOCHEMISTRY.** Olivier F.X. Donard, Group of Bioinorganic Analytical Chemistry, CNRS UMR 5034, Hélioparc, 2, Av. Pierre Angot, F-64053 Pau, France, olivier.donard@univ-pau.fr; S. Dreyfus, C. Pecheyran, C.P. Lienemann, and A. Prinzhofer

3:00

Poster Session

Laser Assisted Plasma Spectrometry; Petroleum Materials Analyses; Automation, Instrumentation, Software; Speciation Sampling, Preparation, and Introduction

PT11 Poster Session: Laser Assisted Plasma Spectrometry

3:00 **WP01 USING A NEW ION-OPTICS DESIGN ICP-MS FOR IMPROVING ULTRATRACE ELEMENT DETECTION LIMITS FOR LASER ABLATION ICP-MS OF DIFUSIVE GRADIENTS IN THIN FILMS OF**

POLYACRYLAMIDE GELS. Phil Shaw, Thermo Electron Corporation, Ion Path, Road Three, Winsford Cheshire CW10 0PE, United Kingdom, phil.shaw@thermo.com; Kent Warnken, William Davison, Ilao Xhang, and Martin Nash

3:00 **WP02 ANALYTICAL PERFORMANCE CHARACTERISTICS OF UV-FS-LA-ICP-MS @ 200 AND 266 NM.** Joachim Koch, ETH Swiss Federal Institute of Technology, Laboratory of Inorganic Chemistry, ETH Hönggerberg HCl G109, CH-8093 Zürich, Switzerland, koch@inorg.chem.ethz.ch; Jorge Pisonero, Markus Wälle, and Detlef Günther

3:00 **WP03 IN TORCH LASER ABLATION ICP-TOFMS.** Martin Tanner, ETH Hönggerberg HCI G113, Laboratory of Inorganic Chemistry, Wolfgang Pauli-Strasse 10, CH-8093 Zürich, Switzerland, tanner@inorg.chem.ethz.ch; Detlef Günther

3:00 **WP04 FRACTIONATION OF ALKALI ELEMENTS DURING LASER ABLATION ICP-MS ANALYSIS OF SILICATE SAMPLES.** Jitka Mikova, Charles University, Faculty of Science, Albertov 6, CZ-128 43 Prague 2, Czech Republic, jitka.mikova@seznam.cz; Henry Longerich, Jan Ksoler, and Michael Wiedenbeck

3:00 **WP05 NEW NATURAL ZIRCON STANDARD FOR LASER ABLATION ICP-MS U-Pb GEOCHRONOLOGY.** Jiri Slama, Charles University, Faculty of Science, Albertov 6, CZ-128 43 Prague 2, Czech Republic, slama@natur.cuni.cz; Jan Kosler, Urs Schaltegger, Mike Tubrett, and Marcus Gutjahr

3:00 **WP06 U-Pb ZIRCON DATING USING LA-MC-ICPMS AT THE ARIZONA LASERCHRON CENTER.** Victor A. Valencia, University of Arizona, Department of Geosciences, Gould-Simpson Building #77, Tucson AZ 85721-0044, victorv@geo.arizona.edu; George Gehreis, Joaquin Ruiz, Alex Pullen, and Mark Baker

3:00 **WP07 LASER-INDUCED BREAKDOWN SPECTROSCOPY USING A COLLIMATED LASER BEAM.** David Cremers, Applied Research Associates, Inc., Suite A-220, 4300 San Mateo Blvd. NE, Albuquerque NM 87110-1295, dcremers@ara.com; Andrew K. Knight, Rosemarie Chinni, and Leon J. Radziemski

3:00 **WP08 A NOVEL SAMPLING SYSTEM FOR LASER-INDUCED BREAKDOWN SPECTROSCOPY.** Scott R. Goode, University of South Carolina, Department of Chemistry and Biochemistry, 631 Sumter Street, Columbia SC 29208, goode@sc.edu; Richard Hoskins [withdrawn]

3:00 **WP09 DEVELOPMENT OF A FUSED PYRRHOTITE (FeS) STANDARD REFERENCE MATERIAL FOR MICROBEAM ANALYSES OF PLATINUM GROUP ELEMENTS AND GOLD.** Mike Tubrett, Memorial University of Newfoundland, MicroAnalysis Facility - Inco Innovation Centre, 230 Elizabeth Avenue PO Box 4200, St. John's NL A1C 5S7, Canada, mtubrett@esd.mun.ca; P.J. Sylvester, L.J. Cabri, W. Diegor, A. Peregoedova, G. McMahon, and J.H.G. Laflamme

3:00 **WP10 NEW ABLATION CELLS FOR IN LASER ABLATION ICP-MS.** Jorge Pisonero, ETH Zürich, Laboratory of Inorganic Chemistry, HCl, G141, Wolfgang Pauli-Strasse 10, CH-8093 Zürich, Switzerland, jorge.pisonero@inorg.chem.ethz.ch; Daniel Fliegel, and Detlef Günther

3:00 **WP11 RADIATIVE MODEL OF LASER INDUCED PLASMA: THEORY AND EXPERIMENT.** Igor Gornushkin, University of Florida, Department of Chemistry, P.O. Box 117200, Gainesville FL 32611, igorg@ufl.edu; N. Omenetto, B.W. Smith, and J.D. Winefordner

3:00 **WP12 ANALYSIS OF SOLID MATERIAL BY UV-LA-ICP-MS -- A COMPARISON BETWEEN FS- AND NS-LA.** Jorge Pisonero, ETH Zürich, Laboratory of Inorganic Chemistry, HCl, G141, Wolfgang Pauli-Strasse 10, CH-8093 Zürich, Switzerland, jorge.pisonero@inorg.chem.ethz.ch; Markus Wälle, Joachim Koch, and Detlef Günther

3:00 **WP13 IMPROVING SAMPLING REPRESENTATIVENESS AND REDUCING MATRIX DEPENDECIES FOR PROBLEMATIC GEOLOGIC SAMPLES USING ULTRAFAST (UF)-LA-ICPMS.** Joel E. Gagnon, University of Windsor, Department of Earth Sciences, 401 Sunset Avenue, Windsor ON N9B 3P4, Canada, jgagnon@uwindsor.ca; Brian J. Fryer, and Iain M. Samson

3:00 **WP14 QUANTITATIVE MAJOR, MINOR AND TRACE ELEMENT ANALYSIS OF GEOLOGICAL MATERIALS BY ULTRAFAST (UF)-LA-ICPMS WITHOUT USING AN INTERNAL STANDARD.** Joel E. Gagnon, University of Windsor, Department of Earth Sciences, 401 Sunset Avenue, Windsor ON N9B 3P4, Canada, jgagnon@uwindsor.ca; Brian J. Fryer, and Iain M. Samson

3:00 **WP15 ANALYSIS OF POWDERED INFANT FORMULA BY LA-ICP-OES.** Viktor Kanicky, Masaryk University in Brno, Faculty of Science, Laboratory of Atomic Spectrochemistry, Kotlarska 2, CZ-611 37 Brno, South Moravia, Czech Republic, viktork@chemi.muni.cz,mhola@centrum.cz; Markéta Holá, Pavel Krásensky

3:00 **WP16 ANALYSIS OF NON-CONDUCTIVE SOLID SAMPLES BY LASER ABLATION INTERFACED WITH HIGH RESOLUTION SECTOR FIELD ICP-MS.** Julian D. Wills, Thermo Electron Bremen GmbH, Hanna-Kunath-Str. 11, D-28199 Bremen, Germany, julian.wills@thermo.com; Masahiro Oishi, and Meike Hamester

PT12 Poster Session: Petroleum Materials Analyses

3:00 **WP17 FACTORS INFLUENCING ACCURATE ANALYSIS OF ASPHALTENES BY ICPMS AND ICPOES.** Christiane Duyck, Pontifica Universidade Católica do Rio de Janeiro, Rua Marquês de Sao Vicente 225, Rio de Janeiro RJ 22451-900, Brazil, cbduyck@rdc.puc-rio.br; Norbert Miekeley, Heloisa Fontenelle, Carmen Lucia Porto da Silveira, Teresa C.O. da Fonseca

3:00 **WP18 SULFUR MULTI-SPECIES DETERMINATION IN PETROLEUM PRODUCTS BY SPECIES-SPECIFIC AND SPECIES-UNSPECIFIC ISOTOPE DILUTION ANALYSIS USING GG/ICP-MS.** Jens Heilmann, Johannes Gutenberg - University Mainz, Institute for Inorganic and Analytical Chemistry, Duesbergweg 10-14, D-55099 Mainz, Germany, heilmanj@uni-mainz.de; Klaus G. Heumann

PT13 Poster Session: Automation, Instrumentation, Software

3:00 **WP19 APPROACHING A UNIVERSAL PNEUMATIC NEBULIZER.** Jerry Dulude, Glass Expansion, Inc., 4 Barlows Landing Road, Suite 2, Pocasset MA 02559-1983, jdulude@geicp.com; Vesna Dolic, and Peter Liddel

3:00 **WP20 PERFORMANCE COMPARISON OF SEVERAL (NEW) SPRAY CHAMBER DESIGNS FOR ICP SPECTROMETRY USING COMPUTATIONAL FLUID DYNAMICS (CFD).** Elke Fasch, University of Leoben, General and Analytical Chemistry, Franz-Josef-Strasse 18, A-8700 Leoben, Austria, elke.fasch@mu-leoben.at; Wolfhard Wegscheider, and Franz Landershamer

3:00 **WP21 FULLY AUTOMATED ELEMENTAL ANALYSIS WITH THE HELP OF A NOVEL FLOW DIGESTION SYSTEM.** Markus Lafer, Anton Paar GmbH, Anton Paar Strasse 20, A-8054 Graz, Austria, markus.lafer@anton-paar.com; Isaac B. Brenner, Peter Kettisch, and Günter Knapp

3:00 **WP22 AUTOMATED SEPARATIONS FOR THE ANALYTICAL LABORATORY.** James Sommers, Idaho National Laboratory, P.O. Box 1625, MS 6150, Idaho Falls ID 83403, james.sommers@inl.gov; Daniel Cummings and Jeffrey Giglio

3:00 **WP23 THE USE OF A HIGH DISPERSION, ARRAY DETECTOR ICP TO GENERATE ELEMENTAL FINGERPRINTS.** Manny Almeida, Teledyne Leeman Labs, Inc., 6 Wentworth Drive, Hudson NH 03051, manuel_almeida@teledyne.com; Peter G. Brown, and David Pfeil

3:00 **WP24 DEVELOPMENT OF A NEW EMISSION SPECTRUM DATA BASE DEDICATED TO ICP OPTICAL EMISSION SPECTROSCOPY.** Albert Brennsteiner, Horiba Jobin Yvon, Inc., 3880 Park Avenue, Edison NJ 08820, albert_brennsteiner@jyhoriba.com; Agnes Cosnier, Yves Danthez, Cendrine Dubuisson, Emmanuel Frétel, Jean Michel Mermet, and Olivier Rogerieux

3:00 **WP25 BENEFITS OF AN ICP-BASED EMISSION SPECTRUM DATA BASE FOR MULTI-LINE ANALYSIS.** Albert Brennsteiner, Horiba Jobin Yvon, Inc., 3880 Park Avenue, Edison NJ 08820, albert_brennsteiner@jyhoriba.com; Agnes Cosnier, Yves Danthez, Cendrine Dubuisson, Emmanuel Frétel, Jean Michel Mermet, and Olivier Rogerieux

3:00 **WP26 CONTINUOUS MAINTENANCE MONITORING AND SO MUCH MORE.** Richard G. Hall, TimeKeepers America, 13044 Pinnacle Lane, Hudson FL 34669, tka@tampabay.rr.com; Claire B. Jablonski

