# PITTCON Conference and Expo 2012

**Abstracts**

# Orlando, Florida, USA
# 11-15 March 2012

# Index

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**SYMPOSIA** Session 40

## Application of Vibrational Spectroscopic Techniques to Art Conservation and Archeology - arranged by John F. Rabolt, University of Delaware

Sunday Afternoon, Room: 308A

John F. Rabolt, University of Delaware, Presiding

1:05 PM (40-01) **An Overview and Case Studies of Infrared and Raman Spectroscopies in Conservation Science** CATHERINE MATSEN, Winterthur Museum

1:40 PM (40-02) **Application of a Portable, Ultrafast Planar Array Infrared (PA-IR) Spectrograph to Heritage Art Objects** JOHN F. RABOLT, University of Delaware, Bruce Chase

2:15 PM (40-03) **The Never Ending Story of the Ubiquitous Calcium Oxalates in Cultural Heritage: Recent Aspects of Vibrational Spectroscopy** GIUSEPPE ZERBI, Politecnico di Milano, Claudia Conti

2:50 PM (40-04) **New Developments in the Application of ATR-FTIR and Raman Spectroscopy to the Characterization of Organic Media in Cross-Sections** ADRIANA RIZZO, The Metropolitan Museum of Art

3:25 PM (40-05) **Vibrational Spectroscopy in Collections Research: Beyond Identification** KAREN TRENTELMAN, Getty Conservation Institute

**SYMPOSIA** Session 50

## Applications of Nanoparticles for Bioanalysis - arranged by Duncan Graham, University of Strathclyde

Sunday Afternoon, Room: 206B

Duncan Graham, University of Strathclyde, Presiding

1:05 PM (50-01) **Single-Molecule and Singe-Nanoparticle SERS: 15 Years Later** SHUMING NIE, Emory University, Ximei Qian

1:40 PM (50-02) **Tuning SERS Nanoantennas for Bioassays** MICHAEL NATAN, Cabot Security Materials

2:15 PM (50-03) **Single-Cell Analysis of Intracellular Content with "Nano-Flares"** CHAD A. MIRKIN, Northwestern University

2:50 PM (50-04) **Gold Nanoparticles, Surface Enhanced Raman Scattering, and Ultrasensitive Immunodiagnostics** MARC PORTER, University of Utah

3:25 PM (50-05) **New Methods of Bioanalysis Using Functionalised Nanoparticles and SERS** DUNCAN GRAHAM, University of Strathclyde

**SYMPOSIA** Session 60

## Ionic Liquids in Separations and Mass Spectrometry - arranged by Daniel W. Armstrong, University of Texas at Arlington

Sunday Afternoon, Room: 206C

Daniel W. Armstrong, University of Texas at Arlington, Presiding

1:05 PM (60-01) **Ionic Liquids in Separations and Mass Spectrometry** DANIEL W. ARMSTRONG, University of Texas at Arlington

1:40 PM (60-02) **A New Trend in Gas Chromatography Selectivity: Ionic Liquid Stationary Phases** LUIGI MONDELLO, University of Messina, Carla Ragonese, Danilo Sciarrone, Peter Tranchida

2:15 PM (60-03) **Extraction-MALDI-MS and Extraction-LC-MS Analytical Tools Based on Ionic Liquids** RICO DEL SESTO, Los Alamos National Laboratory, Andrew Koppisch, Cynthia Corley, David Fox, Geraldine Purdy, John Wilkes, Katherine Lovejoy, Srinivas Iyer, Timothy Sanchez

2:50 PM (60-04) **The Use of Ionic Liquids as Capillary Gas Chromatographic Stationary Phases** LEONARD M. SIDISKY, Supelco/Sigma-Aldrich, Greg Baney, James Desorcie, Katherine Stenerson

3:25 PM (60-05) **Ionic Liquid-Based Separation Methods for Pharmaceutical Analysis** JARED L. ANDERSON, The University of Toledo, Pamela Twu, Qichao Zhao, Tien Ho

**SYMPOSIA** Session 70

## Looking Ahead to a New Era of Analytical Chemistry Education (ACS-ANYL) - arranged by Carol Korzeniewski, Texas Tech University

Sunday Afternoon, Room: 308B

Carol Korzeniewski, Texas Tech University, Presiding

1:05 PM (70-01) **Challenges to Education in the Chemical Sciences in a Time of Change** MICHAEL DOYLE, University of Maryland

1:40 PM (70-02) **Funding for Analytical Instruments from the National Science Foundation** BERT E. HOLMES, University of North Carolina-Asheville

2:15 PM (70-03) **Safety in Academic Laboratories** JYLLIAN KEMSLEY, Chemical & Engineering News

2:50 PM (70-04) **Incorporating RCR in Chemistry Education** ALICE YOUNG, Texas Tech University

3:25 PM (70-05) **Teaching Analytical Chemistry in Canada, Eh!** CHARLES A. LUCY, University of Alberta

**SYMPOSIA** Session 80

## New Advances in Electrochemical Neurotransmitter Detection - arranged by R Mark Wightman, University of North Carolina at Chapel Hill

Sunday Afternoon, Room: 311B

R Mark Wightman, University of North Carolina at Chapel Hill, Presiding

1:05 PM (80-01) **Using FSCV to Probe Tyrosine Kinase Receptors Ability to Regulate Dopamine Dynamics** TIFFANY A. MATHEWS, Wayne State University, Aaron Apawu, Francis Maina

1:40 PM (80-02) **Electrochemical Detection of Octopamine and Tyramine in Drosophila** B JILL VENTON, University of Virginia, Madelaine Denno, Phuong Vo, Trisha Vickrey

2:15 PM (80-03) **Regulation of Striatal Dopamine Release by Insulin** MARGARET E. RICE, New York University School of Medicine, Christian Lee, Jyoti Patel, Kenneth Carr, Li Bao, Melissa Stouffer, Paul Witkovsky, Robert Machold

2:50 PM (80-04) **Simultaneous Voltammetric *In vivo* Detection of 5-HT and Histamine** PARASTOO HASHEMI, Wayne State University, Kevin Wood, R Mark Wightman

3:25 PM (80-05) **A Novel Voltammetric Microsensor for the Quantitative Detection of Real-Time Glucose Fluctuations in Living Brain Tissue** LESLIE A. SOMBERS, North Carolina State University, Amanda Corder, Leyda Lugo-Morales, Phillip Loziuk

**SYMPOSIA** Session 90

## Novel Analytical Chemistry for Nanotoxicity Assays - arranged by Chenzhong Li, Florida International University

Sunday Afternoon, Room: 207A

Chenzhong Li, Florida International University, Presiding

1:05 PM (90-01) **Nanomaterials Toxicity: From Materials Properties to Rapid Screening** SUDIPTA SEAL, University of Central Florida

1:40 PM (90-02) **Analytical Approaches for Nanotoxicity Assays** YULIANG ZHAO, National Center for Nanoscience and Technology

2:15 PM (90-03) **Integrated Analytical Biosensor for Nanotoxicity Assessment** CHEN-ZHONG LI, Florida International University, Evangelia Hondroulis

2:50 PM (90-04) **Sensors for Assessing the Toxicity of Engineered Nanomaterials** OMOWUNMI (WUNMI) SADIK, SUNY at Binghamton

3:25 PM (90-05) **Biophysical Interactions of Nanoparticle with Membrane Lipids** VINOD LABHASETWAR, Cleveland Clinic

**ORGANIZED CONTRIBUTED SESSION** Session 100

## Biomedical Applications of NIR Fluorescence - arranged by Gabor Patonay, Georgia State University

Sunday Afternoon, Room: 207B

Gabor Patonay, Georgia State University, Presiding

1:00 PM (100-01) **Diagnosis to Therapy: Applications of Cyanine Based NIR Optical Probes** NISHA V. PADHYE, LI-COR Biosciences, Joy Kovar, Kousik Kundu, Kuiyi Xing, Michael Olive, Ying Wang

1:20 PM (100-02) **GUMBOS: A New Breed of Tunable Materials** ISIAH M. WARNER, Louisiana State University, Chengfei Lu, Paul Magut, Sergio de Rooy, Susmita Das, Suzana Hamdan

1:40 PM (100-03) **Tumor Imaging with NIR Molecular Probes** SAMUEL ACHILEFU, Washington University

2:00 PM (100-04) **Design and Synthesis of New NIR Fluorescence Probes for *In vivo* Imaging** KENJIRO HANAOKA, The University of Tokyo

2:35 PM (100-05) **Biomedical Applications of Near Infrared Fluorescence from Single Walled Carbon Nanotubes** MICHAEL S. STRANO, Massachusetts Institute of Technology

2:55 PM (100-06) **A Boronic Acid-Functionalized Squarylium Cyanine Dye Designed for On-Capillary Labeling of Gram-Positive Bacteria in CE-LIF** SHINGO SAITO, Saitama University, Christa Colyer, Hiroyuki Nakazumi, Takeshi Maeda

3:15 PM (100-07) **NIR Fluorescence Imaging of Human Lymphatic Disease** EVA SEVICK-MURACA, University of Texas Health Science Center, Banghe Zhu, Chinmay Darne, I-Chih Tan, John Rasmussen, Melissa Aldrich, Milton Marshall

3:35 PM (100-08) **Spectroscopy of Near-Infrared Dye – Biomolecule Interactions** GABOR PATONAY, Georgia State University, Eric Owens, Garfield Beckford, Maged Henary, Sergey Alyabyev

**ORGANIZED CONTRIBUTED SESSION** Session 110

## Non-invasive Biomedical Analysis - arranged by Joachim Pleil, US EPA

Sunday Afternoon, Room: 300

Joachim Pleil, US EPA, Presiding

1:00 PM (110-01) **Non-Invasive Biomedical Analysis – Dawning of a New Area of Diagnostic Information** JOCHEN K. SCHUBERT, University of Rostock, Patricia Fuchs, Wolfram Miekisch

1:20 PM (110-02) **Applications of PTR-MS in Medicine and Biotechnology** JENS HERBIG, Ionimed Analytik, Armin Hansel, Ingrid Kohl, Klaus Winkler

1:40 PM (110-03) **Statistical Considerations for Interpreting Urinary Biomarker Concentrations** JON R. SOBUS, U.S. EPA, Erik Andersen, Marsha Morgan

2:00 PM (110-04) **Mammalian Cell Culture Headspace Volatile Organic Compounds Hold Vital Clues as Putative Biomarkers of Cellular Changes** CRISTINA E. DAVIS, University of California, Davis

2:35 PM (110-05) **Metabolomics Evaluation: Perturbations of Organic Metabolites in Human Breath and Urine** TZIPPORAH KORMOS, U.S. EPA

2:55 PM (110-06) **Real-Time Measurements and Mathematical Modeling of Breath Biomarkers to Address the Impact of Physiological Effects** JULIAN KING, Austrian Academy of Sciences, Anton Amann, Gerald Teschl, Karl Unterkofler, Pawel Mochalski

3:15 PM (110-07) **Correlations of Inflammatory Cytokines in Blood, Exhaled Breath Condensate, and Urine** MATTHEW STIEGEL, University of North Carolina at Chapel Hill, Cassandra O'Lenick, Joachim Pleil, Jon Sobus, Lisa Dailey, Michael Madden

3:35 PM (110-08) **Micro Extraction Techniques as a Link Between Clinical Application and Hyphenated Analytical Techniques** PHILLIP TREFZ, University of Rostock, Dietmar Hein, Jochen Schubert, Wolfram Miekisch

**ORAL** Session 120

## Bioanalytical Microfluidics - arranged by Lisa A. Holland, West Virginia University

Sunday Afternoon, Room: 308D

Lisa A. Holland, West Virginia University, Presiding

1:00 PM (120-01) **Two-Color Electrophoretic Immunoassay on a Microfluidic Device for Monitoring Insulin and Islet Amyloid Polypeptide Secretion from Islets of Langerhans** ANNA R. LOMASNEY, Florida State University, Michael Roper

1:20 PM (120-02) **Microchip Electrophoresis of Serum N-Glycans for Ovarian Cancer Screening** INDRANIL MITRA, Indiana University, Jackie Vasseur, John Goetz, Milos Novotny, Stephen Jacobson

1:40 PM (120-03) **Microfluidic Salivary IL-8 Assay as a Possible Oral Cancer Screening System** JAYSON PAGADUAN, Brigham Young University, Adam Woolley, Ming Yu, Pamela Nge, Weichun Yang

2:00 PM (120-04) **Disposable Microfluidic Devices for Rapid Processing of Sexual Assault Samples** BRIAN L. POE, University of Virginia, James Landers, Jenny Lounsbury, Kerui Xu, Murali Ghatkesar

2:35 PM (120-05) **Experience with Micro-Fluidic LC/MS/MS: Can We Reach the Levels of Sensitivity Required for High Sensitivity Bioanalysis and Biomarker Studies** PAUL D. RAINVILLE, King's College London, Robert Plumb, Smith Norman

2:55 PM (120-06) **Color-Blind Detection of Glucose-Regulating Hormones in a Microfluidic Device** ADRIAN SCHRELL, Florida State University, Anna Lomasney, Michael Roper

3:15 PM (120-07) **Microdialysis Coupled to Microchip Electrophoresis with Electrochemical Detection** DAVID E. SCOTT, University of Kansas, Ryan Grigsby, Susan Lunte

3:35 PM (120-08) **Synchronization of Islets of Langerhans Using a Multi-Chamber Microfluidic System** TUAN M. TRUONG, Florida State University, Mathilda Duncranz, Michael Roper

**ORAL** Session 130

## Bioanalytical Sensors - arranged by Colin D. Medley, Genentech

Sunday Afternoon, Room: 311A

Colin D. Medley, Genentech, Presiding

1:00 PM (130-01) **Oriented Antibody Immobilization on Surfaces for Enhanced Antigen Detection and Sensitivity** NATHAN J. ALVES, University of Notre Dame, Basar Bilgicer

1:20 PM (130-02) **Label-Free Technology and Its Role in Bioanalytical Assay Development** KATIE EDWARDS, Cornell University, Antje Baeumner

1:40 PM (130-03) **The Sensitive and Multiplexed Detection of Messenger RNA Utilizing Arrays of Silicon Photonic Microring Resonators** JARED T. KINDT, University of Illinois at Urbana-Champaign, Ryan Bailey

2:00 PM (130-04) **Bioluminescence Resonance Energy Transfer Based Nucleic Acid Senor: Rapid, Sensitive and Selective** MANOJ KUMAR, New Mexico Tech, Daohong Zhang, Sapna Deo

2:35 PM (130-05) **Design and Characterization of an Electrochemical Peptide-Based Sensor Fabricated via "Click" Chemistry** REBECCA Y. LAI, University of Nebraska-Lincoln

2:55 PM (130-06) **Optical Microring Resonator Arrays for Multiplexed *In vitro* Diagnostics** MATTHEW S. LUCHANSKY, University of Illinois at Urbana-Champaign, Ryan Bailey

3:15 PM (130-07) **Reversible Sensor for the Detection of High Charge Density Polyanion Contaminants in Heparin Preparations** ANDREA K. BELL, University of Michigan, Mark Meyerhoff

3:35 PM (130-08) **Biosensors for Rapid Bacteria Detection and Antibiotic Susceptibility Testing** NUVIA M. SAUCEDO, University of California, Riverside, Ashok Mulchandani, Sira Srinives

**ORAL** Session 140

## Electrochemistry Inorganic - arranged by Yinfa Ma, Missouri University of Science and Technology

Sunday Afternoon, Room: 311C

Yinfa Ma, Missouri University of Science and Technology, Presiding

1:00 PM (140-01) **Voltammetric Observation of a 700 mV Negative Shift in Potential for Oxidation of <3.0 nm Diameter Gold Nanoparticles** RAFAEL MASITAS, University of Louisville, Francis Zamborini

1:20 PM (140-02) **Highly Sensitive Detection of Aqueous Cr(VI) Using Flower-Like Surface Self-Assembly of Gold Nanoparticles** RUIZHUO OUYANG, University of Tennessee - Knoxville, James Chambers, Stefanie Bragg, Zi-Ling Xue

1:40 PM (140-03) **Iridium Oxide ($IrO_x$) Nanoparticles as Catalysts for Water Oxidation** ALESSA GAMBARDELLA, University of North Carolina at Chapel Hill, Royce Murray

2:00 PM (140-04) **Investigation of the Catalytic Activity for Hydrogen Production on Platinized Multilayer Films Photosystem I with Scanning Electrochemical Microscopy** GONGPING CHEN, Vanderbilt University, David Cliffel, Gabriel LeBlanc

2:35 PM (140-05) **Electrochemical Detection of Chromium Based on a Novel Sol-Gel/Single-Walled Carbon Nanotube Hybrid Material** STEFANIE A. BRAGG, University of Tennessee - Knoxville, Adam Lamb, James Chambers, Ruizhuo Ouyang, Sam Rosolina, Zi-Ling Xue

2:55 PM (140-06) **The Role of Hydroxyl Radical Generation in the Voltammetric Detection of Hydrogen Peroxide** JAMES G. ROBERTS, North Carolina State University, Leslie Sombers, Maxim Voynov, Tatyana Smirnova

3:15 PM (140-07) **Potentiometric and Conductometric Studies on Binary and Ternary Complexes of Divalent Transition Metal Ions with Gallic Acid and Some Aliphatic Dicarboxylic Acids as Ligands** ABDELATTY M. RADALLA, Qassim University

3:35 PM (140-08) **Chemical Modification of Photoanode for Stable Dye-Sensitized Solar Cells** TULASHI LUITEL, University of Louisville, Francis Zamborini

**ORAL** Session 150

## Environmental Analysis: Air Contaminants - arranged by Olujide T. Akinbo, Butler University

Sunday Afternoon, Room: 209A

Olujide T. Akinbo, Butler University, Presiding

1:00 PM (150-01) **Determining the Photolysis Rate Constant of Peracetic Acid by Measuring the Absorption Cross Sections of O-H Stretching Overtones Using Cavity Ring-Down Spectroscopy** MARC N. FIDDLER, North Carolina A&T State University, Solomon Bililign, Steven Brown, Sujeeta Singh

1:20 PM (150-02) **Synthetic Training Sets for the Development of Automated Classifiers for Passive Infrared Remote Sensing Measurements** HUA YU, University of Iowa, Gary Small

1:40 PM (150-03) **Measurement of Volatile Organic Compounds in Hot Emission Streams with Cantilever Enhanced Photoacoustic Detector** JUSSI RAITTILA, Gasera Ltd., Aleksi Helle, Christian Hirschmann, Jussi Tenhunen, Kari Roth, Katariina Rahkamaa-Tolonen, Riitta-Liisa Keiski, Satu Ojala, Satu Pitkäaho

2:00 PM (150-04) **Measurement of Oxycombustion Flue Gas From Coal Fired Plants** MORGANE RIVIERE, Air Liquide - CRCD, Daniel Missault, Jean-Marc Rabillier, Kenneth Wong, Martine Carré, Patrick Mauvais, Tracey Jacksier, Valérie Bossoutrot

2:35 PM (150-05) **The Identification and Quantification of Greenhouse Gas Point Source Emissions Using Cavity Ring-Down Spectroscopy, Complementary to Other Techniques** GRAHAM LEGGET, Tiger Optics, Rod Robinson, Tom Gardiner

2:55 PM (150-06) **The Use of Photoacoustic NDIR Based Multi-Gas Analysis in Monitoring the Cattle-Based Production of Greenhouse Gases in an Animal Shelter** ARTO BRANDERS, Gasera Ltd., Juha Fonsen

3:15 PM (150-07) **13C Molecular Isotopic Approach for Source Apportionment of Atmospheric Particulate-PAHs: Analytical Developments and Environmental Applications** ERIC VILLENAVE, University of Bordeaux, Amelie Guillon, Eva Leoz, Helene Budzinski

3:35 PM (150-08) **Cantilever Enhanced Tunable Diode Laser Photoacoustic Analysis of Nitrous Oxide in Automotive Application** JUHO UOTILA, Gasera Ltd., Ismo Kauppinen, Jussi Raittila

**ORAL** Session 155

## **Food Science: Applications** - arranged by Don Shelly, UCT, LLC

Sunday Afternoon, Room: 307A

Don Shelly, UCT, LLC, Presiding

1:00 PM (155-01) **Determination of Isoflavone Composition in Red Clover, Soy, & Kudzu Products via LC-PB/EIMS** CAROLYN E. QUARLES, Clemson University, R Kenneth Marcus

1:20 PM (155-02) **A Simple, One-Step, Quantitative Analytical Method for the Analysis of Omega-3 and Other Important Fatty Acids in Natural Products** ROBERT FREEMAN, Frontier Laboratories, Chu Watanabe, Dave Randle, Tetsuro Yuzawa

1:40 PM (155-03) **Determination of Phenolic Compounds in Grape and Wine Samples Using Automated 96-Blade SPME System Coupled with LC-MS/MS** FATEMEH S. MIRNAGHI, University of Waterloo, Janusz Pawliszyn

2:00 PM (155-04) **Optimization of SPME Coating Structure for High Throughput Analysis of Complex Food Samples** ERICA SILVA, University of Waterloo, Janusz Pawliszyn

2:35 PM (155-05) **Analysis of Pesticides in Fruits and Vegetables Using Z-Sep and Z-Sep+ SPE Sorbents in QuEChERS Method for Sample Cleanup** OLGA . SHIMELIS, Supelco/Sigma-Aldrich, Daniel Vitkuske, Emily Barrey, Matthew Irick, Michael Ye

2:55 PM (155-06) **Artificial Preservatives in Pet Food: BHT, BHA and Ethoxyquin Extraction by QuEChERS Methodology and Analysis by LC/MS/MS** JOAN M. STEVENS, Agilent Technologies, Ritu Arora

3:15 PM (155-07) **The QuEChERS Extraction Approach and Comprehensive Two-Dimensional Gas Chromatography of Halogenated Persistant Organic Pollutants in Cow Milk and Human Breast Milk** MICHELLE MISSELWITZ, Restek Corporation, Jack Cochran, Julie Kowalski

3:35 PM (155-08) **C18 Sorbents and QuEChERS Clean-Up Are Variations in Pesticide Recoveries Manufacturer Dependent?** DON SHELLY, UCT, LLC, Mike Kofel

**ORAL** Session 160

## High-Throughput Chemical Analysis - arranged by Garry J. Lynch, Bechtel Bettis Laboratory

Sunday Afternoon, Room: 310B

Garry J. Lynch, Bechtel Bettis Laboratory, Presiding

1:00 PM (160-01) **Multi-Variant Technology Combining Machine Vision with Raman Spectroscopy for Rapid Assessment of Pharmaceutical Drug Product Formulation and Dosage Strength** TODD BLONSHINE, Mustard Tree Instruments, Brisco Harward

1:20 PM (160-02) **Resin-Bonded Cyclofructans (CFs) as New Stationary Phases for Achiral HILIC and Chiral Separations in HPLC and SFC** HAIXIAO QIU, The University of Texas at Arlington, Daniel Armstrong

1:40 PM (160-03) **Design and Fabrication of an Integrated Microfluidic System for the Analysis of Integral Membrane Proteins** KATRINA N. BATTLE, Louisiana State University

2:00 PM (160-04) **Practical Fast GC: Decreasing Analysis Time the Easy Way** JAAP DE ZEEUW, Restek Corporation, Gary Stidsen, Jim Whitford

2:35 PM (160-05) **High-Throughput Screening Using Droplet Microreactor System with Analysis by Electrospray Ionization Mass Spectrometry** SHUWEN SUN, University of Michigan, Robert Kennedy

2:55 PM (160-06) **Nucleation and Crystallization Kinetics in API Powders Probed by Second Order Nonlinear Optical Imaging of Chiral Crystals (SONICC)** GARTH SIMPSON, Purdue University

3:15 PM (160-07) **HPLC Columns Made with Core-Shell Particles: An Elegant Solution for Fast HPLC** JASON A. ANSPACH, Phenomenex Inc., Gareth Friedlander, Jeff Layne, Lawrence Loo, Tivadar Farkas

3:35 PM (160-08) **A 'Virtual' Analytical Instrument in Every Laboratory** BRIAN EVERATT, Novartis, Simon Tullett

**ORAL**

## Laboratory Management - arranged by Thomas Conti, The Pittsburgh Conference

Sunday Afternoon, Room: 313

Thomas Conti, The Pittsburgh Conference, Presiding

1:00 PM (170-01) **An Open Source Research Notebook** STUART J. CHALK, University of North Florida

1:20 PM (170-02) **Smart Instrument Interfacing** BILL TUMBLESON, CSols, Inc.

1:40 PM (170-03) **Laboratory Spreadsheets and Documents – Converting from Chaos to Control** JOHN NEWTOWN, LabWare

2:00 PM (170-04) **Is There An Apple iPad in Your Lab's Future?** DAVID P. HURT, Labvantage

2:35 PM (170-05) **Comforts and Complexities of Open Chromatography Data System** KASTHURIRENGAN V. KRISHNAN, Mindteck, Basavaraj Khuba

2:55 PM (170-06) **Why Do I Have To Choose Between LIMS and ELN? Why Not Both?** DAVID P. HURT, Labvantage

3:15 PM (170-07) **Leveraging the Power of an Enterprise LIMS Solution** MICHELLE C. SHARRON, Thermo Fisher Scientific

3:35 PM (170-08) **Instrument Integration in LIMS and Electronic Laboratory Notebooks (ELN)** ROBERT VOELKNER, Labvantage

**ORAL** Session 180

## Liquid Chromatography: Stationary Phase Selectivity - arranged by John P. Auses, University of Pittsburgh

Sunday Afternoon, Room: 307C

John P. Auses, University of Pittsburgh, Presiding

1:00 PM (180-01) **Estimation of the Fluorophilic Lipophilic Hydrophilic Balance of Organic Compounds by Means of High Performance Liquid Chromatography** YOJI NAKAJIMA, Asahi Glass Co., Ltd., Kiyoshi Yamamoto, Tsuguhide Isemura, Yuki Hayasaka, Yuko Nakamura

1:20 PM (180-02) **Establishing Relevant Performance Parameters in the Development of High Performance Gel Filtration Media** MICHAEL D. MCGINLEY, Phenomenex Inc., Ismail Rustamov, Ying Wang

1:40 PM (180-03) **Development of New Ion Chromatography Separation Phases Using Amine-Epoxide Hyperbranch Chemistry** RONG LIN, Thermo Fisher Scientific, Christopher Pohl, Kannan Srinivasan, Sheetal Bhardwaj

2:00 PM (180-04) **Utilizing the Hydrophobic-Subtraction Model and Reversed-Phase Selectivity - A Simplified Look at Column Phase Selection** RICHARD LAKE,

Restek Corporation, Brian Jones, Chris Denicola, Mike Wittrig, Ty Kahler

2:35 PM (180-05) **Application Development Using Reversed-Phase/Ion-Exchange Mixed-Mode Columns** XIAODONG LIU, Thermo Fisher Scientific

2:55 PM (180-06) **Column Selectivity in Reversed-Phase LC Using Superficially Porous Columns** WILLIAM J. LONG, Agilent Technologies, Anne Mack, Jason Link, Maureen Joseph

3:15 PM (180-07) **Understanding Selectivity of Stationary Phases Utilized in HILIC Chromatography: Impact of Changing Retention Mechanisms** DAVID S. BELL, Supelco/Sigma-Aldrich, Carmen Santasania, Craig Aurand, Wayne Way

3:35 PM (180-08) **Fast Mixed Mode HILIC/Anion Exchange Separations on Nanoparticle Coated Silica Monoliths** MOHAMMED E. IBRAHIM, University of Alberta, Charles Lucy

**ORAL** Session 190

## **Mass Spectrometry** - arranged by Eduard Rogatsky, Albert Einstein College of Medicine

Sunday Afternoon, Room: 310A

Eduard Rogatsky, Albert Einstein College of Medicine, Presiding

1:00 PM (190-01) **Synchronized Discharge Ionization (SDI) for Analysis of VOCs in Air Using Handheld Ion Trap Mass Spectrometer** TSUNG-CHI CHEN, Purdue University, Zheng Ouyang

1:20 PM (190-02) **Initial Results in Implementing MS/MS on a Field Portable Gas-Chromatography/Toroidal Ion Trap Mass Spectrometer (GC-TMS) System** STEPHEN A. LAMMERT, Torion Technologies Inc., Edgar Lee, Glen Jackson, Joseph Oliphant, Mengliang Zhang, Nathan Porter

1:40 PM (190-03) **Calcination of Graphene-Embedded Silicate/Au Substrates for Enhanced Performance in Mass Spectrometric Analysis of Peptides** JUNQING XU, University of California, Riverside, Jicheng Duan, Quan Cheng

2:00 PM (190-04) **Glassy Carbon Nanofibers as a New Substrate for MALDI-MS** TIAN LU, The Ohio State University, Susan Olesik

2:35 PM (190-05) **New Sample Preparation, Sample Introduction Approaches for Application Across Analytical Chemistry Using Electric Fields: A Video Coming to your Pittcon!** DREW SAUTER, nanoLiter LLC

2:55 PM (190-06) **High Resolution Time-of-Flight Mass Analysis of the Entire Range of Intact Singly-Charged Proteins** PETER T. REILLY, Washington State University, Huijuan Chen, Jeonghoon Lee

3:15 PM (190-07) **Reaction Progress Determination Using Electrospray Ionization High Performance Ion Mobility Spectrometry** SHELLY X. LI, Pfizer, Inc., Anthony Midey, Carol Moraff, Charles Cheng, Ching Wu, Clinton Krueger, Frederick Antosz, Gilles Goetz, Zhongli Zhang

3:35 PM (190-08) **A Consideration of Ion Chemistry Encountered on the Microsecond Separation Timescales of Ultra-High Field Ion Mobility Spectroscopy** ASHLEY T. WILKS, Owlstone Inc.

**ORAL** Session 200

## Microscopic Analysis and Imaging Methods - arranged by Maria K. Ferguson, PA Department of Environmental Protection

Sunday Afternoon, Room: 209B

Maria K. Ferguson, PA Department of Environmental Protection, Presiding

1:00 PM (200-01) **Imaging Fluorescence Correlation Spectroscopy for Measuring Fast Molecular Dynamics at Liquid/Solid Interfaces** JUSTIN T. COOPER, University of Utah, Joel Harris

1:20 PM (200-02) **Correlation Between Surface Adsorptive Sites and Electromagnetic Hot Spots on Gold Nanostructures with Single Molecule Imaging** GUFENG WANG, North Carolina State University, Luyang Zhao

1:40 PM (200-03) **Confocal Raman Microscopy Study of Artificial Heart Valve Tissues Treated with Glutaraldehyde** JINPING DONG, Cargill, Aditee Kurane, Greg Haugstad, Stephanie Board, Zhengrong Zhou

2:00 PM (200-04) **A Simple Model for Calculating the Maximum Pressure in Microchannels and Bonding Optimization with a "Razor Blade" Test** MARCO MATTEUCCI, Technical University of Denmark - DTU Nanotech, Peter Ostergaard, Rafael Taboryski, Simone Tanzi, Thomas Christiansen

2:35 PM (200-05) **Depict Rotational Behaviors of Bioconjugated Nanoparticles on Live Cell Membranes at the First Contact and During the Lateral Diffusions** YAN GU, Iowa State University

2:55 PM (200-06) **Super-High Resolution and Invisibly Using the Same Lens** CHUANHONG ZHOU, Southern Illinois University Carbondale, Katherine Flynn, Kohli Punit

3:15 PM (200-07) **A Two-Camera Imaging Particle Analysis System for Simultaneous Capture of Brightfield and Cross-Polarized Particle Images** LEW BROWN, Fluid Imaging Technologies, Inc.