3:00 **WP27 EXPERIMENTAL DEVELOPMENT OF EMPIRICAL EXTERNAL NORMALISATION AND ASSESSMENT AGAINST SAMPLE-STANDARD BRACKETING METHODS FOR MASS BIAS CORRECTION OF Cu AND Zn ISOTOPE ANALYSIS WITH MC-ICP-MS.** Kate E. Peel, Imperial College, Department of Earth Science and Engineering, Prince Consort Road, South Kensington, London SW7 2A2, United Kingdom, kate.peel@imperial.ac.uk; Dominik J. Weiss, John B. Chapman, and Barry J. Coles

3:00 **WP28 ENHANCING THE PERFORMANCE OF SINGLE COLLECTOR ICP-MS FOR ISOTOPE RATIO DETERMINATIONS.** Meike Hamester, Thermo Electron Bremen GmbH, Hanna-Kunath-Str. 11, D-28199 Bremen, Germany, meike.hamester@thermo.com; Julian Willis, and Lothar Rottmann

3:00 **WP29 DETERMINATION AND APPLICATION OF RELATIVE SENSITIVITY FACTORS (RSFs) FOR THE ACTINIDES.** Daniel Cummings, Idaho National Laboratory, P.O. Box 1625, MS 6150, Idaho Falls ID 83403, daniel.cummings@inl.gov; James Sommers and Jeffrey Giglio

3:00 **WP30 A DUAL SOURCE INDUCTIVELY COUPLED PLASMA/ELECTROSPRAY IONIZATION TIME-OF-FLIGHT MASS SPECTROMETER FOR RAPID SPECIATION AND METALLOMIC ANALYSIS.** Duane Rogers, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, duaroger@indiana.edu; Steven J. Ray and Gary M. Hieftje

3:00 **WP31 COMPARISON OF LIMITS OF DETECTION AND ASSOCIATED STATISTICS.** Daniel Montville, University of Massachusetts, Department of Chemistry, 701A LGRCT, 710 N. Pleasant St., Amherst MA 01003-9336, dmontvil@chem.umass.edu; Edward Voigtman

PT14 Poster Session: Spectrochemical Applications

3:00 **WP32 A CLOSED VESSEL MICROWAVE PREPARATION METHOD OF POLYPROPYLENE FOR BOTH AA AND ICP-OES ANALYSIS.** Daniel Reynolds, Sunoco Chemicals R&T, 550 Technology Drive, Pittsburgh PA 15219, dwreynolds@sunocoinc.com

3:00 **WP33 ANALYSIS OF SEMICONDUCTOR GRADE TIER C SULPHURIC ACID BY ICP-MS USING A SINGLE SET OF OPERATING CONDITIONS.** Julian D. Wills, Thermo Electron (Bremen) GmbH, Hanna-Kunath Str. 11, D-28199 Bremen, Germany, julian.wills@thermo.com; Meike Hamester, Torsten Lindemann, and Lothar Rottmann

3:00 **WP34 DETECTION OF SULPHUR AND SELENIUM GRADIENTS IN SEMICONDUCTOR MATERIALS** Carla Vogt, University of Hannover, Institute of Inorganic Chemistry, Callinst. 9, D-30167 Hannover, Germany, cvogt@acc.uni-hannover.de; Susan Gruhl, L. Tosch, H. Roth, and M. Binnewies

3:00 **WP35 ANALYSIS OF CVD PRECURSOR COMPOUNDS FOR TRACE METAL IMPURITIES BY ICPMS.** Phillip L. Clancy, Air Liquide - Balazs Analytical Services, 13546 North Central Expressway, MS 301, Dallas TX 75243, phil.clancy@airliquide.com; Scott Anderson

3:00 **WP36 DEVELOPMENT OF A SIMPLE ICP-AES OSMIUM ASSAY.** Jeffrey Weber, Pfizer Global Manufacturing, 7000 Portage Ave., Mail Stop 1593-89-2 South, Portage MI 49001, jeffrey.w.weber@pfizer.com; John W. Manski

3:00 **WP37 DETERMINATION OF PHOSPHOROUS IN HIGH PURITY ALUMINUM AND ALUMINUM ALLOY SAMPLES BY QUADRUPOLE ICP-MS.** Michael Paul, Thermo Electron GmbH, Im Steingrund 4-6, D-66603 Dreieich, Germany, michael.paul@thermo.com; Hans Mattedi

3:00 **WP38 ORGANOPHOSPHATE-CONTAINING PESTICIDES AND WAREFARE AGENTS: DETERMINATION BY GC-ICP-MS.** Charlita Rosal, U.S. Environmental Protection Agency, National Exposure Research Laboratory, 944 E. Harmon Avenue, Las Vegas NV 89119, rosal.charlita@epa.gov; Georges-Marie Momplaisier and Edward M. Heithmar

3:00 **WP39 A NEW AFFORDABLE SIMULTANEOUS AXIAL-VIEW ICP WITH CCD DETECTION: ANALYSIS OF ENVIRONMENTAL SAMPLES.** Charles E. Hodges, Spectro Analytical Instruments, Inc., 450 Donald Lynch Blvd., Marlborough MA 01752-4725, chodges@spectro.com; George G. Glavin

3:00 **WP40 HIGH-PRECISION MEASUREMENTS USING A SIMULTANEOUS ICP WITH CCD DETECTION: FROM FERTILIZERS TO PRECIOUS METALS.** George G. Glavin, Spectro Analytical Instruments, Inc., 450 Donald Lynch Blvd., Marlborough MA 01752-4725, ggglavin@spectro.com

3:00 **WP41 DIRECT DETERMINATION OF TRACE ELEMENT CONTAMINANTS IN HIGH ALLOY STEELS AND REFRACTORY Ni ALLOYS BY INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** Isaac (Joe) Brenner, Environmental Analytical Services, 9 Dishon Street, Apartment 9, Malkha, Jerusalem 96956, Israel, brenner@cc.huji.ac.il; Gisela Fauler, and Gunther Knapp

3:00 **WP42 DC ARC-OES FOR MULTELEMENT ANALYSIS OF REFRACTORY SAMPLES -- THE AWAKENING OF THE SLEEPING BEAUTY.** Isaac (Joe) Brenner, Environmental Analytical Services, 9 Dishon Street, Apartment 9, Malkha, Jerusalem 96956, Israel, brenner@cc.huji.ac.il

3:00 **WP43 CHROMIUM BASED POLYATOMIC INTERFERENCES ON RHODIUM IN ICP-MS.** Antoaneta P. Krushevska, General Electric Global Research Center, One Research Circle, Bldg. K-1Room 2A 28, Niskayuna NY 12309, krushevska@crd.ge.com; Ying Zhou, V. Ravikumar, Young Kim, and Joachim Hinrichs

3:00 **WP44 A DISCUSSION OF THE RAMIFICATIONS OF THE WEEE/ROHS LEGISLATION, ITS IMPLICATION FOR FUTURE INSTRUMENTS AND ASSOCIATED ANALYSES.** Adrian Holley, Thermo Electron, Scientific Instruments Division, 19 Mercers Row, Cambridge CB5 8BZ, United Kingdom, adrian.holley@thermo.com; Andrew Clavering, and Paul Neal

3:00 **WP45 SLURRY NEBULIZATION AND ICP-OES ANALYSIS OF INORGANIC SAMPLES.** Rob I. McCrindle, Tshwane University of Technology, Private Bag X680, Pretoria 0001, South Africa, mccrindleri@tut.ac.za; N.S. Mokgalaka, B.M. Botha, and L. Marjanovic

3:00 **WP46 "AGE" CHARACTERIZATION OF A Co SEALED SOURCE BY INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY(ICP-MS).** Jeffrey Giglio, Idaho National Laboratory, P.O. Box 1625, MS 6150, Idaho Falls ID 83415-1625, jeffrey.giglio@inl.gov; Daniel Cummings, James Sommers, Mary Adamic, and Kevin Carney

PT15 Poster Session: Speciation Sampling, Preparation, and Introduction

3:00 **WP47 CAPILLARY ELECTROPHORESIS - INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY FOR ELEMENTAL SPECIATION ANALYSIS.** Chrystel Ambard, Commissariat à l'Energie Atomique, CEA/DAM/DIF/DASE/SRCE, BP 12, F-91680 Bruyères-le-Châtel, France, chrystel.ambard@cea.fr; Nicolas Bafian, Jean Aupiais, and Fabien Pointurier

3:00 **WP48 HYPHENATION OF CAPILLARY ELECTROPHORESIS WITH ICP-MS FOR THE DETERMINATION OF FISSION PRODUCTS IN NUCLEAR SPENT FUELS.** Laura Aldave de las Heras, Institute for Tansuranium Elements, DG Joint Research Centre - European Commission, PO Box 2340, D-76125 Karlsruhe, Germany, aldave@itu.fzk.de; Aurélien Pitois, Ramon Carlos, and Maria Betti

3:00 **WP49 DUAL NEBULIZER SAMPLE INTRODUCTION SYSTEM FOR SIMULTANEOUS DETERMINATION OF VOLATILE ELEMENTAL HYDRIDES AND OTHER ELEMENTS.** José Chirinos, Universidad Central de Venezuela, Centro de Quimica Analitica, PO Box 40720 Escuela Quimica, Caracas 1020-A DF, Venezuela, jchiri@strix.ciens.ucv.ve; Luis Gomez

3:00 **WP50 EXPERIMENTAL DESIGN OPTIMIZATION AND VALIDATION OF A SPME-CG-ICP-MS METHOD FOR THE DETERMINATION OF ORGANOTIN COMPOUNDS IN WATERS.** Claudio Mucchino, Universita di Parma, Dipartimento di Chimica Generale ed Inorganica, Parco Area delle Scienze 17/a, I-43100 Parma, Italy, claudiom@unipr.it; Federica Bianchi, Monica Maffini, and Alessandro Mangia

3:00 **WP51 APPLICATION OF A SMALL MICROWAVE CAVITY FOR THE SPECIATION OF MERCURY AND TIN COMPOUNDS IN BIOLOGICAL MATRICES USING GAS CHROMATOGRAPY-ISOTOPE DILUTION-INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** David Point, National Institute of Standards and Technology, Hollins Marine Laboratory, 331 Fort Johnson Road, Charleston SC 29412-9110, david.point@noaa.gov; W. Clay Davis, Shona McSheehy, Steven J. Christopher, Olivier F.X. Donard, Gregory C. Turk, and David Barclay

3:00 **WP52 MULTIVARIATE STUDY IN CHEMICAL VAPOR GENERATION FOR SIMULTANEOUS DETERMINATION OF ARSENIC, ANTIMONY, BISMUTH, GERMANIUM, TIN, SELENIUM, TELLURIUM AND MERCURY BY ICP-OES.** Marco Grotti, University of Genoa, Department of Chemistry and Industrial Chemistry, Via Dodecaneso 31, I-16146 Genova, Italy, grotti@chimica.unige.it; Cristina Lagomarsino and Roberto Frache

3:00 **WP53 SIMULTANEOUS DETERMINATION OF As, Bi, Sb, Se, Sn, Te, Tl IN HIGH ALLOY STEELS -- REEVALUATION OF HYDRIDE GENERATION INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROMETRY.** Isaac (Joe) Brenner, Technical University of Graz, Institute for Analytical Chemistry, Micro- and Radiochemistry, Technikerstrasse 4, A-8010 Graz, Austria, brenner@cc.huji.ac.il; Helmar Wiltsche, and Gunther Knapp

3:00 **WP54 ARSENIC SPECIATION BY INTERFACING CAPILLARY ELECTROPHORESIS WITH HYDRIDE GENERATION TO HR-ICP-MS.** Georgia C.L. Araújo, Centro de Energia Nuclear na Agricultura, Universidade de Sao Paulo, Av. Centerárlo 303, CEP 13400-970, Piracicaba SP, Brazil, mfgine@cena.usp.br; Carlo Alfredo Suárez, Maria Fernanda Giné, and Jorge E.S. Sarkis

3:00 **WP55 THE DETERMINATION OF ACIDITY IN AQUEOUS SOLUTION BY INDUCTIVELY COUPLED PLASMA EMISSION SPECTROMETRY WITH VAPOR GENERATION TECHNIQUE.** Xuchuan Duan, Tianjin Normal University, College of Chemistry and Life Sciences, No. 241, Weijin Road, Hexi Distri, Tianjin 300074, People's Republic China, xuchuan_duan@hotmail.com

3:00 **WP56 THE DETERMINATION OF CARBONATE AND HYDROGEN CARBONATE IN SOLID MIXED ALKALI BY ICP-OES WITH CO_2 VAPOR GENERATION TECHNIQUES.** Xuchuan Duan, Tianjin Normal University, College of Chemistry and Life Sciences, No. 241, Weijin Road, Hexi Distri, Tianjin 300074, People's Republic China, xuchuan_duan@hotmail.com

3:00 **WP57 NOVEL METHODS FOR THE DETERMINATION OF CARBONATE SPECIES IN AQUEOUS SOLUTION BY ICPOES.** Xuchuan Duan, Tianjin Normal University, College of Chemistry and Life Sciences, No. 241, Weijin Road, Hexi Distri, Tianjin 300074, People's Republic China, xuchuan_duan@hotmail.com

3:00 **WP58 SORPTION OF ELEMENTAL SELENIUM ONTO SURFACES AS A SOURCE FOR SELENIUM LOSS.** Russ Gerads, Applied Speciation and Consulting, LLC, 953 Industry Drive, Tukwila WA 98188, russ@appliedspeciation.com; Hakan Gürleyük

3:00 **WP59 SPECIATION ON-SITE: TAKING PART-OF-THE-LAB TO THE SAMPLE FOR SPECIATION IN THE FIELD BY ITV (IN-TORCH VAPORIZATION) SAMPLE INTRODUCTION AND MEASUREMENT IN THE LAB BY ICP SPECTROMETRY.** Vassili Karanassios, University of Waterloo, Department of Chemistry, Waterloo ON N2L 3G1, Canada, vkaranassios@uwaterloo.ca; B. Gibson, and H. Badiei

3:00 **WP60 MATHEMATICS IN ELEMENTAL SPECIATION: SOME TOOLS FOR DATA ANALYSIS.** Juris Meija, Institute for National Measurements Standards, National Research Council Canada, Ottawa ON K1A 0R6, Canada, juris_m@rocketmail.com; Zoltan Mester, and Joseph A. Caruso

3:00 **WP61 IMPROVING THE PERFORMANCE OF ICP-OES -- A COMPARISON OF ULTRASONIC NEBULIZATION AND AN ENHANCED HYDRIDE GENERATOR.** Mike Wassall, Thermo Electron, Scientific Instruments Division, SOLAAR House, 19 Mercers Row, Cambridge CB5 8BZ, United Kingdom, mike.wassal@thermo.com; Karen Harper, and Adrian Holley

3:00 **WP62 EVALUATING SYRINGE FILTERS FOR THE DETERMINATION OF DISSOLVED TRACE ELEMENTS IN SURFACE WATERS BY HR-ICP-MS.** Panjai Prapaipong, Arizona State University, Department of Geological Sciences, Box 871404, Tempe AZ 85287-1404, panjai@asu.edu; Natalya Zolotiva, Nathan Schnebly, and Everett L. Shock

3:00 **WP63 MICROCAPILLARY SAMPLING AND ANALYSIS OF PLANT-SOIL MICROCOSMS VIA FI-ICP-MS -- SPECIAL REFERENCE TO URANIUM.** Cameron McLeod, University of Sheffield, Centre for Analytical Sciences, Department of Chemistry, Sheffield S3 7HF, United Kingdom, c.w.mcleod@sheffield.ac.uk; S. Brittan, D. Tomas, A. Cox, P. Watson, and E. Patterson

3:15 *WS02 Workshop on New Plasma Instrumentation, Sample Preparation and Accessories: ICP-MS*

Isaac B. Brenner and Robert I. Botto, CoChair

3:15 **WS201 FEATURES AND PERFORMANCE OF THE NOVEL NEW VARIAN COLLISION REACTION INTERFACE ICP-MS (CRI-ICP-MS) -- A NEW SOLUTION TO INTERFERENCE MANAGEMENT IN ICP-MS.** Shane Elliott, Varian Analytical Instruments, 679 Springvale Road, Mulgrave Victoria 3170, Australia, shane.elliott@varianinc.com; Stephen Anderson, Xue Dong Wang, and Iouri Kalinitchenko

3:35 **WS202 PUSHING BACK THE FRONTIERS OF QUADRUPOLE ICP-MS MEASUREMENT: THE POWER OF THE HELIUM COLLISION CELL.** Abe Gutiérrez, Agilent Technologies, ICP-MS Sales and Support, 2554 Jardin Way, Weston FL 33327, abe@agilenticpms.com; Ed McCurdy

3:55 **WS203 ISOTOPE RATIO MEASUREMENTS ON URANIUM USING ICP-MC-MS AND MULTIPLE ION COUNTING.** Zenon Palacz, GV Instruments Ltd, Crews Road, Wythenshawe, Manchester M23 9BE, United Kingdom, zenon.palacz@gvinstruments.co.uk; Sabine Pawlig

4:15 **WS204 CURRENT STATUS OF SECTOR FIELD TECHNOLOGY FOR ELEMENTAL ANALYSIS.** Meike Hamester, Thermo Electron Bremen GmbH, Hanna-Kunath-Str. 11, D-28199 Bremen, Germany, meike.hamester@thermo.com; Lothar Rottmann, Joachim Hinrichs, Dafydd Milton, Julian Willis,

4:35 **WS205 CONTINUED DEVELOPMENTS IN THE ANALYSIS OF POLYBROMINATED DIPHENYL ETHERS BY GC-ICP-MS.** Emmett Soffey, Agilent Technologies, 3380 146th Pl SE, Suite 300, Bellevue WA 98007-6472, emmett_soffey@agilent.com; Steve Wilbur

4:55 **WS206 UNIVERSAL PLATFORM 193 SOLID STATE: A NEW SOLID STATE, SHORT PULSE WIDTH 193 NM LASER SYSTEM FOR THE IN-SITU ANALYSIS OF SOLIDS (AND LIQUIDS).** Lawrence Neufeld, New Wave Research Inc., 2 Adams Circle, Durham NH 03824, lneufeld@new-wave.com

5:30 **PD03 Panel Discussion: Laser Assisted Plasma Spectrometry.** Robert G. Michel, University of Connecticut, Department of Chemistry, 55 N. Eagleville Road, Storrs CT 06269-3060, robert.g.michel@uconn.edu

Thursday, January 12, 2005

SY07 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses for Provenance and Forensics

Frank Vanhaecke, Chair

08:00 **PL04 APPLICATIONS OF LASER ABLATION INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY (LA-ICP-MS) IN CRIME SCENE INVESTIGATIONS.** R. John Watling, University of Western Australia, Centre for Forensic Science, 35 Stirling Highway, Crawley WA 6009, Australia, jwatling@cyllene.uwa.edu.au

09:00 **IL12 THE SOURCE OF GOOD AND EVIL, PROVENANCING BY NITE.** Jurian Hoogewerff, Institute of Food Research, Norwich Research Park, Colney, Norwich NR4 7UA, United Kingdom, jurian.hoogewerff@bbsrc.ac.uk; The NITECRIME Gang

09:30 **Th01 APPLICATIONS OF MC-ICPMS IN FORENSIC STUDIES: DIAMONDS MAY BE FOREVER, BUT NOTHING IS AS PERMANENT AS LEAD.** Michael E. Ketterer, Northern Arizona University, Department of Chemistry and Biochemistry, Box 5698, Flagstaff AZ 86011-5698, michael.ketterer@nau.edu; Michael T. Beddow, Jay R. Vargas, and Celeste M. Biles

09:50 **Th02 TRACE ELEMENT AND ISOTOPIC ANALYSIS FOR PROVENANCING STUDIES OF HUMAN REMAINS.** Christopher Latkoczy, ETH Zürich, Laboratory of Inorganic Chemistry, ETH Hönggerberg HCI G111, Wolfgang-Pauli-Strasse 10, CH-8093 Zürich, Switzerland, latkoczy@inorg.chem.ethz.ch; Thomas Prohaska, Maria Teschler-Nicola, Beat Aeschlimann, and Detlef Günther

10:10 **Break**

10:30 **Th03 LA-ICPMS FOR PROVENANCE INVESTIGATIONS.** Martin Resano, University of Zaragoza, Department of Analytical Chemistry, Pedro Cerbuna 12, E-50009 Zaragoza, Spain, mresano@unizar.es; Esperanza Garcia-Ruiz, Josefina Pérez-Arantegui, and Frank Vanhaecke

10:50 **Th04 PROVENANCE DETERMINATION AND AUTHENTICATION OF ORIENTAL CERAMICS.** Emma K. Bartle, The University of Western Australia, Centre for Forensic Science Mailbag M420, 35 Stirling Highway, Crawley, WA 6009, Australia, ebartle@optusnet.com.au; R. John Watling

11:10 **Th05 THE DEVELOPMENT OF LA-ICP-MS FOR THE PROVENANCE ESTABLISHMENT OF GLASS EVIDENCE.** Christopher May, The University of Western Australia, Centre for Forensic Science Mailbag M420, 35 Stirling Highway, Crawley WA 6009, Australia, mayc02@student.uwa.edu.au; R. John Watling

11:30 **Th06 ANALYSIS OF MULTIPLE ISOTOPIC SYSTEMS ANALYZED BY GS-MS AND ICP-MS FOR PROOF OF AUTHENTICITY OF AGRICULTURIAL PRODUCTS.** Thomas Prohaska, University of Natural Resources and Applied Life Sciences, Department of Chemistry - VIRIS Project, Muthgasse 18, A-1190 Vienna, Austria, thomas.prohaska@boku.ac.at; Siegfried Swoboda, Patrick Galler, Gerhard Stingeder, and Micha Horacek

11:50 **Th07 FORENSIC ANALYSIS OF MICRO CRIME SCENE DEBRIA.** Cameron Scadding, The University of Western Australia, Centre for Forensic Science Mailbag M420, 35 Stirling Highway, Crawley WA 6009, Australia, cscadding@optusnet.com.au; R. John Watling, and Allen Thomas

SY08 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses for Certified Reference Materials

Sergio Caroli, Steven Christopher, and Ralph Sturgeon, CoChair

1:00 **IL13 REFERENCE MATERIAL AND SPECTROSCOPIC METHODS -- WHO NEEDS WHAT?** Hendrik Emons, Institute for Reference Materials and Measurements (IRMM), European Commission, Joint Research Centre, Retieseweg 111, B-2440 Geel, Belgium, hendrik.emons@cec.eu.int

1:30 **Th08 DEVELOPMENT OF ISOTOPIC CERTIFIED REFERENCE MATERIALS FOR LASER ABLATION INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** Steven J. Christopher, National Institute of Standards and Technology, Hollings Marine Laboratory, 331 Fort Johnson Road, Charleston SC 29412-9110, steven.christopher@nist.gov; W. Clay Davis, and Gregory C. Turk

1:50 **Th09 CERTIFICATION OF ORGANOMETALLIC SPECIES IN NIST STANDARD REFERENCE MATERIALS.** W. Clay Davis, National Institute of Standards and Technology, Hollins Marine Laboratory, 331 Fort Johnson Road, Charleston SC 29412-9110, clay.davis@nist.gov; Steven J. Christopher, Lee Yu, and Steve E. Long