3:35 PM (200-08) **Can One Observe Features Below 100 nm in a Conventional Optical Microscope?** PUNIT KOHLI, Southern Illinois University

**ORAL** Session 210

## Molecular Spectroscopy Advances - arranged by Richard A. Larsen, Jasco, Inc.

Sunday Afternoon, Room: 309B

Richard A. Larsen, Jasco, Inc., Presiding

1:00 PM (210-01) **Active Surface Plasmon Tuning** LEE CAMBREA, NAWCWD, Alfred Baca, Peter Zarras, Zachary Sechrist

1:20 PM (210-02) **Optical Chirality Analyses of Adsorbed Molecules at Liquid-Liquid Interfaces** HITOSHI WATARAI, Osaka University, Hideaki Takechi, Koji Mitani, Shiori Watanabe

1:40 PM (210-03) **Assessing Nanoparticulate Rate of Organic Vapor Adsorption via Mid-Infrared Diamond ATR** DAVID L. WETZEL, Microbeam Molecular Spectroscopy Laboratory

2:00 PM (210-04) **Resonance Light Scattering Correlation Spectroscopy: A New Single Nanoparticle Method** JICUN REN, Shanghai Jiaotong University

2:35 PM (210-05) **Diffuse Reflectance Spectroscopic Evaluation of NO Moiety Formation Kinetics on Silicone Rubber Materials** JESSICA M. JOSLIN, Colorado State University, Melissa Reynolds

2:55 PM (210-06) **Forensic Applications of a Combined Raman Spectrometer and Particle Characterization Instrument** LINDA KIDDER, Malvern Instruments, E Neil Lewis

3:15 PM (210-07) **Fusion of Infrared and Raman Spectroscopy for Carotenoid Analysis** YUAN LIU, University of Central Florida, Marc Koehler, Martin Richardson, Matthieu Baudelet

3:35 PM (210-08) **Simplifying Analysis of Complex Samples Using FT-IR Microscope ATR Objectives** RICHARD A. LARSEN, Jasco, Inc., John Carriker, Jun Koshoubu, Ken-ichi Akao, Kohei Tamura, Miyuki Shimomura, Toshiyuki Nagoshi

**ORAL** Session 212

## Process Analytical Chemistry - arranged by Joseph Wreen, Fripp Environmental Network

Sunday Afternoon, Room: 311D

Joseph Wreen, Fripp Environmental Network, Presiding

1:00 PM (212-01) **A Rapid Sampling Method for the Determination of Enantiomeric Excess for Chiral Compounds in Ionic Liquids Using Headspace Solid-Phase Microextraction with On-Fiber Derivatization Coupled to Gas Chromatography** PAMELA TWU, The University of Toledo, Jared Anderson, Qichao Zhao

1:20 PM (212-02) **New Plasma Emission Detector for a Gas Chromatograph** LOUIS PARADIS, LDetek

1:40 PM (212-03) **The Use of Coatings to Improve the Physical and Analytical Reliability of Process Monitors Used for Ammonia, Mercury and Hydrogen Sulfide** GARY BARONE, SilcoTek Corporation, David Smith, Marty Higgins

2:00 PM (212-04) **Cumulative Efficiency of Separate Unit Process Determined via Quantitative Chemical Imaging with an InSb Near Infrared FPA** DAVID L. WETZEL,

Microbeam Molecular Spectroscopy Laboratory, Mark Boatwright

2:35 PM (212-05) **Monitoring Continuous Crystallisation in Oscillatory Baffled Reactors by Non Invasive Raman Spectrometry** LAURA PALMER, University of Strathclyde, Alastair Florence, Alison Nordon, David Littlejohn, Jan Sefcik, Lihua Zhao

2:55 PM (212-06) **New Technique for Routine On-line TOC Analysis for Process Control** THOMAS SZAKAS, GE Analytical Instruments, Erin England, Greg Conway

3:15 PM (212-07) **Fluorescence Correlation Spectroscopy in Semi-Adhesive Wall Proximity** LUIGI SANGUIGNO, Italian Institute of Technology, Filippo Causa, Ilaria De Santo, Paolo Netti

3:35 PM (212-08) **Assessment of Quantitative LIBS Analysis of Steel Samples After Optimization of Both Experimental Setup and Data Processing** BRUNO P. BOUSQUET, University of Bordeaux, Amina Ismael, Josette El Haddad, Lionel Canioni

**ORAL** Session 215

## Sampling and Sample Preparation I - arranged by John Stephens, CCAC

Sunday Afternoon, Room: 307D

John Stephens, CCAC, Presiding

1:00 PM (215-01) **How Many Chemist Does It Take To Place Liquid Samples Into Mass Spectrometers?** DREW SAUTER, nanoLiter LLC

1:20 PM (215-02) **Utilization of Ionic Liquids in the Extraction of Nucleic Acids Using Dispersive Liquid–Liquid Microextraction** TIANHAO LI, The University of Toledo, Donald Ronning, Jared Anderson

1:40 PM (215-03) **Increased Microdialysis Sampling Relative Recovery with Flow Recycling – Approaching 100% Relative Recovery** JUSTIN C. DEATON, University of Arkansas, Julie Stenken

2:00 PM (215-04) **High Throughput Sample Preparation Techniques for Bioanalysis** MOHAMED ABDEL-REHIM, Stockholm University

2:35 PM (215-05) **A Novel Autosampling Device for Needle Trap Micro-Extraction in Breath Analysis** DIETMAR HEIN, PAS Technology Deutschland GmbH, Jochen Schubert, Juliane Obermaier, Lisa Roesner, Phillip Trefz, Wolfram Miekisch

2:55 PM (215-06) **Determining Striatal Extracellular Glutamate Levels in xCT Mutant Mice Using LFPS CE-LIF** SRIVANI BORRA, University of Illinois at Chicago, Scott Shippy

3:15 PM (215-07) **Reusable Extractive Phase for Analysis of Raw Blood Using SPME-LC-MS/MS Method** FATEMEH S. MIRNAGHI, University of Waterloo, Janusz Pawliszyn

3:35 PM (215-08) **Improved Blood Storage Products through Novel Sample Preparation and**

**Detection Methods** YIMENG WANG, Michigan State University, Dana Spence

**SUNDAY POSTER SESSION** Session 220

## New Developments in Analytical Instrumentation and Software

Sunday Afternoon, Room: Valencia Room, W415

(220-01P) **Gold Coated Manganese Based Magnetic Nanoparticles for Potential Drug Delivery Applications** AMOS MUGWERU, Rowan University, John Kong, Ramanujachary Kandalam, Ryan Macquade

(220-02P) **Diffusion vs. Kinetic Control of Heterogeneous Reactions: Indium Mediated Allylations** WALTER J. BOWYER, Hobart and William Smith Colleges, Alexa Hill, Katherine Delaney, Katrina Kiesow, Yuhan Xun

(220-03P) **Laser-Desorption as a Technique for the Detection of Security-Relevant Substances via On-Line Soft Ionization Ion Trap MS** SVEN EHLERT, University of Rostock, Andreas Walte, Jasper Hoelzer, Martin Sklorz, Michael Pütz, Ralf Zimmermann

(220-04P) **Mid-Infrared Analysis of Small Amounts of Dissolved Dyes by Concentrated Multiple Reflection ATR Spectroscopy** JOSEPH P. LUCANIA, Harrick Scientific Products, Inc., Ali Kocak

(220-05P) **Ultrasensitive SERS Nanoprobes for Selective Detection of Trivalent Metal Ions** FEI YAN, North Carolina Central University, Janet Onabanjo, Jennifer Romeika, Rukayat Usman

(220-06P) **Spectrophotometric Analysis of Glutamine with Enzymatic Reactions** AKIMITSU KUGIMIYA, Hiroshima City University, Daiki Funamoto

(220-07P) **Improvement of ASTM D-5769 by GCMS High Concentration Tuning and Automated Data Processing** ZHUANGZHI M. WANG, Shimadzu Scientific Instruments, Clifford Taylor, Richard Whitney

(220-08P) **Determination of Moisture Content in ATF Using an Azeotropic Distillation Method** JOHN D. MACFARLANE, JM Science, Inc., Momoko Nagaya

(220-10P) **Markets for Potential New Physical Adsorbents** HENRY G. NOWICKI, PACS: Testing, Consulting, Training, Barbara Sherman, Wayne Schuliger

(220-11P) **Thermal Properties of Polymer Coatings Containing Excipients and Active Pharmaceutical Ingredients Evaluated by NanoTA Scanning Probe Microscopy** KARIN M. BALSS, Johnson & Johnson, Cynthia Maryanoff, Erica Frankel, Kevin Biggs, Mabel Cejas, Michelle Johnson

(220-12P) **Organic Elemental Analysis for Carbon Characterization by Flash Combustion Method** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(220-13P) **Nano-Composites Characterization by Differential Scanning Calorimetry (DSC)** ANDREW W. SALAMON, PerkinElmer Corporation, Dave Norman

(220-14P) **New Thermal Methods for Testing Batteries** PETER J. RALBOVSKY, NETZSCH Instruments North America LLC

(220-15P) **Study of Ancient Pottery to Determine Their Use via Analyses of Specific Biomarkers Using LC/MS** TIMOTHY WARD, Millsaps College, Erin Redman, Jiyan Gu, Marliana Berch, Syed Ali

(220-16P) **Analysis of Volatile and Semivolatile VOC's in Waste Oils** JACK DRISCOLL, PID Analyzers, LLC

(220-17P) **Inexpensive Wireless Sensor Package for PPB Monitoring of Photochemical Smog Components VOC'S, O3, NO2 and Sunlight** JACK DRISCOLL, PID Analyzers, LLC, Jennifer Maclachlan

(220-18P) **Indoor Air Pollutant Monitoring in Classrooms and Laboratories (VOC's, CO, CO2, and Ventilation Rates)** JENNIFER L. MACLACHLAN, PID Analyzers, LLC, Jack Driscoll, Pol Perov

(220-19P) **About the Correlation of the Heating Rate, the Release Rate and the Sensitivity of the IR Signal of the TG-FTIR Coupling** EKKEHARD FÜGLEIN, NETZSCH-Gerätebau GmbH, Ekkehard Post

(220-20P) **A Robust Person Portable Gas Chromatograph - Toroidal Ion Trap Mass Spectrometer (GC-TMS) for Field Analysis of Volatile and Semivolatile Compounds** DOUGLAS W. LATER, Torion Technologies Inc., Charles Sadowski, Edgar Lee, Jeffrey Jones, Kenneth Fredeen

(220-21P) **HPLC Monitoring of Quaternary Amine Drugs** KORNELIA TEKES, Semmelweis University, Georg Petroianu, Huba Kalasz, Kamil Musilek, Peter Szegi

(220-22P) **Improved Routine Environmental Analysis with ICP-Q-MS Through a Combination of a New Sample Introduction System and Enhanced High Matrix Tolerance** JULIAN WILLS, Thermo Fisher Scientific, Lothar Rottmann, Meike Hamester, Shona McSheehy, Tomoko Oki

(220-23P) **Determination of the Heavy Metal Levels (Pb, Cd, Cu and Zn) in Water and Sediments from the Marsh of Betaci, Colombia** FERNANDO E. LARMAT, Universidad del Valle, Basilio Diaz, Edineldo Lans Ceballos

(220-24P) **Photocatalytic Oxidation of Phenolic Compounds on Thin Films of TiO2 Deposited on Quartz Substrates** FERNANDO E. LARMAT, Universidad del Valle

(220-25P) **Recent Advances in the Supersonic GC-MS** AVIV AMIRAV, Tel Aviv University, Alexander B Fialkov, Alexander Gordin, Tal Alon

(220-26P) **Automatic Set-Up and Arrangement for Degradation Study of Pyridinium Aldoximes** HUBA I. KALASZ, Semmelweis University, Kamil Kuca, Kornelia Tekes, Nazila Ram, Peter Szegi, Szabolcs Beni

(220-27P) **Online Database for Certified Reference Materials** RAINER SCHRAMM, FLUXANA GmbH & Co.KG

(220-28P) **Dual Ion Source for Mass-Spectrometry and Their Application in Thermogravimetry** ANDREAS WALTE, Airsense Analytics GmbH, Bert Ungethuem, Matthias Bente von Frowein, Mohammad Saraji-Bozorgzad, Ralf Zimmermann, Wolf Muenchmeyer

(220-29P) **Improved Plasma Robustness with a Ceramic Torch** RYAN G. BRENNAN, Glass Expansion, Jerry Dulude, Vesna Dolic

(220-30P) **Advances in Enhanced Productivity Sample Introduction Accessories for ICP Spectrometry** RYAN G. BRENNAN, Glass Expansion, Jerry Dulude, Scott Bridger, Vesna Dolic

(220-31P) **Automating Production of Complex CLP and CLP-Like Data Packages to Improve Lab Efficiency and Productivity** MARK S. FERRERO, Labcore

(220-32P) **How to Optimise Your UHPLC Performance – Connect Properly!** KEN BUTCHART, Fortis Technologies Ltd

(220-33P) **New High Performance WD-XRF with Small Sample and Area Analysis Capabilities** ALEXANDER SEYFARTH, Thermo Fisher Scientific, Chris Shaffer, Didier Bonvin

(220-34P) **Enhancing the Laboratory Automation Process for Automated Monitoring of Fluid Levels of Analytical Instruments** SIMON TULLETT, TTP Labtech Ltd, Wendy Gaisford

# Monday Morning, March 12, 2012

**AWARD** Session 230

**Dal Nogare Award - WEBCASTING** - arranged by Mary Ellen P. McNally, DuPont Crop Protection

Monday Morning, Room: 206A

Mary Ellen P. McNally, DuPont Crop Protection, Presiding

8:10 AM (230-01) **The Evolution of Electrodialytic Devices in Ion Chromatography** PURNENDU K. DASGUPTA, University of Texas at Arlington

8:45 AM (230-02) **Recent Progress in the Synthesis of Anion Exchange Condensation Polymers** CHRISTOPHER A. POHL, Thermo Fisher Scientific

9:20 AM (230-03) **Thin Film SPME** JANUSZ PAWLISZYN, University of Waterloo

10:10 AM (230-04) **Development of Ionic Liquids for Chemical and Biochemical Analysis** DANIEL W. ARMSTRONG, University of Texas at Arlington

10:45 AM (230-05) **Recent Advances in the Charge Detector Concept for Ion Chromatography** KANNAN SRINIVASAN, Thermo Fisher Scientific

**AWARD** Session 240

## Pittsburgh Conference Achievement Award - WEBCASTING - arranged by Alice Chen, The Pittsburgh Conference

Monday Morning, Room: 300

Alice Chen, The Pittsburgh Conference, Presiding

8:10 AM (240-01) **Measuring Immune Cell Response to Inflammatory Cytokines** CHRISTY L. HAYNES, University of Minnesota, Audrey Meyer, Benjamin Manning, Donghyuk Kim

8:45 AM (240-02) **Measuring Nitric Oxide Production in Single Cells on Microfluidic Devices** CHRISTOPHER T. CULBERTSON, Kansas State University, Anne Culbertson, Dulan Gunasekara, Eve Metto, Gage Brummer, Susan Lunte

9:20 AM (240-03) **Analytical Methods for the Investigation of the Neurovascular Space** SUSAN M. LUNTE, University of Kansas, Courtney Sloan, Jane Aldrich, Ken Audus, Pradyot Nandi

10:10 AM (240-04) **Cell Signaling and the Platelet: Learning and Validating with Novel Sample Handling and Measurement Schemes** DANA SPENCE, Michigan State University

10:45 AM (240-05) **D-Amino Acid Signaling in the Brain: From Formation and Localization to Function** JONATHAN V. SWEEDLER, University of Illinois

**SYMPOSIA** Session 250

## Accessing Extracellular Fluid - arranged by Stephen G. Weber, University of Pittsburgh

Monday Morning, Room: 311B

Stephen G. Weber, University of Pittsburgh, Presiding

8:05 AM (250-01) **Sources and Sinks of Cytokine Proteins During *In vivo* Microdialysis Sampling** JULIE STENKEN, University of Arkansas, Erika von Grote, Geetika Bajpai, Geoff Keeler

8:40 AM (250-02) **Nanoliter Sampling and Analysis: Studying the Central Nervous System of Mice and Individual Drosophila** SCOTT A. SHIPPY, University of Illinois

9:15 AM (250-03) **Can Brain Microdialysis Sampling be Refined by Lessening the Tissue Reaction to the Probes?** ADRIAN C. MICHAEL, University of Pittsburgh, Andrea Jaquins-Gerstl, Jing Zhang, Kathryn Nesbitt, Stephen Weber, Zhan Shu

9:50 AM (250-04) **Iontophoresis With Voltammetry: A Local Drug Delivery System** R MARK WIGHTMAN, University of North Carolina at Chapel Hill

10:25 AM (250-05) **Electroosmotic Flow in Brain Tissue as a Means to Acquire and Manipulate Extracellular Fluid** STEPHEN G. WEBER, University of Pittsburgh, Amir Faraji, Amy Rupert, Jonathan Cui, Yifat Guy, Ying Yi

**SYMPOSIA** Session 260

## Analytical Applications of Chemically Patterned Surfaces and Films - arranged by Maryanne M. Collinson, Virginia Commonwealth University

Monday Morning, Room: 207A

Maryanne M. Collinson, Virginia Commonwealth University, Presiding

8:05 AM (260-01) **Nanostructures of Designed Geometry and Functionality Enable Regulation of Cellular Signaling Processes** GANG-YU LIU, University of California, Fu-tong Liu, Huan Chen, Jie Ren Li, Lifang Shi, Suhao Lo, Yi-Ping Shih

8:40 AM (260-02) **SPR Phase Imaging and Plasmonic Nanowires for Ultrasensitive Optical Biomolecular Microarray Sensors** ROBERT M. CORN, University of California-Irvine

9:15 AM (260-03) **Nanoscale Test Platforms of Proteins Produced with Particle Lithography for Sensor Applications** JAYNE C. GARNO, Louisiana State University

9:50 AM (260-04) **Surface Chemical Gradients and Their Application in Separation Science** MARYANNE M. COLLINSON, Virginia Commonwealth University, Balamurali Kannan, Daniel Higgins

10:25 AM (260-05) **A Hitchhiker's Guide to Mesostructured Materials: Single Molecule Tracking Studies of Aligned Mesophases** DANIEL A. HIGGINS, Kansas State University, Alec Kirkeminde, Takashi Ito

**SYMPOSIA** Session 270

## Biological Fluid/Tissue Proteomics: Advances and Challenges - arranged by Renã A. Robinson, University of Pittsburgh

Monday Morning, Room: 207B

Renã A. Robinson, University of Pittsburgh, Presiding

8:05 AM (270-01) **Advances in Proteomics Technologies and Their Application to CSF and Plasma for Biomarker Discovery and Verification** RICHARD SMITH, Pacific Northwest National Laboratory

8:40 AM (270-02) **Organelle Proteomics in Tissue: Advances and Challenges in the Characterization of Mitochondria-Associated ER Membranes (MAM)** CARTHENE R. BAZEMORE-WALKER, Brown University, Chloe Poston, Yiying Zhu

9:15 AM (270-03) **COPa Knowledgebase: A Specialized Proteome Resource for Cardiovascular Biology and Medicine** PEIPEI PING, University of California, Los Angeles, Haomin Li, Nobel Zong

9:50 AM (270-04) **Challenges and Advances in the Identification and Quantification of**

**Oxidatively-Modified Proteins in Tissues** RENÃ A. ROBINSON, University of Pittsburgh

10:25 AM (270-05) **Mass Linked Immuno-Selective Analysis of Proteins** FRED E. REGNIER, Purdue University

**SYMPOSIA** Session 280

## Biomedical Nanotechnology - arranged by Raoul Kopelman, University of Michigan

Monday Morning, Room: 307B

Raoul Kopelman, University of Michigan, Presiding

8:05 AM (280-01) **Magnetorotation-Based Biomedical Platforms: From Biomarker Analysis to Rapid Testing for Microbial and Cancer Drug Sensitivity** RAOUL KOPELMAN, University of Michigan

8:40 AM (280-02) **Intracellular Applications of Oligonucleotide-Gold Nanoparticle Conjugates** CHAD A. MIRKIN, Northwestern University

9:15 AM (280-03) **Bio-Inspired, Smart, Multiscale Interfacial Materials** LEI JIANG, The Institute of Chemistry

9:50 AM (280-04) **Gold and Silver Nanoparticles Use Different Programs for Cancer Cell Death and Show Us How** MOSTAFA EL-SAYED, Georgia Tech

10:25 AM (280-05) **Biologically Functionalized Nanomaterials For Cancer** WEIHONG TAN, University of Florida

**SYMPOSIA** Session 290

## Extreme Electrochemistry - Electrochemistry in Microstructures and Nanostructures - arranged by Paul Bohn, University of Notre Dame

Monday Morning, Room: 206B

Paul Bohn, University of Notre Dame, Presiding

8:05 AM (290-01) **Electrochemical Measurements of Atmospheric Micro- and Nanoparticle Chemistry** CHARLES S. HENRY, Colorado State University, Jeffrey Collett, John Volckens

8:40 AM (290-02) **Controlling the Spatial Distribution of Molecules and Particles Using Electrochemistry and Nanoscale Structures** HENRY S. WHITE, University of Utah, Mark Burgess, Wei-Jie Lan

9:15 AM (290-03) **Electrochemical Nanofluidics: Mesoscopic and Single-Molecule Limits** SERGE G. LEMAY, University of Twente

9:50 AM (290-04) **Single-Nanoparticle Electrochemistry** BO ZHANG, University of Washington, Joshua Guerrette, Stephen Percival

10:25 AM (290-05) **Attoliter Volume Plasmonic Sensing of Faradaic Reactions at Embedded Annular Nanoband Electrodes** PAUL BOHN, University of Notre Dame, Nicholas Contento, Sean Branagan

**SYMPOSIA** Session 300

**Imaging Mass Spectrometry: New Chemical Insights into Biomedicine and Pharmaceutics - WEBCASTING** - arranged by Richard A. Yost, University of Florida

Monday Morning, Room: 206C

Richard A. Yost, University of Florida, Presiding

8:05 AM (300-01) **Molecular Signaling Studied with High Resolution Imaging MS** RON M. HEEREN, FOM-AMOLF

8:40 AM (300-02) **Aspects of Imaging Mass Spectrometry in Pharmaceutical Applications** DIETER DREXLER, Bristol-Myers Squibb

9:15 AM (300-03) **Unraveling Identity in Imaging Mass Spectrometry: The Roles of Tandem and High Resolution MS** TIMOTHY J. GARRETT, University of Florida, Richard Yost, Robert Menger, Whitney Stutts, William Mounfield, Yu-Hsuan Tsai

9:50 AM (300-04) **"Seeing" the Future of MALDI Imaging in Ocular Tissues** KEVIN L. SCHEY, Vanderbilt University, David Anderson

10:25 AM (300-05) **Imaging Mass Spectrometry: Ambient Tissue Analysis for Cancer Diagnostics** R GRAHAM COOKS, Purdue University, Christina Ferreira, Dahlia Campbell, Kevin Kerian, Livia Eberlin, Valentina Pirro

**SYMPOSIA** Session 310

**Use of Ionic Media in Separation Science (ACS-ANYL)** - arranged by Neil Danielson, Miami University

Monday Morning, Room: 308B

Neil Danielson, Miami University, Presiding

8:05 AM (310-01) **The Role of Ionic Media in Influencing Electrostatic Interactions in Chromatographic Separations** BRIAN BIDLINGMEYER, Agilent Technologies, Inc.

8:40 AM (310-02) **Chiral Separations Using Amino Acid Surfactant-Bound Polymeric Monolithic Columns: Open Up New Possibilities for Chiral Separations in Capillary Electrophoresis** SHAHAB A. SHAMSI, Georgia State University, Jun He, Xiochun Wang

9:15 AM (310-03) **Why Consider Ionic Liquids as Mobile Phase Modifiers for Liquid Chromatography?** NEIL D. DANIELSON, Miami University, Ling Zhou, Matthew Collins

9:50 AM (310-04) **Ionic Liquids in Separation Science: From Chromatographic Stationary Phases to Extraction Media in Analytical Microextractions** JARED L. ANDERSON, The University of Toledo

10:25 AM (310-05) **The Judicious Use of pH Gradients Can Double or Triple the Peak Capacity and Resolving Power of High- or Ultra-Pressure Liquid Chromatography** JOE P. FOLEY, Drexel University, Adam Socia

**SYMPOSIA** Session 320

**uTAS for Bioanalysis** - arranged by Robert T. Kennedy, University of Michigan

Monday Morning, Room: 307D

Robert T. Kennedy, University of Michigan, Presiding

8:05 AM (320-01) **Microfluidics for the Efficient Selection, Enumeration and Molecular Profiling of Circulating Tumor Cells (CTCs)** STEVEN A. SOPER, Louisiana State University

8:40 AM (320-02) **Towards High-Throughput Protein Analysis via Microfluidic Integration** AMY E. HERR, University of California, Berkeley

9:15 AM (320-03) **New Tools for Single-Cell Studies** DANIEL T. CHIU, University of Washington

9:50 AM (320-04) **High-Throughput Chemistry, Biology and Diagnostics in Droplets** ANDREW J. DEMELLO, ETH Zurich

10:25 AM (320-05) **High-Throughput Analysis of Droplets by Mass Spectrometry and Electrophoresis** ROBERT T. KENNEDY, University of Michigan

**WORKSHOP** Session 330

**Implementation of Analytical Curriculum Reform: Solving Problems and Making Gains** - arranged by Olujide T. Akinbo, Butler University

Monday Morning, Room: 313

Olujide T. Akinbo, Butler University, Presiding

8:05 AM (330-01) **Evidence Based Curriculum Reform** MELANIE M. COOPER, Clemson University

8:30 AM (330-02) **Overcoming Obstacles to Initiating Curricular Change** THOMAS WENZEL, Bates College

8:55 AM (330-03) **Broader Impact: Adaption, Adoption and Implementation of Change Beyond the Local Environment** BERT E. HOLMES, University of North Carolina-Asheville

9:20 AM (330-04) **The Analytical Sciences Digital Library – A Unifying Force for Analytical Science Education** CYNTHIA K. LARIVE, University of California - Riverside

9:45 AM (330-05) **A Grassroots Effort to Reform the Chemistry Curriculum** MICHAEL J. SAMIDE, Butler University, Olujide Akinbo

10:10 AM (330-06) **A Global Approach to Curriculum Reform** MARIA J. SCHROEDER, US Naval Academy, Debra Dillner, Jeffrey Fitzgerald, Robert Ferrante

**ORGANIZED CONTRIBUTED SESSION** Session 340

**Application of Surface-Enhanced Raman Spectroscopy to Real-World Problems** - arranged by Stuart Farquharson, Real-Time Analyzers, Inc.

Monday Morning, Room: 308A

Stuart Farquharson, Real-Time Analyzers, Inc., Presiding

8:00 AM (340-01) ***In vivo*, Transcutaneous Glucose Sensing Using Surface-Enhanced Spatially Offset Raman Spectroscopy: Multiple Rats, Improved Hypoglycemic Accuracy, Low Incident Power, and Continuous Monitoring for Greater Than 17 Days** RICHARD VAN DUYNE, Northwestern University

8:40 AM (340-02) **SERS as a Platform for High Sensitivity Sensing** MARTIN MOSKOVITS, CCNY

9:00 AM (340-03) **Protocol for the Assessment of Surface-Enhanced Raman Spectroscopy Substrates – Toward a SERS Chemical Agent Sensor** JASON GUICHETEAU, U.S. Army Edgewood Chemical Biological Center, Ashish Tripathi, Augustus Fountain, Darren Emge, Erik Emmons, Mikella Hankus, Paul Pellegrino, Phillip Wilcox, Steven Christesen

9:35 AM (340-04) **Detection of Single-Digit Bacillus Anthracis Spores in 15 Minutes by SERS** FRANK INSCORE, Real-Time Analyzers, Inc., Hermes Huang, Stuart Farquharson

9:55 AM (340-05) **Rapid Detection and Identification of Overdose Drugs in Saliva by Surface-Enhanced Raman Spectroscopy** CHETAN SHENDE, Real-Time Analyzers, Inc., Atanu Sengupta, Frank Inscore, Hermes Huang, Stuart Farquharson

10:15 AM (340-06) **Surface-Enhanced Resonance Raman Scattering in Art and Archaeology** MARCO LEONA, The Metropolitan Museum of Art

10:35 AM (340-07) **SERS and SEIRA: Do They Have A Similar Cause?** PETER R. GRIFFITHS, University of Idaho

**ORGANIZED CONTRIBUTED SESSION** Session 350

**Orthogonal Sensing System for Homeland Security Applications** - arranged by Samar K. Guharay, The MITRE Corporation

Monday Morning, Room: 308C

Samar K. Guharay, The MITRE Corporation, Presiding

8:00 AM (350-01) **Prototype Micro Gas Chromatograph for Rapid Determination of Explosive Marker Compounds** EDWARD T. ZELLERS, University of Michigan, Gustavo Serrano, Hungwei Chang, Lindsay Amos, Nicolas Nunovero, Will Collin

8:20 AM (350-02) **Chemiresistive Sensing: Nanomaterial Systems with Integrated Receptors** TIMOTHY M. SWAGER, Massachusetts Institute of Technology

8:40 AM (350-03) **Integrated Use of X-Ray, Millimeter Wave People Screeners, Raman and Trace Detectors for Explosive Detection** RENO DEBONO, Smiths Detection, Kristofer Roe

9:00 AM (350-04) **Acoustic Probe for Concealed Weapons on Persons** JOHN HAAS, ARA, Lance Besaw, Mark McKenna, Phil Stimac, Sam Guy, Steve Timian

9:35 AM (350-05) **Multi-Modal Security Systems for Person-Borne Threats** DOUGLAS L. MCMAKIN, Pacific Northwest National Laboratory, Bruce Bernacki, David Sheen, Jonathan Tedeschi, Justin Fernandes, Paul Keller

9:55 AM (350-06) **Orthogonal Sensing System for Trace Explosives Detection** SAMAR K. GUHARAY, The MITRE Corp

10:15 AM (350-07) **Channel Coding to Improve Specificity** DAVID J. BRADY, Duke University

10:35 AM (350-08) **Long-Wave IR and Passive Wideband Submillimeter-Wave Imagery of Static Indoor Scenes** ERICH GROSSMAN, National Institute of Standards and Technology, Richard Chamberlin

**ORAL** Session 360

## Advances in Instrumentation: Atomic Spectroscopy - arranged by Steven B. Dorn, Momentive Performance Materials, Inc.

Monday Morning, Room: 307A

Steven B. Dorn, Momentive Performance Materials, Inc., Presiding

8:00 AM (360-01) **Chemical Mapping and Depth Profiling of Materials with Laser Ablation Spectrometers: LIBS and LA-ICPMS** ALEXANDER A. BOL'SHAKOV, Applied Spectra Inc., Chunyi Liu, Jhanis Gonzalez, Jong Yoo, Richard Russo

8:20 AM (360-02) **Analysis of Metal-Containing Nanoparticles Using Single Particle ICP-MS (Sp ICP-MS) in Environmental Matrices** JAMES RANVILLE, Colorado School of Mines, Christopher Higgins, Denise Mitrano, Heather Pace, Kenneth Neubauer, Robert Reed

8:40 AM (360-03) **Investigation of the Effects of Electrode Material and Geometry in Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) Microplasma Emission Spectroscopy and the Potential for Chromatography** BENJAMIN T. MANARD, Clemson University, C Derrick Quarles, R Kenneth Marcus

9:00 AM (360-04) **Analytical Performance Characteristics of Ar-H2, Battery-Operated, Microplasma-On-A-Chip Using a Portable Emission Spectrometer** VASSILI KARANASSIOS, University of Waterloo, Scott Wegant

**ORAL** Session 370

## Advances in Instrumentation: GC - arranged by Steven B. Dorn, Momentive Performance Materials, Inc.

Monday Morning, Room: 307A

Steven B. Dorn, Momentive Performance Materials, Inc., Presiding

9:35 AM (370-01) **A New Modular Approach to Gas Chromatographic Equipment Design** MASSIMO SANTORO, Thermo Fisher Scientific, Eric Phillips, Fausto Pigozzo, Paolo Magni

9:55 AM (370-02) **New Development in Resistively Heated Column Technology** STANLEY D. STEARNS, Valco Instruments Co. Inc., Chris Bishop, Chris Cowles, Dale Ashworth, Huamin Cai, J Art Koehn, Martin Brisbin, Santos Puente

10:15 AM (370-03) **Limits of Detection and Quantification in Comprehensive Multidimensional Separations** A PAULINA DE LA MATA, University of Alberta, James Harynuk

10:35 AM (370-04) **Development of a New Consumable-Free Modulator For Comprehensive Two-Dimensional Gas Chromatography** MATTHEW K. EDWARDS, University of Waterloo, Tadeusz Gorecki

**ORAL** Session 380

## Bioanalytical Assays and Sensors - arranged by Deepak Dibya, Advanced Analytical Technologies, Inc.

Monday Morning, Room: 311A

Deepak Dibya, Advanced Analytical Technologies, Inc., Presiding

8:00 AM (380-01) **A Novel Enzymatic Technique for Determination of Sarcosine in Urine Samples for Potential Early Cancer Screening** CASEY BURTON, Missouri University of Science and Technology, Sanjeewa Gamagedara, Yinfa Ma

8:20 AM (380-02) **A New Fluorescent Cu2+ Sensor Based on Poly(N-isopropylacrylamide) Copolymers** RUI DING, University of New Hampshire, Justin Massing, Roy Planalp, William Seitz

8:40 AM (380-03) **Detection of mRNA Biomarkers for Breast Cancer Metastasis Using a Molecular Beacon-Based Assay** JENNIFER R. FURCHAK, Kalamazoo College, Amy Ong, Carolyn Walsh, Erik Guetschow, Vinay Sharma, Will Black

9:00 AM (380-04) **Homogenous Fluorescence Assays of Proteins Secreted from Pancreatic Islets and Adipocytes** JOONYUL KIM, Auburn University, Christopher Easley, Leah Godwin

9:35 AM (380-05) **Ratiometric Sensing in Trypanosoma Brucei Glycosomes** SHENG LIN, Clemson University, James Morris, Kenneth Christensen, Meredith Morris

9:55 AM (380-06) **Facile Assembly of Biomembrane Micro- and Nanoarrays for Fluorescence and Plasmonic Sensing** NATHAN J. WITTENBERG, University of Minnesota, Arthur

Warrington, Hyungsoon Im, Moses Rodriguez, Sang-Hyun Oh, Timothy Johnson, Xiaohua Xu

10:15 AM (380-07) **Electrocatalytic Oxidation of Hydrogen Sulfide Using CN-Coordinated Electrodeposited Hemin** JASON A. BENNETT, Penn State Erie, The Behrend College, Christopher Wheeler

10:35 AM (380-08) **Protein Detection Using Homogeneous Electrochemical Proximity Assay with Background Minimization** JIAMING HU, Auburn University, Christopher Easley, Curtis Shannon, Joonyul Kim, Tanyu Wang

**ORAL** Session 390

## Data Analysis and Manipulation - arranged by Cecil Dybowski, University of Delaware

Monday Morning, Room: 310B

Cecil Dybowski, University of Delaware, Presiding

8:00 AM (390-01) **Chromatographic Peak Integration Simplified by Intelligent Signal Processing** RAJEEV KUMARASWAMY, Network Systems & Technologies (P) Ltd

8:40 AM (390-03) **Investigating the Use of Multivariate Statistical Procedures for Fire Debris Analysis** RUTH WADDELL SMITH, Michigan State University, Kaitlin Prather, Suzanne Towner, Victoria McGuffin

9:00 AM (390-04) **Enhanced Automated Chemical Image Data Segregation and Classification** JOHN F. TURNER, Cleveland State University

9:35 AM (390-05) **Multi-Technique Data Analysis Software for Synthetic Chemists** GRAHAM A. MCGIBBON, Advanced Chemistry Development, Michael Boruta, Mike McBrien, Ryan Sasaki

9:55 AM (390-06) **Enhancing Classification of Microalgae Cells by Means of Data Fusion, Plausibility Analyses, and Bayes Statistics** FRANK VOGT, University of Tennessee - Knoxville, Morgan McConico

10:15 AM (390-07) **True Currie Detection Limits in a True Experimental Linearly Heteroscedastic System** EDWARD VOIGTMAN, University of Massachusetts - Amherst, Kevin Abraham

10:35 AM (390-08) **The Use of Residual Spectra in Noise Reduction in FTIR** KENNETH WONG, American Air Liquide, Jorge Perez

**ORAL** Session 400

## Environmental Analysis: Protocols - arranged by Robert W. Baudoux, Sr., RWB Convention Mgt

Monday Morning, Room: 209B

Robert W. Baudoux, Sr., RWB Convention Mgt, Presiding

8:00 AM (400-01) **Versatile Automation of Water Methods: EPA 500 Series and Beyond** JESSICA NETZER, J2 Scientific, Jeff Wiseman, Jennifer Salmons, Tom Dobbs

8:20 AM (400-02) **A Guide to EPA Method 1664B Utilizing Automated Solid Phase Extraction** DAVID GALLAGHER, Horizon Technology, Inc., Michael Ebitson

8:40 AM (400-03) **Laboratory Processing of Incremental Samples** MARK L. BRUCE, TestAmerica

9:00 AM (400-04) **Environmental Sample Analysis Using an ICP-OES New Technology** PRAVEEN R. SAROJAM, PerkinElmer Inc., Laura Thompson

9:35 AM (400-05) **Fast Screening of Volatiles and Semivolatiles by DHS-GC-TOFMS in Compliance with EPA Methods** DANIELA CAVAGNINO, DANI Instruments SpA, Alessandra Mantegazza, Ilaria Ferrante

9:55 AM (400-06) **A Novel Solution for Automated Canister Cleaning to Meet EPA Method TO-15** MARCIE GLASS, Wasson-ECE Instrumentation

10:15 AM (400-07) **Scaling Down The Sample Volume Requirements for the Automated Solid Phase Extraction of Semi-Volatile Organic Compounds in EPA Method 8270 By One Order of Magnitude** WILLIAM R. JONES, Horizon Technology, Inc., Julie McGettrick, Kevin Dinnean

10:35 AM (400-08) **Environmental Contaminants in Finished Drinking Water and Raw Source Water: Carbonyl Compounds by EPA Method 556** PADMAJA PRABHU, PerkinElmer, Anil Nimkar, William Goodman

**ORAL** Session 410

## LC-MS, Bioanalytical - arranged by Elizabeth Harris, Mannkind Corporation

Monday Morning, Room: 209A

Elizabeth Harris, Mannkind Corporation, Presiding

8:00 AM (410-01) **Long Microcapillary Columns at Elevated Temperatures and Pressures for Use in Proteomic and Lipidomic Applications** EDWARD FRANKLIN, University of North Carolina at Chapel Hill, James Jorgenson