2:10 **Th10 STABILITY OF As SPECIES IN A CANDIDATE URINE REFERENCE MATERIAL.** Lee Yu, National Institute of Standards and Technology, 100 Bureau Dr., Mail Stop 8391, Gaithersburg MD 20899-8391, lee.yu@nist.gov; Carl P. Verdon

2:30 **Th11 REPORTING VALUES AND UNCERTAINTIES FOR CERTIFIED REFERENCE MATERIALS USED IN ICPMS ANALYSIS.** Ralph H. Obenauf, Spex CertiPrep, 203 Norcross Avenue, Metuchen NJ 08840, robenauf@spexcsp.com; Nimi Kocherlakota

2:50 **Th12 CRMS -- NEW OPPORTUNITIES FOR MEETING THE NEEDS OF ANALYTICAL MASS SPECTROMETRY USERS.** Ralph Sturgeon, Institute for National Measurement Standards, National Research Council of Canada, Montreal Road, Bldg M-12, Ottawa ON K1A 0R9, Canada, ralph.sturgeon@nrc.ca; Zoltan Mester, Christine Scriver, Scott Willie, and Lu Yang

3:00

Poster Session

Provenance, Forensics Analyses; Instrumentation; Reference Materials; Teaching Spectroscopy, Educational Programs; Plasma Fundamentals

PT21 Poster Session: Provenance, Forensics

3:00 **ThP01 Pb ISOTOPE ANALYSIS OF BONE TISSUE FOR OBTAINING INSIGHT INTO Pb POISONING IN THE ROMAN ERA.** Frank Vanhaecke, Ghent University, Laboratory of Analytical Chemistry, Proeftuinstraat 86, B-9000 Ghent, Belgium, frank.vanhaecke@ugent.be; David De Muynck, Karen Van Hoecke, Lieve Balcaen, Ghylaine Quitté, Elisabeth Smits, and Freek de Wolff

3:00 **ThP02 PROGRESS IN THE APPLICATION OF ICPMS AND LA-ICPMS TO FORENSIC ANALYSIS.** Jorge E. Souza Sarkis, Instituto de Pesquisas Energéticas e Nucleares, IPEN-CNEN/SP, Caixa Postal 11049, 05508-900, Sao Paulo SP, Brazil, jesarkis@baitaca.ipen.br; Steven F. Durrant

3:00 **ThP03 QUANTITATIVE DETERMINATION OF ELEMENTS IN FORENSIC FLOAT GLASS SAMPLES BY LA-ICP-MS -- PRESENTATION OF A STANDARD ROUTINE METHOD.** Christopher Latkoczy, ETH Zürich, Laboratory of Inorganic Chemistry, ETH Hönggerberg HCI G111, Wolfgang-Pauli-Strasse 10, CH-8093 Zürich, Switzerland, latkoczy@inorg.chem.ethz.ch; Stefan Becker, Marc Dücking, Detlef Günther, Jurian Hoogewerff, Jose Almirall, JoAnn Buscaglia, and Andrew Dobney, Robert Koons, Shirley Montero, Gerard van der Peijl, Wilfried Stoecklein, Tatiana Trejos, John Watling, and Vincent Zdanowicz

3:00 **ThP04 A COMPARISON OF NANOSECOND *VS.* FEMTOSECOND LA-ICP-MS FOR THE ANALYSIS OF GLASS.** Benjamin Naes, Florida International University, Department of Chemistry and Biochemistry, 11200 SW 8th Street, Miami FL 33199, benjamin.naes@fiu.edu; Jhanis Gonzalez, Richard E. Russo, and José R. Almirall

3:00 **ThP05 ^{57}Fe AND ^{56}Fe LIMITS OF DETECTION IN GLASS BY HR-ICP-MS AND DRC-ICP-MS.** Waleska Castro, Florida International University, Department of Chemistry and Biochemistry, 11200 SW 8th Street, Miami FL 33199, waleska.castro@fiu.edu; Taatiana Trejos, Benjamin Naes, and José R. Almirall

3:00 **ThP06 LEAD, BARIUM, STRONTIUM AND ZINC DISTRIBUTION IN ENSLAVED INDIVIDUALS IN NEW YORK AFRICAN BURIAL GROUND: A LASER ABLATION-INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY (LA-ICP-MS) STUDY.** Dula Amarasiriwardena, Hampshire College, School of Natural Science, Amherst MA 01002, dula@hampshire.edu; Joseph Jones, Edward Buford, and Alan Goodman

3:00 **ThP07 SOURCING THE PROVENANCE OF MARIJUANA SAMPLES SEIZED IN THE CITY OF SAO PAULO USING CHEMICAL FINGERPRINT.** Elisa Kayo Shibuya, Instituto de Pesquisas Energeticas e Nucleares, IPEN/CNEN, Caixa Postal 11049, CEP 05508-900 Sao Paulo SP, Brazil, eshibuya@usp.br; Jorge Eduardo de Souza Sarkis, and Osvaldo Negrini Neto

3:00 **ThP08 USE OF FISH OTOLITH CHEMISTRY AS NATURAL TAGS OF HABITAT EXPOSURE.** Zhongxing Chen, Old Dominion University, Department of Chemistry and Biochemistry, 4541 Hampton Blvd, Norfolk VA 23529-0126, zchen@odu.edu; Cynthia M. Jones

3:00 **ThP09 STUDY OF MIGRATORY HISTORY OF NORTH SEA HOUTING *COREGONUS OXYRINCHUS L.* CAUGHT IN LAKE IJSSELMEER (THE NETHERLANDS) INFERRED FROM SCALE TRANSECTS USING LA-ICP-MS.** Carola Pickhardt, Research Centre Jülich GmbH, Central Division of Chemical Analysis, Postfach 1913, D-52425 Jülich, Germany, c.pickhardt@fz-juelich.de; Jost Borcherding, Erwin (H.V.) Winter, and J. Sabine Becker

3:00 **ThP10 PROVENANCE ESTABLISHMENT OF AUSTRALIAN OCHRES USING LA-ICP-MS FOR IDENTIFICATION AND AUTHENTICATION OF INDIGENOUS ART.** Rachel L. Green, University of Western Australia, Centre for Forensic Science (M420), 35 Stirling Highway, Crawley WA 6009, Australia, greenr08@student.uwa.edu.au; R. John Watling

PT22 Poster Session: Instrumentation

3:00 **ThP11 PDMS MICROCHIP PLASMA WITH ELECTROTHERMAL VAPORIZER FOR THE DETERMINATION OF METAL IONS IN AQUEOUS SOLUTIONS.** HeoungBin Lim, Dankook University, Department of Chemistry, Youngsan-Ku, Hannam-dong, Seoul 140-714, Korea, plasma@dankook.ac.kr; WonKyung Ryu, DongHoon Kim, and R. Sam Houk

3:00 **ThP12 ANALYTICAL PERFORMANCE AND FUNDAMENTAL PROPERTIES OF A NEW MICROPLASMA SOURCE.** Akitoshi Okino, Tokyo Institute of Technology, Department of Energy Sciences, 4259-J2-32 Nagatsuta, Midori-ku, Yokohama 226-8502, Japan, aokino@es.titech.ac.jp; Goro Ohba, Hidekazu Miyahara, Jungsun Ahn, Masato Watanabe, and Eiki Hotta

3:00 **ThP13 DEVELOPMENT AND EFFECTIVENESS OF FLEXIBLE CLEANROOM DEVICES FOR ANALYTICAL PURPOSES.** Knut Ohls, Spetec GmbH, Justus-von-Liebig-Str. 2, D-85435 Erding, Germany, prof@knutohls.de; Friedhelm Rickert, Christian Grüner

3:00 **ThP14 THE EFFECTS OF ORGANIC LOADING ON SAMPLES IN HIGH RESOLUTION INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY ANALYSIS.** Barry Higgins, University of Missouri Research Reactor, Research Park Drive, Columbia MO 65211, higginsb@missouri.edu

3:00 **ThP15 MULTIPLEXED ETV-ICP (TOF)MS: A FAST PLATFORM FOR ELEMENTAL ANALYSIS.** Thomas E. Kreschollek, University of Texas at Austin, Department of Chemistry and Biochemistry, 1 University Station #A5300, Austin TX 78712-0165, tk109400@mail.utexas.edu; James A. Holcombe

3:00 **ThP16 USE OF ETV-ICP (TOF)MS FOR ISOTOPIC ANALYSIS AND THERMAL SEPARATION OF ISOBARS.** Adam M. Rowland, University of Texas at Austin, Department of Chemistry and Biochemistry, 1 University Station A5300, Austin TX 78712-0165, adamrowland@mail.utexas.edu; James A. Holcombe

3:00 **ThP17 NANO-PARTICLES OF TIO_2 SLURRIES BY IN-TORCH VAPORIZATION (ITV) SAMPLE INTRODUCTION AND HIGH-RESOLUTION, SECTOR-FIELD INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY (SF-ICP-MS).** Vassili Karanassios, University of Waterloo, Department of Chemistry, Waterloo ON N2L 3G1, Canada, vkaranassios@uwaterloo.ca; B. Gibson, and H.R. Badiei

3:00 **ThP18 REAL AND ARTIFICIAL EMISSION LINES AS INTERNAL STANDARDS TO REDUCE MATRIX EFFECT FOR DETERMINATION OF As, Se AND Sb BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROMETRY.** Fumin Pan, University of Massachusetts, Department of Chemistry, Amherst MA 01002, fpan@chemistry.umass.edu; Julian F. Tyson

3:00 **ThP19 EFFECT OF THE PRECISION OF TORCH GEOMETRIES ON INDUCTIVELY COUPLED PLASMA - ATOMIC EMISSION SPECTROMETRY.** Daniel Shelby, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, dshelby@indiana.edu; Gerardo Gamez, George C.-Y. Chan, and Gary Hieftje

3:00 **ThP20 INCREASING PERFORMANCE AND DECREASING INTERFERENCE WITH A NEW OPTIMISED ICP TORCH.** Paul Neal, Thermo Electron, York Street, SOLAAR House, 19 Mercers Row, Cambridge CB5 8BZ, United Kingdom, paul.neal@thermo.com; Karen Harper, and Andrew Clavering

3:00 **ThP21 TWO-JET ARC PLASMATRON AS A PROMISING SOURCE OF SPECTRA EXCITATION FOR ATOMIC EMISSION SPECTROMETRY.** Natalia P. Zaksas, Nikolaev Institute of Inorganic Chemistry, Siberian Branch of Russian Academy of Science, Acad. Lavrentiev Avenue 3, 630090 Novosibirsk, Russia, zak@che.nsk.su, nz@54.ru; Vladimir A. Gerasimov

3:00 **ThP22 FLAME "ATOM TRAP" AAS: ARE FURTHER ADVANCES YET POSSIBLE?** Henryk Matusiewicz, Politechnika Poznanska, Department of Analytical Chemistry, Piotrowo 3, PL-60-965 Poznan, Poland, henryk.matusiewicz@put.poznan.pl

PT23 Poster Session: Reference Materials

3:00 **ThP23 DEVELOPMENT OF A NOVEL EXTRACTION PROCEDURE FOR THE ACCURATE DETERMINATION OF MONOMETHYLMERCURY IN FISH TISSUE BY HPLC-ICP SPECIES-SPECIFIC ISOTOPE DILUTION MASS SPECTROMETRY.** Heidi Goenaga-Infante, LGC Limited, Queens Road, Teddington, Middlesex TW11 OLY, United Kingdom, heidi.goenaga-infante@lgc.co.uk; John Entwisle, and Ruth Hearn

PT24 Poster Session: Teaching Spectroscopy, Educational Programs

3:00 **ThP24 A NEW UNDERGRADUATE DEGREE PROGRAM IN NANOTECHNOLOGY ENGINEERING (NTE): A PARTNERSHIP BETWEEN CHEMISTRY AND CHEMICAL AND ELECTRICAL ENGINEERING.** Vassili Karanassios, University of Waterloo, Department of Chemistry, Waterloo ON N2L 3G1, Canada, vkaranassios@uwaterloo.ca

3:00 **ThP25 INDUCTIVELY COUPLED PLASMA SPECTROSCOPY IN THE UNDERGRADUATE LABORATORY: FORENSICS IN THE INSTRUMENTAL ANALYSIS LAB.** Scott Goode, University of South Carolina, Department of Chemistry and Biochemistry, 631 Sumter Street, Columbia SC 29208, goode@sc.edu; Richard Hoskins, Jack Pender, Amy Taylor, and Danny Sullivan [withdrawn]

PT25 Poster Session: Plasma Fundamentals

3:00 **ThP26 FENIX: A DIRECT SIMULATION MONTE CARLO MODEL OF THE ICP/MS -- METHODS AND VALIDITY TESTS.** Jamie Palmer, Brigham Young University, N243 ESC, Provo UT 84602, band_jam@hotmail.com; Jaron Krogel, Adam Payne, Andrew Sampson, William Somers, and Ross Spencer

3:00 **ThP27 PROPERTIES OF NEUTRAL GAS FLOW IN THE ICP/MS FIRST VACUUM STAGE.** Jaron Krogel, Brigham Young University, Department of Physics and Astronomy, N243 ESC, Provo UT 84602, jaronkrogel@yahoo.com; Jamie Palmer, and Ross Spencer

3:00 **ThP28 ANALYTE DENSITIES IN AN ICP/MS NEAR THE SAMPLING CONE: A COMPARISON OF RESULTS FROM LASER SPECTROMETRY AND THE NUMERICAL SIMULATION FENIX.** Ross Spencer, Brigham Young University, Department of Physics and Astronomy, Provo UT 84602, ross_spencerr@byu.edu; Paul Farnsworth, Andrew Mills, Jaron Krogel, and Jamie Palmer

3:00 **ThP29 SOURCE GAS KINETIC TEMPERATURES IN AN ICP-MS DETERMINED BY MEASUREMENTS OF GAS VELOCITIES IN THE FIRST VACUUM STAGE OF THE INSTRUMENT.** Jordan Olsen, Brigham Young University, Department of Chemistry and Biochemistry, C104 BNSN, Provo UT 84602-5700, pbfarnsw@chem.byu.edu; Paul Farnsworth

3:00 **ThP30 REMOVING METAL OXIDE INTERFERENCES USING ICP-MS WITH COLLISION/REACTION CELL TECHNOLOGY AND He CELL GAS.** Edward McCurdy, Agilent Technologies Ltd, 5500 Lakeside, Cheadle Royal Business Park, Stockport, Cheshire SK8 2GR, United Kingdom, ed_mccurdy@agilent.com; Glenn Woods

3:00 **ThP31 INVESTIGATION OF THE ORIGIN OF PLASMA-RELATED MATRIX EFFECTS IN INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY.** George C.-Y. Chan, Indiana University, Department of Chemistry, 800 E. Kirkwood Ave., Bloomington IN 47405, gcchan@indiana.edu; Gary Hieftje

3:00 **ThP32 EFFECT OF OPERATING CONDITIONS ON EXCITATION TEMPERATURE AND ELECTRON NUMBER DENSITY IN AXIALLY-VIEWED ICP-OES WITH INTRODUCTION OF VAPORS AND AEROSOLS.** Marco Grotti, University of Genoa, Department of Chemistry and Industrial Chemistry, Via Dodecaneso 31, I-16146 Genova, Italy, grotti@chimica.unige.it; Cristina Lagomarsino, and Jean-Michel Mermet

3:00 **ThP33 HIGH RESOLUTION QUADRUPOLE MASS ANALYZER WITHIN THE FIRST TRANSITIONAL AND MODIFIED STABILITY REGIONS.** Vladimir Titov, Technical Physics & Automation, Research Institute, Warshavskoe Shosse 46, 115230 Moscow, Russia, vniitfa@tsmail.ru

3:00 **ThP34 OVERCOMING ANALYTE-OXIDE INTERFERENCES IN INDUCTIVELY COUPLED PLASMA TIME-OF-FLIGHT MASS SPECTROMETRY.** William C. Wetzel, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, wwetzel@indiana.edu; Daniel E. Shelby and Gary M. Hieftje

3:00 **ThP35 A NEW APPROACH TO THE REMOVAL OF POLYATOMIC INTERFERENCES IN ICP-MS.** Iouri Kalinitchenko, Varian Australia Pty Ltd, 679 Springvale Road, Mulgrave, Victoria 3170, Australia, iouri.kalinitchenko@varianinc.com

3:00 **ThP36 ESTIMATION OF ICP-OES (NON-SPECTRAL) MATRIX EFFECTS BY PLASMA AND GENERATOR ELECTRICAL PARAMETERS.** Dirk Ardelt, Spectro Analytical Instruments GmbH & Co KG, Boschstrasse 10, D-47533 Kleve, Germany, dardelt@spectro.com; Petar Ivanov, Ludger Hebben, and Michael Steenmann

3:00 **ThP37 KINETIC MODELING OF THE EFFECTS OF EASILY IONIZED ELEMENTS ON ANALYTE EMSSION DURING ICP-OES AND FLAME AES: APPLICATION TO THE EFFECTS OF Li AND K AS INTERFERENTS DURING THE DETERMINATION OF Mg.** Courtie Mahamadi, Bindura University of Science Education (BUSE), Private Bag 1020, Bindura, Zimbabwe, courtiema@yahoo.com; Mark F. Zaranyika

3:00 **ThP38 FOCUS ON THE FIGURES OF MERIT OF THE STATIC HIGH SENSITIVITY ICP (SHIP).** Andy Scheffer, University of Münster, Department of Applied Atomic Spectroscopy, Corrensstr. 30, D-48149 Münster, Germany, wolfgang.buscher@uni-muenster.de; Sascha Nowak, Carsten Engelhard, and Wolfgang Buscher

3:00 **ThP39 FUNDAMENTAL STUDIES ON A LOW FLOW ICP DISCHARGE.** Carsten Engelhard, University of Münster, Department of Applied Atomic Spectroscopy, Corrensstr. 30, D-48149 Münster, Germany, wolfgang.buscher@uni-muenster.de; Wolfgang Buscher, Gerardo Gamez, George C.Y. Chan, and Gary M. Hieftje

3:15 *WS03 Workshop on New Plasma Instrumentation, Sample Preparation and Accessories: Sample Introduction, Preparation, Accessories*

Isaac B. Brenner and Robert I. Botto, CoChair

3:15 **WS301 A STAND-ALONE DEVICE TO SPEED ICP ANALYSES.** Jerry Dulude, Glass Expansion, Inc., 4 Barlows Landing Road, Suite 2, Pocasset MA 02559-1983, jdulude@geicp.com

3:35 **WS302 A NEW DC ARC-OES SYSTEM FOR MUTLIELEMENT ANALYSIS OF REFRACTORY SAMPLES.** Isaac (Joe) Brenner, Environmental Analytical Laboratory, 9 Dishon Street, Apartment 9, Malkha, Jerusalem 96956, Israel, brenner@cc.huji.ac.il; Jürgen Hassler, and Peter R. Perzl

3:55 **WS303 HOW TO OVERCOME THE THROUGHPUT BOTTLENECK IN MICROWAVE SAMPLE PREPARATION.** Markus Lafer, Anton Paar GmbH, Anton Paar Strasse 20, A-8054 Graz, Austria, markus.lafer@anton-paar.com; Elisabeth Kahr, and Peter Kettisch

4:15 **WS304 PRODUCTS FOR REDUCING CONTAMINATION IN THE DETERMINATION OF PPB AND PPT METAL CONCENTRATIONS.** Ralph H. Obenauf, Spex CertiPrep, Inc., 203 Norcross Avenue, Metuchen NJ 08840, robenauf@spexcsp.com; Nimi Kocherlakota

4:35 **WS305 DEFINITIVE, ACCURATE AND LEGALLY-DEFENSIBLE SPECIATED ANALYSIS UNDER EPA METHOD 6800, A STABLE-ISOTOPE-BASED ICP-MS METHOD USING CONVENIENT REAGENT KITS.** Matt Pamuku, Applied Isotope Technologies, 851 Stella Ct., Sunnyvale CA 94087, matt@sidms.com

4:55 **WS306 SC-FAST -- SAMPLE INJECTION SYSTEM FOR HIGH THROUGHPUT SAMPLE ANALYSIS ON ICP AND ICPMS.** Dan Wiederin, Elemental Scentific, Inc., 2440 Cuming Street, Omaha NE 68131, dan@icpms.com

5:30 **PD04 Panel Discussion: Provenance and Forensics Analyses.** Christopher Latkoczy, Chair, ETH Zurich, Laboratory of Inorganic Chemistry, Hoennggerber - HCl G111, CH-8093 Zurich, Switzerland, latkoczy@inorg.chem.ethz.ch

7:00 **Conference Dinner, Last Territory Steakhouse and Music Hall**

7:30 **D01 TREASURE HUNTING IN TUCSON.** Henri (Rik) Dillen, OCAS N.V., Arcelor Industry Research Centre, John Kennedylaan 3, Chemistry Department, B-9060 Zelzate, Belgium, henri.dillen@arcelor.com

8:00 **D02 GEOCHRONOLOGY BY LASER ABLATION ICP MASS SPECTROMETRY AT THE ARIZONA LASERCHON CENTER.** George Gehrels, University of Arizona, Department of Geosciences, Gould-Simpson Bldg 531, Tucson AZ 85721, ggehrels@geo.arizona.edu

Friday, January 13, 2005

SY09 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses for Environmental Sciences

Mike Ketterer and H.M. "Skip" Kingston, CoChair

08:00 **PL05 RECENT DEVELOPMENTS AND TRENDS IN ISOTOPE ANALYSIS BY ADVANCED MASS SPECTROMETRIC TECHNIQUES.** J. Sabine Becker, Research Centre Jülich, Central Department for Chemical Analysis, D-52425 Jülich, Germany, s.becker@fz-juelich.de

09:00 **IL14 DYNAMIC ELEMENTAL SPECIES ANALYSIS ENVIRONMENTAL METHODS ESTABLISHED BY EPA AND CONTROVERSIES IN SPECIES MEASUREMENTS EXAMINED.** H.M. "Skip" Kingston, Duquesne University, Department of Chemistry and Biochemistry, 308 Mellon Hall, 600 Forbes Ave., Pittsburgh PA 15282-1530, kingston@duq.edu; Mizanur Rahman, John Kern, Matt Pamuku, and Carrie Untch

09:30 **F01 ANTIMONY IN ARCTIC SNOW AND ICE -- A GLOBAL POLLUTANT IDENTIFIED USING ULTRA CLEAN ROOM PROCEDURES AND SECTOR FIELD ICP-MS.** Michael Krachler, University of Heidelberg, Institute of Environmental Geochemistry, Im Neuenheimer Feld 236, D-69120 Heidelberg, Germany, krachler@ugc.uni-heidelberg.de; James Zheng, Roy M. Koerner, William Shotyk, Roy M. Koerner, Christian Zdanowicz, and David Fisher

09:50 **F02 THE ONGOING PROJECTS ON POLAR CHEMISTRY OF THE ITALIAN NATIONAL PROGRAMME FOR RESEARCH IN ANTARCTICA: AN OVERVIEW.** Sergio Caroli, Istituto Superiore di Sanità, Viale Regina Elena 299, I-00161 Rome, Italy, caroli@iss.it; Gabriele Capodaglio, and Paolo Cescon