8:20 AM (410-02) **Characterization of Post-Source Fragmentation with Deconvolution and Accurate Mass Measurement as a Tool for Analyte Identification in Natural Products: HPLC-TOF-MS Analysis with Database Searching of Fragment Ions** JEFFREY S. PATRICK, LECO Corporation, Joe Binkley, Kevin Siek, Li Zhang

8:40 AM (410-03) **3D LC/MS for Better Sensitivity, Reproducibility and Ruggedness** EDUARD ROGATSKY, Albert Einstein College of Medicine, Daniel Stein

9:00 AM (410-04) **Recognizing Quaternary Amines Using Electrospray Mass Spectrometry** HOLLY M. SHACKMAN, Bristol-Myers Squibb, Mark Bolgar

9:35 AM (410-05) **Trace Analysis of Zearalenone and Its Analogs in Food Matrices by Solid**

**Phase Extraction-Liquid Chromatography Tandem Mass Spectrometry** BUU TRAN, Wadsworth Center, Kenneth Aldous, Richard Okoniewski

9:55 AM (410-06) **Development of an LC-MS/MS Method for the Detection of Arachidonic Acid Metabolites in Microdialysis Samples** JUSTIN C. COOLEY, University of Kansas, Craig Lunte

10:15 AM (410-07) **Therapeutic Monitoring of Tranexamic Acid Concentration in Patients Undergoing Cardiac Surgery with the Use of Cardiopulmonary Bypass** BARBARA BOJKO, University of Waterloo, Angela Jerath, Janusz Pawliszyn, Marcin Wasowicz

10:35 AM (410-08) **Investigation of the Adduct Formation of Mercury Species with Components of Cell Culture Media by Means of HPLC/ESI-TOF-MS** MIRIAM SCHWARZER, University of Muenster, Imke Pieper, Michael Sperling, Rasmus Janzen, Tanja Schwerdtle, Uwe Karst

**ORAL** Session 420

## Liquid Chromatography - arranged by Stephen Gozo, Celgene Corporation

Monday Morning, Room: 307C

Stephen Gozo, Celgene Corporation, Presiding

8:00 AM (420-01) **Separation of Some Drugs by HPLC Using New Cross Linked Co-Polymer of (Trietyl Amine Glyceryl Maleate)** EMAAD T. BAKIR AL-TAKRITY, Tikrit University/ College of Science

8:20 AM (420-02) **Systematic Method Development and Optimization in Reversed-Phase UPLC** APARNA CHAVALI, Waters Corporation, Patricia McConville, Thomas Wheat

8:40 AM (420-03) **Transfer and Optimization of HPLC Methods to Superficially Porous UHPLC** WILLIAM J. LONG, Agilent Technologies, Anne Mack, Jason Link, Maureen Joseph

9:00 AM (420-04) **High Performance Toolbox Approach for HPLC Method Development** LAWRENCE Y. LOO, Phenomenex Inc., Jason Anspach, Jeff Layne, Mike Chitty, Thuylinh Tran, Tivadar Farkas

9:35 AM (420-05) **Assessment of HILIC Mode and Stationary Phase for UHPLC/MS** ANNE MACK, Agilent Technologies, Jason Link, Maureen Joseph, William Long

9:55 AM (420-06) **Comparing Selectivity Rules for Core-Shell UHPLC Columns versus Fully Porous Wide Pore Columns for Protein and Oligonucleotide Separations** MICHAEL D. MCGINLEY, Phenomenex Inc., Daniel Brock, Jeff Layne

10:15 AM (420-07) **Exploiting the Speed and Performance of Analytical Scale Commercial Silica Monoliths Through an *In Situ* Modification Process** ARIANNE SOLIVEN, University of Western Sydney, Emily Hilder, Gary Dennis, Georges Guiochon, Ross Shalliker

10:35 AM (420-08) **Quality by Design (QbD) Approach to Rapid HPLC Method Development for**

**Pharmaceuticals Using Automated Screening and Design of Experiments (DOE)** CATHARINE JOHNSON, Boehringer Ingelheim, Shaun Mendonsa

**ORAL** Session 430

## Liquid Chromatography: Stationary Phase Architecture - arranged by Richard A. Henry, Supelco/Sigma-Aldrich

Monday Morning, Room: 311C

Richard A. Henry, Supelco/Sigma-Aldrich, Presiding

8:00 AM (430-01) **Characterization of Carbon-Modified Silicas for Analytical Liquid Chromatography** STEPHEN R. GROSKREUTZ, Gustavus Adolphus College, Doug Fryer, Dwight Stoll, Jon Thompson, Tuan Tran

8:20 AM (430-02) **Using Solvent-Particle Interactions to Predict Slurry Packing and Performance of 1.2 µm Superficially Porous Particles Packed in Capillary Columns for Liquid Chromatography** LAURA BLUE, University of North Carolina, James Jorgenson

8:40 AM (430-03) **Performance Reproducibility of Chromatographic Columns Packed With Sub-3 Micron Core-Shell Particles** FABRICE GRITTI, University of Tennessee - Knoxville

9:00 AM (430-04) **Equivalency of Selectivity Plots for Porous and Superficially-Porous Particles** RICHARD A. HENRY, Supelco/Sigma-Aldrich, Carmen Santasania, David Bell

9:35 AM (430-05) **Comparison of Efficiencies of Diamond-Based Core-Shell Materials for HPLC Made with Different Sizes of Nanodiamonds and Core Carbon Particles** CHUAN-HSI HUNG, Brigham Young University, Andrew Dadson, James Christensen, Landon Wiest, Loryn Killpack, Matthew Linford, Michael Vail, Robert Davis

9:55 AM (430-06) **1.2 µm Large Pore, Thin Shell, Superficially Porous Particles and Their Chromatographic Performance in Capillary LC Columns** JAMES W. TREADWAY, University of North Carolina at Chapel Hill, James Jorgenson, Laura Blue

10:15 AM (430-07) **Evaluations of Sub 2m Nonporous Organosilica Hybrid Particles for LC** AMBER D. MOORE, SUNY at Buffalo, Luis Colon

10:35 AM (430-08) **A High-Performance Specialty Column for Surfactant Analysis** XIAODONG LIU, Thermo Fisher Scientific, Christopher Pohl, Mark Tracy

**ORAL** Session 440

## Microfluidics/Lab-on-a-Chip I- Bioanalytical - arranged by X Nancy Xu, Old Dominion University

Monday Morning, Room: 309A

X Nancy Xu, Old Dominion University, Presiding

8:00 AM (440-01) **Flow-Valve Diagnostics for Label-Free, Point-of-Care Analyte Quantitation** DEBOLINA CHATTERJEE, Brigham Young University, Adam Woolley, Danielle Mansfield, Neil Anderson

8:20 AM (440-02) **Platform for Lock-In Detection Using Droplet Microfluidics as a Sample Chopper to Achieve Nanomolar Absorbance Detection Limits** KENNON DEAL, Auburn University, Christopher Easley

8:40 AM (440-03) **Electrophoretic Separations in a Paper-PDMS Device** CHRISTOPHER R. HARRISON, San Diego State University, Dylan Mitchell

9:00 AM (440-04) **A Continuous-Flow Microfluidic Device for the Automated Preparation of Fatty Acid Methyl Esters** CINDY T. DUONG, Florida State University, Michael Roper

9:35 AM (440-05) **Super-localization of Single Molecules and Nanoparticles in High-Fidelity Optical Imaging Microfluidic Devices** NING FANG, Iowa State University, Wei Sun, Yong Luo

9:55 AM (440-06) **Micellar Electrokinetic Chromatography of Oxidized Lipids in a Three-Dimensional Polymeric Micro/Nanofluidic Device** LARRY R. GIBSON, University of Notre Dame, Paul Bohn

10:15 AM (440-07) **Rapid Prototyping in Polystyrene: Techniques to Produce High Throughput Microfluidic Devices for the Monitoring of Cell-Cell Communication** STEPHEN T. HALPIN, Michigan State University, Dana Spence

10:35 AM (440-08) **Microfluidic Emulsion-Mediated Generation of Clonal Bead Populations** CHERYL J. DEJOURNETTE, Auburn University, Christopher Easley

**ORAL** Session 445

## Sampling and Sample Preparation II - arranged by Singh Manocha, The Pittsburgh Conference

Monday Morning, Room: 308D

Singh Manocha, The Pittsburgh Conference, Presiding

8:00 AM (445-01) **Quantitative Analysis of Stearic Acid in Rubber Using Reactive Pyrolysis GC/MS** ATSUSHI WATANABE, Frontier Laboratories, Chu Watanabe, Robert Freeman

8:20 AM (445-02) **In-vial Pyrolysis (PyroVial) with Pre- and Post - Sample Treatment Combined with Different Separation Techniques** BART TIENPONT, Research Institute for Chromatography, Frank David, Pat Sandra

8:40 AM (445-03) **High Efficient and Quantitatively Reproducible Protein Digestion by Trypsin-Immobilized Magnetic Microspheres** LIANGLIANG SUN, University of Notre Dame, Guijie Zhu, Norman Dovichi, Ping Yang, Yihan Li

9:00 AM (445-04) **Optimization of Solid Phase Microextraction and Comprehensive Two-Dimensional Gas Chromatography – Time-of-Flight Mass Spectrometry**

**Technique for High-Resolution Profiling of Plant Metabolites** SANJA RISTICEVIC, University of Waterloo, Janusz Pawliszyn

9:35 AM (445-05) **Investigating Low Potency Assay Values for Film Coated Tablets** SHELLY X. LI, Pfizer, Inc.

9:55 AM (445-06) **Fully Automated Sample Preparation for Pharmaceuticals in Drinking Water** TOM DOBBS, J2 Scientific, Jeff Wiseman, Jessica Netzer

10:15 AM (445-07) **Enhancing the Sensitivity for Trace-Level Analysis of Genotoxic Impurities Using Polymeric Ionic Liquid-Based Coatings in Solid-Phase Microextraction** TIEN D. HO, The University of Toledo, Jared Anderson, Mark Silver

10:35 AM (445-08) **Automated Sample Preparation for Tablet Content Uniformity and Assay Testing** MARC FINN, SOTAX Corporation, Robert Houser

**POSTER** Session 450

## Agriculture

Monday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(450-01P) **A New Approach to the Simultaneous Analysis of Underivatized Ionophoric Antibiotics Using Liquid Chromatography with Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth

(450-10P) **Electrochemical MIP/GCE Sensor for Direct Detection of Chiral Catechin Without Separation** TANYU WANG, Auburn University, Curtis Shannon

(450-02P) **Measurement of Phenolics, Carotenoids and Chlorophylls During Wheat Development in Different Environments** ODEAN M. LUKOW, Agriculture and Agri-Food Canada, Doug Brown, Gavin Humphreys, Jerry Suchy, Kathy Adams, Ron DePauw, Stephen Fox

(450-03P) **Shelf Life Study of Egg Albumen in Pasteurized and Non-Pasteurized Eggs Using Visible-Near Infrared Spectroscopy and Chemometrics** SAMANTHA HAWKINS, USDA-ARS, Deana Jones

(450-04P) **Single Seed Near Infrared Analysis for Soybean Raffinose and Stachyose** MIN REN, Pioneer, A Dupont Company

(450-05P) **Cholesterol is a Glycoalkaloid Precursor in Potato Plants** ERIK V. PETERSSON, Swedish University of Agricultural Sciences, Anders Broberg, Folke Sitbon, Lisbeth Jonsson, Nurun Nahar, Paresh Dutta, Rikard Aslund-Troger

(450-06P) **Biomimetic Synthesis of Calcium Phosphate Compounds** MAYUMI MINAMISAWA, Chiba Institute of Technology, Atsushi Uzawa, Hiroaki Minamisawa, Shoichiro Yoshida

(450-07P) **Use of Spectroscopy ICP-MS and FT-IR Characterization of Soils of Brazilian**

**River Basins** THIAGO FARIAS, Universidade Nove de Julho, Elisandra Farias

(450-08P) **Use of Ultrasound Bath in the Extraction and Quantification of Ester-Linked Phenolic Acids in Tropical Forages** MARIA AUXILIADORA C. MATOS, UFJF, Carneiro Jailton, Mellina Santos, Paciullo Domingos, Renato Matos, Vitor Aline

(450-09P) **Supercritical Fluid Extraction of Oil From Seed and Grain Materials: A Fast Green Alternative to Traditional Solvent Based Extraction Processes** ANDREW AUBIN, Waters Corporation, Jeff Wright

**POSTER** Session 460

## Biomedical Applications I

Monday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(460-01P) **Integration of Surface Plasmon Resonance and Molecular Imprinting Technologies for Protein Detection** ABRAHAM AVALOS, University of Toledo, Arunan Nadarajah

(460-02P) **High-Speed Analysis for Amino Acids Using OPA-FMOC Auto-Precolumn Derivatization** YOSHIKO HIRAO, Shimadzu Corporation, Yoshihiro Hayakawa, Yoshiyuki Watabe, Yusuke Osaka

(460-03P) **Potential of Photoacoustic Spectroscopy for Saliva Analysis** JOPI MIKKONEN, SIB-Labs, University of Eastern Finland, Jussi Raittila, Reijo Lappalainen, Sami Myllymaa

(460-04P) **Identification of Biomarkers for Alcoholic Liver Disease from Mice Fed with Unsaturated Fat Diets by Gas Chromatography-High Resolution Time-of-Flight Mass Spectrometry** LI ZHANG, LECO Corporation, David Alonso, Jeffrey Patrick, Joe Binkley, Xiang Zhang, Xiaoli Wei, Xue Shi

(460-05P) **Nanoparticles-Enabled Integrated Capture, Detection and Killing of Circulating Tumor Cells** MAINUL HOSSAIN, University of Central Florida, Ming Su, Minghui Zhang, Zhaoyong Sun

(460-06P) **Non-Contact Fluorescence Based Temperature Sensor for Neonatal Care** HUNG T. LAM, University of Maryland, Baltimore County, Govind Rao, Steven Falk, Yordan Kostov

(460-07P) **Microelectrode Arrays for Studying Oxygen Consumption in Cultured Endothelial Cells During Angiogenesis** TEMPEST A. VAN SCHAIK, Imperial College London, Danny O'Hare

(460-08P) **Quantum Dot-Labeled Sandwich Immunoassay for High Throughput and High Sensitivity Quantification of C - Reactive Protein** YANG LUO, University of Central Florida, Bo Zhang, Ming Chen, Ming Su, Tianlun Jiang, Weiling Fu

(460-09P) **Application of Photochemically Generated Biointerfaces to Investigate the Mechanism of Action of an Anti-Inflammatory Therapeutic** CHRISTINE HERMAN, University of Illinois at Urbana-Champaign, Ryan Bailey

(460-10P) **Development of Conducting Polymer Electrodes for *In vivo* Detection, Stimulation, and Sensing** J FAYE RUBINSON, Georgetown University, Anthony Kammerich, Elizabeth Hanna, Julia Roberts, Karen Gale, Laura Rubinson, Patrick Forcelli, Yohani Kayinamura

(460-11P) **Examination of Nitroxide Release from Dibenzoyl Furoxans Using a Fluorescent Assay** SETH FILLIOE, Hofstra University

**POSTER** Session 470

## Clinical Chemistry and Toxicology I

Monday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(470-01P) **A Comparison of Derivatized and Underivatized 1,25-Dihydroxyvitamin D2 and D3 Quantitative Analysis in Blood by LC-MS/MS Utilizing Ion Funnel Technology** KEVIN MCCANN, Agilent Technologies, Andre Szczesniewski, Anne Mack

(470-02P) **The First MALDI-MS Imaging Agent for the Histological Analysis of Cancer Tissue Expressing the Sialyl Lewis X Antigen** CHAOFENG DAI, Georgia State University, Binghe Wang, Dean Troyer, Lifang Wang, Lisa Cazares, O John Semmes, Richard Drake, Siming Wang, Yong Chu

(470-03P) **Simultaneous Determination of Mephedrone, Methylone, MDPV, and Amphetamines in Urine by LC/MS/MS** RICHARD LAKE, Restek Corporation, Amanda Rigdon, Chris Denicola, Michelle Misselwitz, Sharon Lupo, Ty Kahler

(470-04P) **Method Development for the Identification and Determination of Synthetic Cannabinoid Metabolites in Hydrolyzed Urine by LC/MS/MS** RICHARD LAKE, Restek Corporation, Amanda Rigdon, Chris Denicola, Michelle Misselwitz, Sharon Lupo, Ty Kahler

(470-05P) **Mercury (Hg) Exposure from Dental Amalgam Fillings and Its Influence on Renal and Oxidative Stress Biomarkers in Children** IMAN AL-SALEH, King Faisal Specialist Hospital & Research Centre, Al anoud Al-Sedairi, Rola Elkhatib

(470-06P) **Total Solution for the Analysis of 25-Hydroxy Vitamin D2 and D3 in Human Serum Using Automated Sample Preparation and UHPLC-TOF** SEAN DAUGHERTY, Perkin Elmer, Jonathan Rehnberg, Sean Sales

(470-07P) **Early Diagnosis of Colorectal Cancer by Using Surface Plasmon Resonance Sensor** TOSHIKAZU KAWAGUCHI, Hokudai University, Daisuke Nonaka, Katsuaki Shimazu, Tanaka Kenji, Yoshiko Lee

(470-08P) **Determination of Creatinine and Uric Acid in Human Urine Samples by Reversed Phase and Hydrophilic HPLC** YUEGANG ZUO, University of Massachusett Dartmouth, Di Wu, Patricia Henegan, Si Zhou, Yiwei Deng

(470-09P) **Understanding Transient Isotacophoretic Stacking of an In-Line Generated Product with EMMA and Computer Simulation** ADAM R. MEIER, Bucknell University, Aravinda Seneviratne, Derek Schildt, Diana Beblo, Timothy Strein

(470-10P) **Sample Preparation Based on Cryogenic Pulverization for Multi-Residue Analysis of Environmental Chemicals in Animal Tissues** NANQIN LI, HID, EHSRB, Health Canada, Dawn Jin, Jenny Wang

**POSTER** Session 480

## Data Analysis and Manipulation

Monday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(480-01P) **Unbiased Reduction of Variables for Efficient Data Analysis** WALEED M. MASWADEH, US Army, A Peter Snyder

(480-02P) **Development of a New GC-MS Library for the Identification of Condensation Polymers** STEPHANIE MATSUI, Frontier Laboratories, Chu Watanabe, Dave Randle, Sayuri Kunil

(480-03P) **Development of a Chemical Imaging Algorithm Using Mahalanobis Distances in Principal Component Space on 2-D FT-IR Microspectroscopic Data of Murine Abdominal Aortas** OLLA NAYAL, The Ohio State University, Justin Harris

(480-04P) **Event Detection in Time Domain Data from Multiple Sources** SUSAN A. MULCAHY, Imperial College London, Martyn Boutelle

(480-05P) **A 45-Position, Automated, Temperature Controlled Sample Changer for a Small Angle Neutron Scattering (SANS) Instrument** LAKEISHA WALKER, Oak Ridge National Laboratory, Georg Ehlers, Jinkui Zhao, John Wenzel

(480-06P) **A Pattern Recognition Method for Matching Raman Spectra** ROBERT CANNON, Cleveland State University, John Turner

(480-07P) **Enhancement of Linearity and Response in Charged Aerosol Detection** CHRISTOPHER CRAFTS, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth, John Waraska, Marc Plante

(480-09P) **Characterization of Color Test Method by DFSS Methodology** JIANG TAO, Covidien, Brian Donley, Dave Berberich, Peter Wang

**POSTER** Session 490

## Electrochemistry I

Monday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(490-01P) **Array of Hundreds of Boron Doped Diamond µ Electrodes: Application to an Electrochemical Sensor for HPLC** FRANCOIS DARDOIZE, UPMC, David Khamis, Didier Devilliers, Eric Mahe

(490-02P) **Rapid Sampling Online Microdialysis System for Monitoring Viability of Transplant Kidneys** SALLY GOWERS, Imperial College London, Ara Darzi, Chi

Leng Leong, George Hanna, Karim Hamaoui, Martyn Boutelle, Michelle Rogers, Nicholas Bullock, Samir Damji, Vassilios Papalois

(490-03P) **Preparation and Electrochemical Characterization of Graphite Nanoplatelet Electrodes** DOO YOUNG KIM, University of Kentucky

(490-04P) **Fabrication of a Composite Comprising a Controlled Porosity Sol-Gel Film and a Metal Nanoparticle Array for Electrocatalytic Detection in Liquid Chromatography** LAYLA MEHDI, Miami University, James Cox

(490-05P) **Investigating the Effects of Heme on Staphylococcus Aureus Respiration by Multianalyte Microphysiometry** MIKA E. MESCHIEVITZ, Vanderbilt University, David Cliffel, Eric Skaar, Neal Hammer

(490-06P) **Electrochemical Biosensor Based on a Microarray of Individually Addressable Chemically Modified Electrodes for Multianalyte Detection** JENNY BERGMAN, University of Gothenburg, Andrew Ewing, Gulnara Safina, Johan Dunevall, Wolfgang Harreither

(490-07P) **Characterization of Pedot:tosylate Microelectrodes for Transmitter Detection** SIMON T. LARSEN, Technical University of Denmark, Michael Heien, Rafael Taboryski, Richard Vreeland

(490-08P) **The Metabolic Effects of Fluorescent Dyes Determined by Multianalyte Microphysiometry** TESNIEM SHINAWI, Vanderbilt University, David Cliffel

(490-09P) **Selective Glucose Detection Based on a Design of Diffusion Profiles** TAKESHI WATANABE, Keio University, Yasuaki Einaga

(490-10P) **Boron Doped Diamond Macro Electrode and Micro Electrode Array Fabrication** MICHAEL BECKER, Fraunhofer USA - CCL

**POSTER** Session 500

## High-Throughput Chemical Analysis

Monday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(500-01P) **Automated Dissolution System with HPLC Interface** CHUNG M. HYUN, Nutrilite-Division of Access Business Group, Jim Brown, Jonathan Shen, Mary Yee, Tom Flug

(500-02P) **Alternate Selectivity Using Various Fused-Core Bonded Phases** BARRY E. BOYES, Advanced Materials Technology, Inc., Joseph DeStefano, Stephanie Schuster, Timothy Langlois, William Johnson

(500-03P) **Utilizing of a Novel Organic/Inorganic Hybrid C18 Column for Efficient Method Development Over a Wide pH Range** SATO TAKASHI, YMC Co., Ltd., Sobkow Ernest

(500-04P) **Characterization and Evaluation of a Novel C18 Column Based on Organic/Inorganic Hybrid Silica for HPLC and UHPLC** SATO TAKASHI, YMC

Co., Ltd., Sobkow Ernest

(500-06P) **Development of Multi-Channel Ink-Jet Sample Introduction System** FENGMING CHEN, Metropolitan University

(500-07P) **Fusing Parallel Regression Results for Chromatographic Calibration** NICHOLAS F. POMPA, Salisbury University, Robert Luttrell

(500-08P) **LC/MS Elucidates the Diffference Between Conventional Plate Seals, Which Might Affect Analytical Results** KAZUYUKI TAKAMA, Bio Chromato

**POSTER** Session 510

## Imaging

Monday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(510-01P) **XPS Study of Surface Complexation Between Trace Metal Ions and Self-Assembled Monolayers** ABDUNNASER M. ETORKI, University of Tripoli, Mahmoud A El Rais, Mohamed Abuein

(510-02P) **Thermal Diffusivity Imaging with the Thermal Lens Microscope** PETER E. FEIST, University of Notre Dame, Norman Dovichi, Oluwatosin Dada

(510-03P) **Non-Contact Measurement on the Mechanical Properties of Single Living Cell Membranes: (1) Development of the Laser-Induced Surface Deformation Microscope** TOSHINORI MORISAKU, Tokyo University of Science, Ayako Arita, Hiroharu Yui

(510-04P) **Non-Contact Measurement on the Mechanical Properties of Single Living Cell Membranes: (2) Distinguishing the Membrane Tension Between Different Types of Cells by Laser-Induced Surface Deformation Microscope** TOSHINORI MORISAKU, Tokyo University of Science, Ayako Arita, Hiroharu Yui

(510-05P) **Investigation of Transformed Cells by Atomic Force Microscopy** AIDA VAITKUVIEN, Vilnius University, Arturas Suchodolskis, Arunas Ramanavicius, Arunas Stirke, Lina Mikoliunait, Almira Ramanaviciene

(510-06P) **High Sensitivity Spectroelectro Analysis of Dynamic Processes Through Nanostructured Silver Films** STEVEN M. ASIALA, University of Notre Dame, Zachary Schultz

(510-07P) **Surface Plasmon-Field Enhanced Raman Spectroscopy** XU WEIQING, Jilin University, Li Haibo, Liu Yu, Xu Shuping

(510-08P) **Scanning Probe Microscopy Studies of the Vibration of Intermetallic Nanoparticles with Magnetic Sample Modulation by an Applied AC Electromagnetic Field** LAUREN E. ENGLADE-FRANKLIN, Louisiana State University, Gregory Morrison, Jayne Garno, Julia Chan

(510-09P) **Extending the Wavelength Range for FTIR Imaging** RICHARD SPRAGG, Perkin

Elmer LAS, Andrew Turner, Dean Brown

(510-10P) **Hyperspectral Imaging of Biomaterials Using a Novel Surface Plasmon-Based Wavelength Filter** NICK PALLAS, Cleveland State University, John Turner

(510-11P) **Investigating Vesicle Binding and Lipid Extraction by GM2 Activator Protein** STACEY-ANN BENJAMIN, University of Florida

(510-12P) **Lead Coprecipiation with Iron Oxyhdroxide Nano-Particles** CHEN ZHU, Indiana University, Peng Lu

(510-13P) **Novel Ultrathin Molecular Coating for Injection Molding Tools** JIRI CECH, Technical University of Denmark - DTU Nanotech, Rafael Taboryski

(510-14P) **Mapping Lipid Distributions on the Surface of Neurons with Secondary Ion Mass Spectrometry** MELISSA PASSARELLI, University of Gothenburg, Andrew Ewing, Nicholas Winograd

**POSTER** Session 520

## Laboratory Management

Monday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(520-01P) **Achieving More With Less: Stream-Lining Analytical Support for Medicinal Chemistry** KIMBERLY YACH, Abbott Laboratories, Lisa Schaffter, Sopheary Op, William Wirthl

(520-02P) **Development of Consulting, Training, Expert Witness Business** HENRY G. NOWICKI, PACS: Testing, Consulting, Training, Barbara Sherman, Bill Purves, Brian Smith, Wayne Schuliger

(520-03P) **The Changing Face of Lab Automation – Alternative Computing Devices and the Cross Platform Evolution** STEVEN NERI, LabWare, Inc.

(520-04P) **Comparative Evaluation of Algorithms for Alignment of Gas Chromatographic Data of Complex Mixtures Analyses** SANDRINE AMAT, University Paul Cezanne, Jean-Francois Antinelli, Nathalie Dupuy, Rabia Korifi, Yveline Le Dreau

(520-05P) **LIMS Implementation in a Global Environment** DANE BONEAU, CSols, Inc.

(520-06P) **Minerals in Broccoli: Evaluation of Cooking Method for Multivariate Analysis** ANA P. SANTOS, IQ/UFBA

(520-07P) **Application of Digital Images to Detect Adulterations in Liquid Cow's Milk** POLIANA M. SANTOS, UFSCar, Edenir R Pereira-Filho

(520-08P) **Mercury in Workroom Air Monitoring Using Atomic Fluorescence Spectrometry** MATTHEW A. DEXTER, P S Analytical, C Anthony Rogers, Warren Corns

(520-09P) **Monitoring and Quantifying Toxic Industrial Compounds (TICs) with Proton-Transfer-Reaction Mass Spectrometry (PTR-MS)** ALFONS JORDAN, IONICON Analytik, Christian Lindinger, Hans Seehauser, Lukas Maerk, Philipp Sulzer, Simone Juerschik, Tilmann Maerk

(520-10P) **Assessment of Alternative Strategies to Determine Solid Rocket Motor Propellant Stability** STEPHANIE E. LEACH, Naval Air Warfare Center, Bruce Thomas

(520-11P) **Managing Your LIMS: What is the Best Resource?** PATRICIA HINDS-BANKOLE, CSols, Inc.

(520-12P) **A Novel Solution for Searching Distributed Instrument Data Archives** VIRAL VYAS, Bristol Myers Squibb, Carol McNab, Chris Baglieri, David Dorsett, Ramesh Durvasula, Robert Colon

**POSTER** Session 530

## Materials Sciences I

Monday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(530-01P) **Irvingia Gabonensis Extracts as Green Corrosion Inhibitors for Aluminum in HCl Solution** OLUSEGUN K. ABIOLA, Federal University of Petroleum Resources, Alice Babatunde

(530-02P) **Spectroelectrochemical Investigation of Metal Complexes** JENNI BRIGGS, Pike Technologies, Gary Guillet, Leslie Murray

(530-03P) **One Pot Synthesis of Active Components of Bulk Heterojunction Solar Cells** MALLIKA DASARI, Southern Illinois University, Punit Kohli

(530-04P) **Atomic Force Microscopy Studies of pi-Conjugated Molecules** MAKSYMILIAN A. DERYLO, Indiana University, Dongwhan Lee, Hoyong Lee, Junyong Jo, Kirstin Morton, Lane Baker

(530-05P) **Micro-Optical Devices Generated by Attaching Versatile Micro-Lens on the Tip of Anisotropicly Etched Si Pores** KEXIN JIAO, Southern Illinois University at Carbondale, Pradeep Ramiah Rajasekaran, Punit Kohli

(530-06P) **Metal Oxide Functionalization of Porous Silicon Improves Sensor Robustness** NADINE D. KRAUT, State University of New York at Buffalo, Frank Bright, Luis Colon

(530-07P) **Particle Lithography Strategies for Preparing Organosilane Nanostructures with Well-Defined Periodicity and Geometries: Scanning Probe Characterization of Surface Density** CHAMARRA K. SANER, Louisiana State University, Jayne Garno, Kathie Lusker, Zorabel LeJeune

(530-08P) **Applicability of Supercritical Fluid Chromatography (SFC) to the Analysis and Purification of Organic Compounds Used in the Production of Organic Light Emitting Diodes (OLED)** JOHN P. MCCAULEY, Waters Corporation,

Harbaksh Sidhu, Lakshmi Subbarao, Peter Lee, Rui Chen, Timothy Jenkins

**POSTER** Session 540

## Neurochemistry

Monday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(540-01P) **Probing the Effect of Repeated Toluene Exposure on the Striatal Dopamine Dynamics Using Fast Scan Cyclic Voltammetry** AARON K. APAWU, Wayne State University, Scott Bowen, Tiffany Mathews

(540-02P) **Peptide Discovery of Rat Hippocampus and Striatum with via Mass Spectrometry** XIAN CHEN, University of Illinois, Agatha Maki, Cong Wu, Jonathan Sweedler, Kasia Cudzilo, Ken Morris, Neil Kelleher, Paul Gold

(540-03P) **Neuropeptide Extraction Efficiencies of Various Solvents and Techniques in Analyzing Peptides and Metabolites** JOHN P. KEOGH, University of Arizona, Michael Heien

(540-04P) **Characterizing D-Amino Acid Containing Peptides in *Aplysia californica*** ITAMAR LIVNAT, University of Illinois at Urbana-Champaign, Elena Romanova, Jonathan Sweedler, Lu Bai

(540-05P) **The Effects of Voluntary Ethanol Consumption on Dopamine Neurotransmission in WT and BDNF$^{+/-}$ Mice Using Neurochemical Techniques** BROOKE D. NEWMAN, Wayne State University, Aaron Apawu, Christopher Rogalla, Kelly Bosse, Tiffany Mathews

(540-06P) **Quantitative Analysis of Biogenic Amines and Methylphenidate in Fruit Fly Brains Using Capillary Electrophoresis Coupled to Mass Spectrometry to Explore Drug Addiction** NHU PHAN, University of Gothenburg, Andrew Ewing, Ingela Lanekoff, Jörg Hanrieder

(540-07P) **Monitoring Neuropeptide Release from Neurons with Capillary-Based Collection and MALDI-TOF Mass Spectrometry Detection** YI FAN, University of Illinois at Urbana-Champaign, Chang Young Lee, Jonathan Sweedler

**POSTER** Session 550

## Sensors I

Monday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(550-01P) **Development of a Biosensor for Monitoring of Mercury Pollution in Natural Water** JIAO CHEN, University of North Dakota

(550-02P) **Functionalizing Polydiacetylene Liposomes to Detect Glucose** JESSIKA WILLIAMS, Southern Illinois University Carbondale, Julia Reyes, Navneet Dogra, Punit Kohli

(550-03P) **Molecular Imprinting of Small Molecules Using Lightly Crosslinked Polymers** JOHN R. CSOROS, University of New Hampshire, William Seitz

(550-04P) **Prolactin Immunosensor Based on Gold Nanoparticles Modified Screen Printed Electrodes** BRUNO C. JANEGITZ, Universidade Federal de São Carlos, Maria Moreno-Guzmán, Orlando Fatibello-Filho, Paloma Yáñez- Sedeño, Pingarrón José

(550-05P) **A Preliminary Study of Extracting Heavy Metals from Polluted Soils** HIDEHIRO NAKAMURA, Hitachi Chemical

(550-06P) **Nanostructurized Electrodes for Selective Determination of Ascorbic Acid** YASEMIN OZTEKIN, Vilnius University, Arunas Ramanavicius, Esra Bilici, Mutahire Tok, Zafer Yazicigil

(550-07P) **Development of Analytical Method Using Paper Chromatography and Electrochemical Sensor for Quantification of Glucose, Ethanol and Sulphite** THIAGO PAIXAO, University of Sao Paulo, Nilton Terng

(550-08P) **Piezoelectric Aqueous Cyanide Monitoring Through Continuous Membrane Separation** JEFFREY ROSENTRETER, Idaho State University

(550-10P) **Immunosensors Based on Surface Plasmon Resonance and Electrochemical Techniques** ALMIRA RAMANAVICIENE, Vilnius University, Arunas Ramanavicius, Asta Kausaite-Minkstimiene, Asta Makareviciute, Jaroslav Voronovic, Justina Kirlyte, Leva Baleviciute, Natalija German, Yasemin Oztekin

(550-11P) **Recognizing Translocation Signal of Individual Bioconjugation by an -Hemolysin Nanopore** YI-LUN YING, East China University of Science and Technology, Da-Wei Li, Heinz Kraatz, Subrata Dey, Yi-Tao Long

(550-12P) **Self-Catalyzed Single Gold Nanoparticles for the Construction of Plasmon Resonance Rayleigh Scattering DNA Sensor** QING LIU, East China University of Science and Technology, Chao Jing, Chun-Hai Fan, Di Li, Wei Ma, Yi-Tao Long

(550-13P) **Microfluidically Addressable Solid State Nanopores for Biochemical Sensing and Counting** FÜRJES PÉTER, Res. Inst. for Technical Physics and Materials Sci, Diana Teodóra Bakk, Róbert Gyurcsányi, Zoltán Fekete

(550-14P) **A Cytochrome C Microbiosensor for Evaluating Extracellular Superoxide in Brain Slices** MALLIKARJUNARAO GANESANA, Clarkson University, Silvana Andreescu

(550-15P) **Stable Protein as A Novel Nanopore for DNA Detection** HAI-YAN WANG, East China University of Science and Technology, Arnon Heyman, Itamar Willner, Li-Xia Qing, Shoseyov Oded, Tian He, Yi-Tao Long

(550-16P) **Stimuli-Responsive Polymer Functionalized Gold Nanoprism Substrates for Ultra-Sensitive Glucose Sensing** GAYATRIBAHEN K. JOSHI, Indiana University - Purdue University Indianapolis, Nathan Dennis, Rajesh Sardar

(550-17P) **Development of Highly Stable Solid Phase Test Strip and Reagent Strips for the Visual and Colorimetric Detection of Quaternary Ammonium**

**Compounds** BALAJI TATINENI, Industrial Test Systems, Howard Ray, Ivars Jaunakais, Uliana Ivanova

**POSTER** Session 560

## Separation Sciences

Monday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(560-01P) **Development and Application of Analysis Methods for Multiple Environmental Chemicals in Support of a Toxicity Testing Study** STEPHEN D. COOPER, RTI International, Bradley Collins, Brenda Fletcher, Franz Thomas, Gwendolyn McNeill, James Blake, Martin Best, Melanie Silinski, Michael DeVito, Reshan Fernando, Teruyo Uenoyama, Veronica Robinson

(560-02P) **Development and Application of Novel Methods for Preparation and Analysis of Ethinyl Estradiol and Genistin in Corn Oil** JENNIFER A. GILLIAM, RTI International, Bradley Collins, Gwendolyn McNeill, James Blake, Kembra Howdeshell, Melanie Silinski, Reshan Fernando, Stephen Cooper, Veronica Robinson

(560-03P) **Sensitivity Meets Selectivity – The New Amperometric Detector** JAY GANDHI, Metrohm USA, Alfred Steinbach, Andrea Wille, Gabriele Zierfels

(560-04P) **The Holy Grail: Comprehensive Polyaromatic Hydrocarbon Analysis by Serial Combination of HPLC Columns with Different Selectivities and UV and Fluorescence Detection** MICHELLE MISSELWITZ, Restek Corporation, Chris Denicola, Jack Cochran, Julie Kowalski, Richard Lake, Sharon Lupo, Ty Kahler

(560-05P) **Core Enhanced Technology Column Performance** LUISA PEREIRA, Thermo Fisher Scientific, Anthony Edge, Harald Ritchie, Stephen Luke

(560-06P) **The Enantiomeric Separation of Tetrahydrobenzimidazole Intermediates by HPLC and CE Using Cyclodextrin and Cyclofructan-Based Chiral Selectors** SIRANTHA PERERA, University of Texas at Arlington, Carl Lovely, Daniel Armstrong, Thomas Doundoulakis, Victor Ngo, Yun-Cheol Na, Zachary Breitbach

(560-07P) **Sample Stacking for Sensitive Detection of Neurotransmitters in Capillary Electrophoresis with Fast-Scan Cyclic Voltammetric Detection** MADELAINE E. DENNO, University of Virginia, B Jill Venton, Huaifang Fang

(560-08P) **Why Inertness Matters in Gas Phase Analyses** KENNETH G. LYNAM, Agilent Technologies, Inc.