10:10 **Break. Sponsored by Applied Isotope Technologies**

10:30 **F03 ULTRA-SENSITIVE DIRECT DETERMINATION OF RARE EARTH ELEMENTS AND Th IN ANTARCTIC ICE CORE SAMPLES BY ICP-SFMS USING A DESOLVATION SYSTEM.** Giullo Cozzi, University of Venice, Department of Environmental Sciences, Ca' Foscari, I-30123 Venice, Italy, barbante@unive.it; Carlo Barbante, Paolo Gabrielli, Clara Turetta, Alexandrine Marteel, Claude Boutron, and Paolo Cescon

10:50 **F04 PLASMA-BASED TECHNIQUES APPLIED TO MONITOR ANTIMONY IN AIRBORNE PARTICULATE MATTER.** Patricia Smichowski, Comisión Nacional de Energía Atómica, Centro Atómico Constituyentes, A. Gral. Paz 1499, San Martin B1650KNA, Argentina, smichows@cnea.gov.ar; Darío Gómez, Maria Fernanda Giné, Ana Claudia Sánchez Bellato, Susana Rosa

11:10 **F05 ANALYSIS OF TRACE ELEMENTS IN ENVIRONMENTAL SAMPLES BY DRC-ICPMS USING BENZENE AS THE "UNIVERSAL" REACTION GAS.** Feiyue Wang, University of Manitoba, Department of Environment and Geography, and Chemistry, 438 Parker Building, Winnipeg MB R3T 2N2, Canada, wangf@ms.umanitoba.ca; Debbie Armstrong

11:30 **F06 QUANTITATIVE ANALYSIS OF RUTHENIUM FISSION PRODUCT ISOTOPES IN GROUNDWATER AND SEDIMENT SAMPLES.** Christopher F. Brown, Pacific Northwest National Laboratory, P.O. Box 999, MS-IN P7-22, Richland WA 99354, christoper.brown@pnl.gov; P. Evan Dresel, Orville T. Farmer III, and Keith N. Geizler

SY10 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses for Earth, Marine, and Geological Sciences

Ruth E. Wolf, Chair

1:00 **IL15 TRANSITION METAL AND OTHER NON-TRADITIONAL STABLE ISOTOPES: NOVEL APPLICATIONS OF MULTIPLE-COLLECTOR ICP-MS.** Ariel Anbar, Arizona State University, Department of Geological Sciences, Bateman Physical Sciences Bldg., Tempe AZ 85287, anbar@asu.edu

1:30 **F07 INVESTIGATION OF EXTRACTION METHODS FOR CHROMIUM SPECIATION IN SOILS.** Ruth E. Wolf, U.S. Geological Survey, Denver Federal Center, Box 25046, MS964, Denver CO 80225, rwolf@usgs.gov; Jean M. Morrison, and Martin B. Goldhaber

1:50 **F08 IMPROVEMENTS IN TRACE ELEMENT ANALYSIS WHEN USING A NEW ION-OPTICS DESIGN ICP-MS WITH LASER ABLATION ICP-MS FOR BASALTIC AND ANDESITIC NATURAL GLASSES.** Susan C. Woods, Harvard University, Department of Earth and Planetary Sciences, 20 Oxford Street, Cambridge MA 02138, swoods@fas.harvard.edu; Fergus Keenan, Phil Shaw, and Charles H. Langmuir

2:10 **F09 LASER ABLATION MC-ICP-MS ANALYSES OF Fe ISOTOPES IN IRON METEORITES.** Jan Kosler, University of Bergen, Department of Earth Science, Allegaten 41, N-5007 Bergen, Norway, jan.kosler@geo.uib.no; Patricia Tycova

2:30 **F10 CALCIUM ISOTOPE RATIO ANALYSIS OF QUEEN CONCH (*SROMBUS GIGAS*).** Neal Julien, Midwest Research Institute, Florida Division, 1470 Treeland Blvd SE, Palm Bay FL 32909, njulien@mriresearch.org; Ashley Spring

2:50 **F11 COMBINATION OF A TWELVE ORDER OF MAGNITUDE LINEAR DYNAMIC RANGE ICP-MS WITH A LARGE SPOT-SIZE LASER ABLATION SYSTEM FOR OCEANOGRAPHIC STUDIES.** Paul Field, Rutgers, The State University of New Jersey, Institute of Marine and Coastal Sciences, 71 Dudley Rd, New Brunswick NJ 08901-8521, field@imcs.rutgers.edu; Julian D. Wills, and Meike Hamester

3:00

Poster Session
Environmental Analyses; Earth, Geological, Marine Analyses; Advanced Materials, Surface, and Interface Analyses

PT31 Poster Session: Environmental Analyses

3:00 **FP01 PRECISE Pb ISOTOPE RATIO MEASUREMENTS IN RAINWATER USING MULTI-COLLECTOR ICP-MS.** Masato Iwashita, Kitasato University, School of Applied Health Sciences, 1-15-1 Kitasato, Sagamihara, Kanagawa 228-8555, Japan, iwashita@ahs.kitasato-u.ac.jp; Yuuichi Takaku, and Tadashi Shimamura

3:00 **FP02 THE STUDY OF ENVIRONMENT POLLUTION WITH HEAVY METALS BY MEANS OF THE EMISSION SPECTROMETRY METHOD.** Vasile Viman, North University of Baia Marie, Faculty of Sciences, 62/A Victor Babes Street, 430083 Bai Mare, Romania, v_viman@hotmail.com; Anca Mihaly Cozmuta, Leonard Mihaly Cozmuta, Mariana Dobra, and Gheorghe Vatca

3:00 **FP03 CHARACTERIZATION OF NATURAL WATER RESOURCES IN ISRAEL BY ICP-MS.** Ludwick Halicz, Geological Survey of Israel, 30 Malkhey Israel Street, Jerusalem 95501, Israel, ludwik@mail.gsi.gov.il; C. Pickhardt, I. Gavrieli, A. Burg, A. Nishri, I.T. Platzner, and J.S. Becker

3:00 **FP04 EXTRACTION AND SPECIATION OF ARSENIC CONTAINING DRINKING WATER TREATMENT SOLIDS BY IC-ICP-MS.** John T. Creed, U.S. Environmental Protection Agency, National Exposure Research Laboratory, 26 West Martin Luther King Dr., Cincinnati OH 45268, creed.jack@epa.gov; Patricia A. Creed, Christina M. Gallawa, Carol A. Schwegel, and Thomas J. Sorg

3:00 **FP05 ICP-AES CANNOT BE USED FOR COMPLIANT ANALYSIS OF DRINKING WATER USING EPA PROCEDURES -- A CRTICIAL EXAMINATION OF RADIALLY (RV) AND AXIALLY VIEWED (AX) ICPS.** Isaac (Joe) Brenner, Environmental Analytical Services, 9 Dishon Street, Apartment 9, Malkha, Jerusalem 96956, Israel, brenner@cc.huji.ac.il

3:00 **FP06 EVALUATION OF WHATMAN DE81 ANION EXCHANGE MEMBRANE AS A DGT BINDING PHASE FOR TRACE URANIUM ANALYSIS IN RIVER WATER.** Weijia Li, Radiation Protection Bureau, Health Canada, 775 Brookfield Road, AL 6302A A1, Ottawa, ON K1A 1C1, Canada, weijia_li@hc-sc.gc.ca; Jiujiang Zhao, Chunsheng Li, Dominic Lariviere, Stephen Kiser, R. Jack Cornett

3:00 **FP07 FLOW FIELD-FLOW FRACTIONATION - INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY: DISAGGREGATION OF HUMIC ACID.** Atitaya Siripinyanond, Mahidol University, Department of Chemistry, Faculty of Science, Rama 6 Rd., Rajthevee, Bangkok 10400, Thailand, scasp@mahidol.ac.th; Sumattana Worapanyanond, and Juwadee Shiowatana

3:00 **FP08 EVALUATION OF AN ICP-OES IN MEETING THE REQUIREMENTS OF USEPA 200.7 METHODOLOGY.** Doug Shrader, Varian, Inc., 2700 Mitchell Drive, Walnut Creek CA 94598, doug.shrader@varianinc.com; Andrew Ryan, Michelle Cree, and Steve Wall

3:00 **FP09 INVESTIGATION OF LEAD AND ARSENIC DISTRIBUTIONS IN A LEAD ARSENATE CONTAMINATED APPLE ORCHARD: TEACHING ANALYTICAL ATOMIC SPECTROSCOPY ADVANCES IN AN ENVIRONMENTAL CHEMISTRY CLASS.** Dula Amarasiriwardena, Hampshire College, School of Natural Science, Amherst MA 01002, dula@hampshire.edu

3:00 **FP10 ADVANCES IN TRACE BERYLLIUM MEASUREMENT ON PLUTONIUM AIR SAMPLES BY ICP-ES.** Frank Pennebaker, Westinghouse Savannah River Company, Savannah River Site, Building 773-A, C-148, Aiken SC 29808, frank.pennebaker@srnl.doe.gov; Arthur R. Jurgensen and Charles J. Coleman

3:00 **FP11 TRACE BERYLLIUM MEASUREMENT ON AIR SAMPLES BY MC-ICP-MS.** Arthur R. Jurgensen, Westinghouse Savannah River Company, Savannah River Site, Bldg 773-A, Aiken SC 29808, arthur.jurgensen@srnl.doe.gov; Frank M. Pennebaker, and William T. Boyce

3:00 **FP12 ENVIRONMENTAL ANALYSIS MADE EASY -- INTERFERENCE MANAGEMENT IN CHALLENGING ENVIRONMENTAL SAMPLES USING A NOVEL COLLISIONAL REACTION INTERFACE ICP-MS.** Michelle Cree, Varian, Inc., 2700 Mitchell Drive, Walnut Creek CA 94598, michelle.cree@varianinc.com; Steve Wall, Thorsten Hoss, Xue Dong Wang, and Stephen Anderson

3:00 **FP13 THE SPECIATION OF CHROMIUMIN WATER, DUST AND CEMENT USING HPLC-ICP-MS WITH CCT.** Olivier F.X. Donard, Université de Pau et des Pays de l'Adour, Laboratoire de Chimie-Analytique, Bio-Inorganic et Environnement, 2, Av. Pierre Angot, F-64230 Pau, France, olivier.donard@univ-pau.fr; S. McSheehy, F. Seby, P. Shaw, and M. Nash

3:00 **FP14 UTILIZATION OF ELECTROCHEMICALLY MODULATED SEPARATION (EMS) FOR PLUTONIUM ANALYSIS VIA ICP-MS.** Douglas C. Duckworth, Oak Ridge National Laboratory, 1 Behtel Valley Road, MS 6375, Oak Ridge TN 37831-6375, duckworthdc@ornl.gov; Sea H. Park, William J. Clark, Jr., and Debra A. Bostick

PT32 Poster Session: Earth, Geological, Marine Analyses

3:00 **FP15 ULTRA TRACE ELEMENT ANALYSIS OF SEAWATER MATRICES USING AN ICP-MS WITH A NEW ION-OPTICS DESIGN FOR HIGHER STABILITY AND LOWER DETECTION LIMITS.** Bill Spence, Thermo Electron Corporation, ICP-MS Facility, Ion Path, Road Three, Winsford Cheshire CW7 3BX, United Kingdom, bill.spence@thermo.com; Phil Shaw, Simon Nelms, and Martin Nash