(560-09P) **Design and Fabrication of a Consumable-Free, Field Portable GCxGC Instrument** PETE STEVENS, 3 Degrees of Separation, Joshua Whiting

(560-10P) **Analysis of Fat Soluble Vitamin Capsules Using Supercritical Fluid Chromatography** ANDREW AUBIN, Waters Corporation

(560-11P) **Modified Pluronic Gels for Wide Bore Tube Electrophoresis** NEIL D. DANIELSON, Miami University, Wenjun Wei

(560-12P) **Systematic Development of Methods for Multidimensional Chromatography** DANIEL ROOT, Waters Corporation, Patricia McConville, Thomas Wheat

(560-13P) **An Automated Multidimensional UPLC Approach to Optimize Sensitivity and Selectivity in Complex Sample Analysis** DANIEL ROOT, Waters Corporation, Patricia McConville, Thomas Wheat

(560-14P) **High Impact Solvent Mixing Optimization of Gradient Profile in Liquid Chromatography** ZIQIANG WANG, Waters Corporation, Chuping Luo, Harbaksh Sidhu

(560-15P) **Enantiomeric Separations of Biologically Active Compounds, Illicit Drugs, and Agrochemicals Using Cyclofructan Based HPLC Chiral Stationary Phases** ZACHARY S. BREITBACH, The University of Texas at Arlington, Daniel Armstrong, Tharanga Payagala

(560-16P) **One Step Extraction Method for Low Molecular Weight Compound** KAZUYUKI TAKAMA, Bio Chromato

(560-17P) **Coupling SFC with ELSD: Study of the Relevant Parameters Ruling Response** ERIC VERETTE, Sedere, Caroline West, Eric Lesellier, Michel Dreux

(560-18P) **Effect of Alkyl Length and Concentration of 1,3 Dialkyl Substituted Imidazolium Ionic Liquids as Mobile Phase Additives on the Adsorption Isotherms and Peak Shapes of Some Amino Acids on RPLC** TARAB AHMAD, Western Illinois University, Azhar Alhejji, Kishore Kumar R Aluguvelli, Tariq Z Ahmad

## Monday Afternoon, March 12, 2012

**AWARD** Session 570

**Charles N Reilley and Young Investigator Awards - SEAC - WEBCASTING** - arranged by Hector Abruna, Cornell University

Monday Afternoon, Room: 206A

Hector Abruna, Cornell University, Presiding

2:10 PM (570-01) **What Electroanalysis Tells Us About Technologically Relevant Nanomaterials** DEBRA ROLISON, U.S. Naval Research Laboratory

2:45 PM (570-02) **Transport in 30-Nanometer Wide Electrochemical Cells** HENRY S. WHITE, University of Utah, Emily Cooley, Jiewen Xiong

3:20 PM (570-03) **New Methods of Using “Density” in Analysis** GEORGE M. WHITESIDES, Harvard University

4:15 PM (570-04) **Measuring Gaps and Spaces with Ion Conductance Microscopy** LANE A.

BAKER, Indiana University, Celeste Morris, Chiao-Chen Chen, Niya Sa, Yi Zhou

4:50 PM (570-05) **Self-Powered Microelectrochemical Devices** RICHARD M. CROOKS, The University of Texas at Austin, Brian Zaccheo, Ioana Dumitrescu

**SYMPOSIA** Session 580

## Bioanalytical Microfluidics and Emerging Nanotechnologies - WEBCASTING - arranged by Richard A. Durst, Cornell University

Monday Afternoon, Room: 206C

Richard A. Durst, Cornell University, Presiding

2:05 PM (580-01) **Microfluidic Capillary Bioanalysis Using Miniaturized Immunoaffinity and Molecular Imprinted Polymer Separations** H THOMAS KARNES, Virginia Commonwealth University, Kumar Shah, Matthew Halquist, Mike Peoples

2:40 PM (580-02) **Lab-on-a-Chip – A Fully Integrated Nucleic Acid Analysis System – From Sample-In to Result Out** CLAUDIA GÄERTNER, microfluidic ChipShop GmbH, Nadine Hlawatsch, Richard Klemm

3:15 PM (580-03) ***In vitro* Diagnostics for Stroke Enabled through Microfluidics and Single-Molecule Detection** STEVEN A. SOPER, Louisiana State University

3:50 PM (580-04) **Immunoassay Signal Amplification Using 2-Dimensional Paper Networks** PAUL YAGER, University of Washington, Barry Lutz, Elain Fu

4:25 PM (580-05) **Automated Microflow Cytometer for Detection of Infectious Disease** LISA SHRIVER-LAKE, Naval Research Laboratory, Fran Ligler

**SYMPOSIA** Session 590

## Chemistry and Art for Teaching and Research - arranged by Patricia S. Hill, Millersville University

Monday Afternoon, Room: 308A

Patricia S. Hill, Millersville University, Presiding

2:05 PM (590-01) **cCWCS Fostering Chemistry in Art Community (CiA) of Scholars** PATRICIA S. HILL, Millersville University

2:40 PM (590-02) **Science in Art: Teaching and Undergraduate Research** ERICH UFFELMAN, Washington and Lee University

3:15 PM (590-03) **Highlighting Cultural Heritage Science in Undergraduate and Graduate Science Curricula** ANTHONY F. LAGALANTE, Villanova University, Amanda Norbutus, Richard Wolbers

3:50 PM (590-04) **The Case of the Fantastic Forgery** MICHELLE L. SHULMAN, Saint Mary's College

4:25 PM (590-05) **A "Chemistry and Art" Course for Non-Science Majors at Ithaca**

**College** MICHAEL P. HAAF, Ithaca College, Gary Wells

**SYMPOSIA** Session 600

## Differential Ion Mobility Spectrometry (FAIMS): New Instrumentation and Applications (ACS-ANYL) - arranged by Alexandre A. Shvartsburg, Pacific Northwest National Laboratory

Monday Afternoon, Room: 308B

Alexandre A. Shvartsburg, Pacific Northwest National Laboratory, Presiding

2:05 PM (600-01) **High Performance Differential Mobility Spectrometry/Mass Spectrometry Interface with Chemically Modified Separations** BRADLEY B. SCHNEIDER, AB SCIEX, Thomas Covey

2:40 PM (600-02) **Exploring DMS-MS as a High Throughput Method for Forensic and Bio-Organic Analysis** PAUL VOUROS, Northeastern University, Adam Hall, Amol Kafle, Erkinjon Nazarov, Stephen Coy

3:15 PM (600-03) **High-Resolution FAIMS of Variant Modified Peptides Including Histones** ALEXANDRE A. SHVARTSBURG, Pacific Northwest National Laboratory, Neil Kelleher, Richard Smith, Yupeng Zheng

3:50 PM (600-04) **Scanning Multiple Parameters Simultaneously in a FAIMS Experiment** GARY L. GLISH, University of North Carolina at Chapel Hill, Alice Pilo, Andrew Hampton, Desmond Kaplan, Mark Ridgeway, Samantha Isenberg

4:25 PM (600-05) **Developments in Ultra FAIMS Instrumentation for Standalone and Hyphenated Applications** BILLY BOYLE, Owlstone Nanotech Inc

**SYMPOSIA** Session 610

## Implantable Nanosensors - arranged by Heather A. Clark, Northeastern University

Monday Afternoon, Room: 207A

Heather A. Clark, Northeastern University, Presiding

2:05 PM (610-01) **Encapsulation of Luminescent Sensing Chemistry with Engineered Nanofilms** MIKE MCSHANE, Texas A&M University

2:40 PM (610-02) **Tissue Implantable Sensors based on Near Infrared Fluorescence from Single Walled Carbon Nanotubes** MICHAEL S. STRANO, Massachusetts Institute of Technology

3:15 PM (610-03) **Optical Nanosensor "Tattoos" Paired with a Smartphone for Physiological Monitoring** HEATHER A. CLARK, Northeastern University

3:50 PM (610-04) **The Effects of the Foreign Body Response on Optical Signal Transduction** KRISTEN HELTON, University of Washington, Buddy Ratner, Kelsey Willson, Natalie Wisniewski

4:25 PM (610-05) **Regulatory Aspects of Implantable Nanosensors in Medical Devices and Diagnostics** DAYA RANAMUKHAARACHCHI, FDA

**SYMPOSIA** Session 620

**Real-time Clinical Analysis - New Tools for Clinical Measurement** - arranged by Martyn G. Boutelle, Imperial College London

Monday Afternoon, Room: 207B

Martyn G. Boutelle, Imperial College London, Presiding

2:05 PM (620-01) **Electroanalytical Techniques as Potential Tools for Investigating Bowel Disorders** BHAVIK A. PATEL, University of Brighton, Keith Sharkey, Sarah MacEachern

2:40 PM (620-02) **Advances in Wireless Neurochemical Measurements for Humans** PAUL A. GARRIS, Illinois State University, Charles Blaha, Kendall Lee, Kevin Bennet, Pedram Mohseni

3:15 PM (620-03) **Towards Real-Time Recordings of L-Glutamate in the Human CNS** GREG A. GERHARDT, University of Kentucky Medical Center

3:50 PM (620-04) **High Throughput Monitoring in Patients Using Solid Phase Microextraction** JANUSZ PAWLISZYN, University of Waterloo, Barbara Bojko, Marcin Wasowicz

4:25 PM (620-05) **Real-time Neurochemical Analysis Tools for the Injured Human Brain Using Microfluidics** MARTYN G. BOUTELLE, Imperial College London, Andrew de Mello, Chi Leng Leong, Michelle Rogers, Sally Gowers, Susan Mulcahy, Xize Niu

**SYMPOSIA** Session 630

**The Twenty-Third James L Waters Symposium: Recognizing Pioneers in the Development and Application of Portable Handheld X-Ray Fluorescence Spectrometers - WEBCASTING** - arranged by Charles Holifield, The Pittsburgh Conference

Monday Afternoon, Room: 300

Charles Holifield, The Pittsburgh Conference, Presiding

2:05 PM (630-01) **The Birth and Maturation of Handheld XRF Spectrometers** LEE GRODZINS, AS&E

2:40 PM (630-02) **X-MET HHXRF Analyzers: A Stainless History** ANDREW T. ELLIS, Oxford Instruments

3:15 PM (630-03) **The Evolution of Analytical Capabilities of Field Portable and Handheld XRF Analyzers – From Pencil and Slide Rule to Fundamental Parameters Based Algorithms** STANISLAW PIOREK, Thermo Scientific Niton Analyzers

3:50 PM (630-04) **The Development of Detectors for Handheld XRF** ALAN HUBER, Amptek, Inc.

4:25 PM (630-05) **Performance Improvements in Miniature X-ray Sources** CHARLES JENSEN, Moxtek, Inc., David Reynolds, Dongbing Wang, Keith Decker, Sterling Cornaby, Vince Jones

**WORKSHOP** Session 650

## Managing and Motivating for Continuous Improvement (ALMA) - arranged by Dennis Swijter, IFF R&D

Monday Afternoon, Room: 310B

Dennis Swijter, IFF R&D, Presiding

2:05 PM (650-01) **Continuous Improvement: Aligning the Laboratory with Stakeholder Needs** LAWRENCE MURPHY, Cabot Corporation

2:30 PM (650-02) **Evaluation and Implementation of New Technology – A Multi-Disciplinary Team Based Approach for Modernization and Continuous Improvement of Your Laboratory** WAYNE M. MULLETT, Nordion

2:55 PM (650-03) **Is It Only About the Money?** LARRY SIMERAL, Albemarle Corporation

3:35 PM (650-04) **SMART Analytical Lab Employee Incentive Goals** KURT HEADRICK, Vale

4:00 PM (650-05) **Using Cascading Goals to Improve Individual and Work Group Performance** JOHN K. BORCHARDT, Southhaven Communications

4:25 PM (650-06) **Motivating Analytical Teams in a Changing R&D Landscape** ERIC MOORE, Qteros, Inc.

**WORKSHOP** Session 660

## Words Matter - Effective Communication in Your Lab - arranged by Mario Di Ubaldi, Lab Manager Magazine

Monday Afternoon, Room: 313

Mario Di Ubaldi, Lab Manager Magazine, Presiding

2:05 PM (660-01) **Words Matter - Effective Communication in Your Lab** PAMELA JETT, Jett Communication, Inc.

**ORGANIZED CONTRIBUTED SESSION** Session 670

## Advances in Preparative Chromatography Techniques - arranged by Martha Knight, CC Biotech LLC

Monday Afternoon, Room: 307B

Martha Knight, CC Biotech LLC, Presiding

2:00 PM (670-01) **Multi-Column Continuous Chromatography: A Versatile and Scalable Platform for Purification of Biologicals and Chemicals** ANTHONY C. GRABSKI, Semba Biosciences, Inc., Alla Zilberman, Bruce Thalley, Robert Mierendorf

2:20 PM (670-02) **Mass Spectrometric Monitoring for Preparative High Speed Counter-Current Chromatography** KOICHI INOUE, Kinjo Gakuin University

2:40 PM (670-03) **Spiral Countercurrent Chromatography: Instrumentation and Techniques** MARTHA KNIGHT, CC Biotech LLC

3:00 PM (670-04) **Overcoming Challenges in Mass Directed SFC Purification** JOHN VAN ANTWERP, Waters Corporation

3:35 PM (670-05) **A Supercritical Fluid Based Approach to Sample Work-up, Analysis and Purification in Natural Products Research** JOHN P. MCCAULEY, Waters Corporation, Harbaksh Sidhu, Huang Jing, Jacquelyn Runco, Lei Sang, Rui Chen, Yongwei Xu

**ORGANIZED CONTRIBUTED SESSION** Session 680

## Analytical Instrumentation for Bio-materials at Practical Use (PAI-NET) - arranged by Kenji Kojima, Professionals' Network in Advanced Instrumentation Society

Monday Afternoon, Room: 206B

Kenji Kojima, Professionals' Network in Advanced Instrumentation Society, Presiding

2:00 PM (680-01) **Integration and Installation of Micro-Fluidic Devices on Bio-Medical Equipment** RYO MIYAKE, Hiroshima University

2:20 PM (680-02) **Micro/Nano Analytical Devices on Chips and Instrumentation for Practical Use** KAZUMA MAWATARI, The University of Tokyo

2:40 PM (680-03) **Lab-on-a-Chip Systems for Medical Diagnostics** MANABU TOKESHI, Nagoya University

3:00 PM (680-04) **Bioanalytical Microdevices Based on Chemically-Functionalized Capillary Array Towards Simple and Practical Multi-Bioanalysis** HIDEAKI HISAMOTO, Osaka Prefecture University, Tatsuro Endo

3:35 PM (680-05) **Novel Correlative Microscopy Methods for Imaging Biological Samples** WILLIAM A. RUSSIN, Northwestern University

3:55 PM (680-06) **Sub-Minute Separations Using Microflow-UHPLC** KHALED S. MRIZIQ, Eksigent, Part of AB SCIEX, Remco van Soest

4:15 PM (680-07) **Rapid Characterization of Bacteria Using Newly Developed MALDI Spiral-TOFMS** KANAE TERAMOTO, JEOL Ltd.

4:35 PM (680-08) **High Sensitive Ultra Compact Elemental Analysis Using Liquid Electrode Plasma Atomic Emission Spectrometry and Its Biological Application** YUZURU TAKAMURA, Japan Advanced Institute of Science and

Technology (JAIST)

**ORGANIZED CONTRIBUTED SESSION** Session 690

## Quantitation of Proteins: From Clinical Applications to Biotherapeutics - arranged by Mike Lee, Milestone Development Services

Monday Afternoon, Room: 307D

Mike Lee, Milestone Development Services, Presiding

2:00 PM (690-01) **Sample Preparation – A Critical Path to Absolute Protein Quantitation by Targeted Mass Spectrometry** NALINI SADAGOPAN, Agilent Technologies

2:20 PM (690-02) **Transforming a Qualitative Protein Biomarker Assay into a Clinical Diagnostic Assay** KENNETH C. LEWIS, OpAns, Anthony Yeung

2:40 PM (690-03) **High Resolution Mass Spectrometry Data - New Frontiers for Bioinformatics** NATHAN A. YATES, Merck

3:00 PM (690-04) **Protein-Level Fractionation by Electrophoresis as Sample Preparation for Quantitative Protein Analysis by LC-MS/MS** RICHARD KING, PharmaCadence Analytical Services, LLC, Carmen Fernandez-Metzler

3:35 PM (690-05) **Evaluation of Options to Improve the Robustness of LC-MRM-MS Peptide Quantification Assays at Nano Flowrates** SUSAN E. ABBATIELLO, The Broad Institute of MIT and Harvard

3:55 PM (690-06) **Top-Down Quantitative Proteomics Identified Phosphorylation of Cardiac Troponin I as a Candidate Biomarker for Chronic Heart Failure** YING GE, University of Wisconsin

4:15 PM (690-07) **Integral Membrane Proteins and Quantification by Top-Down Mass Spectrometry** JULIAN P. WHITELEGGE, University of California, Los Angeles

4:35 PM (690-08) **Proteomics with Species-Specific Quantitation for Investigation of Chlamydia Trachomatis Developmental Forms** J WILL THOMPSON, Duke University, Hector Saka

**ORAL** Session 700

## Bioanalytical CE and Microfluidics - arranged by Xingwei Wu, West Virginia University

Monday Afternoon, Room: 307C

Xingwei Wu, West Virginia University, Presiding

2:00 PM (700-01) **Rapid Determination of Steroidal Compounds Using Capillary Electrophoresis for Environmental Monitoring** LISA A. HOLLAND, West Virginia University, Jennifer Ripley-Stueckle, Ted Langan, Vincent Nyakubaya

2:20 PM (700-02) **Highly-Stabilized Phospholipid Bilayer Coatings for Transmembrane Protein**

**Functionalization in Capillary Electrochromatography** ELYSSIA M. STEINWINTER, University of Arizona, Craig Aspinwall, Elisabeth Mansfield

2:40 PM (700-03) **Rapid Capillary Electrophoresis (CE) Coupled to Particle-into –Liquid-Sampling: A Tool for Studying Aqueous Phase Atmospheric Chemistry** HAO TANG, Texas Tech University, Jon Thompson, Yiyi Wei

3:00 PM (700-04) **Passive Microfluidic Methods for Secretion Sampling and Quantitation of Adiponectin from Murine Adipocytes** LEAH A. GODWIN, Auburn University, Christopher Easley, Desiree Wanders, Joonyul Kim, Robert Judd

3:35 PM (700-05) **Rapid Sizing of DNA Markers Using Self-Assembled Nanomaterials for Chemical Sieving** LISA A. HOLLAND, West Virginia University, Brandon Durney, Xingwei Wu

3:55 PM (700-06) **Microfluidic Capillary Electrophoresis-Based Immunoassay for Measuring Insulin Secretion from Groups of Islets of Langerhans** CYNTHIA M. CIPOLLA, University of Michigan, Robert Kennedy

4:15 PM (700-07) **Optimization of Microfluidic Geometry for Dynamic Stimulation of Large-Volume Cell Chambers** RAGHURAM DHUMPA, Florida State University, Michael Roper, Xinyu Zhang

4:35 PM (700-08) **Microfluidic Secretion Sampling and Small -Volume Proximity Immunoassays to Examine Endocrine Tissue** CHRISTOPHER J. EASLEY, Auburn University

**ORAL** Session 710

## Bioanalytical Spectroscopy - arranged by A Peter Snyder, US Army

Monday Afternoon, Room: 308D

A Peter Snyder, US Army, Presiding

2:00 PM (710-01) **Structural Analysis of DNA Interaction with Carmustine Using Fourier Transform Infrared Spectroscopy** SONIKA CHARAK, National Physical Laboratory, Ranjana Mehrotra

2:20 PM (710-02) **Infrared-Coupled Atomic Force Microscopy (AFM-IR) – A Frontier in Nanoscale Analysis for Biological Systems** MICHAEL LO, Anasys Instruments, Alexandre Dazzi, Ariane Deniset, Curtis Marcott, Kevin Kjoller, Rohit Bhargava, Roshan Shetty

2:40 PM (710-03) **Multi-Spectral Optical Tweezers for Molecular Diagnostics of Single Biological Cells** MATTHIEU BAUDELET, University of Central Florida, Alex Sincore, Martin Richardson, Matthieu Baudelet

3:00 PM (710-04) **Temperature Correction Strategies for Multivariate Calibration Models Based on Near-Infrared Spectra of Aqueous Samples** CHAMATHCA P. KUDA-MALWATHUMULLAGE, The University of Iowa, Gary Small

3:35 PM (710-05) **Molecular Factor Computing (MFC) of the Extent of Atherosclerosis in D-**

**Tagatose Treatment** ROBERT A. LODDER, University of Kentucky, Claire Kruger, Dietrich Conze, Molly Binkley

3:55 PM (710-06) **Interrogation of the Structure and Formation of a Poly-ala Fibril Using UV Resonance Raman Spectroscopy** DAVID PUNIHAOLE, University of Pittsburgh, Sanford Asher

4:15 PM (710-07) **Biomolecule Raman Spectral Flux From One Day Resting Bacilli in Distilled Water Matrix** A PETER SNYDER, US Army, Ashish Tripathi, Jason Guicheteau, Philip Wilcox, Rabih Jabbour

4:35 PM (710-08) **Laser-Induced Breakdown Spectroscopy for Moisture Monitoring in Food** YUAN LIU, University of Central Florida, Martin Richardson, Matthieu Baudelet

**ORAL** Session 720

## Electrochemistry Methodology I - arranged by Elizabeth Bucher, University of North Carolina at Chapel Hill

Monday Afternoon, Room: 311C

Elizabeth Bucher, University of North Carolina at Chapel Hill, Presiding

2:00 PM (720-01) **Fast Pulsed Amperometric Detection Waveform for High Performance Anion Exchange Chromatography** JUN CHENG, Thermo Fisher Scientific, Christopher Pohl, Petr Jandik, Yan Liu

2:20 PM (720-02) **Reconstruction of Vesicle Aperture Openings from Amperometric Spikes Obtained During Vesicular Exocytosis** IRINA SVIR, Ecole Normale Superieure, Alexander Oleinick, Christian Amatore, Frederic Lemaitre, Manon Guille

2:40 PM (720-03) **Background Correction for Evaluating Carbon Fiber Microelectrodes Performance *In vivo*** GREG S. MCCARTY, North Carolina State University, Andreas Schmidt, Eyob Eyualem, James Roberts, Jonathan Toups, Leslie Sombers

3:00 PM (720-04) **Locating Carbon Fiber Microelectrode Implantation Sites** ANDREA JAQUINS-GERSTL, University of Pittsburgh, Adrian Michael, Ying Liu

3:35 PM (720-05) **Minimizing Background Drift in Fast-Scan Cyclic Voltammetric Measurements** ELIZABETH S. BUCHER, University of North Carolina at Chapel Hill, Jinwoo Park, R Mark Wightman

3:55 PM (720-06) **Synthetic Control of Electrokinetic Transport in an Aqueous Polymeric Matrix** JONATHAN J. CUI, University of Pittsburgh, Amir Faraji, Ling Li, Stephen Weber, Yifat Guy

4:15 PM (720-07) **Ion Current Rectification at Quartz Nanopipette** NIYA SA, Indiana University, Lane Baker, Nils Calander

4:35 PM (720-08) **Conductance and Flux Measurements on Capillary-Incorporated Nanoporous Monoliths Derived from Block Copolymer** TAKASHI ITO, Kansas

State University, Daniel Higgins, David Moore, Shaida Ibrahim, Shinobu Nagasaka

**ORAL** Session 730

## Environmental Analysis: Novel Applications I - arranged by Scott Hazard, OI Analytical

Monday Afternoon, Room: 209B

Scott Hazard, OI Analytical, Presiding

2:00 PM (730-01) **Automated Solid Phase Extraction for Emerging Contaminants in Drinking Water** WILLIAM R. JONES, Horizon Technology, Inc., Julie McGettrick, Kevin Dinnean

2:20 PM (730-02) **Modeling the Chemical Adaptations of Microalgae Cells to Changing Environmental Conditions by Nonlinear 'Prediction Surfaces'** FRANK VOGT, University of Tennessee - Knoxville, Rebecca Horton

2:40 PM (730-03) **Phyroextraction of Selected Metals from Soils by Spartina Alterniflora** JOSEPH SNEDDON, McNeese State University, Carey Hardaway, Joel Richert

3:00 PM (730-04) **Development and Evaluation of New *In vivo* SPME Device (Sampler) for Rapid Sampling of Pharmaceuticals in Fish Using LC/MS/MS** PAUL O. TOGUNDE, University of Waterloo, Heather Lord, Janusz Pawliszyn

3:35 PM (730-05) **Investigation and Optimization of Particle Dimensions for Needle Trap Device as an Exhaustive Active Sampler** WEIQIANG ZHAN, University of Waterloo, Gangfeng Ouyang, Heather Lord, Janusz Pawliszyn

4:15 PM (730-07) **Extracting ppt and ppb Concentrations Using Multiple Sensor Wireless Networks** JOHN R. SAFFELL, Alphaense Ltd., Rod Jones

4:35 PM (730-08) **Combining Solid Phase Microextraction and Needle Trap Devices to Determine Free and Total Concentrations in Gaseous Samples** HEATHER L. LORD, University of Waterloo, Don-Roger Parkinson, Gangfeng Ouyang, Jamie Warren, Janusz Pawliszyn, Nathaly Reyes, Ruifen Jiang, Xiang Li

**ORAL** Session 740

## LC-MS, 'Omics - arranged by Chang Samuel Hsu, Florida State University

Monday Afternoon, Room: 209A

Chang Samuel Hsu, Florida State University, Presiding

2:00 PM (740-01) **Effect of Lysine Acetylation on Peptide Fragmentation Using a Combinatorial Synthetic Approach** RANDY J. ARNOLD, Indiana University, Emily Renzi, Haixu Tang, Predrag Radivojac, Sujun Li

2:20 PM (740-02) **Rational Solution for the Analysis of Protein Digests** TIVADAR FARKAS, Phenomenex Inc., Jason Anspach, Lawrence Loo, Michael McGinley

2:40 PM (740-03) **LC-MS MS of Permethylated N-Glycans Derived from Model Glycoprotein an Esophageal Adenocarcinoma Human Blood Serum Samples** YUNLI HU, Texas Tech University, Janie DeSantos-Garcia, Yehia Mechref

3:00 PM (740-04) **Liquid Chromatography Followed by MALDI-ToF Mass Spectrometry of Intact Membrane Proteins for Differential Proteomic Analysis** BRIAN MATTHEW, University of North Carolina at Chapel Hill, James Jorgenson

3:35 PM (740-05) **Superficially Porous Stationary Phases for Rapid Profiling of Intact Proteins with Capillary LC and High-Resolution Mass Spectrometry** MICHAEL J. ROTH, University of Texas Southwestern Medical Center, Daniel Plymire, Erica Maresh, Shane Larson, Steven Patrie

3:55 PM (740-06) **Shooting 100% of Nanoliter Volumes of Liquids, Cells and More Into Mass Spectrometers** DREW SAUTER, nanoLiter LLC

4:15 PM (740-07) **Differential Proteomic Analysis by Online and Offline Two-Dimensional LC/MS** JORDAN T. STOBAUGH, University of North Carolina at Chapel Hill, James Jorgenson, Kaitlin Fague

4:35 PM (740-08) **Novel Co-Elution Method for the Determination of Protein Targets of Bioactive Molecules Using Chromatographic Fractionation** DAJANA VUCKOVIC, University of Toronto, Andrew Emili, Corey Nislow, Janet Chan, Johannes Hewel, Jonathan Olsen, Lekha Sleno, Marcel Musteata, Navgeet Bajaj, Pierre Havugimana, Yale Wang

**ORAL** Session 745

## Pharmaceutical Applications: Separation Methodology - arranged by Yan He, Pfizer

Monday Afternoon, Room: 308C

Yan He, Pfizer, Presiding

2:00 PM (745-01) **Rapdi Aanlysis of Charge Variants of Antibodies with Capillary Zone Electrophoresis** YAN HE, Pfizer, Colleen Isele, Margaret Ruesch, Weiying Hou

2:20 PM (745-02) **Impurity Profiling of Carbamazepine by HPLC/UV** GUIFENG JIANG, ThermoFisher Scientific, Terry Zhang

2:40 PM (745-03) **Validated Stability Indicating Capillary Electrophoresis Method for the Separation and Determination of Fixed Dose Combination of Carvedilol and Hydrochlorothiazide in Tablets** MAHA A. SULTAN, King Saud University, Hadir Maher, Mona Alshehree, Nora Alzoman

3:00 PM (745-04) **HPLC Method for Simultaneous Estimation of Nabumetone and Paracetamol in Combined Dosage Form** PRUTHVIRAJ K. CHAUDHARY, S.K. Patel College of Pharmacy

3:35 PM (745-05) **Mass Spectral Accuracy Applied to the Quantitative Analysis of Impurities in Protein and Oligonucleotide Therapeutics** MING GU, Cerno Bioscience, Hongliang (Leo) Xu, Yongdong Wang

3:55 PM (745-06) **The Use of LC/MSn, LC/TOF MS and On-Line H/D Exchange MS To Identify A Drug Degradation Product Found in a Base-Stressed Dosage Form** CHARLES PAN, Novartis

4:15 PM (745-07) **Improving Sensitivity and Throughput in LC/MS/MS while Reducing Solvent Usage with Microflow-UHPLC** KHALED S. MRIZIQ, Eksigent, Part of AB SCIEX, Dave Neyer, Remco van Soest, Steve Hobbs, Tina Settineri

4:35 PM (745-08) **Improved RP-HPLC Method for Analysis of Rottlerin in Whole Fruit and Red Powder Extracts of Mallotus philippensis** VAIBHAV M. SHINDE, Bharati Vidyapeeth University, Atul Rathore, Avinash Kapase, Deepika Jadhav, Kakasaheb Mahadik

**ORAL** Session 750

## Physical Measurements - arranged by Mark Bumiller, Horiba

Monday Afternoon, Room: 309A

Mark Bumiller, Horiba, Presiding

2:00 PM (750-01) **Characterization of Nano/Microparticle and Its Chemical Binding Applying Magnetic Force** HITOSHI WATARAI, Osaka University, Makoto Kawano, Shinichi Imai

2:20 PM (750-02) **Bi-Axial DMA and Large Strain Modeling in Polymers** ALEX ARZOUMANIDIS, Psylotech

2:40 PM (750-03) **Simultaneous, Single-Particle Zeta Potential and Particle Size Measurement by Nanoparticle Tracking Analysis (NTA)** DUNCAN A. GRIFFITHS, NanoSight, Bob Carr, Joanna Sullivan, Patrick Hole, William Bernt

3:00 PM (750-04) **Statistics of Sampling for Particle Size by Image Analysis** MARK BUMILLER, Horiba, Jeffrey Bodycomb

**ORAL** Session 760

## SERS/Resonance Raman - Applications - arranged by Matthew P. Nelson, ChemImage Corporation

Monday Afternoon, Room: 309B

Matthew P. Nelson, ChemImage Corporation, Presiding

2:00 PM (760-01) **DNA Sequence Detection Using Surface Enhanced Resonance Raman Spectroscopy (SERRS)** KAREN FAULDS, University of Strathclyde, Duncan Graham, Jennifer Dougan

2:20 PM (760-02) **Tailoring Substrates for Purpose: Commercial Applications for SERS** DAVID EUSTACE, Renishaw Diagnostics Ltd, Alastair McInroy, Ewen Smith, Graeme McNay

2:40 PM (760-03) **Novel Enzymatic Detection of DNA Using Enhanced Raman**

**Spectroscopy** KRISTY MCKEATING, University of Strathclyde, Duncan Graham, Jennifer Dougan, Karen Faulds

3:00 PM (760-04) **Sequence Specific Interactions of Oligonucleotides With SWCNTs** MUSTAFA CULHA, Yeditepe University, Ayaksiz Sevcan, Seda Demir

3:35 PM (760-05) **Raman Spectroscopy Using Retina-Safe (1550 nm) Laser Excitation** HERMES HUANG, Real-Time Analyzers, Inc., Carl Brouillette, Chetan Shende, Stuart Farquharson, Wayne Smith

3:55 PM (760-06) **Detection of Protein Biomarkers for Disease Diagnosis Using Dip-Pen Nanolithography and Resonance Raman Spectroscopy** STACEY LAING, University of Strathclyde, Aaron Hernandez-Santana, Duncan Graham, Eleanore Irvine, Karen Faulds

4:15 PM (760-07) **Shifted Excitation Raman Difference Spectroscopy(SERDS) of Binary Component Mixtures Based on Volume Bragg Grating (VBG) Stabilized Sources** BENJAMIN APPIAH, Princeton University, Boris Volodin, Elena Melnik, Sergei Dolgy

4:35 PM (760-08) **Comparison of SERRS, Surface Plasmon Resonance and EELS from Single Particles and Small Clusters of Silver Nanoparticles** EWEN SMITH, Strathclyde University, Dale Cunningham, David Mc Comb, Imran Khan

**ORAL** Session 770

## Surface Analysis and Imaging Methods - arranged by Brian R. Strohmeier, Thermo Fisher Scientific

Monday Afternoon, Room: 307A

Brian R. Strohmeier, Thermo Fisher Scientific, Presiding

2:00 PM (770-01) **Surface Characterization of Native Biological Surfaces Using TOF-SIMS and MALDI-IMS-MS** FRANCISCO FERNANDEZ-LIMA, Texas A&M University, David Russell, Emile Schweikert

2:20 PM (770-02) **Surface Analysis of Hydrophobic Polymers and the Influence of Nitric Oxide Release on Fibrinogen Adsorption** SARAH M. LANTVIT, Colorado State University, Brittany Barrett, Melissa Reynolds

2:40 PM (770-03) **Surface Functionalization of Gate Dielectrics for Biosensing Applications** KRISTI L. LIDDELL, Pennsylvania State University, Bei Wang, Christine Keating, Jun Zhu, Theresa Mayer, Xiahua Zhong

3:00 PM (770-04) **Surface Characterization of Organic Nano-Coatings Using X-Ray Photoelectron Spectroscopy (XPS) and Raman Microscopy** BRIAN R. STROHMEIER, Thermo Fisher Scientific, Mark Wall, Oliver Greenwood, Paul Mack, Richard White, Ryan Kershner, Tim Nunney

3:35 PM (770-05) **Scanning Angle Total Internal Reflection Raman Microscopy of Polymers, Cells and Biopolymers** EMILY SMITH, Iowa State University, Kristopher McKee, Matthew Meyer

3:55 PM (770-06) **Carbonaceous Probes for Atomic Force Microscopy** KIRSTIN C. MORTON, Indiana University, Lane Baker, Maksymilian Derylo

4:15 PM (770-07) **Surface Analysis of Antifouling and Foul Release Xerogel Coatings Utilizing IR Microscopy** JOSEPH J. BAILEY, SUNY at Buffalo, Anastasiya Sokolova, Caitlyn Gatley, Frank Bright, Lisa Muller, Michael Detty

4:35 PM (770-08) **Study of Mineral Surface Interactions Related to Possible Contamination of Groundwater by Toxic Metals during $CO_2$ Sequestration** JOHN P. BALTRUS, US Department of Energy - NETL

**ORAL** Session 780

## Thermal Analysis - arranged by Mark Bumiller, Horiba

Monday Afternoon, Room: 309A

Mark Bumiller, Horiba, Presiding

3:35 PM (780-01) **Studying the Performance and Safety of Secondary Lithium Ion Cells Using Isothermal and Adiabatic Calorimetry** PETER J. RALBOVSKY, NETZSCH Instruments North America LLC, Joshua Gordon, Simon Chippett

3:55 PM (780-02) **TG-GC-MS and TG-FTIR Measurement Results on Biomass** EKKEHARD POST, NETZSCH Geraetebau GmbH, Bob Fidler

4:15 PM (780-03) **Impact of Phase Transitions on the Densification and Thermophysical Properties of Gadolinia** J B. HENDERSON, Netzsch Instruments

4:35 PM (780-04) **Application of the MMC Calorimeter in Food Science** PETER J. RALBOVSKY, NETZSCH Instruments North America LLC

**POSTER** Session 790

## ACS Division of Analytical Chemistry Poster Session

Monday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(790-01P) **Developing a Fundamental Understanding of the Behavior of Porous Polymer Monoliths in Capillary Electrochromatography Systems** TRISHA H. PATEL, Trinity University, Douglas Nolan, Jessica Lam, Jing Liu, Michelle Bushey, Nicholas Kuklinski

(790-02P) **Chemical Constituents of the Burmese Python (Python Molurus Bivittatus) Sexual Attractiveness Pheromone** ALLISON BALLOON, Malone University, Chris Carmichael, Jeff Goff, Skip Snow

(790-03P) **Studies of Real-Time Changes in Electroosmotic Flow Under Dynamic Buffer Conditions** AARON OSHER, Skidmore College, Kimberley Frederick, Ryan Ahern

(790-04P) **Evaluation of Thermoresponsive Hydrogels for In-Capillary Preconcentration of Proteins in CE** LELAND MARTIN, Skidmore College, Kimberley Frederick, Sarah Bashaw

(790-05P) **Characterization of Low Cost Plastic Microfluidic Chips** BRENDA OLIVO, Skidmore College, Denise Croote, Kimberley Frederick, Leland Martin

(790-06P) **Tetrahymena Thermophila Proteomics** DOUGLAS BEUSSMAN, St. Olaf College, Aaron Chamberlain, Robert Pieh

(790-07P) **Date-Rape Drug Detection: MDA and Mixtures** DOUGLAS BEUSSMAN, St. Olaf College, Britta Anderson

(790-08P) **GC-MS: Investigating Human Scent Differentiation** DOUGLAS BEUSSMAN, St. Olaf College, Brooke Reaser

(790-09P) **Differentiation of Cotton Fibers from Clothing and Other Common Items Using Isotope Ratio Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Jason Eckmann

(790-10P) **Structural Changes of Octadecyltrichlorosilane Nanostructures in Liquid Environments: Molecular-Level Views of Surface Wetting** SHALAKA . KULKARNI, Louisiana State University, Jayne Garno, Venetia Lyles, Wilson Serem

(790-12P) **A Novel Method for Detection of Ethanol and Methanol in Distilled Alcoholic Beverages Using Raman Spectroscopy** BURCU GUVEN, Hacettepe University, Huseyin Genis, Ismail Boyac, Ugur Tamer

(790-13P) **Effects of Sample Pretreatment Procedures on the Precision of Determination of Phthalate Esters in Child Care Products by Gas Chromatography/Mass Spectrometry (GC-MS)** RICHARD R. WHITNEY, Shimadzu Scientific Instruments, Clifford Taylor, Jiarui “Jerry” Wang, Nicole Lock, Zhuangzhi Wang

(790-14P) **Spontaneous, Transient Release of Adenosine Occurs After A1 Antagonist Administration** MICHAEL NGUYEN, University of Virginia

(790-15P) **A Comparison of DNA Separations Performed on Glass and Plastic Microfluidic Devices** JAMES M. KARLINSEY, Penn State Berks

(790-16P) **International Year of Chemistry 2011- The Global Water Experiment at the Fresh Air Fund** GEORGE RUGER, ACS Mid Hudson

(790-17P) **Fabrication of Nano Array Structure for Transmission Type Surface Plasmon Resonance Sensor** TAKASHI USUI, Tokyo Metropolitan University, Akihide Hemmi, Hizuru Nakajima, Hulie Zeng, Katsumi Uchiyama

(790-18P) **A Microfluidics Experiment for the Quantitative Analysis Laboratory** ERIN M. GROSS, Creighton University, Connor Neuville, Kalani Parker, Michelle Clevenger

(790-19P) **Combining Ionization with Gas Phase Chemical Reaction for Identification of Components of Complex Mixtures Using Atmospheric Pressure GC QTof** DOUGLAS M. STEVENS, Waters Corporation, Adam Ladak, Chang (Sam) Hsu,

Steven Lai

(790-20P) **Interaction of Hydrophobically Coated Zinc Oxide Nanomaterials with Municipal Solid Waste Landfill Leachate: A Systematic Fluorescence Based Study** SRIJITA BASUMALLICK, University of Central Florida, Debra Reinhart, Stephanie Bolyard, Swadeshmukul Santra Santra

(790-21P) **Sensors for Hypnotic Drugs** EUGENIA EFTIMIE TOTU, University Politehnica of Bucharest, Cristina Aurelia Nechifor

(790-22P) **Fabrication and Chemical Separations on Binder-Free Carbon Nanotube Templated Thin Layer Chromatography Plates** DAVID S. JENSEN, Brigham Young University, Andrew Dadson, Matthew Linford, Michael Vail, Richard Vanfleet, Robert Davis, Supriya Kanyal

(790-23P) **Utilizing Social Media to Continue the International Year of Chemistry Mission Beyond 2012** JENNIFER L. MACLACHLAN, PID Analyzers, LLC

(790-24P) **Advantages of a Hyphenated PID/MS Combination for GC Applications** JACK DRISCOLL, PID Analyzers, LLC, Clifford Taylor, Jennifer Maclachlan

(790-25P) **Image Analysis of Ecological Changes Based on the Size and Shape of Microalgae Cells** MORGAN MCCONICO, University of Tennessee, Frank Vogt, Rebecca Horton

(790-26P) **Single-Molecule Magnets: A Playground for Magnetochemists, Physicists, and Spectroscopists** CHRISTOS LAMPROPOULOS, University of North Florida

(790-27P) **An UPLC-MS/MS Method for Simultaneous Determination of 14 Bile Acids in Sea Lamprey Plasma, Liver, Intestine, and Gill** HUIYONG WANG, Michigan State University, Chu-Yin Yeh, Ke Li, Weiming Li, Yu-Wen Chung-Davidson

(790-28P) **Development of Glucose Oxidase Microsensors Using Two Innovative Enzyme Entrapment Techniques for the *In vivo* Detection of Glucose Fluctuations Using Fast Scan Cyclic Voltammetry** AMANDA K. CORDER, North Carolina State University, Christina Tang, Leslie Sombers, Leyda Lugo-Morales, Phillip Loziuk, Saad Khan

(790-30P) **A Service Learning Approach to Quantitative Analysis Laboratory** KIMBERLY D. CHICHESTER, St. John Fisher College, Irene Kimaru, Lynn Donahue

**POSTER** Session 800

## Bioanalytical - Capillary Electrophoresis

Monday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(800-01P) **A Comparison of Analytical Methods for Determination of Effective Charge Attribute of Proteins Reagents Used in *In vitro* Diagnostic Test Design** SAM DIEP, Abbott Laboratories, Glamarie Burgos, Jeffrey Fishpaugh, Larissa Harwick, Martin Lopez, Ryan Bonn, Tracey Rae

(800-02P) **Chiral Capillary Electrophoresis and Capillary Gel Electrophoresis Applied to the Investigation of DNA Photocleavage Agents Based on Cr(III)** TAYLOR F. HARRIS, Furman University, Brittany Fenner, John Wheeler, Noel Kane-Maguire, Sandra Wheeler

(800-03P) **Mechanistic Investigation of the Formation of Benzo[a]pyrene Induced DNA Adducts in the Presence of Arsenic** JEFF W. GUTHRIE, Eastern Michigan University, Jane Lee, Michael Weinfeld, X Chris Le

(800-04P) **Capillary Electrophoresis Separations of DNA Using Phospholipid Additives** BRANDON C. DURNEY, West Virginia University, Lisa Holland

(800-05P) **Determination of APTS Labeled Oligosaccharides via Phospholipid Enhanced Capillary Electrophoresis Coupled to Electrospray Mass Spectrometry** TED J. LANGAN, West Virginia University, Lisa Holland

(800-06P) **Aptazyme Cleavage for the Detection of Small Biomolecules Using Capillary Gel Electrophoresis and Laser-Induced Fluorescence** LYDIA MANGER, Kalamazoo College, Eric Parker, Jennifer Furchak

(800-07P) **CE-MS Enhanced Enzymatic Assay of D-Amino Acids** CASSANDRA MCCULLUM, Jackson State University

(800-08P) **Surface Modification of Aptamer Conjugated Gold/Silver Nanorods for Rare Protein Detection** EMIR YASUN, University of Florida, Basri Gulbakan, Weihong Tan

(800-09P) **Investigating DNA Photodamage Induced by Diimine Complexes of Cr(III) Using Real Time PCR and Gel Electrophoresis** RICHARD M. GRAYBILL, Furman University, Christian Baker, John Wheeler, Noel Kane-Maguire, Sandra Wheeler

(800-10P) **Rapid Analysis of Genomic DNA Samples by Capillary Gel Electrophoresis** ANDRAS GUTTMAN, University of Debrecen, Ildiko Bacskai, Marta Kerekgyarto, Varouj Amirkhanian

(800-11P) **A Simple Capillary Electrophoresis Assay to Determine Photodegradation Products of Linezolid in Tablets** MARIA L. MORAES, Federal Uniersity of São Paulo, Cristiani Lopes, Herida Salgado

**POSTER** Session 810

## Computer Modeling and Simulation

Monday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(810-01P) **Development of an Equilibrium Modeling Simulation to Determine Binding Constants for Systems Involving Fluorescence Measurements** SHELLY CASCIATO, University of Texas at Austin, James Holcombe

(810-02P) **Semi-Empirical Models and Chemical Warfare Agent to Simulant Relationships from the Off-Gassing of Common Protective Equipment and Test Chamber Materials** MARK HANNING-LEE, Jacobs Dugway Team, Darren

Jolley, Laurence Adair, Michael Giessing

(810-03P) **Semi-Empirical Models and Agent to Simulant Relationships from Breakthrough Measurements through IPE and ColPro Filter Components** MARK HANNING-LEE, Jacobs Dugway Team, Brian Johnson, Darren Jolley, Laurence Adair, Michael Giessing

(810-04P) **Near Real-Time Measurements of Chemical Warfare Agent and Simulant Vapor Permeation Through a Novel Composite Passive Filter Material and Through C2A1 Mask Filters** MARK HANNING-LEE, Jacobs Dugway Team, Brian Johnson, Darren Jolley, Laurence Adair, Michael Glessing

(810-05P) **Finite Difference Studies of the Relationship Between Peak Tailing and Capacity Factor in Partition-Adsorption Chromatography** JOSEPH T. MALOY, Seton Hall University, Antonio Macaluso, Nicole Charles

(810-06P) **Using Advanced Software Routines to Determine Kinetics from Thermoanalytical Data** PETER J. RALBOVSKY, NETZSCH Instruments North America LLC, Elena Moukhina

(810-07P) **New Software For Computational Electrochemistry** IRINA SVIR, Ecole Normale Superieure, Alexander Oleinick, Christian Amatore, Oleksiy Klymenko

**POSTER** Session 815

## Education

Monday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(815-01P) **An Environmental Science Inquiry-Based Experience** SUZANNE K. LUNSFORD, Wright State University, William Slattery

(815-02P) **Acid Rain Observation in Sapporo, Northern Japan, During 2006-2011 and Its Application to the Environmental Education** MASAHIKO KAN, Hokkaido University of Education Sapporo

(815-03P) **Presumptive and Confirmatory Tests Using Analogs of Illicit Drugs** EUGENE SMITH, Florida Atlantic University, Becky Schneider, Benjamin Rouse

(815-04P) **A Partnership Between College and High School Students to Determine the Effects of Urbanization on the Water Quality of A Local Creek** KIMBERLY D. CHICHESTER, St. John Fisher College, Alyse Palumbo, Irene Kimaru, Jason Brownwell, Kristina Lantzky

(815-05P) **Green Technology Education in the Undergraduate Classroom** ROLF SCHLAKE, Applied Separations

(815-06P) **Talkin' About A Revolution** JARED J. STANDISH, American Chemical Society, Lee Polite, Stephanie Rizk

**POSTER** Session 820

## Elemental Analysis/Atomic Spectroscopy

Monday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(820-01P) **Characterizing the $^{13}C/^{12}C$ Ratio Obtained from Oxidation Techniques Used in Isotopic Total Organic Carbon (TOC) Measurements** J GARRETT SLATON, OI Analytical, Gary Engelhart, Jeffrey Lane

(820-02P) **New Elemental Analyzer that Utilizes a Unique Universal Injection System** STEVE HERRE, EST Analytical, Justin Murphy, Lindsey Pyron

(820-03P) **Improvement of Sensitivity in Atomic Absorption Spectroscopy by Solving Problems of Interferences** ONDITI O. ANAM, Jomo Kenyatta University

(820-04P) **Microspectroscopy for Plasma Chemistry in Solutions (1): Development of a New Apparatus for the Spatially and Temporally Resolved Imaging** HIROHARU YUI, Tokyo University of Science, Yuta Kusama, Yuu Someya

(820-05P) **Microspectroscopy for Plasma Chemistry in Solutions (2): Spatial Distribution of Active Species in the Plasma in Solutions** YUTA KUSAMA, Tokyo University of Science, Hiroharu Yui, Yuu Someya

(820-06P) **Method Development for Simultaneous Determination of As, Bi, Sb and Se in Foodstuffs by Hydride Generation Graphite Furnace Atomic Absorption Spectrometry** JOSÉ ANCHIETA G. NETO, São Paulo State University, Institute of Chemistry, Carolina Freschi, Gian Paulo Freschi

(820-07P) **Speciated Isotope Dilution Mass Spectrometry (SIDMS) for Validation of EPA's Arsenic Speciation Analysis Methods in Seafood** MESAY M. WOLLE, Duquesne University, Denise Herr, HM (Skip) Kingston, Jay Gandhi, Katie Adams

(820-08P) **Application of Doehlert Designs for Optimization of an On-line Preconcentration System for Cadmium Determination in Drinking Water by FAAS** SÉRGIO A. ROCHA, Universidade Federal do Recôncavo da Bahia, Sérgio Ferreira

(820-09P) **Measuring Si, Al, B, and Na Trace Levels in Solutions Containing High Metal Concentration with HF Acid Matrix** CONNIE HAYES, High-Purity Standards, Eldon Delong, Zhen Xu

(820-10P) **Off-Line Coupling of Ultracentrifugation and Inductively Coupled Plasma Mass Spectrometry for Metal-Protein Equilibria Studies** ISAAC ARNQUIST, University of Texas at Austin, James Holcombe

(820-11P) **Achieving Ultratrace Levels of Elements by ICP-MS Using Ultrapure Water** MARICAR TARUN, EMD Millipore, Liba Amir, Stephane Mabic

(820-12P) **Ion Species in the Prepeak of Noble Gas Millisecond Pulsed Glow Discharges** JAMES H. BARNES, University Multispectral Laboratories, Cris Lewis, Kendal James, Kyler Robinson, Thomas Greenlee, Timothy Gustafson

(820-13P) **Gravimetric Measurement of Airborne Particulate Matter and Multi-**

**Elemental Determination by Inductively Coupled Plasma-Mass Spectrometry** XINBANG FENG, Alberta Innovates Technology Futures

(820-14P) **Tomography of Single and Double Pulse Laser Induced Plasma Using Radon Transform Technique** IGOR GORNUSHKIN, BAM-Federal Institute for Materials Research

(820-15P) **Dissolution Made Easy for Chromite Ores, Ferrochromes and Chromium Slags by Peroxide Fusions for ICP Analyses** JANICE PITRE, Claisse, Corporation Scientifique, John Anzelmo, Melanie Bedard

(820-16P) **Atomic Absorption Spectrophotometric Analysis of Some Selected Toxic Metals in Twenty Listed Herbal Remedies Manufactured in Nigeria** ADERONKE A. ADEPOJU-BELLO, University of Lagos, Abiodun Ayoola, Babtunde Coker, Olusegun Issa

(820-17P) **Mobilization of Heavy Metals in Composted Sludge Applied to Soils in Northeast Alabama** KEYTON P. FIKE, Jacksonville State University, Nixon Mwebi

(820-18P) **Direct Determination of Zinc, Cadmium, Lead, Copper Metal in Tap Water of Delhi (India) by Anodic Stripping Voltammetry Technique** ANUPUMA RAINA, All India Institute of Medical Sciences (Aiims), Jaya Raj, Mohineesh Chandra, Tirath Dogra

(820-19P) **Micro-Chemical Identification of Printing and Writing Inks Using Laser-Based Methods (LIBS and LA-ICP-MS)** TATIANA TREJOS, Florida International University, Jose Almirall

(820-20P) **Nitrogen Purged Total-Reflection X-Ray Fluorescence Analysis** MICHAEL HOLTKAMP, University of Muenster, Catharina Holtschulte, Christoph Wehe, Franziska Blaske, Michael Sperling, Uwe Karst

(820-21P) **Availability of Potassium in Lebanese Calcareous Soils** ISAM I. BASHOUR, American University of Beirut

**POSTER** Session 830

## Environmental Analysis I

Monday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(830-01P) **Automated Analysis of Canister and Online Samples for Every Air Monitoring Application** NICOLA WATSON, Markes International, Kurt Thaxton, Stephen Davies

(830-02P) **Low Cost Gas Sensor Array System for Detection of TIC and Odors** ANDREAS WALTE, Airsense Analytics GmbH, Bert Ungethuem, Wolf Muenchmeyer

(830-03P) **Semi-Continuous Determination of Heavy Metals, Anions, and Cations in Aerosols** N HARIHARA SUBRAMANIAN, Metrohm USA, Christian Emmenegger, Markus Kalcher

(830-04P) **Effects of New Aging Scheme on the Model Simulation of Global Carbonaceous Aerosols** SHILIANG WU, Michigan Tech

(830-05P) **Analyzing Emissions of the Green House Gas, Nitrous Oxide, from Landfills** SUNG-WOO LEE, Oregon Health & Science University, Jeremy Semrau, Thomas Yavaraski

(830-06P) **Comprehensive Analysis and Characterization of Tobacco Smoke Extracts** ELIZABETH M. HUMSTON-FULMER, LECO Corporation, David Alonso, Joe Binkley, John Heim

(830-07P) **Identification and Quantitation of THMs Formed From Different NOM Fractions** JAY P. PATEL, University of South Alabama, Alexandra Stenson, Timothy Sahawneh

(830-08P) **Chemiluminescence Detection for Nitrogen-Containing Compounds** NATHAN VALENTINE, Teledyne Tekmar, Holly Taylor, Roger Bardsley, Thomas Hartlein, Tyler Trent

(830-09P) **Water Analysis by Time of Flight Mass Spectrometry** SUE DANTONIO, Agilent Technologies, Joan Stevens, Lynne Marshall

(830-10P) **Processing Highly Particulate Laden Samples Using Automated SPE Extractors** DAVID GALLAGHER, Horizon Technology, Inc., Michael Ebitson

(830-11P) **Monitoring of Iodine- and Gadolinium-Based Contrast Media in Water Treatment Plants** JAY GANDHI, Metrohm USA, Christian Martin, Dirk Flottmann, Peter Pfundstein, Wolfgang Schulz

(830-12P) **Fluorescence-Based Microfluidic Sensor for Measurements of pCO2 in Seawater** YORDAN KOSTOV, University of Maryland, Baltimore County, Govind Rao, Robert Henderson, Xudong Ge

(830-13P) **Direct Analysis of Surfactants Using HPLC with Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth

(830-14P) **Determination of Volatile Organic Compounds in Air** ANNE JUREK, EST Analytical, Jeff Sheriff, Lindsey Pyron, Murphy Justin

(830-15P) **Low Level 2-Methylisoborneol and Geosmin Detection by Purge and Trap Sampling** ANNE JUREK, EST Analytical, Jeff Sheriff, Justin Murphy, Lindsey Pyron

(830-16P) **Supercritical Fluid Extraction of Lipid Biomarkers for Monitoring Microbial Community Structure in an Anaerobic Digestion** MUHAMMAD HANIF, Toyohashi University of Technology, Hiroyuki Daimon, Takeshi Yamada, Yoichi Atsuta

(830-17P) **Micro-Calorimetric Study of Xenobiotics in Soil** HAMEED ULLAH, Universidade Estadual de Campinas, Jose Simoni

(830-18P) **Enzymatic Determination of Organophosphosphorus Pesticide by Flow Injection Analysis** SABIR KHAN, UNICAMP, Marta Vila, Mathieu Tubino

## Fuels I

Monday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(840-01P) **Determination of Sulfur Species in Petrochemical Matrices by ASTM Methods Using a Pulsed Flame Photometric Detector** LAURA CHAMBERS, OI Analytical, Gary Engelhart

(840-02P) **Advances in Alumina PLOT Column Technology for the Accurate Measurement of Trace Polar Hydrocarbons in Hydrocarbon Streams** JAAP DE ZEEUW, Restek Corporation, Bill Bromps, Mark Badger, Rick Morehead, Tom Vezza

(840-03P) **Simultaneous Simulated Distillation (CNS-SIMDIS) in Crude Oils: Determination of Hydrocarbon, Nitrogen and Sulphur Species Using Gas Chromatography** RIK SUIJKER, PAC, Erwin Barendregt, Rob de Jong

(840-04P) **Industrial Applications with Novel Nano Stationary Phase GC Capillary Column Technology** KRISHANT P. NAIKWADI, J & K Scientific Inc., Heman Cortes, Jim Luong, Robert Shellie, Taylor Hayward

(840-05P) **Combining Methods CAN/CGSB-3.0 and ASTM D-5580 in a Single GC Platform** ZHUANGZHI M. WANG, Shimadzu Scientific Instruments, Clifford Taylor, Richard Whitney

(840-06P) **Light Crude Oil Fingerprinting from Six Different Global Regions Using GCxGC-TOFMS with Structural Classifications to Compare Functional Group Differences** JOHN HEIM, LECO Corporation, Elizabeth Humston-Fulmer, Joe Binkley

(840-07P) **Quantification of Ethanol in Complex Oil Samples: A Comparison of Two Headspace Methods and an Automated Direct Injection Procedure** SUSANNE SPERLING, Gerstel, Eike Kleine-Benne

(840-08P) **Investigation of Flow Behavior of Polymer/Gas and Surfactant/Gas Two Phase Fluids in Microchannel Using Single Molecule Imaging System** QIHUA WU, Missouri University of Science & Technology, Baojun Bai, Yinfa Ma, Yongpeng Sun

(840-09P) **Troubleshooting Chromatographic Problems Related to Flame Ionization Detector Issues** JAAP DE ZEEUW, Restek Corporation

(840-10P) **Pyrolytic Cork Bio-Oils: An Analytical Pyrolysis Study** ANTÓNIO V. MARQUES, CIEQB, ISEL

(840-11P) **Preparation of Zeolites for Biofuel Synthesis** MAXWELL I. MARTIN, Eckerd College, Juan Monsalve Wagner, Yelda Hangun-Balkir

(840-12P) **Improving Efficiency of Production of Alternative Sources of Biofuels Using Magnesium** JUAN MONSALVE WAGNER, Eckerd College, Yelda Hangun-Balkir

(840-14P) **A Spectrophotometric Method for Quantitative Determination of Xylose and Glucose in Acid-Catalyzed Hydrolysate Medium** PATRISHA J. PHAM, Mississippi State University, Andro Mondala, Benjamin Estill, Gouchang Zhang, Rafael Hernandez, William French, William Holmes

**POSTER** Session 850

## GC Optimization

Monday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(850-01P) **Extended Range GC Analysis Using Metal Capillary Columns** MONICA DOLCI, Thermo Fisher Scientific, Anthony Edge, Peter Morgan, Ruth Lewis

(850-02P) **The Influence of Modulation Period Changes on Slightly Resolved Components Using Variable Modulation in GCxGC** CORY S. FIX, LECO Corporation, Joe Binkley

(850-03P) **Simplifying Connections in the GC** ROB FREEMAN, SGE Analytical Science, Dan DiFeo

(850-04P) **Demonstration of a Two Dimensional Micro-Gas Chromatography System** JING LIU, University of Michigan

(850-05P) **A Better Way to Guard Your GC Column** LUISA PEREIRA, Thermo Fisher Scientific, Anthony Edge, Peter Morgan, Ruth Lewis

(850-06P) **Variable Geometry Columns for Gas Chromatography** WILLIAM H. STEINECKER, Miami University, Gilbert Pacey

(850-07P) **Fluidic and Chemical Functionalization Characterization of Silicon/Glass Microcolumns for Gas Chromatography** FLORENCE RICOUL, CEA-LETI, MINATEC, Amélie Bellemin-Comte, Nadine David

(850-08P) **Carrier Gas Selection for Capillary GC** LEONARD M. SIDISKY, Supelco/Sigma-Aldrich, Greg Baney

(850-09P) **Towards A Novel Acoustic Wave Mass-Based Detector for Gas Chromatography** CAITLIN N. KELLER, University of Dayton Research Institute, Gilbert Pacey, Matthew Bachus, William Steinecker

(850-10P) **A New Syringe Line for Highly Sensitive Applications** DAN DIFEO, SGE Analytical Science, Glenn Clivaz, Suzanne Yee

(850-11P) **Investigation of the Polyionic Ionic Liquid Stationary Phases for Capillary GC** LEONARD M. SIDISKY, Supelco/Sigma-Aldrich, Greg Baney, James Desorcie, Katherine Stenerson

(850-12P) **Performance Comparison of Various Commercial GC Septa and Their Associated Failure Mechanisms** JESSICA WESTLAND, The Pennsylvania State University, Frank Dorman, Kari Organtini

**POSTER** Session 860

## Pharmaceutical LC, HILIC and GPC I

Monday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(860-01P) **HPLC Method Development for Enantiomeric Separation of Chiral Pesticides and Herbicides on New Cyclofructan Derived Stationary Phases** THARANGA PAYAGALA, University of Texas at Arlington, Daniel Armstrong

(860-02P) **Compendial Methods Adjusted to Use Non C18, or Non Reverse Phase with Superficially Porous Columns** WILLIAM J. LONG, Agilent Technologies, Anne Mack, Jason Link, Maureen Joseph

(860-03P) **Spectroscopic Visualization Approaches for Chromatographic Detection of Glycoaminoglycans** NEIL D. DANIELSON, Miami University, Steven Santiago, Thomas Loegel

(860-04P) **Analytical Methods to Qualify and Quantify PEG and PEGylated Biopharmaceuticals** CHRISTOPHER CRAFTS, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth, John Waraska, Marc Plante

(860-05P) **Fast Desalting of Proteins Using a Novel High Mechanical Strength Gel Filtration Column** ATIS CHAKRABARTI, Tosoh Bioscience LLC, Roy Eksteen

(860-06P) **A General HPLC Method for the Analysis of Pinacol Esters with Conjugated Chemical Features** MEGAN SUN, Genentech, Jane Li, Ken Ngim, Qiqing Zhong

(860-07P) **Cost-Effective Purification of High Value-Added Compounds in Reversed-Phase Chromatography Achieved by Using Novel Organic/Inorganic Hybrid Silica Based Packing Material with High Mechanical and Chemical Stability** SATO TAKASHI, YMC Co., Ltd., Sobkow Ernest

(860-08P) **The Spectro-Electro Array: A Novel Platform for the Measurement of Secondary Metabolites in Botanicals, Supplements, Foods and Beverages - Part 3: Metabolomics** PAUL A. ULLUCCI, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth, Marc Plante

**POSTER** Session 870

## Quality Assurance/Control Applications

Monday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(870-01P) **Nanopore Detection of Sample Purity and Composition** MILAN KRISHANTHA DISSANAYAKE M, University of Texas at Arlington, Daniel Armstrong, Nilusha Padivitage, Xiyun Guan, Zachary Breitbach

(870-02P) **Continuous Improvements Using Lean Six Sigma** MAROOF H. QURASHI, Department of Navy

(870-03P) **Combined Water Analysis System with Titration and Ion**

**Chromatography** TORE FOSSUM, Mettler Toledo, Inc., Hans-Joachim Muhr

(870-04P) **Acid Corrected Brix Measurement System for Orange Juice** TORE FOSSUM, Mettler Toledo, Inc., George McLean

(870-05P) **High Sensitivity Determination of Water, Ammonia and Trace Impurities in Industrial Solvents Using a Miniaturized Thermal Conductivity Detector for Gas Chromatography** MASSIMO SANTORO, Thermo Fisher Scientific, Eric Phillips, Fausto Pigozzo, Riccardo Facchetti, Wenmin Liu

(870-06P) **The Importance of Paying Attention to Operation Details of Automated Liquid Handlers** JOHN T. BRADSHAW, Artel, Keith Albert, Rodrigues George, Tanya Knaide

(870-07P) **Analytical Applications of 2-Hydroxy-4-Isobutoxy Acetophenone Oxime for the Determination of Copper** JANAK S. SHUKLA, Arts, Science & Community College, Sanjaykumar Shah

(870-08P) **Introducing Extended Facilities for EPA Acceptable Calibration Gas Mixtures** JANNEKE VAN WIJK, VSL Dutch Metrology Institute, Rutger Oudwater

(870-09P) **Evaluation of the Analytical Figures of Merit of Electrospray Ionization High Performance Ion Mobility Spectrometry** CAROL L. MORAFF, Excellims Corporation, Ching Wu, Clinton Krueger

(870-10P) **Automation of AOAC 970.16 Bitterness of Malt Beverages and AOAC 976.08 Color of Beer Through Unique Software Control of Common Laboratory Instruments with Real-Time Decision Making and Analysis** MEGAN YORK, Gilson, Inc., Judy Hadley, Rick Laurell, Robert Widholm, Toni Hofhine

(870-11P) **New Fast Approach For Achieving USP 467 Compliance** ILARIA FERRANTE, DANI Instruments SpA, Manuela Bergna, Roberta Lariccia

(870-12P) **Tips for Requesting Calibration Service to Avoid Assessment Deficiencies** ROBERT L. KNAKE, A2LA

## UNDERGRADUATE POSTER SESSION

Session 875

### Undergraduate Poster Session

Monday Afternoon, Room: Valencia Room, W415

(875-01P) **Analysis of Pharmaceutical Market Products by Laser-Induced Breakdown Spectroscopy** DAVID A. RUSAK, University of Scranton, Chelsea Wetzel, Philip Malley, Stephanie Richter, Taryn Anthony

(875-02P) **Towards Rapid Identification of Bacterial Strains Using Fatty Acid Methyl Ester Profiles and Chemometrics** IVONE MENCHACA, Texas Wesleyan University, Michael Gilbert

(875-03P) **Isolation of Aptamers for Disease-Linked Glycosylation of Proteins Using A Modified Form of Capillary Electrophoresis Selection** NATHANIEL W. MAY,

Santa Clara University, Dustyn Uchiyama, Megan Morisada, Nicholas Giustini, Steven Suljak

(875-04P) **Quantification and Characterization of the Release of Biogenic Amines From the Pericardial Organs of Cancer Borealis Using in Vivo Microdialysis and LC-MS** RYAN K. CHEU, Santa Clara University, Christopher Rose, John Birmingham, Megan Morisada, Steven Suljak

(875-05P) **Investigation of Contamination Levels in Southwest Arkansas Lake Water** KATHERINE S. DOCKTER, Southern Arkansas University, Tim Schroeder