3:00 **FP16 SOLID PHASE EXTRACTION (SPE) OF SYNTHETIC SEA WATER SAMPLE MATRIX PRIOR TO ANALYSIS OF TRANSITION METALS BY INDUCTIVELY COUPLED PLASMA - OPTICAL EMISSION SPECTROMETRY (ICP-OES).** Yoshiaki Furusho, SCP SCIENCE, 21800 Clark Graham, Baie-D'Urfe, QC H9X 4B6, Canada, aross@scpscience.com; Manabu Takayanagi, Kenji Namiki, Masayuki Yamada, Shoji Motomizu, and Art Ross

3:00 **FP17 DETERMINATION OF MERCURY SPECIES IN SEAWATER AND SOIL BY HPLC-ICP/MS.** Miao Jing, First Institute of Oceanography, State Oceanic Administration, LoShan Science Park, No. 6 Xian Xia Ling Rd, LoShan Di, QingDao 266061, China, fsclee@yahoo.com; Dengyun Chen, and Xiaoru Wang

3:00 **FP18 THE SYNTHESIS OF 8-HYDROXYQUINOLINE BONDED SILICA (SHQ) AND ITS APPLICATIONS IN FIA-ICP-MS ANALYSI OF TRACE METALS IN WATER.** Frank S.C. Lee, First Institute of Oceanography, State Oceanic Administration, LoShan Science Park, No. 6 Xian Xia Ling Rd, LoShan Di, QingDao 266061, China, fsclee@yahoo.com; Zheng Wang, Miao Jing, and Xiaoru Wang

3:00 **FP19 SECTOR FIELD ICP-MS: A POWERFUL TOOL IN GEOLOGICAL SAMPLE ANALYSIS.** Walter R. Pedreira Filho, Universidade Brasilia (UnB), Instituto de Geosciencias, 70910-900 Brasilia DF, Brazil, walterpf@usp.br; Carlos A. da S. Queiroz, Alcidio Abrao, Soraya M.R. da Rocha, Mari E. de Vasconcellos, José A. Seneda, Christina A.L.G. de O. Forbicini, Geraldo R. Boaventura, and Márcio M. Pimentel

3:00 **FP20 DETERMINATION OF HEAVY METALS IN RIVER BOTTOM SEDIMENTS USING AD-AES, AFS-ICP AND AES-ICP.** Galina Mazo, Lomonosov Moscow State University, Department of Chemistry, GSP-2, Leninskie Gory, Moscow 119992, Russia, mazo@inorg.chem.msu.ru; N.S. Safronova, E.S. Grishanzeva, and O.A. Lipatnikova

3:00 **FP21 INVESTIGATION OF SPATIAL TRACE ELEMENTAL PROFILES OF BLUE MUSSEL SHELLS (*MILTILUS EDILUS*) IN BOSTON HARBOR, MASSACHUSETTS BY LASER ABLATION-INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY (LA-ICP-MS).** Dula Amarasiriwardena, Hampshire College, School of Natural Science, Amherst MA 01002, dula@hampshire.edu; Kimberly Newton, and Joseph Jones

3:00 **FP22 RARE EARTH ELEMENTS IN SEEP AND LEACHATES OF ROCK FROM YUCCA MOUNTAIN.** Caixia Guo, University of Nevada Las Vegas, Harry Reid Center for Environmental Studies, 4505 Maryland Parkway, Las Vegas NV 89154-4009, cizdziej@unlv.nevada.edu; James Cizdziel, and Karen Johannesson

3:00 **FP23 HIGH PRECISION MERCURY ISOTOPE RATIOS BY MC-ICP-MS USING AN AUTOMATIC (COMBUSTION) MERCURY ANALYZER AS A SAMPLE PREPARATION TOOL.** James Cizdziel, University of Nevada Las Vegas, Harry Reid Center for Environmental Studies, 4505 Maryland Parkway, Las Vegas NV 89154-4009, cizdziej@unlv.nevada.edu; Yixin Wei, and Paul Gremillion

3:00 **FP24 SIMPLE METHOD TO ASSESS THE DISTRIBUTION OF ELEMENTS IN ROCKS USING FLOW INJECTION AND MICROWAVE-ASSISTED CONTINUOUS LEACHING WITH INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY.** Diane Beauchemin, Queen's University, Department of Chemistry, Kingston ON K7L 3N6, Canada, diane.beauchemin@chem.queensu.ca; Milithza Silva, and Kurt Kyser

3:00 **FP25 DEVELOPMENT OF ICP-OES TIME RESOLVED ANALYSIS FOR THE DETERMINATION OF ELEMENTAL RATIOS IN GEOCHEMICAL APPLICATIONS.** R. Craig Seeley, Teledyne Leeman Labs, 6 Wentworth Dr., Hudson NH 03051, cseeley@teledyne.com; Andy Ungerer, and Gary Klinkhammer

3:00 **FP26 U-Th-Pb GEOCHRONOLOGY BY LASER ABLATION ICP MASS SPECTROMETRY AT THE ARIZONA LASERCHON CENTER.** George Gehrels, University of Arizona, Department of Geosciences, Gould-Simpson Bldg 531, Tucson AZ 85721, ggehrels@geo.arizona.edu; Joaquin Ruiz, Victor Valencia, Alexander Pullen, and Mark Baker

3:00 **FP27 U-Pb GEOCHRONOLOGY ON SPHENE (TITANITE) BY LA-MC-ICPMS AT THE ARIZONA LASERCHRON CENTER.** Alexander Pullen, University of Arizona, Department of Geosciences, 1040 E. 4th Street, Tucson AZ 85721, apullen@geo.arizona.edu; George Gehrels, Joaquin Ruiz, Victor Valencia, and Mark Baker

3:00 **FP28 IMPROVING TRACE AND ULTRATRACE ELEMENT MEASUREMENT PRECISIONS IN LITHIUM METABORATE FUSIONS USING A NEW ION-OPTICS DESIGN ICP-MS WITH A COLLISION CELL FOR INTERFERENCE REMOVAL.** Phil Shaw, Thermo Electron Corporation, Ion Path, Road Three, Winsford Cheshire CW10 0PE, United Kingdom, phil.shaw@thermo.com; David Wray, and Martin Nash

3:00 **FP29 USE OF MEMBRANE DESOLVATION IN GEOLOGICAL STUDIES FOR MULTICOLLECTOR ICP-MS.** Fred G. Smith, Cetac Technologies, 14036 Industrial Road, Omaha NE 68144-3334, fsmith@cetac.com

3:00 **FP30 CAN ACTINIDES BE MONITORED IN RADIOACTIVELY CONTAMINATED SOIL AND SEDIMENT SAMPLES BY GDMS?** Laura Aldave de las Heras, Institute for Tansuranium Elements, DG Joint Research Centre -

European Commission, P.O. Box 2340, D-76125 Karlsruhe, Germany, aldave@itu.fzk.de; Jérôme Himbert, Ramon Carlos, and Maria Betti

PT33 Poster Session: Advanced Materials, Surface, and Interface Analyses

3:00 FP31 ATMOSPHERIC-PRESSURE HELIUM GLOW DISCHARGE AS AN IONIZATION SOURCE FOR ORGANIC COMPOUNDS. Francisco J. Andrade, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, fandrade@indiana.edu; Steven Ray, William Wetzel, Michael Webb, Gerardo Gamez, and Gary Hieftje

3:00 FP32 EVALUATION OF THE ROBUSTNESS OF AN ELECTROLYTE-CATHODE GLOW DISCHARGE FOR THE ANALYSIS OF COMPLEX LIQUID SAMPLES. Michael R. Webb, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405-7102, micwebb@indiana.edu; Francisco J. Andrade, and Gary M. Hieftje

3:00 FP33 HYDRIDE GENERATION INTO AN ATMOSPHERIC-PRESSURE GLOW DISCHARGE FOR ELEMENTAL MASS SPECTROMETRY. William C. Wetzel, Indiana University, Department of Chemistry, 800 E. Kirkwoord Avenue, Bloomington IN 47405, wwetzel@indiana.edu; Francisco J. Andrade, José A.C. Broekaert, and Gary M. Hieftje

3:00 FP34 NEW FRONTIERS IN THE ANALYTICAL APPLICATION OF AN ATMOSPHERIC-PRESSURE GLOW DISCHARGE: DESORPTION-IONIZATION FOR THE ANALYSIS OF ORGANIC COMPOUNDS. Francisco J. Andrade, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, fandrade@indiana.edu; Steven Ray, William Wetzel, Michael Webb, Gerardo Gamez, and Gary Hieftje

3:00 FP35 MINIATURE ATMOSPHERIC PRESSURE DISCHARGE FOR USE WITH LIQUID SAMPLES. Michael R. Webb, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405-7102, micwebb@indiana.edu; Francisco J. Andrade, and Gary M. Hieftje

3:00 FP36 ISOTOPE RATIO MEASUREMENTS BY GLOW DISCHARGE SPECTROSCOPY. Shannon M. Mahurin, Oak Ridge National Laboratory, Chemical Sciences Division, P.O. Box 2008, Bldg 4500A, MS 6142, Oak Ridge TN 37831-6142, mahurinsm@ornl.gov; Steve L. Allman, Wendy Lyons, and Robert W. Shaw

3:00 FP37 STUDIES OF NON-SPECTRAL INTERFERENCES AND SUITABLE INTERNAL STANDARD ELEMENTS FOR THE DETERMINATION OF Cd, Cr AND Pb IN PLASTICS USING ICP-MS. Masaki Ohata, National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science (AIST), Tsukuba Central 3-10 1-1-1 Umezon, Tsukuba, Ibaraki 305-8563, Japan, m-oohata@aist.go.jp; Naoko Nonose, Akiharu Hioki, and Koichi Chiba

3:00 FP38 DIRECT ANALYSIS OF INSULATING MATERIALS USING SPARK ABLATION INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. Nicolas H. Bings, University of Hamburg, Institute for Inorganic and Applied Chemistry, Martin-Luther-King Platz 6, D-20146 Hamburg, Germany, bings@chemie.uni-hamburg.de; Arne F. Kiera

3:00 FP39 GD-OES AS AN ANALYTICAL TOOL FOR ELECTROPLATED COMPONENTS SUSCEPTIBLE TO HYDROGEN EMBRITTLEMENT. Vasile-Dan Hodoroaba, Federal Institute for Materials Research, and Testing (BAM), Unter den Eichen 44-46, D-12200 Berlin, Germany, dan.hodoroaba@bam.de; Jens-Uwe Riedel, and Wolfgang Paatsch

3:00 FP40 DIRECT ANALYSIS OF INDUSTRIAL FLUORINATED POLYMERS BY MEANS OF SS-ETV-ICP-MS. María Teresa Aramendía, University of Zaragoza, Department of Analytical Chemistry, Faculty of Sciences, Pedro Cerbuna 12, E-50009 Zaragoza, Spain, maiteam@unizar.es; Martin Resano, Wim Devos, and Frank Vanhaecke

3:00 FP41 VALIDATION OF ICP-MS DETERMINATION OF Ce, Sr AND Ti IN CERAMIC SAMPLES AND FILTERS CONTAINING AEROSOLIZED MATERIAL. Ana Paula Packer, Health Canada, Radiation Protection Building, 775 Brookfield Road, Ottawa ON K1A 0K9, Canada, paula_packer@hc-sc.gc.ca; Dominc Lariviere, Chunsheng Li, Jack Cornett, Kathy Nielson, Amares Chatt, and Christine Scriver

3:00 FP42 VOLTAGE TRANSFER COEFFICIENT IMPROVEMENT ON NON CONDUCTIVE MATERIALS FOR RADIOFREQUENCY GLOW DISCHARGE OPTICAL EMISSION SPECTROMETRY. Philippe Belenguer, Centre de Physique des Plasmas et Applications de Toulouse, Université Paul Sabatier, UMR 5002, 118, route de Narbonne, F-31062 Toulouse Cedex, France, belenguer@cpat.ups-tlse.fr; Laurent Therese, Z. Ghalem, Philippe Guillot