(875-06P) **Quantification of Mast-Cell Secreted Serotonin by Electrochemical Detection to Differentiate Stimulant-Mediated Differences in Degranulation** SARAH M. GRUBA, Creighton University, Benjamin Manning, Christy Haynes

(875-07P) **Plants Grown in an Ash Tray: Elemental Analysis of Bean Plants by ICP-OES** KATHERINE THURMAN, The University of Tennessee at Chattanooga, Gretchen Potts

(875-08P) **Safe Smoking?: An Analysis of Electronic Cigarettes by GC-MS and ICP-OES** AMY R. BALESTRINO, The University of Tennessee at Chattanooga, Christopher Dockery, Gretchen Potts

(875-09P) **Microwave Assisted Ion Mobility in Perovskite Membranes** ELIZABETH HORNER, Waynesburg University, John Williams

(875-10P) **Correlation of Lipid Content in Algae with FT-NIR Spectra: A Real World Application** MARGARET ROBINSON, Michigan State University

(875-11P) **Forced Degradation of Sildenafil for Forensic Analysis by ESI-LC-MS** PHILLIP J. MABE, College of Charleston, Wendy Cory

(875-12P) **Photodegradation of Zwitterionic Ceterizine in Simulated Natural Water Samples** DANIELLE WHITE, College of Charleston, Wendy Cory

(875-13P) **Indirect Photodegradation of Naproxen by Natural Organic Matter in Simulated Natural Waters** CANDICE ULMER, College of Charleston, Wendy Cory

(875-14P) **Screening of Anti-Tuberculosis Medicine Quality by Ambient Mass Spectrometry** CATHERINE L. KRAMER, Hanover College/Georgia Institute of Technology, Facundo Fernandez, Rachel Bennett

(875-15P) **Trace Elements in Fingernails: Are Vegetarians at an Advantage?** JUSTIN M. JONES, Westminster College, Helen Boylan

(875-16P) **Alumina Mixtures as Standard Matrices for Soil Using PXRF** SHAUNA HILEY, Missouri Western State University, Ashton Noland, Lindsey Jacobs

(875-17P) **Quantitative and Qualitative Analysis of Biomarkers in Fusarium Verticillioides** ETHAN S. ROBERTS, Bradley University, Edward Remsen, Kristi McQuade

(875-18P) **Separation and Quantification of 5 Sunscreen Components Using HPLC**

**Analysis** LORI FRALEY, Catawba College, Mark Sabo, Robert Burgess

(875-19P) **The Use of Methyl-β-Cyclodextrin to Improve Solubility of Cholesterol in HPLC Mobile Phases** SHAUNA A. CHARLTON, University of South Alabama, Jason Coym

(875-20P) **Solvent Strength Linearity and Pure-Water Retention Estimation Using "Bio-Inspired" Reversed-Phase Stationary Phases** OMAR I. HASHMI, University of South Alabama, Jason Coym

(875-21P) **Understanding Rates of Corrosion, Diffusion of Corrosive Species, and Failure of Steel through Fluorescent Polymers in Thin Films** JACOB A. HILL, Catawba College, James Rawlins, Josh Hanna

(875-22P) **Temperature-Dependent Activity of Carbonic Anhydrase in the Tissue of Aiptasia spp** RACHEL L. CONE, Catawba College

(875-23P) **Manipulation of Mechanical Properties in Copper-Crosslinked Electroplastic Elastomer Hydrogels** RACHEL HARRIS, University of Pittsburgh, Tara Meyer

(875-24P) **Elemental Analysis of Cremated Remains Using ICP-OES** CHRISTA A. CURRIE, College of Mount St Joseph, Devon Heil, Katherine Case

(875-25P) **Analysis of Cremated Remains Using Capillary Electrophoresis** CHRISTA A. CURRIE, College of Mount St Joseph, Ashley Woods

(875-26P) **Chiral Separations of Chloroquine Using Heparin and Capillary Electrophoresis** CHRISTA A. CURRIE, College of Mount St Joseph, Matthew Collins

(875-27P) **Measuring Band Gaps in Gratzel Solar Cell Lab** ZACHARY SMITH, Westminster College, Larry Miller

(875-28P) **Microcontact Patterning and Atomic Force Microscopy Characterization of Single-Monolayer Molecular Piezoelectrics** TERRY L. PASKE, University of Pittsburgh, Geoffrey Hutchison, Xinfeng Quan

(875-29P) **Determination of Mercury in the Muscle Tissue of New York State Game Fish** KIMBERLY D. CHICHESTER, St. John Fisher College, Thomas Quinzi

(875-30P) **Lead in Soil Analysis and Phytoremediation Trials** KIMBERLY D. CHICHESTER, St. John Fisher College, Cara Patrick, Drew Merkel, Erin Semple, Irene Kimaru, Maryann Herman

(875-31P) **Analysis of Commercial Fishtanks for BPA Using High Performance Liquid Chromatography** KIMBERLY D. CHICHESTER, St. John Fisher College, Andrianette Skrypek, Edward Freeman, Irene Kimaru

(875-32P) **Analysis of Acetaminophen Suspensions and Capsules by Raman Spectroscopy** KIMBERLY D. CHICHESTER, St. John Fisher College, Fang Zhao, Irene Kimaru, Kacie Rich, Nicole Gombert, Parag Budukh

(875-33P) **Simultaneous Determination of Mixtures of Arsenate and Phosphate Using**

**an Organic Modified Phosphomolybdate Reagent** NATALIE CLEAVELAND, University of North Florida, Stuart Chalk

(875-34P) **Alumina as a Solid Optical Filter** JOSEPH J. LAVRENCIK, Northern Illinois University

(875-35P) **Determination of Triclosan in Wastewater Treatment Plants from Rochester NY** IRENE KIMARU, St John Fisher College, Arielle Mensch, Kimberly Chichester

(875-36P) **Characterization of Methylene Dianiline Synthesis Using Advanced Mass Spectrometry Techniques** NICHOLAS W. KWIECIEN, Vanderbilt University, Amit Chakraborty, Cody Goodwin, David Hercules, Jody May

(875-37P) **Compositional Analysis of Polyester-based Polyurethanes Using Advanced Mass Spectrometry Techniques** AMIT K. CHAKRABORTY, Vanderbilt University, Cody Goodwin, David Hercules, Jody May, Nicholas Kwiecien

(875-38P) **Surface pKa and Cytochrome *c*: Characterizing the Surface Acidity of Carboxylic Acid / Alcohol Self-Assembled Monolayers Using Electrochemical Titration** LAURA E. SMITH, Saint Francis University, Agnieszka Marciniak, Colin Trout, Rose Clark

(875-39P) **Synthesis of Chiral Cation Selective Crown Ethers** LAUREN MCCONNEL, Saint Francis University, Balazs Hargittai

(875-40P) **Biosynthetic Labeling of mRNA in the Sexual Stages of the Malaria Parasite** SELAMAWIT WOLDEMESKEL, Saint Francis University, Bjorn Kafsack, Heather Painter, Manuel Llinas

(875-41P) **Developing a Robust Method to Identify and Quantify VOCs in Environmental Samples** REBECCA SCHROEDER, University of Pittsburgh

(875-42P) **Effects of Varying Coating Thicknesses on Electroosmotic Flow in Nonaqueous Capillary Electrophoresis** TIMOTHY VAN RIPER, Waynesburg University, John Williams

(875-43P) **Computer Simulation Study of Methane Hydrate Formation in Carbon Nanotubes** ROGER D. BOFF, University of Pittsburgh

(875-44P) **Quantitative Chiral Determination of Naproxen by the Mass Spectrometric Kinethod Method** STEPHEN A. FERGUSON, College of Charleston, Wendy Cory

(875-45P) **Optimization and Validation of a HS-SPME / GC-MS Method for the Analysis of MDMA ("Ecstasy") in Oral Fluid** DAVID M. CORRELL, Trinity College, Charles McLendon, Janet Morrison

(875-46P) **A Novel Combinatorial Approach to Study Cross-Linked Peptide Fragmentation** EMILY C. RENZI, Indiana University, Haixu Tang, Predrag Radivojac, Randy Arnold

# Tuesday Morning, March 13, 2012

**AWARD** Session 880

**Bomem-Michelson Award - The Coblentz Society/ABB** - arranged by Peter R. Griffiths, University of Idaho

Tuesday Morning, Room: 206B

Peter R. Griffiths, University of Idaho, Presiding

8:10 AM (880-01) **Confocal Raman Microscopy of Particles in Liquids: Vibrational Spectroscopy in Femtoliter Volumes** JOEL M. HARRIS, University of Utah

8:45 AM (880-02) **Eukaryotic Membrane Lipid Asymmetry: What A New Analytical Technique Can Tell Us About An Old Problem** JOHN CONBOY, University of Utah

9:20 AM (880-03) **Vibrational Optical Activity in the Pharmaceutical Industry: Chiral Necessity Meets Vibrational Opportunity** LAURENCE A. NAFIE, Syracuse University, Rina Dukor

10:10 AM (880-04) **Completely Automated Open-Path FT-IR Spectroscopy: The Impact of Innovative Chemometrics** PETER R. GRIFFITHS, University of Idaho, Limin Shao

10:45 AM (880-05) **Tracking Atomic Ions Through an ICP-MS with Photons** PAUL B. FARNSWORTH, Brigham Young University, Alisa Edmund, Nicholas Taylor, Ross Spencer

**AWARD** Session 890

**Pittsburgh Analytical Chemistry Award - WEBCASTING** - arranged by John Jackovitz, University of Pittsburgh

Tuesday Morning, Room: 300

John Jackovitz, University of Pittsburgh, Presiding

8:10 AM (890-01) **Fourier Transform Ion Cyclotron Resonance Mass Spectrometry: Life as a Target** ALAN G. MARSHALL, Florida State University

8:45 AM (890-02) **Adventures in Mass Spectrometry** GARY M. HIEFTJE, Indiana University, Alexander Graham, Charles Barinaga, Christie Enke, David Koppenaal, Elise Dennis, Jacob Shelley, Justin Wiseman, Steven Ray

9:20 AM (890-03) **Electrochemistry and Photochemistry in Mass Spectrometry** EVAN R. WILLIAMS, University of California, Berkeley

10:10 AM (890-04) **Rational Biomarker Discovery and Validation Using a Systems Approach** DAVID C. MUDDIMAN, North Carolina State University

10:45 AM (890-05) **Chemistry in Nano and Outer Space** HAROLD KROTO, Florida State University

**SYMPOSIA** Session 900

## Analyzing Chemical Markers of Brain Injury and Disease: Clinical Horizons - arranged by Adrian C. Michael, University of Pittsburgh

Tuesday Morning, Room: 311B

Adrian C. Michael, University of Pittsburgh, Presiding

8:05 AM (900-01) ***In vivo* Voltammetry: Evaluating Striatal Neurotransmission and Neuro-Recovery in an Experimental Model of Traumatic Brain Injury** AMY K. WAGNER, University of Pittsburgh

8:40 AM (900-02) **Towards Smart DBS System: Human Electrochemical Recordings** KENDALL LEE, Mayo Clinic

9:15 AM (900-03) **Novel Applications For Feedback Controlled Deep Brain Stimulation** JAMES C. LEITER, Dartmouth Medical School, Eric Arehart, Silvana Andreescu

9:50 AM (900-04) **Detecting Spreading Depolarisation in the Cortex Following Traumatic Brain Injury** MARTYN G. BOUTELLE, Imperial College London, Anthony Strong, Chi Leng Leong, Christos Tolias, Clemens Pahl, Daniel Walsh, Michelle Rogers

10:25 AM (900-05) **MRI Contrast Agents for Detection of Neurochemical Signaling** ALAN JASANOFF, Massachusetts Institute of Technology

**SYMPOSIA** Session 910

## Breath Analysis as a Non-invasive Alternative for Medical Diagnostics - arranged by Janusz Pawliszyn, University of Waterloo

Tuesday Morning, Room: 207B

Janusz Pawliszyn, University of Waterloo, Presiding

8:05 AM (910-01) **The State of Breath Analysis: Achievements and Challenges** RAED A. DWEIK, Cleveland Clinic

8:40 AM (910-02) **The State of Breath Analysis: Achievements and Challenges, Analytical Perspective** ANTON AMANN, Austrian Academy of Sciences

9:15 AM (910-03) **Methodological Aspects of VOC Collection in Real Time Breath Analysis** TERENCE H. RISBY, Johns Hopkins University

9:50 AM (910-04) **Breath Biomarkers in Environmental Health Science: Decoding the Human Exposome** JOACHIM D. PLEIL, US Environmental Protection Agency

10:25 AM (910-05) **Micro Sampling/Sample Preparation Devices for Breath Analysis** HEATHER L. LORD, University of Waterloo

**SYMPOSIA** Session 920

## Fundamentals of Ambient Mass Spectrometry: The Chemical Analysis of Things as They Are - arranged by Jacob T. Shelley, Indiana University

Tuesday Morning, Room: 206C

Jacob T. Shelley, Indiana University, Presiding

8:05 AM (920-01) **The Chemistry in the Splash: Fundamentals of Desorption Electrospray Ionization** R GRAHAM COOKS, Purdue University, Abraham Badu-Tawiah, Ryan Espy, Thomas Mueller, Zheng Ouyang

8:40 AM (920-02) **Seeing the Light in Ambient Mass Spectrometry** PAUL B. FARNSWORTH, Brigham Young University, Kellie Woodfield, Matthew Heywood

9:15 AM (920-03) **Liquid Extraction Surface Sampling Probes** GARY J. VAN BERKEL, Oak Ridge National Laboratory

9:50 AM (920-04) **Going with the DART Flow** FACUNDO M. FERNANDEZ, Georgia Institute of Technology, Asiri Galhena, Christina Jones, Glenn Harris, Rachel Bennett

10:25 AM (920-05) **Preventing the Chemical Analysis of Things As They Are Not** JACOB T. SHELLEY, Indiana University, Gary Hieftje, George Chan, Kevin Pfeuffer, Nicolas Bings, Niklas Schaper, Steven Ray

**SYMPOSIA** Session 930

## Government Security Application of Laser Spectroscopy - WEBCASTING - arranged by Michael Shepard, Department of Homeland Security

Tuesday Morning, Room: 206A

Michael Shepard, Department of Homeland Security, Presiding

8:05 AM (930-01) **Differential Laser-induced Perturbation Spectroscopy (DLIPS) for Standoff Detection** MICHAEL SHEPARD, Dept of Homeland Security

8:40 AM (930-02) **Differential Laser-induced Perturbation Spectroscopy (DLIPS) for Standoff Detection** DAVID W. HAHN, University of Florida, Nicolo Omenetto, Sarah Smith

9:15 AM (930-03) **Novel Approaches to Eye-Safety in Standoff Laser Sensing** KENNETH R. POHL, Alakai Defense Systems

9:50 AM (930-04) **Broad Bandwidth Trace Gas and Standoff Detection with Infrared Frequency Comb Sources** NATHAN NEWBURY, National Institute of Standards and Technology, Alex Zolot, Esther Baumann, Fabrizio Giorgetta, Florian Adler, Ian Coddington, Kevin Knabe, Lora Nugent-Glandorf, Paul Williams, Scott Diddams, Tyler Neely

10:25 AM (930-05) **Stand-off Trace Detection of Explosives by Raman Spectroscopy** HENRIC OSTMARK, FOI

**SYMPOSIA** Session 940

## Nanofluidics in Analysis and Sample Preparation - arranged by Adam T. Woolley, Brigham Young University

Tuesday Morning, Room: 308D

Adam T. Woolley, Brigham Young University, Presiding

8:05 AM (940-01) **NanoPlatform Embedded Reactions for Enhanced Chemical Transformations (NanoPERfECT)** PAUL BOHN, University of Notre Dame, Francesca Carpino, Nicholas Contento, Sean Branagan

8:40 AM (940-02) **Sample Enrichment and Preparation with Nanofluidic/Microfluidic Interfaces** AARON TIMPERMAN, US Army, Travis King

9:15 AM (940-03) **Planar Thin-film Nanofluidic Devices for Sample Fractionation** ADAM T. WOOLLEY, Brigham Young University, Aaron Hawkins, Daniel Maynes, H Dennis Tolley, Jie Xuan, Milton Lee, Suresh Kumar

9:50 AM (940-04) **Fundamentals of Confined Fluids at Nanoscale: Computational Studies** NR ALURU, University of Illinois at Urbana-Champaign

10:25 AM (940-05) **Nanostructures for Biomolecular Analysis** HAROLD CRAIGHEAD, Cornell University

**SYMPOSIA** Session 950

## The Great Protein Shootout: Instrumentation and Technology for Targeted Analysis - arranged by Joshua J. Coon, University of Wisconsin

Tuesday Morning, Room: 307D

Joshua J. Coon, University of Wisconsin, Presiding

8:05 AM (950-01) **How High Mass Accuracy Measurements Will Transform Targeted Proteomics** JOSHUA J. COON, University of Wisconsin, Alexander Hebert, Christopher Rose, Derek Bailey, Graeme McAlister, Michael Westphall

8:40 AM (950-02) **Selectivity Tools for Targeted Protein Detection in Complex Biological Mixtures** ANDREW EMILI, University of Toronto

9:15 AM (950-03) **Shifting Paradigms: Changing Proteomics from Hypothesis Generating to Hypothesis Testing** MICHAEL MACCOSS, University of Washington, Brendan MacLean, Jarrett Egertson, Jesse Canterbury, John Chilton, Michael Bereman, Shannon Joyner

9:50 AM (950-04) **Quantitative Mitochondrial Proteomics and Phosphoproteomics of Healthy and Diabetic Mice** DAVE PAGLIARINI, University of Wisconsin

10:25 AM (950-05) **Discovery and Targeted Proteomics to Study Transplant Rejection** JOHN R. YATES, The Scripps Research Institute, Aleksey Nakorchevsky, Daniel Salomon

**SYMPOSIA** Session 960

## The Increasing Importance of Temperature in Liquid Chromatography - arranged by Matthew R. Linford, Brigham Young University

Tuesday Morning, Room: 308C

Matthew R. Linford, Brigham Young University, Presiding

8:05 AM (960-01) **The Role of Temperature in HPLC Selectivity** JOHN W. DOLAN, LC Resources

8:40 AM (960-02) **Van't Hoff Analysis in Liquid Chromatography Applied to Thermally Stable Materials** MATTHEW R. LINFORD, Brigham Young University, Andrew Dadson, Chuan-Hsi Hung, Grant Brown, James Christensen, Landon Wiest, Loryn Killpack, Michael Vail, Pavel Nesterenko, Richard Vanfleet, Robert Davis

9:15 AM (960-03) **High Speed Two Dimensional LC at Elevated Temperatures** PETER W. CARR, University of Minnesota, Dwight Stoll, Marcelo Filgueira

9:50 AM (960-04) **Coupling the Hydrophobic Subtraction Model with Organic Modifiers and Elevated Temperature for Optimization of Selectivity and Efficiency** FRANK L. DORMAN, The Pennsylvania State University, Michael Wittrig, Richard Lake, Ty Kahler

10:25 AM (960-05) **The Role of Temperature in HPLC Efficiency and Speed** PAT SANDRA, Research Institute for Chromatography

**SYMPOSIA** Session 970

## The State-of-the-Art Technologies from Japan: Analytical Instruments with/for Nano-chemistry Technology I (JAIMA) - arranged by Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Morning, Room: 207A

Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

8:05 AM (970-01) **Electroluminescence From Organic Liquid Emitting Layer and Its Application for Micro-TAS** CHIHAYA ADACHI, Kyushu University

8:40 AM (970-02) **Photo-Controllable Magnetic and Superconducting Nanomaterials** YASUAKI EINAGA, Keio University

9:15 AM (970-03) **Microfluidic Technology for Biofabrication and Biosensing** SHOJI TAKEUCHI, University of Tokyo

9:50 AM (970-04) **Microdroplets for Chemical Analysis** AKIHIDE HIBARA, The University of Tokyo

10:25 AM (970-05) **Photoelectrochemical Applications of Plasmonic Metal Nanoparticles** TETSU TATSUMA, University of Tokyo

**WORKSHOP** Session 980

## GC-on-a-Chip: The Next Generation - arranged by Edward T. Zellers, University of Michigan

Tuesday Morning, Room: 313

Edward T. Zellers, University of Michigan, Presiding

8:05 AM (980-01) **Microfabricated Gas Chromatographs with Microsensor Array Detectors for the Determination of Complex Vapor Mixture Components** EDWARD T. ZELLERS, University of Michigan

8:25 AM (980-02) **A Microfabricated High-speed GCxGC System** R J. SIMONSON, Sandia National Laboratories, Douglas Read, Joshua Whiting, Paul Galambos

8:45 AM (980-03) **GC-on-a-Chip: Fundamental Considerations of Microcolumn Separations** JOSHUA J. WHITING, 3 Degrees of Separation, Pete Stevens, R Simonson

9:40 AM (980-04) **Micro-Fabricated Planar GCXGC-PID Using a Glass Substrate** ALASTAIR C. LEWIS, University of York, Jacqueline Hamilton, Jaydene Halliday, Richard Lidster, Sam Edwards

10:00 AM (980-05) **MEMS and Nanotechnology: Taking µGC Beyond Miniaturizing Gas Chromatography** MASOUD AGAH, Virginia Tech

10:20 AM (980-06) **Optical Sensors for Micro-Gas Chromatography Development** XUDONG FAN, University of Michigan, Karthik Reddy, Liu Jing, Maung Khaing Oo, Sun Yuze

**ORGANIZED CONTRIBUTED SESSION** Session 990

## Analytical Applications of Broadly Tunable Lasers - arranged by Richard A. Crocombe, Thermo Fisher Scientific

Tuesday Morning, Room: 308A

Richard A. Crocombe, Thermo Fisher Scientific, Presiding

8:00 AM (990-01) **IR Microscopy Using Broadly Tunable External-Cavity Quantum-Cascade Lasers** ROBERT SHINE, Daylight Solutions, Miles Weida, Peter Buerki, Tim Day

8:20 AM (990-02) **Chemical and Photoacoustic Imaging Using an Optical Parametric Oscillator** ELI MARGALITH, OPOTEK, Inc., Lam Nguyen

8:40 AM (990-03) **Analytical Applications of Quantum Cascade and Interband Cascade Lasers** KRISHNAN R. PARAMESWARAN, Physical Sciences Inc., David Sonnenfroh, John Bradshaw, Mark Allen, Richard Wainner

9:00 AM (990-04) **High Performance Chemical Analyzers Based on Frequency Agile Mid-infrared Lasers** JAMES J. SCHERER, Thermo Fisher, Hans-Jurg Jost, Joshua Paul

9:35 AM (990-05) **Structure and Orientation in Electrospun Nanofibers** BRUCE CHASE, University of Delaware, Craig Prater

9:55 AM (990-06) **Quantum Cascade Laser Based Gas Analyzer for Process Applications** RUTH E. LINDLEY, Cascade Technologies Ltd

10:15 AM (990-07) **Applications of External Cavity Quantum Cascade Lasers for Chemical Imaging** MARK C. PHILLIPS, Pacific Northwest National Laboratory, Bruce Bernacki, Jonathan Suter

10:35 AM (990-08) **Stand-Off Molecular Surface Analysis Using Hand-Held, Widely Tunable Mid-Infrared Quantum Cascade Laser (QCL) Spectrometers** ERIK R. DEUTSCH, Block Engineering, Frederick Haibach, Jeffery Sherman

**ORGANIZED CONTRIBUTED SESSION** Session 1000

## Celebrating the Future of Analytical Chemistry - The ACS Division of Analytical Chemistry Graduate Fellows (ACS-ANYL) - arranged by Paul Edmiston, College of Wooster

Tuesday Morning, Room: 308B

Paul Edmiston, College of Wooster, Presiding

8:00 AM (1000-01) **Voltammetric Assessment of Dopamine Transporter Activity in the Drosophila CNS** TRISHA L. VICKREY, University of Virginia, B Jill Venton

8:20 AM (1000-02) **Task-Specific Ionic Liquids for Applications in Photonics and Optoelectronics** SERGIO L. DE ROOY, Louisiana State University, Isiah Warner, Noureen Siraj, Ridgely Lodes, Susmita Das

8:40 AM (1000-03) **Classifying Human Brain Tumors Using Lipid Imaging by Desorption Electrospray Ionization Mass Spectrometry** LIVIA S. EBERLIN, Purdue University, Alexandra Golby, Allison Dill, Isaiah Norton, Keith Ligon, Nathalie Nagar, R Graham Cooks, Sandro Santagata

9:00 AM (1000-04) **Protein Conformations Studied via the Vapor Treatment of Electrospray Droplets** ANASTASIA KHARLAMOVA, Purdue University, Scott McLuckey

9:35 AM (1000-05) **Measuring D-Amino Acids in *Aplysia* Neurons via Capillary Electrophoresis with Enzymatic and Immunological Treatments** NOBUTOSHI OTA, University of Illinois at Urbana-Champaign, Jonathan Sweedler, Lee Replogle, Liping Wang, Stanislav Rubakhin

9:55 AM (1000-06) **Composition and Reactivity of Atmospherically-Relevant Nanoparticles by Mass Spectrometry** BRYAN BZDEK, University of Delaware, Murray Johnston

10:15 AM (1000-07) **The Past, Present, and Future of the DAC Graduate Fellowship Program** PAUL L. EDMISTON, College of Wooster

10:35 AM (1000-08) **ACS-DAC Graduate Fellowship Sponsor Perspective: It's All About Great Science and Great Scientists!** ANNE M. WARNER, Eli Lilly & Company

**ORAL** Session 1010

## Advances in Fuels and Petrochemicals Analysis I - arranged by Brandon Johnston, University of Alberta

Tuesday Morning, Room: 307A

Brandon Johnston, University of Alberta, Presiding

8:00 AM (1010-01) **Simultaneous Determination of Trace Sulfur and Nitrogen by Combustion UV-Fluorescence and Chemiluminescence in Reformulated Gasolines** AARON MENDEZ, PAC, Lisa Houston, Mark Homan, Rick Trevino

8:20 AM (1010-02) **Analyzing Low Level Sulfurs, Hydrocarbons, and Permanent Gases for Environmental Monitoring and Catalyst Protection Using FID, SCD, and Dual TCD Gas Chromatography** SHANNON CANFIELD, Wasson-ECE Instrumentation, David Cuthbert

8:40 AM (1010-03) **Selective Measurement of H2S Contaminant in Natural Gas by Novel Cantilever Enhanced Tunable Diode Laser Photoacoustic Spectroscopy** ISMO KAUPPINEN, Gasera Ltd., Juho Uotila, Jussi Raittila

9:00 AM (1010-04) **FTIR Identification of Sulfur Structures Responsible for Anti-Oxidation of Lubricating Oils** SANDRINE AMAT, University Paul Cezanne, Jacky Kister, Nathalie Dupuy, Yveline Le Dreau, Zeineb Braham

9:35 AM (1010-05) **Retention Characteristics of Alkyl Phosphates in Gas Chromatography** BRANDON M. JOHNSTON, University of Alberta, James Harynuk

9:55 AM (1010-06) **A Novel System for the Automated Sample Introduction of Tricholorosilane Samples to Gas Chromatograph** DAVID J. CUTHBERT, Wasson-ECE Instrumentation, John Wasson

10:15 AM (1010-07) **Comprehensive Two Dimensional Gas Chromatography (GC×GC) with a Single-Stage Cryogenic Modulator** AHMED MOSTAFA, University of Waterloo, Pak Hin Law, Tadeusz Gorecki

10:35 AM (1010-08) **Prediction of Retention Times for Alkyl Polyaromatic Hydrocarbons in GCxGC Using Thermodynamic Modeling** TEAGUE M. MCGINITIE, University of Alberta, James Harynuk

**ORAL** Session 1020

## Explosive Material Detection - arranged by Ashish Tripathi, US Army

Tuesday Morning, Room: 310B

Ashish Tripathi, US Army, Presiding

8:00 AM (1020-01) **Effect of Morphology on the Detection of Explosives by Differential Reflective Spectroscopy** THIERRY A. DUBROCA, University of Florida, Gael Guetard, Rolf Hummel

8:20 AM (1020-02) **Raman Imaging Study of Solid State Phases of Energetic Materials** TRIPATHI ASHISH, SAIC, Augustus Fountain, Erik Emmons, Jason Guicheteau, Norman

Green, Raphael Moon, Steven Christesen

8:40 AM (1020-03) **Identification of Explosive Materials by Deep UV Resonance Raman Spectroscopy** MANASH GHOSH, University of Pittsburgh, Luling Wang, Sanford Asher, Todd Vargson

9:00 AM (1020-04) **Detection of Ammonium Nitrate Surface Residues Using Ambient-Pressure-Ionization Mass Spectrometry** KERIN E. GREGORY, MIT Lincoln Laboratory, Alla Ostrinskaya, Roderick Kunz

9:35 AM (1020-05) **Laser-Desorption for Real-Time Detection of Security Relevant Substances at Ambient Conditions** SVEN EHLERT, University of Rostock, Andreas Walte, Jasper Hölzer, Martin Sklorz, Michael Pütz, Ralf Zimmermann

9:55 AM (1020-06) **Analysis of the Improvised Organic Peroxide-Based Explosive Methyl Ethyl Ketone Peroxide by Mass Spectrometry and Ion Mobility Spectrometry** CHARLES D. CLARK, University of Central Florida, Michael Sigman

10:15 AM (1020-07) **Trace Explosive Vapor Detection Using Silicon Nanowires in a Vertical Array with a Porous Electrode** CHRISTOPHER R. FIELD, U.S. Naval Research Laboratory, Arthur Snow, Hyun Jin In, Pehr Pehrsson, Susan Rose-Pehrsson

10:35 AM (1020-08) **Sampling of the Explosive RDX (hexogen) from Air and Analysis by HPLC-DAD** OLAF WILKE, BAM-Federal Institute for Materials Research, Dirk Stolle, Reinhard Noske, Ria Juritsch

**ORAL** Session 1030

## Food and Beverage Analysis - arranged by Brian Bidlingmeyer, Agilent Technologies, Inc.

Tuesday Morning, Room: 209B

Brian Bidlingmeyer, Agilent Technologies, Inc., Presiding

8:20 AM (1030-02) **Profiling Scotch Malt Whisky Spirits From Different Distilleries Using an Electronic Nose and an Expert Sensory Panel** MITCHELL LAMBOY, Alpha MOS, Carol Schneider, Jean-Christophe Mifsud, Mike Parada

8:40 AM (1030-03) **Application of GC-MS and GC x GC-MS for the Detection and Characterization of Flavor Compounds in Pet Food** ELIZABETH M. HUMSTON-FULMER, LECO Corporation, David Alonso, Joe Binkley

9:00 AM (1030-04) **Determining Flavors and "Defects" in Beer by Headspace Trap/Gas Chromatography/Mass Spectrometry (HStrap/GC/MS)** LEE MAROTTA, Perkin Elmer, Andrew Tipler

9:35 AM (1030-05) **Development of Fully Automatic Surface Plasmon Resonance Immunosensor System for Detection of Toxic Agent in Food** TOSHIKAZU KAWAGUCHI, Hokudai University, Hiromitsu Ogata, Katsuaki Shimazu, Masaki Miura, Morita Kinichi, Shinji Suzuki

9:55 AM (1030-06) **Analysis of Halogenated Organic Compounds and Metabolites in Dog and Cat Blood Serum by Gas Chromatography with Ultra High Resolution Time-**

**of-Flight Mass Spectrometry** DAVID E. ALONSO, LECO Corporation, Joe Binkley, John Heim, Kevin Siek

10:15 AM (1030-07) **New Procedure of Automated Sample Preparation in Hop Analytics by Reusable Specific Absorber Materials** DIEDRICH HARMS, VLB Berlin (Central Laboratory), Guido Offer

10:35 AM (1030-08) **From Farm to Fork: Global Analysis of VOCs in Hazard Analysis and Critical Control Points (HACCP)** THIERRY R. ZESIGER, VOCscan AG, Colin Mitchell, Hans Wiech, Rene Trost

**ORAL** Session 1040

## LC-MS, Environmental and Food Science - arranged by Mary Ellen P. McNally, DuPont Crop Protection

Tuesday Morning, Room: 209A

Mary Ellen P. McNally, DuPont Crop Protection, Presiding

8:00 AM (1040-01) **Development and Application of a Method for the Simultaneous Analysis of Five Bisphenols in Canned Beverages by Solid Phase Extraction Liquid Chromatography–Tandem Mass Spectrometry (SPE-LC-MS/MS)** OLUJIDE T. AKINBO, Butler University, Benjamin Trefilek

8:20 AM (1040-02) **The Characterization of Pesticide Soil Metabolites Using Microbial Cultures Coupled with Linear Ion Trap Mass Spectrometry** DONGTING LIU, Dow AgroSciences, Krishna Madduri, Mike Hastings

8:40 AM (1040-03) **A Fast Separation and Quantification Method for Nitroguanidine and 2, 4-Dinitroanisole by Liquid Chromatography/Tandem Mass Spectrometry** RUIPU MU, Missouri University of Science and Technology, Adcharee Karnjanapiboonwong, Honglan Shi, Joel Burken, Xiaojing Wang, Yinfa Ma, Yuan Yuan

9:00 AM (1040-04) **Use of Isotope Dilution Mass Spectrometry Methods in the Certification of Food and Dietary Supplement Standard Reference Materials** LANE SANDER, National Institute of Standards and Technology, Catherine Rimmer, Johanna Camara, Karen Phinney, Mary Bedner, Melissa Phillips

9:35 AM (1040-05) **The Promise of Dilute-and-Shoot LC/MS/MS: Feasibility of Dilute-and-Shoot Injections for Pesticide Residue Analysis in Different Food Types Using Experimentally Determined Matrix Effects** RICHARD LAKE, Restek Corporation, Jack Cochran, Julie Kowalski, Sharon Lupo

9:55 AM (1040-06) **Evaluation of Oligolysines and Alpha Hydroxyl Acid Capped Oligolysines as Selective Substrate for Rapid Quantification of Trypsin Inhibitor in Food and Feed Formulation with Electrospray Mass Spectrometry (ESI-MS)** RACHADAPRN SEEMAMAHANNOP, University of Missouri, Shubhen Kapila, Steve Lorbert

10:15 AM (1040-07) **Hyphenation of LC Techniques to ICP/MS for Improved Detection Levels of CrVI in the Environment** JOAUDIMIR CASTRO GEORGI, CNRS-IPREM, Emmanuel

Tessier, Fabienne Seby, Olivier Donard

10:35 AM (1040-08) **Application of Ultra High Mass Resolution Orbitrap Mass Spectrometry for the Determination of the Polyether Toxins and Their Biotransformation Products in Shellfish** KEVIN J. JAMES, University College Cork, Bebhine Carey, Daniel O'Driscoll, Frank Vanpelt, John O'Halloran, Zuzana Skrabáková

**ORAL** Session 1050

## Liquid Chromatography: Instrumental Aspects - arranged by William R. LaCourse, University of Maryland, Baltimore County

Tuesday Morning, Room: 307C

William R. LaCourse, University of Maryland, Baltimore County, Presiding

8:00 AM (1050-01) **Improving Resolution in UPLC by Reducing System Dispersion** APARNA CHAVALI, Waters Corporation, Patricia McConville, Tanya Jenkins, Thomas Wheat

8:20 AM (1050-02) **Benefits and Challenges with Rapid Unified UHPLC Methods in Pharmaceutical Analyses** JONATHAN G. SHACKMAN, Bristol-Myers Squibb, Brent Kleintop

8:40 AM (1050-03) **Hollow Fibre Liquid Phase MicroExtraction for Preconcentration and Clean-Up of Flavonoids from Plant Extracts** MANUEL VALIENTE, Universitat Autonoma de Barcelona, Johanes Gonzalez, Messaoud Mars, Montserrat Lopez-Mesas, Nadia Chaeib

9:00 AM (1050-04) **Electrospun Silica Nanofibers as Novel UTLC Stationary Phases** TONI E. NEWSOME, The Ohio State University, Susan Olesik

9:35 AM (1050-05) **Improving Peak Capacity and Flexibility in On-Line Two Dimensional Liquid Chromatography by Flow-Splitting after First Dimension Column** MARCELO R. FILGUEIRA, University of Minnesota, Cecilia Castells, Klaus Witt, Peter Carr, Yuan Huang

9:55 AM (1050-06) **Development and Evaluation of an Improved System for Amino Acid Analysis** THOMAS E. WHEAT, Waters Corporation, Margaret Maziarz, Patricia McConville

10:15 AM (1050-07) **Monolithic Metal and Metal-Oxide Liquid Chromatography Columns** FRANCHESSA M. SAYLER, The University of Alabama, Amy Grano, Jevgeni Parshintsev, Martin Bakker, Susanne Wiedmer

10:35 AM (1050-08) **UHPLC Method Development Challenges for Low Dose Formulations – A Case Study** MICHAEL GRABOWSKI, Boehringer Ingelheim Pharmaceuticals, Inc., Prince Korah, Stephanie DaSilva

**ORAL** Session 1060

## Portable Instruments - Applications - arranged by Garth Simpson, Purdue University

Tuesday Morning, Room: 309A

Garth Simpson, Purdue University, Presiding

8:00 AM (1060-01) **Use of Needle Traps with a Person Portable GC-MS (Gas Chromatograph-Mass Spectrometer) for Field Sampling and Analysis** JOSEPH L. OLIPHANT, Torion Technologies Inc., Anthony Rands, Edgar Lee, Nathan Porter

8:20 AM (1060-02) **Rapid Prototyping of Sugar-Cube Size, 3d-Printed, Battery-Operated, He-H2 Microplasma and Its Background Spectral Emission by Portable Emission Spectrometer** VASSILI KARANASSIOS, University of Waterloo, Xu Zhang

8:40 AM (1060-03) **Real Time Measurement of Occupational Diesel Particulate Matter Exposures** JAMES NOLL, NIOSH, Samuel Janisko

9:00 AM (1060-04) **Handheld Tools for the Analysis of Liquids** PATRICK F. HENNING, Spectro, Inc., Christy DiCologero, Eric Olson, Jinkee Lee, Thomas Barraclough

9:35 AM (1060-05) **Design of a Compact Microscope for Combined Second Harmonic Generation (SHG) Imaging and Synchrotron X-Ray Diffraction** GARTH SIMPSON, Purdue University

9:55 AM (1060-06) **New Developments and Applications of Hand-Held Raman, Mid-Infrared and Near-Infrared Spectrometers** HEINZ W. SIESLER, University of Duisburg-Essen

10:15 AM (1060-07) **Handheld Mid-Infrared Spectrometer for Liquids Analysis** PATRICK F. HENNING, Spectro, Inc., Christy DiCologero, Eric Olson, Thomas Barraclough

10:35 AM (1060-08) **Novel Sampling Accessories Used to Enhance Extraction Efficiency of SPME and Performance of a Field Portable GC-MS** TIFFANY C. WIRTH, Torion Technologies Inc., Douglas Later, Edgar Lee, Gary Groenewold, Jill Scott, Joseph Oliphant, Nathan Porter, Stephen Lammert

**ORAL** Session 1070

## Raman/FTIR Instrumentation and Applications - arranged by Alfred Baca, US Navy

Tuesday Morning, Room: 309B

Alfred Baca, US Navy, Presiding

8:00 AM (1070-01) **Quantitative Enhanced Raman Scattering of Phosphorothioate Modified DNA from Silver Nanoparticles** RICHARD NICHOLAS CASSAR, University of Strathclyde, Duncan Graham, Karen Faulds

8:20 AM (1070-02) **Raman Imaging for the Examination of Dynamic Chemical Reactions** RICHARD A. LARSEN, Jasco, Inc., John Carriker, Ken-ichi Akao, Takeo Soejima, Yoshiko Kubo, Yusei Ohkubo

8:40 AM (1070-03) **High Resolution Raman and Brillouin Spectroscopy Using a Virtual Imaged Phased Array (VIPA)** RAJESH MORAMPUDI, Cleveland State University, John

Turner

9:00 AM (1070-04) **High Resolution Monolithic MEMS FT-IR Spectrometer** BASSAM SAADANY, Si-Ware Systems, Bassem Mortada, Diaa Khalil, Mostafa Medhat, Muhammad Nagi, Tarik Bourouina, Yasseen Nada

9:35 AM (1070-05) **Plasmonic Nanostructures Formed by Soft Imprint Lithography for Surface Enhanced Raman Scattering** ALFRED BACA, US Navy

9:55 AM (1070-06) **Quantitative Nanosensing of Multiple Biomolecule Interactions in Real Time** DEREK CRAIG, University of Strathclyde, Duncan Graham, Karen Faulds

10:15 AM (1070-07) **Sensitive Vapor Detection with Surface-Enhanced Raman Active Gold Nanoparticles Immobilized Flow-Through Multi-Hole Capillary** MAUNG K. KHAING OO, University of Michigan, Jing Liu, Karthik Reddy, Xudong Fan, Yunbo Guo

10:35 AM (1070-08) **Evaluation of Drug-Eluting Stents from Porcine Explants by Confocal Raman Microscopy: Comparison of Durable and Erodible Polymers Systems** KARIN M. BALSS, Johnson & Johnson, Cynthia Maryanoff, Frederick Long, Mary Ellen Dukart, Maureen Chisholm

**ORAL** Session 1080

## **Sensors I** - arranged by Dutt Vinjamoori, DSM Nutritional Products

Tuesday Morning, Room: 311D

Dutt Vinjamoori, DSM Nutritional Products, Presiding

8:00 AM (1080-01) **Fabrication of Novel Carbohydrate Microarrays with Fluorosilane for Onchip Analysis by SPR and Surface Assisted LDI Mass Spectrometry** CHIH-YUAN CHEN, University of California, Riverside, Hai Yu, Quan Cheng, Xi Chen

8:20 AM (1080-02) **Parallel Microfluidic Surface Plasmon Resonance Imaging Spectroscopy Using Metallic Nanohole Arrays** SI HOON LEE, University of Minnesota, Luke Jordan, Nathan Lindquist, Nathan Wittenberg, Sang-Hyun Oh

9:00 AM (1080-04) **Self-Referencing SPR Biosensors Based on Penetration Difference of Evanescent Waves** VLADIMIR M. MIRSKY, Lausitz University of Applied Sciences, Shavkat Nizamov

9:35 AM (1080-05) **Solution Based SERS Detection of Ultra-Low Levels of Thiram and Ferbam in Real Environmental Media Using Gold Nanoparticles of Different Shapes** RADHA NARAYANAN, University of Rhode Island, Benjamin Saute

9:55 AM (1080-06) **Mesoporous Overcoating of Gold Nanoarrays and Glass Substrates to Improve the Longevity and Selectivity of SERS and Fluorescent Sensors for Cyanide and Its Metabolites** DAVID E. THOMPSON, Sam Houston State University, Antonio Carrillo, Asish Parbatani, Emily Totman, Thomas Miller

10:15 AM (1080-07) **Characterization and Implementation of Ion Exchange Electrospun Nanofibers for Nucleic Acid Detection** MICHAEL C. BEILKE, The Ohio State

University, Susan Olesik

10:35 AM (1080-08) **Genetically Encoded Fluorescent Protein Redox Biosensors for Hydrogen Peroxide** AHMED S. BELAL, University of Alberta, Robert Campbell

**POSTER** Session 1090

## Art / Archeology

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1090-01P) **Chemical Characterization of a Tower in Monterubiaglio, Umbria (Italy) Utilizing Portable X-Ray Fluorescence Spectrometry** MARY KATE DONAIS, Saint Anselm College, Anthony Desmond, Bradley Duncan, David George

(1090-02P) **Trace Element Fingerprinting of Chert Artifacts with Portable X-Ray Fluorescence Spectrometry and Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry** JIYAN GU, Millsaps College, Christopher Horne, Michael Galaty, Timothy Ward

(1090-03P) **The Development of a Portable Raman Imaging Spectrometer Using "Dimension-Compressed Imaging Optical Fibers"** HISAMITSU HIGASHIYAMA, ST Japan, Akira Sakamoto, Emi Horyu-Koseto, Kohji Masutani, Shukichi Ochiai

(1090-04P) **Dietary Analysis of Washington Park Remains Using Stable Isotope Ratios** DOUGLAS J. MEYER, College of Mount Saint Joseph

(1090-05P) **Artist Paint Degradation Monitoring with Vibrational Spectroscopy** STACEY SPRAGUE, Western Carolina University, Scott Huffman

**POSTER** Session 1100

## Bioanalytical - Separations / LC

Tuesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1100-01P) **Extending the Usefulness of HPLC with Electrochemical Detection** IAN N. ACWORTH, Thermo Fisher Scientific, Bruce Bailey

(1100-02P) **Sensitive Analysis of Underivatized Amino Acids Using UHPLC with Charged Aerosol Detection** CHRISTOPHER CRAFTS, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth, Marc Plante

(1100-03P) **Size Exclusion Screening Kit for Membrane Protein Separation** HAIYING CHEN, Sepax, Katherine Mclaughlin, Xueying Huang

(1100-04P) **The Influence of Silica Pore Size and Particle Size on Insulin Analysis** RONGJIE FU, Agilent Technologies, Anne Mack, Maureen Joseph, William Long

(1100-05P) **Development of New Chiral Stationary Phases Based on Cationic and Basic**

**Derivatives of Cyclofructan 6 for High Performance Liquid Chromatography** NILUSHA L. PADIVITAGE, The University of Texas at Arlington, Daniel Armstrong, Edra Dodbiba, Jonathan Smuts, Milan Krishantha, Zachary Breitbach

(1100-06P) **Peptide Separations Using Size Exclusion Chromatography** HAIYING CHEN, Sepax, Katherine Mclaughlin

(1100-07P) **The Effect of Gold Nanoparticles on the Inhibition of Advanced Glycation Endproducts** WEIXI LIU, University of Rhode Island, Champika Seneviratne, Dain Joel, Menashi Cohenford, Sreekanth Suravajjala

(1100-08P) **Modification of Allyl Silica Hybrid Monoliths via Click Chemistry for Liquid Chromatography** LISANDRA SANTIAGO-CAPELES, SUNY at Buffalo, Luis Colon

(1100-09P) **Unusual Light-Dark Adaptation of Anabaena Sensory Rhodopsin Compared to Bacteriorhodopsin based on Retinal Isomers** VISHWA TRIVEDI, Bethune Cookman University

(1100-10P) **Novel C18+AX+CX Multi-mode ODS Columns can Overcome the Limitations of Traditional ODS Columns** ITARU YAZAWA, Imtakt Corporation

(1100-11P) **Advantage of a New Generation of Evaporative Light-Scattering Detectors: Universality, Higher Sensitivities and Cost-Effectiveness for Multi-Element Analyses in Liquid Chromatography - An Application Review** ERIC VERETTE, Sedere

**POSTER** Session 1110

## Bioanalytical LC-MS I

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1110-01P) **On-Line Electrochemistry Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry of Pesticide Chlorpyrifos and Guanosine Adducts** IMRAN IFTIKHAR, University of Florida, Anna Brajter-Toth, Gustavo Garbellini, Hideko Yamanaka

(1110-02P) **Electrochemical Oxidation and Fragmentation of Caffeine and Theophylline in On-Line Electrochemistry Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (EC ESI FTICR MS)** IMRAN IFTIKHAR, University of Florida, Anna Brajter-Toth

(1110-03P) **Direct Protein Analysis Using Size Exclusion Chromatography Zenix-SEC and Mass Spectrometry** HAIYING CHEN, Sepax, Xueying Huang

(1110-04P) **Tandem Mass Spectrometric Analysis of cis/trans Isomers of Lutein Using Ion Mobility Time-of-Flight Mass Spectrometry** LINLIN DONG, University of Illinois, Richard van Breemen, Roderick Davis, Shunyan Mo

(1110-05P) **Mapping of Aromatic Diisocyanate Binding Sites on Human Albumin Utilizing Multiplexed Tandem Mass Spectrometry** JUSTIN M. HETTICK, National Institute

for Occupational Safety and Health, Paul Siegel

(1110-06P) **Whole Mouse Imaging Using Laser Ablation Electrospray Ionization Mass Spectrometry and MALDI-MS Imaging** BRENT R. RESCHKE, Protea Biosciences, Callee Walsh, Matthew Powell, Pamela Williams, Trust Razunguzwa

(1110-07P) **Glycosylation Profiling of Monoclonal Antibodies Using Mass Spectrometry** NA YANG, Abbott Laboratories, Carol Ramsay, Jeffrey Fishpaugh

(1110-08P) **Exploring Possible Binding Sites of Nanoparticles on Protein** SHANG ZENG, University of California, Riverside, Ni Li, Wenwan Zhong

(1110-09P) **Investigating the Gas Phase Structure of KIX Protein with Radical Directed Dissociation: Retention of the Native Structure** XING ZHANG, University of California, Riverside, Ryan Julian

(1110-10P) **Testosterone in Human Saliva: Method Development and Validation by Liquid Chromatographic Tandem Mass Spectrometry** SYED N. ALVI, King Faisal Specialist Hospital & Research Centre, Muhammad Hammami, Saleh Al Dgither

(1110-11P) **Effect of Hematocrit on Analyte Quantification Using Dried Blood Spot Technology for Pharmaceutical Bioanalysis** RITU ARORA, Agilent Technologies, Ben Yong, Paul Boguszewski, William Hudson

(1110-12P) **One-Step Procedure for Simultaneous Protein Precipitation and Phospholipid Removal from Biological Matrices Prior to LC/MS Analysis** XIAONING . LU, Supelco/Sigma-Aldrich, Craig Aurand, Emily Barrey, Michael Ye

(1110-13P) **Novel Derivatization Strategy for the Trace Analysis of Dimethyl Sulfate** JOHN P. GUZOWSKI, Biogen Idec, William Kiesman

(1110-14P) **Characterization of Novel Glycans Isolated from Tear and Saliva** SUREYYA OZCAN, University of California, Davis, Carlito Lebrilla, Hyun Joo An

(1110-15P) **Comparative Study of the Alkaloids Extracted from Vinca Minor and Those Present in the Homeopathic Tincture 1X** FRANK D'AMELIO, Bio-Botanica, Inc, Erin Krueger, Paula Schulbaum, Youssef Mirhom, Yuping Williamson

(1110-17P) **Quantification of HPLC-separated Peptides and Proteins by Spectrofluorimetric Detection of Native Fluorescence and Mass Spectrometry** SURAJ SARASWAT, The University of Toledo, Bruce Snyder, Dragan Isailovic

**POSTER** Session 1120

## Biomedical Applications II

Tuesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1120-01P) **FT-IR Studies on the Interaction of Allicin with DNA Double Helix** GUNJAN

TYAGI, National Physical Laboratory, Ranjana Mehrotra

(1120-02P) **1H NMR and LC-MS Metabolomics Study of Response to Preoperative Chemotherapy of Breast Cancer** SIWEI WEI, Purdue University, Daniel Raftery, Jian Zhang, Lingyan Liu, Nagana Gowda, Shanaiah Murthy

(1120-03P) **Laser Ablation Electrospray Ionization Mass Spectrometry Detection of Metabolic Differences in Leukemia Cells Exposed to the Tumor Microenvironment** CALLEE WALSH, Protea Biosciences, Brent Reschke, Debbie Piktel, James Fortney, Laura Gibson, Matthew Powell, Trust Razunguzwa

(1120-04P) **MID FT-IR Microspectroscopic Evaluation of Normal and Malignant Lung Histological Tissues** MENASHI COHENFORD, Marshall University, Emily Beckelhimer, Muhammad Chaudhry, Saroj Sigdel

(1120-06P) **Sensitive Detection of Cardiac Biomarker Using Zinc Sulfide Nanoparticles as Novel Fluorescence Signal Transducers** CHAD L. COWLES, University of Nevada Reno, Xiaoshan Zhu

(1120-07P) **Identification by GC-MS of the Constituents of the Essential Oil from the Leaves of Rauwolfia Vomitoria, A Potential Medication for Hypertension, Nervous Disorders and Malaria** WESLEY O. OKIEI, University of Lagos, Angela Boms, Edith Ofor, Midupe Ogunlesi

(1120-08P) **GC-MS Analysis of the Essential Oil from the Seeds of Hunteria Umbellata, A Herbal Medication for Diabetes** MIDUPE M. OGUNLESI, University of Lagos, Edith Ofor, Onyebuchi Onyefuosaonu, Wesley Okiei

(1120-09P) **Advances in Zymography Techniques Concerning Protease Analysis** LILIANA KURZ, University of Carabobo, Jeff Wilkesman

**POSTER** Session 1130

## Clinical Chemistry and Toxicology II

Tuesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1130-01P) **Automated Extraction of Vitamin D Metabolites from Serum Using ITSP** EDWARD PFANNKOCH, Gerstel, Inc., Bob Green, Fredrick Foster, Paul Roberts

(1130-02P) **Investigation of the Reaction of the Gold-Based Antirheumatic Agent Auranofin with Glutathione and Human Serum Albumin (HAS) by Means of LC/ESI-MS and LC/ICP-MS** ANASTASIA ALBERT, University of Muenster, Carsten Engelhard, Michael Sperling, Uwe Karst

(1130-03P) **Tear Glucose Measurements Using an Enzymatic Micro-Biosensor** BO PENG, University of Michigan, Mark Meyerhoff, Qinyi Yan

(1130-04P) **Gold Electrode for Analysis of Nitrite in Urine** DENISE LOWINSOHN, UFJF

(1130-05P) **High Throughput DNA Damage Assay Based on High Density Cell Array** QIAO

YONG, University of Central Florida

(1130-06P) **Zinc Finger Protein Based Detection of Mycobacterium Tuberculosis DNA** DAOHONG ZHANG, University of Miami

(1130-07P) **Potent Anticancer and Antioxidant Activities of Two Pure Compounds Separated from Syzygium Cumini (Pomposia)** ABD EL-MONEIM M. AFIFY, Cairo University, Emad Shalaby, Hany El-Shemy, Sayed Fayed

(1130-08P) **Quantitation of Trace Amounts of Polychlorinated Biphenyl Congeners from Microliter Volumes of Blood Serum by Automated GC/MS and Isotope Dilution Mass Spectrometry Using Solid-Phase Microextraction** ANDREW BOGGESS, Duquesne University, HM (Skip) Kingston

(1130-09P) **New Mixed Mode SPME-LC Fiber Coatings for Solvent Desorption** ROBERT E. SHIREY, Supelco/Sigma-Aldrich, Craig Aurand, Katherine Stenerson, Leonard Sidisky, Young Chen

(1130-10P) **The Development of a Novel Sol Gel Polymeric Network for the Molecular Imprinting of Illicit Drugs** MICHELLE CERRETA, Florida International University, Abuzar Kabir, Kenneth Furton

**POSTER** Session 1140

## Electrochemistry II

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1140-01P) **Stripping Voltammetric Determination of Arsenic with a Carbon Paste or Glassy Carbon Electrode Modified with Mercury-Nafion-Lessonia Nigrescens or Alginic Acid from Brown Algae** VERONICA AARANCIBIA, Pontificia Universidad Catolica de Chile, Carolina Munoz

(1140-02P) **Electrochemical Characteristics of a Floated Electrochemical Cell Used for On-Line Electrospray Mass Spectrometry** ANNA BRAJTER-TOTH, University of Florida, Donq Looi

(1140-03P) **Cadmium and Lead Determination by Adsorption Voltammetry Using Aurintricarboxylic Acid on Bismuth Film Electrode** RODRIGO A. SEGURA, Univeridad de Santiago de Chile, Deny Pinto, Milenco Pradena

(1140-04P) **Development of Electrodes Based in Composites of Carbon Nanotube and Polyaniline** FÁBIO SIMÕES, Universidade Federal de São Paulo, Fernanda Palazzo

(1140-05P) **Fabrication of Carbon-Fiber Microelectrodes without Glass Using Epoxy Insulation** ALEXANDER G. ZESTOS, University of Virginia, B Jill Venton, Brian Poe, Christopher Green, Kerui Xu

(1140-06P) **Accuracy, Stability and Traceability of Conductivity Standard Solutions** FRANK D. HONOLD, ITT-WTW GmbH, Peter Rauch

(1140-07P) **Carboxylate Ligand-Modified Glassy Carbon Electrode Interfaces for**

**Anchoring 2 nm Diameter Iridium Oxide Nanoparticles to Investigate Water Oxidation Catalysis** SEAN DORIS, University of North Carolina at Chapel Hill, Lloyd Horne, Royce Murray

(1140-08P) **A General Analytical Methodology for Evaluating Electrocatalyst Activity: Voltammetric- and Chemical Oxidant-Driven Water Oxidation Catalysis via an Iridium Oxide (IrOx) Nanoparticle Film in Rotated Ring-Disk Voltammetry** LLOYD P. HORNE, University of North Carolina at Chapel Hill, Royce Murray

(1140-09P) **Nickel Alloy Silicate Corrosion Resistant Coatings for Use in the Oil and Gas Industry** JEERAPAN TIENTONG, University of North Texas, Teresa Golden

(1140-10P) **Electrochemical Synthesis of Cerium Dioxide Doped with Praseodymium Films and Powders** TSO-CHANG WU, University of North Texas, Teresa Golden

(1140-11P) **Spectroelectrochemical Characterisation of Bipolar Electrodes** AXLINE SANGHAPI, Auburn University, Curtis Shannan

**POSTER** Session 1150

## Environmental Analysis II

Tuesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1150-01P) **Electrodesposition of Mercury in Solutions with Plant Biomass** JOSÉ L. MARRUGO NEGRETE, Universidad de Córdoba, Amado Navarro Frómeta, José Pinedo Hernández

(1150-02P) **Mesoporous Carbon Electrodes for Use in Electrochemically Modified Extraction** JUSTIN SHEARER, Rose-Hulman Institute of Technology, Caeb Rinard, Daniel Lee, Sharon Wang, Zhang Wang

(1150-03P) **Accurate pH Measurement of Low Ionic Strength Solutions with the Glass Electrode Combined with the Reference Electrode Equipped with the Ionic Liquid Salt Bridge** KATO MAKOTO, HORIBA, Ltd., Imai Hirofumi, Kakiuchi Takashi, Shibata Manabu

(1150-04P) **Simultaneous Determination of Carbendazin and Fenamiphos in Water Using a Diamond Electrode** VALBER PEDROSA, UNESP, Lucia Codognoto

(1150-05P) **Stripping Analysis of $Cd^{2+}$ Using Boron-Doped Diamond Electrodes with Dual-Electrode Approach for Elimination of Electrochemical Active Species** AI SUGITANI, Keio University, Michinobu Katayama, Takeshi Watanabe, Yasuaki Einaga, Yoshinori Matsumoto

(1150-06P) **Manual, Semi-Automated, and Automated Methodologies for Determination of Total Phosphorus (TP) and Total Nitrogen (TN)** WILLIAM LIPPS, OI Analytical, Elizabeth Badgett, Gary Engelhart

(1150-07P) **Investigation of Perchlorate Occurrence in Missouri Drinking Water System Using UFLC-MS/MS** SANJEEWA GAMAGEDARA, Missouri University of Science and

Technology, Craig Adams, Honglan Shi, Terry Timmons, Yinfa Ma

(1150-08P) **In Glass Canisters Hydrogen Sulfide Recovery with Dehydrating Agent** THOMAS X. ROBINSON, Entech Instruments, Inc., Daniel Cardin

(1150-09P) **Evaluation of a Finger-Sized Atomic Emission Detector for Elemental-Selective Detection of Fluorine in Liquid Chromatography** TATSURO NAKAGAMA, Nihon University, Kazunori Saitoh, Masaaki Maeda

(1150-10P) **Analytics of Surfactants in the Environment** ANETA POLKOWSKA, Gdansk University of Technology, Ewa Olkowska, Jacek Namiesnik

(1150-11P) **Development of Highly Stable Solid Phase Reagent Strip for the Detection of Water Hardness** BALAJI TATINENI, Industrial Test Systems, Ivars Jaunakais, Yasmine Shoemaker

**POSTER** Session 1160

## Food Science I

Tuesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1160-01P) **Impact of Brewing Conditions on the Antioxidant Capacity of Green Tea** ERICA SHARPE, Clarkson University, Ryan Bradley, ND, MPH

(1160-02P) **Rapid Quantitative Analysis of Fatty Acids in Flaxseed Oil and Fish Oil on Ionic Liquid Columns by GC** YING ZHANG, University of Texas at Arlington, Daniel Armstrong, Edra Dodbiba

(1160-03P) **Qualitative Analysis of Commercially Available Coconut Water Products with Multiple Sample Introduction Techniques** JOHN R. STUFF, Gerstel, Inc., Edward Pfannkoch, Jacqueline Whitecavage

(1160-04P) **Validation of Shorter Enrichment Time for Salmonella enterica subsp. Enterica in Peanut Butter Samples Followed by a rRNA Detection System** SHYAM . VERMA, Supelco/Sigma-Aldrich, Donald Hobbs, Jvo Siegrist, Ute Luoca

(1160-05P) **Focused Microwaves-Assisted Extraction of Theobromine and Caffeine from Cacao** MARIA P. CAÑIZARES-MACIAS, Universidad Nacional Autonoma de Mexico, Lesli González-Nuñez

(1160-06P) **High Performance Gas Chromatography – Time-of-Flight Mass Spectrometry Analysis of Halogenated Organic Compounds in Pet Food** DAVID E. ALONSO, LECO Corporation, Joe Binkley, John Heim, Kevin Siek

(1160-08P) **Selection of Vegetal Oil Ingredients Based on Sensory Profile Ageing** MITCHELL LAMBOY, Alpha MOS, Carol Schneider, Jean-Christophe Mifsud, Mike Parada

(1160-09P) **Determination of the Quality of Walnut Batches Using Electronic Eye Advanced Analysis** MITCHELL LAMBOY, Alpha MOS, Alain Gaudon, Jean-

Christophe Mifsud, Pierre Dubosclard

(1160-10P) **Quantification of Printing Ink Mineral Oils in Food Packaging via Direct Thermal Extraction Coupled with Thermal Desorption-GCxGC-TOF-MS Analysis** NICK BUKOWSKI, ALMSCO International, Kurt Thaxton, Stephen Smith

(1160-11P) **A Comprehensive Two Dimensional GC Approach for Pesticides Determination in Essential Oils** DANIELA CAVAGNINO, DANI Instruments SpA, Alessandra Mantegazza

(1160-12P) **Determination of Phenolic Compounds in Cranberry Products by Ultrasound-Assisted Hydrolysis and Gas Chromatography-Mass Spectrometry** YUEGANG ZUO, University of Massachusett Dartmouth, Chengjun Wang, Yiwei Deng

(1160-13P) **Quantification of 4-ethylphenol in Belgian Style Beers** ASHLEY BLYSTONE, Westminster College, Sarah Kennedy

(1160-14P) **Analysis of Various Flavored Green Tea Extracts for Their Antioxidant Activities** CHAU TRUONG, Saint Xavier University, Bindhu Varughese

(1160-15P) **Quantitative Analysis of Humectants in Tobacco Products Using Gas Chromatography with Simultaneous Mass Selective and Flame Ionization Detection** CHRISTINA RAINEY, Indiana University - Purdue University Indianapolis, Dawit Bezabeh

(1160-16P) **A Novel and Rapid Separation Method for the Determination of Cobalt and Cobalamin (Vitamin B12) Using HPLC-ICP-MS** SIVA KESAVA RAJU CHINTHALAPATI, National Institute of Standards and Technology, John Schiel, Lee Yu, Stephen Long

(1160-17P) **Identification and Cytotoxicity of Alkaloids in Goldenseal (Hydrastis Canadensis) Root Extract by LC-MS-MS and Bioassay** MAI P. LE, National Research Council Canada, Andre Pichette, Anthony Windust, Jean Legault, Peggy McCooeye

(1160-18P) **Rapid Determination and Quantification of Adulteration in Milk by Mid-Infrared** POLIANA MACEDO DOS SANTOS, UFSCar/OSU, Edenir R Pereira-Filho, Luis Rodriguez-Saona

**POSTER** Session 1165

## Laboratory Management II

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1165-01P) **Centralized Research Resource Management Systems for Efficiency, Cost Reduction and Competitive Advantage** MUNDOMA CLAUDIUS, Florida State University

(1165-02P) **The Cure for Your Biobanking Informatics Challenges** DON CROSSETT, Thermo Fisher Scientific

(1165-03P) **Using LIMS to Maintain Regulatory Compliance in the Food Safety Laboratory** COLIN THURSTON, Thermo Fisher Scientific

(1165-04P) **Enhancing Productivity in a Bioanalytical Laboratory by the Implementation of an Electronic Laboratory Notebook** GREGG IMRIE, Unilabs York Bioanalytical Solutions

**POSTER** Session 1170

## Materials Sciences II

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1170-01P) **The Application of Hollow Fiber in the Treatment of Plasma Sample** WANG RUYI, Bonna-Agela Technologies, Wang Wan

(1170-02P) **Real-World Emission Testing Applications within the Construction Product Industry** CAROLINE WIDDOWSON, Markes International, Lara Kelly, Nicola Watson, Stephen Smith

(1170-03P) **Harmonizing Analysis of VOCs from Spray Polyurethane Foam Insulation** CAROLINE WIDDOWSON, Markes International, Lara Kelly, Nicola Watson, Paul Morris

(1170-04P) **The Different Retention Behavior of Basic Compounds on Three Mixed HPLC Phases** LEI YIN, Bonna-Agela Technologies

(1170-05P) **Characterization of Light Emitting Diodes (LEDs) and Compact Fluorescent Lamps (CFLs) by UV-Visible Spectrophotometry** CHESTER M. TALBOTT, Shimadzu, Robert Clifford

(1170-06P) **Characterization of Hydrogen-Generating Conducting Polymers with Scanning Electrochemical Microscopy** RAHUL THAKAR, Indiana University, Dongwhan Lee, Lane Baker, Wenjun Liu

(1170-07P) **Determination of Trace Metals in LaOx Thin Film on Silicon Wafer by Direct Film Stripping ICP-MS/ICP-AES** SHI LIU, Chemtrace Analytical Services, Shengyong Lu

(1170-08P) **Dynamic Hydrogels Based on Light-Controlled DNA Hybridization** LU PENG, University of Florida, Mingxu You, Weihong Tan, Yan Chen

(1170-09P) **Infrared and Raman Spectra r0 Structural Parameters, Conformational Stability, and Vibrational Assignment of 3- aminopropionitrile** IKHLAS D. DARKHALIL, University of Missouri, Kansas City, James Durig

(1170-10P) **Direct Analysis of Cream and Plastic Materials by DART-MS Using a Temperature Rising Device and Unique Search Software** HARUO SHIMADA, Shiseido Co., LTD, Kawanishi Tokimasa, Kinoshita Kazumasa, Matsui Rakan, Nakatani Yoshimasa, Noritake Yuka, Shida Yasuo

**POSTER** Session 1180

## Pharmaceutical Spectroscopy I

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1180-01P) **Introducing Chemistry and Pharmacy Students to Analysis of Pharmaceutical Products by Raman Spectroscopy – An Interdisciplinary Project** IRENE KIMARU, St John Fisher College, Fang Zhao, Kimberly Chichester, Nicole Gombert, Parag Budukh

(1180-02P) **Analysis of Counterfeit Tadalafil Tablets Using Raman Microscopy and Multivariate Curve Resolution** KAHO KWOK, Purdue University, Lynne Taylor

(1180-03P) **Raman Analysis of Particulate Materials** EUNAH LEE, HORIBA Scientific, Andrew Whitley, David Tuschel, Jeffrey Bodycomb, Philo Morse

(1180-04P) **Preparation and *In vitro* Evaluation of Coated Chitosan Microparticles for Drug Delivery Applications** LIDIA RODRIGUEZ, The University of Toledo, Arunan Nadarajah, Nicolas Chiaia

(1180-05P) **Application of qNMR for Methanesulfonic Acid Analysis in Pharmaceutical Industry** RAID IBRAHIM, Abbott Laboratories, Ian Marsden, Mathew Pelc, Nancy Benz

(1180-06P) **Spectrophotometric Study of the Inclusion Complex Between -Cyclodextrins and Rosiglitazone Maleate and Its Analytical Application** INDERESH JAIN, Ranbaxy Laboratories Limited

(1180-07P) **Rapid Determination of Fluorodeoxyglucose (18F) and Chlorodeoxyglucose Impurity by High Performance Anion Exchange Chromatography with Pulsed Amperometric Detection (HPAC-PAD)** PAUL A. ULLUCCI, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth, Marc Plante

(1180-08P) **Three Novel Cocrystals of Oxcarbazepine with Pharmaceutically Acceptable Coformers: Preparation and Characterization** ANUPAM SAINI, Panjab University, Renu Chadha

(1180-09P) **Comparison of TOC Instruments, UV/Persulfate vs. Combustion, for Analysis of Hard to Oxidize Substances** NATHAN VALENTINE, Teledyne Tekmar, Holly Taylor, Roger Bardsley, Tom Rhorkemper, Tyler Trent

(1180-10P) **Characterization of Polymorphic Forms of lamivudine by Thermo-Analytical and Diffraction Techniques** POONAM ARORA, Panjab University, Renu Chadha

**POSTER** Session 1185

## Samples and Sampling I

Tuesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1185-01P) **Evaluation of a New Technique in Semi-Automated, Miniaturized Solid Phase Extraction** ROB FREEMAN, SGE Analytical Science, Dan DiFeo

(1185-02P) **New Polymer Designed to Enhance the Solid Phase Extraction Analytical Performance** DAVID DUBÉ, SiliCycle Inc., Delphine Desplantier-Giscard, François Béland, Geneviève Gingras, Vincent Bédard

(1185-03P) **Making Tube Sampling Easy – The Development of a New Type of 'Grab Sampler'** NICOLA WATSON, Markes International, Kurt Thaxton

(1185-04P) **Investigating the Extraction of Diesel Fuel from Water for Fuel Spill Remediation** JOHANNA M. SMEEKENS, Michigan State University, John McIlroy, Ruth Waddell Smith

(1185-05P) **Advances in Sample Preparation for Accelerated Solvent Extraction** SM RAHMAT ULLAH, Thermo Fisher Scientific, Christopher Pohl, Kannan Srinivasan

(1185-06P) **Automated GPC with Inline SPE to Improve Sample Cleanup Without Adding Time or Solvent** JESSICA NETZER, J2 Scientific, Jeff Wiseman, Jennifer Salmons, Tom Dobbs