3:00 FP43 A LOW BACKGROUND HOLLOW CATHODE ION SOURCE FOR ELEMENTAL ANALYSIS OF SOLIDS IN GLOW DISCHARGE MASS SPECTROMETRY. George Sikharulidze, Institute of Microelectronics Technology, Russian Academy of Sciences, 142432 Chernogolovka Moscow District, Russia, sikharul@ipmt-hpm.ac.ru

3:00 FP44 THE FORMATION AND ROLE OF PLASMA "STOPPER" INTO THE HOLLOW CATHODE. George Sikharulidze, Institute of Microelectronics Technology, Russian Academy of Sciences, 142432 Chernogolovka Moscow District, Russia, sikharul@ipmt-hpm.ac.ru

3:00 FP45 IMPROVEMENTS FOR THIN FILM ANALYSIS BY GD-OES. Denis Klemm, Leibniz Institute for Solid State and, Materials Research Dresden, P.O. Box 27 00 16, D-01171 Dresden, Germany, d.klemm@ifw-dresden.de; Volker Hoffmann, and Klaus Wetzig

3:00 FP46 EVALUATION OF THE SOURCE PARAMETERS OF A PULSED GLOW DISCHARGE TOF-MS EFFECTING INFORMATION VOLUME IN CHEMICAL SPECIATION ANALYSIS. Daniel Fliegel, ETH

Zürich, Laboratory of Inorganic Chemistry, HCl, G111, Wolfgang Pauli-Strasse 10, CH-8093 Zürich, Switzerland, fliegel@inorg.chem.ethz.ch; Detlef Günther

3:00 **FP47 GLOW DISCHARGE ATOMIC EMISSION SPECTROMETRY. APPLICATION IN BIOLOGY AND MEDICINE.** Vasil G. Bregadze, E. Andronikashvili Institute of Physics, Georgian Academy of Science, 6 Tamarashvili St., Tbilisi 01777, Georgia, v_breg@yahoo.com, breg@ipac.ge; Eteri S. Gelagutashvili, and Ketevan J. Tsakadze

5:30 **PD05 Panel Discussion: Environmental, Earth, Geological, Marine Science Applications.** Jan Kosler, University of Bergen, Department of Earth Science, Allegaten 41, N-5007 Bergen, Norway, jan.kosler@geo.uib.no

Saturday, January 14, 2005

SY11 Plasma Spectrochemical Fundamental Studies and Instrumentation

José A.C. Broekaert, Chair

08:00 **PL06 NEW SOURCES AND SPECTROMETERS FOR PLASMA SPECTROCHEMISTRY.** Gary M. Hieftje, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405-7102, hieftje@indiana.edu; Francisco J. Andrade, Gerardo Gamez, Steven J. Ray, Gregory D. Schilling, Michael R. Webb, William C. Wetzel, M. Bonner Denton, Roger P. Sperline, David W. Koppenaal, and Charles J. Barinaga

09:00 **IL16 THE STATUS OF AEROSOL GENERATION AND TRANSPORT IN PLASMA SPECTROMETRY.** Akbar Montaser, The George Washington University, Department of Chemistry, 721 21st Street, NW, Washington DC 20052, montaser@gwu.edu

09:30 **IL17 FROM WET OR DRY AEROSOL TO ICP-OES AND ICP-MS SIGNALS.** John Olesik, The Ohio State University, Department of Geological Sciences, 125 S. Oval Mall, 275 Mendenhall, Columbus OH 43210, olesik.2@osu.edu; Noel Casey, Brandon Henderson, and Gerhard Meyer

10:00 **Break**

10:20 **S01 AN EXPERIMENTAL OVERVIEW OF ATOM AND ION BEHAVIOR IN THE FIRST VACUUM STAGE OF AN ICP-MS.** Paul Farnsworth, Brigham Young University, Department of Chemistry and Biochemistry, C104 BNSN, Provo UT 84602-5700, pbfarnsw@chem.byu.edu; Andrew Mills, Jeff Macedone, and Jordan Olsen

10:40 **S02 NEW DEVELOPMENTS IN PLASMA SOURCE TIME-OF-FLIGHT MASS SPECTROMETRY FOR ELEMENTAL ANALYSIS.** Nicolas H. Bings, University of Hamburg, Institute for Inorganic and Applied Chemistry, Martin-Luther-King Platz 6, D-20146 Hamburg, Germany, bings@chemie.uni-hamburg.de; Arne F. Kiera, and Sebastian Schmidt-Lehr

11:00 **S03 DYNAMIC COLLISION INDUCED DISSOCIATION IN QUADRUPOLE ION TRAP MASS SPECTROMETRY.** Sofie P. Pasilis, Oak Ridge National Laboratory, Chemical Sciences Division, MS 6375, Bldg. 5505, Oak Ridge TN 37831-6375, pasilissp@ornl.gov; Lei Li, Glen P. Jackson, and Douglas C. Duckworth

11:20 **S04 EVALUATION OF A FARADAY STRIP ARRAY DETECTOR AND A MATTAUCH-HERZOG MASS SPECTROMETER FOR THE SIMULTANEOUS MULTIELEMENT ANALYSIS OF TRANSIENT SAMPLES.** Gregory D. Schilling, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, gschilli@indiana.edu; Francisco J. Andrade, James H. Barnes IV, Roger P. Sperline, M. Bonner Denton, Charles J. Barinaga, David W. Koppenaal, and Gary M. Hieftje

11:40 **S05 FAST DETERMINATION OF NON-METALLIC INCLUSIONS IN STEELS BY SPARK OES AND MUTLIVARIATE DATA PROCESSING.** Arne Bengtson, Corrosion and Metals Research Institute KIMAB, Drottning Kristinas väg 48, S-114 28 Stockholm, Sweden, arne.bengtson@kimab.com; Miroslava Sedlakova, and Rolf Didriksson

SY12 Trace Element, Stable Isotope, and Elemental Speciation Spectrochemical Analyses for Advanced Materials, Surfaces, and Interfaces

Volker Hoffmann and Norbert Jakubowski, CoChair

1:00 **IL18 GLOW DISCHARGE SPECTROSCOPY FOR DEPTH PROFILE ANALYSIS OF THIN FILMS.** Jorge Pisonero, ETH Zürich, Laboratory of Inorganic Chemistry, HCl, G109, Wolfgang Pauli-Strasse 10, CH-8093 Zürich, Switzerland, jorge.pisonero@inorg.chem.ethz.ch; Beatriz Fernandez, Rosario Pereiro, Alfredo Sanz-Medel, and Nerea Bordel

1:30 **IL19 EXPLOITING THE GLOW DISCHARGE VERSATILITY AND IMPROVING ITS UNDERSTANDING.** Gerardo Gamez, Indiana University, Department of Chemistry, 800 E. Kirkwood Avenue, Bloomington IN 47405, ggamez@indiana.edu; Franciso Andrade, Michael R. Webb, Steve J. Ray, and Gary M. Hieftje

2:00 **S06 PROPERTIES OF A HIGH RESOLUTION GLOW DISCHARGE MASS SPECTROMETER FOR MULTIELEMENT DEPTH PROFILING ANALYSES.** Lothar Rottmann, Thermo Electron Bremen GmbH, Hanna-Kunath-Str. 11, D-28199 Bremen, Germany, lothar.rottmann@thermo.com; Meike Hamester, and Joachim Hinrichs

2:20 **S07 ANALYSIS OF LIGHT ELEMENTS BY GLOW DISCHARGE OPTICAL EMISSION SPECTROMETRY.** Volker Hoffmann, Leibniz Institute for Solid State and, Materials Research Dresden, P.O. Box 27 00 16, D-01171 Dresden, Germany, v.hoffmann@ifw-dresden.de; Ludger Wilken, Denis Klemm, and Klaus Wetzig

2:40 **S08 DEVELOPMENT OF A MULTIFUNCTIONAL ION SOURCE FOR TIME-OF-FLIGHT MASS SPECTROMETRY.** Brad C. Knippel, Oak Ridge National Laboratory, Chemical Sciences Division, Oak Ridge TN 37831-6375, duckworth@ornl.gov; Douglas C. Duckworth, Lei Li, and Glen P. Jackson

3:00 **Break**

3:20 **S09 LA-ICPMS AND GDMS FOR THE ANALYSIS OF Pb BUTTONS OBTAINED *VIA* FIRE ASSAY OF PLATINIFEROUS ORES.** Frank Vanhaecke, Ghent University, Laboratory of Analytical Chemistry, Proeftuinstraat 86, B-9000 Ghent, Belgium, frank.vanhaecke@ugent.be; Martin Resano. Esperanza Garcia-Ruiz, Isolde Deconinck, Keith McIntosh, and Joachim Hinrichs

3:40 **S10 CHARACTERIZATION OF A GRIMM TYPE GLOW DISCHARGE SOURCE ENGAGED TO A HIGH RESOLUTION, FAST SCANNING MAGNETIC SECTOR FIELD MASS SPECTROMETER.** Cornel Venzago, AQura GmbH, Rodenbacher Chaussee 4, D-63457 Hanau, Germany, cornel.venzago@degussa.com; Thomas Hofmann, Camile Payre, Lothar Rottmann, and Joachim Hinrichs

4:00 **S11 DEPTH PROFILE ANALYSIS OF ULTRA THIN ORGANIC FILMS AND FRAGILE MATERIALS IN RF-GD-OES.** Patrick Chapon, Horiba Jobin Yvon SAS, 16-18 rue du canal, F-91165 Longjumeau cedex, France, patrick.chapon@jobinyvon.fr; Célia Tauziede, and Philippe Belenguer

4:20 **S12 COMPARATIVE STUDIES ON EXCITATION OF NICKEL IONIC LINES BETWEEN Ar-EXCITED AND Kr-EXCITED GLOW DISCHARGE PLASMAS.** Kazuaki Wagatsuma, Tohoku University, Institute for Materials Research, Katahira 2-1-1, Aoba, Sendai 980-8577, Japan, wagatuma@imr.tohoku.ac.jp

4:40 **S13 GLOW DISCHARGE SPECTROSCOPY FOR NUCLEAR MATERIAL ANALYSIS.** James H. Barnes IV, Los Alamos National Laboratory, PO Box 1663, MS K484, Los Alamos NM 87545, jhbarnes@lanl.gov; Cris L. Lewis, Elizabeth Hastings, and Terry Hahn

5:00 **S14 INVESTIGATIONS ON THE VOLATIZATION OF TRACE ELEMENTS FROM REFRACTORY POWDERS IN ETV-ICP-MS AT THE EXAMPLE OF Al_2O_3.** José A.C. Broekaert, University of Hamburg, Institute for Inorganic and Applied Chemistry, Martin-Luther-King-Platz 6, D-222305 Hamburg, Germany, jose.broekaert@chemie.uni-hamburg.de; Birgit U. Peschel

5:30 **PD06 Panel Discussion: New Directions and Problems in Plasma Source Instrumentation.** Dirk Ardelt, Spectro Analytical Instruments GmbH & CoKG, Boschstrasse 10, D-47533 Kleve, Germany; José A.C. Broekaert, Institute for Inorganic and Applied Chemistry, University of Hamburg, Martin-Luther-King-Platz 6, D-22305 Hamburg, Germany; Detlef Günther, ETH Swiss Federal Institute of Technology, Laboratory of Inorganic Chemistry, Hönggerberg, HCI, G113, CH-8093 Zurich, Switzerland; Meike Hamester, Thermo Electron Corporation, Hanna-Kunath-Strasse 11, D-28199 Bremen, Germany; Norbert Jakubowski, ISAS-Institute for Analytical Sciences, Bunsen-Kirchhoff-Strasse 11, D-44139 Dortmund, Germany; jose.broekaert@chemie.uni-hamburg.de

6:30 **Closing Ceremonies**