(1185-07P) **A Combined SPE Method for Analysis of Chloroacetic Acids in Drinking Water** TOM DOBBS, J2 Scientific, Jeff Wiseman, Jennifer Salmons, Jessica Netzer

(1185-08P) **Investigating the Effect of Cooling Solid Phase Microextraction Fiber and Membrane on the Extraction Efficiency** JIANG RUIFEN, University of Waterloo, Janusz Pawliszyn

(1185-09P) **Novel Materials for Solvent Holdup in Protein Precipitation** KYLE T. HARRIS, Porex Corporation, Robert Voyksner

**POSTER** Session 1190

## Sensors II

Tuesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1190-01P) **Effects of Gaseous Analytes on Porous Silicon Surface Chemistry** RANDI E. DEURO, SUNY at Buffalo, Frank Bright, Joseph Richardson

(1190-02P) **A Simple and Inexpensive Chip Based Antimicrobial Sensor** NAVNEET DOGRA, Southern Illinois University, Punit Kohli, Ruplal Choudhary

(1190-03P) **Stationary Detection System Based on Ion Mobility Spectrometry and Other Orthogonal Detectors (GDA-S) for Supervision of Sensitive Infrastructure** ANDREAS WALTE, Airsense Analytics GmbH, Bert Ungethuem, Wolf Muenchmeyer

(1190-04P) **Highly Selective Sensing of Nitroaromatics Using Nanostructures of PAH** FRANK JI, Drexel University

(1190-05P) **Modification of Coumarin 343 for Optimized *In vivo* Monitoring of Magnesium Flux in *D. Discoideum*** HENOK YEMAM, Colorado College, Murphy Brasuel

(1190-06P) **Electrochemical Detection of Bio-Molecules with o-quinone Capped Molecular Wires on a Polycrystalline Gold Electrode** JOSHUA YOUNG, University of Toledo, Brian Muntean, Jhindan Mukherjee, Jon Kirchhoff, Viranga Tillekeratne

(1190-07P) **CCD-Type Ion Sensitive Image Sensor for Rapid Monitoring Biological Cells and Tissues** TOSHIAKI HATTORI, Toyohashi University of Technology, Kazuaki Sawada, Koichi Okumura

(1190-08P) **Analyses of Biomolecular Interactions by Waveguide-Mode Sensors** GOPINATH SUBASH, AIST, Koichi Awazu, Makoto Fujimaki

(1190-09P) **Development of DNA Machine and Silver Nanoparticle-Based Amplification Method for the Detection of Membrane Protein** SIOU-HAN YANG, National Tsing Hua University, Hsing-Cheng Chou, I-Hsiang Hsu, Yuh-Chang Sun

(1190-10P) **Side Illuminated Optical Fiber Sensor Array for Relative Humidity** CLAUDIO O. EGALON, Science & Sensors Technologies

(1190-11P) **Flexible Nanostructured Conducting Poly(amic) Acid Plasmonic Sensors** BOLING DENG, SUNY at Binghamton

(1190-12P) **Surface Engineered Liquid Crystal Droplets as Sensing Devices** TANMAY BERA, University of Central Florida, Jiyu Fang

# Tuesday Afternoon, March 13, 2012

**AWARD** Session 1200

**Pittsburgh Spectroscopy Award - WEBCASTING** - arranged by Joanne H. Smith, Edinboro University of Pennsylvania

Tuesday Afternoon, Room: 300

Joanne H. Smith, Edinboro University of Pennsylvania, Presiding

2:10 PM (1200-01) **Single Molecules as Light Sources for Super-Resolution Imaging and Probes for Single Biomolecules in Solution** W E MOERNER, Stanford University

2:45 PM (1200-02) **Single Molecules and Metal Nanoparticle Hot Spots** KATHERINE A. WILLETS, University of Texas at Austin

3:20 PM (1200-03) **Live-Cell Single-Molecule and Super-Resolution Imaging in Bacteria** JULIE S. BITEEN, University of Michigan

4:10 PM (1200-04) **Watching Single Enzymes and Fluorescent Proteins in Action in Solution Using a Microfluidic Trap** RANDALL H. GOLDSMITH, University of Wisconsin, W E Moerner

4:45 PM (1200-05) **Some Operational Principles for the Functional Conformation Transition in Enzymes** HAW YANG, Princeton University

**SYMPOSIA** Session 1210

## Better Diagnostic and Understanding of Diseases: New Molecules for Biological Imaging - arranged by Stephane Petoud, University of Pittsburgh

Tuesday Afternoon, Room: 207B

Stephane Petoud, University of Pittsburgh, Presiding

2:05 PM (1210-01) **Near-Infrared Emitting Lanthanide Dendrimer Complexes and Metal-Organic Frameworks for Biologic Imaging and Diagnostics** STEPHANE PETOUD, Centre de Biophysique Moleculaire, CNRS UPR 4301, Alexandra Foucault, Hyounsoo Uh, Kristy Gogick, Nathaniel Rosi, Sandrine Villette

2:40 PM (1210-02) **Miniaturized Confocal Microscopes for Point-of-Care Pathology** CHRISTOPHER H. CONTAG, Stanford University

3:15 PM (1210-03) **Molecular Nanoparticles for Biological Imaging and Photo-induced Therapy** RAOUL KOPELMAN, University of Michigan

3:50 PM (1210-04) **Metal Phthalocyanine Near-IR Dyes as Reporters for Biomedical Applications** STEVEN A. SOPER, Louisiana State University

4:25 PM (1210-05) **Nanotechnology for Protein and Nucleic Acid Detection: Applications to Prostate Cancer** COLBY S. THAXTON, Northwestern University

**SYMPOSIA** Session 1220

## Hyphenated Techniques for Peptidomics: Bridging the Gap Between Proteomics and Metabolomics by Mass Spectrometry - arranged by Lingjun Li, University of Wisconsin

Tuesday Afternoon, Room: 307D

Lingjun Li, University of Wisconsin, Presiding

2:05 PM (1220-01) **Neuropeptidomics: From Discovery to Function** JONATHAN V. SWEEDLER, University of Illinois

2:40 PM (1220-02) **Quantitative Peptidomics to Identify Novel Bioactive Peptides and Their Cellular Functions** LLOYD FRICKER, Albert Einstein College of Medicine

3:15 PM (1220-03) **Strategies for Specific and Sensitive Identification of Neuropeptides Involved in Parkinson's Disease** PER E. ANDREN, Uppsala University

3:50 PM (1220-04) **Toward Functional Discovery of Neuropeptides by MS-based Comparative Peptidomic Strategies** LINGJUN LI, University of Wisconsin

4:25 PM (1220-05) **Monitoring Metabolome Dynamics to Understand Cell Function Using LC-MS** ROBERT T. KENNEDY, University of Michigan

**SYMPOSIA** Session 1230

## Measurement Tools for Reactive Oxygen and Nitrogen Species - Understanding the Good and the Bad (ACS-ANYL) - WEBCASTING - arranged by Susan M. Lunte, University of Kansas

Tuesday Afternoon, Room: 206A

Susan M. Lunte, University of Kansas, Presiding

2:05 PM (1230-01) **Investigating Oxidative Stress at the Single Cell Level** CHRISTIAN A. AMATORE, Ecole Normale Superieure

2:40 PM (1230-02) **Nitric Oxide Microfluidic Sensor for Clinical Applications** MARK SCHOENFISCH, University of North Carolina at Chapel Hill

3:15 PM (1230-03) **Simultaneous Detection of Reactive Oxygen Species Using Capillary Electrophoresis** MARGARET DONOGHUE, University of Minnesota, David Bernlohr, Edgar Arriaga

3:50 PM (1230-04) **Improved Understanding of Nitric Oxide Bioavailability Using Novel Tools to Control and Detect Oxygen Levels** DANA SPENCE, Michigan State University

4:25 PM (1230-05) **Microchip Based Methods for Monitoring Reactive Nitrogen Species** SUSAN M. LUNTE, University of Kansas, Christopher Culbertson, Dulan Gunasekara, Emilie Mainz, Eve Metto

**SYMPOSIA** Session 1240

## Multifunctional Nanomaterials for Biosensors and Biotechnology - arranged by Antje J. Baeumner, Cornell University

Tuesday Afternoon, Room: 308C

Antje J. Baeumner, Cornell University, Presiding

2:05 PM (1240-01) **DNA-Directed Immobilization of Proteins and Cells for Applications in Microtechnology and Biosensing** CHRISTOF NIEMEYER, Technical University of Dortmund

2:40 PM (1240-02) **Self-Powering and Sensing by Integrated Nano-Devices** BOZENA KAMINSKA, Simon Fraser University

3:15 PM (1240-03) **Nanofiber-Integrated Microfluidic Biosensors for Pathogen Detection** ANTJE BAEUMNER, Cornell University

3:50 PM (1240-04) **Synthetic Nanopores as Biological Model Channels** ZUZANNA S. SIWY, University of California, Irvine

4:25 PM (1240-05) **Multifunctional Interfaces in Biosensing** ALEKSANDR L. SIMONIAN, Auburn University

**SYMPOSIA** Session 1250

**New Spectroscopic Approaches to Protein Structure - Understanding Amyloid Fibrils** - arranged by Igor K. Lednev, University at Albany - SUNY

Tuesday Afternoon, Room: 308A

Igor K. Lednev, University at Albany - SUNY, Presiding

2:05 PM (1250-01) **Looking at "Misfolding" and Aggregation of Intrinsically Disordered Proteins** VLADIMIR N. UVERSKY, University of South Florida

2:40 PM (1250-02) **Nanoscale Investigation of Fibril Surfaces** VOLKER DECKERT, Uni Jena

3:15 PM (1250-03) **Correlation of Protein Fibril Supramolecular Chirality from VCD to Fibril Morphology Using AFM and SEM Microscopic Imaging** LAURENCE A. NAFIE, Syracuse University, Dmitry Kurouski, Igor Lednev, Rina Dukor, Xuefang Lu

3:50 PM (1250-04) **Structural Insights into Functional Amyloid from Magic Angle Spinning Solid State NMR** KENDRA K. FREDERICK, Whitehead Institute for Biomedical Research

4:25 PM (1250-05) **Spontaneous Refolding of Amyloid Fibrils from One Polymorph to Another** DMITRY KUROUSKI, University at Albany - SUNY, Igor Lednev, Laurence Nafie, Lu Xuefang, Rina Dukor, Rosina Lombardi, William Lauro

**SYMPOSIA** Session 1260

**Strategies for Quantitative Proteomics** - arranged by John R. Yates, The Scripps Research Institute

Tuesday Afternoon, Room: 206C

John R. Yates, The Scripps Research Institute, Presiding

2:05 PM (1260-01) **Evolution of Method Development and Data Analysis Strategies for Targeted Peptide Quantification in Plasma** SUSAN E. ABBATIELLO, The Broad Institute of MIT and Harvard

2:40 PM (1260-02) **Survey of Mass Spectrometric Methods for Targeted Quantitation of Peptides** JULIE A. HORNER, ThermoFisher, August Specht, Reiko Kiyonami, Scott Peterman

3:15 PM (1260-03) **Label Free Quantitative Proteomic Analyses of Protein Complexes and Protein Interaction Networks** MICHAEL WASHBURN, Stowers Institute for Medical Research

3:50 PM (1260-04) **Use of Multiplex Isotope Labeling to Address Questions in Developmental Biology** JARROD A. MARTO, Harvard Medical School

4:25 PM (1260-05) **Protein Quantitation Using Stable Isotope Labeling in Mammals** JOHN R. YATES, The Scripps Research Institute, Daniel McClatchy, Jeff Savas, Tao Xu

**SYMPOSIA** Session 1270

## The State-of-the-Art Technologies from Japan: Analytical Instruments with/for Nano-chemistry Technology II (JAIMA) - arranged by Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Afternoon, Room: 207A

Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

2:05 PM (1270-01) **Single-Molecule Biophysics** TAKAYUKI NISHIZAKA, Gakushuin University

2:40 PM (1270-02) **Latest SEM for Soft Materials Surface Analysis** ATSUSHI MUTO, Hitachi High Technologies America

3:15 PM (1270-03) **1 mm Magic Angle Sample Spinning for Solid-State NMR** YUSUKE NISHIYAMA, Jeol Resonance Inc.

3:50 PM (1270-04) **Evaluation of Nano Materials Dispersion and Agglomeration** GILBERT J. VIAL, Shimadzu Scientific Inc, Haruo Shimaoka, Haruo Shimaoka

4:25 PM (1270-05) **Spectral Resolution and Its Significance for Raman Spectral Imaging** DAVID TUSCHEL, Horiba Scientific

**SYMPOSIA** Session 1275

## Ultrasensitive Measurements of Exocytosis from Unique Cell Systems - arranged by Andrew G. Ewing, Chalmers University and University of Gothenburg

Tuesday Afternoon, Room: 310B

Andrew G. Ewing, Chalmers University and University of Gothenburg, Presiding

2:05 PM (1275-01) **Amperometric Measurements of the Actions of DNA Zippers Initiating Exocytosis of Nanometer Vesicles at Artificial Cells** ANN-SOFIE CANS, Chalmers University of Technology, Fredrik Höök, Lisa Simonsson, Michael Kurczy

2:40 PM (1275-02) **Quantitative Voltammetric Measurements of Hydrogen Peroxide – A Dynamic Neuromodulator** LESLIE A. SOMBERS, North Carolina State University, Audrey Sanford, Jeremy Letchworth, Jonathan Toups, Marina Spanos

3:15 PM (1275-03) **Transient Adenosine Signaling: Evidence for Activity-Dependent Release** B JILL VENTON, University of Virginia

3:50 PM (1275-04) **Exocytosis from Single Blood Platelets** CHRISTY L. HAYNES, University of Minnesota, Secil Koseoglu, Shencheng Ge

4:25 PM (1275-05) **Development and Application of False Fluorescent Neurotransmitters for Quantitative Measurements of Exocytosis** DAVID SULZER, Columbia University

**WORKSHOP** Session 1280

## Mentoring in the Chemistry Hierarchy - arranged by Stuart J. Chalk, University of North Florida

Tuesday Afternoon, Room: 313

Stuart J. Chalk, University of North Florida, Presiding

2:05 PM (1280-01) **Coaching as a Tool for Mentors: Helping Colleagues Improve Performance** HELEN M. BOYLAN, Westminster College

2:25 PM (1280-02) **Mentoring Graduate Students** EDWARD VOIGTMAN, University of Massachusetts - Amherst

2:45 PM (1280-03) **Strategies for Mentoring within a Global Corporation** JEFF SEELEY, Procter & Gamble

3:20 PM (1280-04) **Making Science Mean Something: Mentoring in the Project SEED Program** SEAN C. PAWLOWSKI, Extrel, CMS

3:40 PM (1280-05) **Mentoring Undergraduate Researchers in Chemistry** STUART J. CHALK, University of North Florida

**ORGANIZED CONTRIBUTED SESSION** Session 1290

## Explosive Sensing: From Homeland Security to Military Applications - arranged by Shelley Minteer, University of Utah

Tuesday Afternoon, Room: 206B

Shelley Minteer, University of Utah, Presiding

2:00 PM (1290-01) **Fluorescent Materials for the Trace Detection of Explosives** TIMOTHY M. SWAGER, Massachusetts Institute of Technology

2:20 PM (1290-02) **Electrochemical Devices and Microchips for Detecting Explosives** JOSEPH WANG, University of California, San Diego

2:40 PM (1290-03) **Detection of Nitroaromatic Explosives Using Molecularly Imprinted Polymers Labeled with Fluorescent Dyes** RICHARD C. STRINGER, Lincoln University, Sheila Grant, Shubhra Gangopadhyay

3:00 PM (1290-04) **Detection of Organic Gunshot Residues by Surface-Enhanced Raman Scattering Spectroscopy** WEI-CHUAN SHIH, University of Houston, Ji Qi, Jorn (Chi Chung) Yu, Yuanwei Gao

3:35 PM (1290-05) **Self Powered Explosive Sensing** SHELLEY MINTEER, University of Utah

3:55 PM (1290-06) **Matrix Independent Analyte Identification and Classification** MICHAEL E. SIGMAN, University of Central Florida

4:15 PM (1290-07) **Turning on for Explosives Detection** MICHAEL KNAPP, University of Massachusetts - Amherst

4:35 PM (1290-08) **Optoelectronic Gas Sensing with Organic Nanowires** LING ZANG, University of

Utah

**ORGANIZED CONTRIBUTED SESSION** Session 1300

## Fast Separations (ACS-ANYL) - arranged by Carmen T. Santasania, Sigma-Aldrich

Tuesday Afternoon, Room: 308B

Carmen T. Santasania, Sigma-Aldrich, Presiding

2:00 PM (1300-01) **New Hydrophobic Coatings on Carbon Spheres for Use in High Temperature and Extreme pH Reversed Phase HPLC** LANDON A. WIEST, Brigham Young University, Andrew Dadson, Chuan-Hsi Hung, David Jensen, James Christensen, Loryn Killpack, Matthew Linford, Michael Vail, Pavel Nesterenko, Robert Davis

2:20 PM (1300-02) **Pillar Array Columns with Low Dispersion Turns for Pressure-Driven Reversed-Phase Liquid Chromatography** MAKOTO TSUNODA, University of Tokyo, Aoyama Chiaki, Jun Mizuno, Shuichi Shoji, Takashi Funatsu

2:40 PM (1300-03) **The Critical Role of Column and Instrument Design in Development of Ultra-Fast LC-UV Methods** RICHARD A. HENRY, Supelco/Sigma-Aldrich, Carmen Santasania, David Bell

3:00 PM (1300-04) **Enabling Faster Separations and Smaller Sample Volumes with Microflow-UHPLC/MS/MS** KHALED S. MRIZIQ, Eksigent, Part of AB SCIEX, Dave Neyer, Remco van Soest, Steve Hobbs, Tina Settineri

**ORGANIZED CONTRIBUTED SESSION** Session 1310

## High Throughput Analysis for Food Safety - arranged by Perry G. Wang, US FDA

Tuesday Afternoon, Room: 311A

Perry G. Wang, US FDA, Presiding

2:00 PM (1310-01) **The Use of UHPLC and Fused Core HPLC Columns to Decrease Analysis Time of Dietary Supplements and Botanical Ingredients** MARK C. ROMAN, Tampa Bay Analytical Research

2:20 PM (1310-02) **Establishing a Model for High Throughput Screening and Quantifying Unknown Additives in Foodstuffs** CHU XIAOGANG, Chinese Academy of Inspection and Quarantine, Feng Feng

2:40 PM (1310-03) **Using Resolution to Transform High-Throughput Methods into High-Throughput Processes for Food Safety Analysis** KEVIN SIEK, Leco Corporation, Cory Fix, David Alonso, Doug Staples, Elizabeth Humston-Fulmer, Jeffrey Patrick, Joe Binkley, John Heim, Li Zhang

3:35 PM (1310-05) **High Throughput Sample Analysis by Using a High Resolution Bench Top Orbitrap System** JAMES S. CHANG, Thermo Fisher Scientific

3:55 PM (1310-06) **High Resolution LC-MS of Ovatoxins: A Strategy to Face an Emerging Threat**

**to Seafood Consumers in the Mediterranean Area** CARMELA DELL'AVERSANO, University of Naples Federico II, Emma Dello Iacovo, Ernesto Fattorusso, Luciana Tartaglione, Martino Forino, Patrizia Ciminiello

4:15 PM (1310-07) **Techniques for Rapid Screening of Veterinary Drug Residues in Foods** FIFEL TOLDRA, Institute Agroquimica Y Tecnologia de Alimentos, Milagro Reog

4:35 PM (1310-08) **High Throughput Multi-Component and Multi-Class Quantitation of Food Residues Using LC-MS/MS** ANDRE SCHREIBER, AB SCIEX, Rolf Kern

**ORGANIZED CONTRIBUTED SESSION** Session 1320

## Novel Methods in Trace Analysis Using Ion Chromatography - arranged by Greg Dicinoski, ACROSS, University of Tasmania

Tuesday Afternoon, Room: 308D

Greg Dicinoski, ACROSS, University of Tasmania, Presiding

2:00 PM (1320-01) **Quality Assurance Requirements for EPA Method Development** HERBERT WAGNER, Shaw Environmental

2:20 PM (1320-02) **Application of Two-Dimensional Matrix Elimination Ion Chromatography for Trace Analysis** RONG LIN, Thermo Fisher Scientific, Christopher Pohl

2:40 PM (1320-03) **New Methods in Trace Analysis Incorporating Valve Switching and Trap Columns** KANNAN SRINIVASAN, Thermo Fisher Scientific, Christopher Pohl

3:00 PM (1320-04) **Role of UltraPure Water in Ionic Trace Analysis** JIM KEARY, ELGA LabWater, Alan Mortimer, Paul Whitehead

3:35 PM (1320-05) **Multidimensional Methods for the Analysis of Bromate** GREG DICINOSKI, University of Tasmania, Paul Haddad, Philip Zakaria, Robert Shellie

3:55 PM (1320-06) **Comprehensive Multidimensional Liquid Chromatography (ICxRPLC)** ROBERT SHELLIE, University of Tasmania

4:15 PM (1320-07) **Gradient Elution Ion Chromatography of Flowback Water from Marcellus Shale Gas Wells** DAVID SCHWAB, Kroff Lab Services, Inc., Marla Kruth

4:35 PM (1320-08) **Trace Ion Analysis in the Pressurized Water Reactor Secondary Cycle by Suppressed Ion Chromatography** RICHARD WALLWORK, Pacific Gas & Electric, Peter Bodsky

**ORGANIZED CONTRIBUTED SESSION** Session 1330

## Specialty Gas - arranged by Jorge Perez, CIC Photonics

Tuesday Afternoon, Room: 307B

Jorge Perez, CIC Photonics, Presiding

2:00 PM (1330-01) **Monitoring ppb Level H2 Gas in Nuclear Containment Vessels Using a GC – RCP (Reducing Compound Photometer)** ALEXANDER LOWE, Peak Laboratories, Steve Hartman

2:20 PM (1330-02) **Sulfur Measurements in Different Synthesis Gas Streams** BARBARA ACHENBACH, Air Liquide

2:40 PM (1330-03) **Towards a Consensus Method for Analyzing Zero Gas** ANNARITA M. BALDAN, VSL, Rob Wessel

3:00 PM (1330-04) **Detection of Trace Impurities in Hydrogen Selenide** DAN CHASE, Matheson, Mark Raynor

3:35 PM (1330-05) **Certification of Green House Gases in Atmospheric Gas Standard Reference Materials** GEORGE RHODERICK, National Institute of Standards and Technology, Franklin Guenther

3:55 PM (1330-06) **Frequency Comb Spectroscopy in the Mid-Infrared for Gas Analysis** FLORIAN ADLER, University of Colorado, Aleksandra Foltynowicz, Jun Ye, Kevin Cossel, Piotr Maslowski, Ticijana Ban

4:15 PM (1330-07) **FTIR Line Broadening Effects on CO, CO2 and CH4 in N2 Versus Other Matrix Gases** BARBARA MARSHIK, MKS Instruments, Charles Eckman, Lyn Gaemson, Mark Phillips, William Thorn

**ORAL** Session 1340

## Advances in Fuels and Petrochemicals Analysis II - arranged by Eugene Barry, University of Massachusetts Lowell

Tuesday Afternoon, Room: 307A

Eugene Barry, University of Massachusetts Lowell, Presiding

2:00 PM (1340-01) **Evaluation of Carbonic Acid Hydrolysis for Algal Biomass Fermentation and the Production of Ethanol** PAUL K. NAM, Missouri University of Science & Technology, Keesoo Lee, Nicholas Dudenhoeffer

2:20 PM (1340-02) **Application of GC-IRD and Analytical Pyrolysis to the Characterization of Source Materials for Biofuels** TERRY L. RAMUS, Diablo Analytical, Inc., Scott Hein

2:40 PM (1340-03) **Sampling and Analysis of Biomass Pyrolysis Effluent by Gas Chromatography** BRICE VAN DER VOLGEN, Wasson-ECE Instrumentation, David Cuthbert

3:00 PM (1340-04) **Analysis of Trace Alkyl Phosphates in Petroleum Samples by GCxGC-NPD** JAMES J. HARYNUK, University of Alberta, Katie Nizio

3:35 PM (1340-05) **Detection and Quantification of Tert-Butyl Mercaptan (TBM) Odorant in a Natural Gas Matrix Using a Transportable Micro Gas Chromatography System with a Thermal Conductivity Detector** DEBBIE HUTT, INFICON, Inc.

3:55 PM (1340-06) **Rapid Process and Materials Characterization with a Two-Stage High Pressure Pyrolysis System with Analysis by GC-MS** TERRY L. RAMUS, Diablo Analytical, Inc., Chu Watanabe, Dave Randle, K Ito, Robert Freeman, Tetsuro Yuzawa

4:15 PM (1340-07) **Chromatographic Behavior of a New Generation of Activated Alumina Adsorbents for the Analysis of Hydrocarbons and Halogenated Compounds** JAAP DE ZEEUW, Restek Corporation, Bill Bromps, Mark Badger, Rick Morehead, Tom Vezza

4:35 PM (1340-08) **Sampling and Analysis of High Purity Silane by Gas Chromatography** DAVID J. CUTHBERT, Wasson-ECE Instrumentation, John Wasson

**ORAL** Session 1350

## Analysis of Neurochemical Systems I - arranged by Lara P. Autry, US Environmental Protection Agency

Tuesday Afternoon, Room: 311B

Lara P. Autry, US Environmental Protection Agency, Presiding

2:00 PM (1350-01) ***In vitro* Glycolipid Analysis by Capillary Electrophoresis: A Kinetic Study** RICHARD B. KEITHLEY, University of Notre Dame, David Essaka, Monica Palcic, Norman Dovichi, Ole Hindsgaul, Ronald Schnaar

2:20 PM (1350-02) **Separation and Selective Detection of Tryptophan-Related Metabolites in Neuronal Systems Using CE-LINF** CHRISTOPHER A. DAILEY, University of Illinois, Jonathan Sweedler, Stanislav Rubakhin

2:40 PM (1350-03) **Real-Time Detection of Glucose *In vivo* Using Fast Scan Cyclic Voltammetry and Novel Glucose Oxidase-Chitosan Modified Carbon Fiber Microelectrodes** LEYDA Z. LUGO-MORALES, North Carolina State University, Amanda Corder, Leslie Sombers, Lingjiao Qi, Phillip Loziuk

3:00 PM (1350-04) **Neurochemical Analysis of Spreading Depolarizations in the Rat Brain Using Rapid Sampling Microdialysis and Online Microfluidic Sensors** MICHELLE ROGERS, Imperial College London, Andrew de Mello, Chi Leng Leong, Delphine Feuerstein, Martyn Boutelle, Masatoshi Takagaki, Rudolf Graf, Xize Niu

3:35 PM (1350-05) **Characterization of Poly(3,4-ethylenedioxythiophene) as a Novel Optically-Transparent Electrode Material for Sensitive Detection of Neurotransmitters** RICHARD F. VREELAND, University of Arizona, Michael Heien, Rafael Taboryski, Simon Larsen

3:55 PM (1350-06) **Electrochemical Detection Approach for Acetylcholine Using Enzyme Functionalized Nanoparticles** JACQUELINE KEIGHRON, Chalmers University of Technology, Ann-Sofie Cans, Michael Kurczy

4:15 PM (1350-07) **Detection of the Domain Dependent Effect of DAT Inhibition in the Rat Dorsal Striatum Using Fast Scan Cyclic Voltammetry** IAN M. TAYLOR, University of Pittsburgh, Adrian Michael

**ORAL** Session 1360

## Bioanalytical Capillary Separations - arranged by Parastoo Hashemi, Wayne State University

Tuesday Afternoon, Room: 307C

Parastoo Hashemi, Wayne State University, Presiding

2:00 PM (1360-01) **Development of a Micro-Western Blotting Method for Analysis of Protein Mixtures** GWENDOLYN J. ANDERSON, University of Michigan, Robert Kennedy

2:20 PM (1360-02) **A Sequential Bilayer/Diblock Polymer Coating for Tunable Electroosmotic Flow in Capillary Zone Electrophoresis and Capillary Isoelectric Focusing** MAHMOUD BAHNASY, University of Alberta, Charles Lucy

2:40 PM (1360-03) **Probing the Multi-Pathway Metabolism of Glycosphingolipids in Single Cells Using Capillary Electrophoresis with Two-Color Fluorescence Detection** DAVID C. ESSAKA, University of Notre Dame, Monica Palcic, Norman Dovichi, Ole Hindsgaul, Richard Keithley

3:00 PM (1360-04) **Chiral CE-MS of DOPA and Its Derivatives In Neural Samples** YIMING LIU, Jackson State University, Baiqing Yuan, Hao Wu

3:35 PM (1360-05) **Microscale Enzymatic Sequencing of Complex Carbohydrates Using Capillary Electrophoresis** LISA A. HOLLAND, West Virginia University, Brandon Durney, Stephanie Archer-Hartmann

3:55 PM (1360-06) **Chemical Measurements to Guide Biomimetic Retinal Prosthesis Development** GEOVANNIE OJEDA-TORRES, University of Illinois, Laxman Saggere, Scott Shippy

4:15 PM (1360-07) **Hyphenation of Capillary Isotachophoresis to a Microslot NMR Probe Designed for Separation and Analysis of Mass-Limited Samples** CHRISTOPHER J. JONES, University of California, Riverside, Cynthia Larive

4:35 PM (1360-08) **Capturing Affinity-Tagged Cells Using Capillary-Channeled Polymer (C-CP) Fiber Devices** NATASHA KHAN, Clemson University, Kenneth Christensen, R Kenneth Marcus

**ORAL** Session 1370

## Electrochemistry for Biological Applications - arranged by Mark T. Stauffer, University of Pittsburgh at Greensburg

Tuesday Afternoon, Room: 311C

Mark T. Stauffer, University of Pittsburgh at Greensburg, Presiding

2:00 PM (1370-01) **Aptamer-Based Electrochemical Bioassay of Carcinoembryonic Antigen (CEA)** GUODONG LIU, North Dakota State University, Anant Gurung, Lu Wang, Meenu Baloda, Yuqing He

2:20 PM (1370-02) **Electrochemical Detection of Neuronal Disease Biomarkers *In vitro*** JENNIFER R. MCKENZIE, Florida International University, Chen-zhong Li, John Cirrito

2:40 PM (1370-03) **Simultaneous Detection of Dopamine and Adenosine from Brain Microdialysate Samples Using A Boron-Doped Diamond Electrode** JOHNNA A. BIRBECK, Wayne State University, Tiffany Mathews

3:00 PM (1370-04) **Detection of Potassium Dynamics During Spreading Depolarization in Segmented Microdialysis Streams from the Injured Brain** CHI LENG LEONG, Imperial College London, Andrew de Mello, Delphine Feuerstein, Martyn Boutelle, Michelle Rogers, Rudolf Graf, Xize Niu

3:35 PM (1370-05) **Electrochemistry of Neurotransmitters at Boron Doped Diamond Surfaces, Resistance to Fouling and Influence of the Boron Content** RAPHAEL TROUILLON, University of Gothenburg, Andrew Ewing, Danny O'Hare, Yasuaki Einaga

3:55 PM (1370-06) **Cysteine Self-Assembled Monolayers at Gold Nanoparticles, Characterization and Sensor Applications for Some Biologically Important Compounds** AHMED GALAL, Cairo University, Ekram El-Ads, Nada Atta

4:15 PM (1370-07) **Microfabricated Electrochemical Sensor Arrays for *In vivo* Measurements** GREG S. MCCARTY, North Carolina State University, Adam Dengler, R Mark Wightman

4:35 PM (1370-08) **Carbon Nanotube Microelectrodes for Sensitive Detection of Neurotransmitters** CHRISTOPHER B. JACOBS, University of Virginia, B Jill Venton

**ORAL** Session 1375

## Environmental Analysis: Novel Applications II - arranged by Jinesh Jain, URS Corporation

Tuesday Afternoon, Room: 209B

Jinesh Jain, URS Corporation, Presiding

2:00 PM (1375-01) **Determination of Pollutant Levels in Tannery Effluents from Kano Metropolis, Nigeria** OLUWATOYIN E. TAIWO, Federal Institute of Industrial Research, Olumuyiwa Tojola

2:20 PM (1375-02) **Artificial Neural Network (ANN) Applied to Quantitative Analysis of Polluted Soils by Laser Induced Breakdown Spectroscopy (LIBS)** BRUNO P. BOUSQUET, University of Bordeaux, Christopher Forgeron, Guillaume Gallou, Josette El Haddad, Karine Michel Le Pierres, Lionel Canioni, Valérie Laperche

2:40 PM (1375-03) **Electrochemical Sensing Applications of Polycrystalline Boron Doped Diamond Electrodes** LAURA A. HUTTON, University of Warwick, Julie Macpherson, Mark Newton, Patrick Unwin

3:00 PM (1375-04) **A Microfabricated Thermal Modulator for Fast Comprehensive Two-Dimensional Gas Chromatography** GUSTAVO SERRANO, University of Michigan, Edward Zellers, Katsuo Kurabayashi, Paul Dibyadeep

3:35 PM (1375-05) **Instrument Specific Interferences Associated with Cu and Zn Isotope Analysis of Sulfide-Rich Samples by MC-ICP-MS** JINESH JAIN, URS Corporation, Andrew Wall, J. Alexandra Hakala

3:55 PM (1375-06) **Miniaturized Ultra High-Mass Resolution Time-of-Flight Mass Spectrometer "infiTOF" and its Application for Environmental Analysis** SHUICHI SHIMMA, Osaka University, Michisato Toyoda, Shinichi Miki

4:15 PM (1375-07) **Ten Years of SBSE Dedicated to the Characterization and the Analysis of Environmental Matrices** DAVID BENANOU, Veolia Environment Research & Innovation, Christophe Tondelier, Dalel Benali-raclot, Emilie Cocardon, Faten Belhadj-Kaabi

4:35 PM (1375-08) **Mesoporous Silica Functionalized with Macrocyclic Compound: Synthesis, Characterization and Employment for Organotin Compound Adsorption** SANA ALAHMADI, University Malaya, Sharifah Mohamad

**ORAL** Session 1380

## Microfluidics/Lab-on-a-Chip II - Bioanalytical - arranged by Joshua E. Smith, National Research Council

Tuesday Afternoon, Room: 309A

Joshua E. Smith, National Research Council, Presiding

2:00 PM (1380-01) **Continuous and Periodic Concentration of Solutes by Flow Step Focusing** PETER B. HOWELL, Naval Research Laboratory, Andre Adams

2:20 PM (1380-02) **3D Droplet Microfluidic Systems for High-Throughput Biological Applications** DONG-KU KANG, Imperial College London, Andrew de Mello, Gong Xiuqing

2:40 PM (1380-03) **Proteomic Sample Preparation and MS Analysis Using A Droplet-Based Microfluidic Platform** RYAN T. KELLY, Pacific Northwest National Laboratory, Keqi Tang, Richard Smith, Xuefei Sun

3:00 PM (1380-04) **Ischemia/Reperfusion Study of Porcine Cardiomyocyte in a Low-Shear Microfluidic Device** GRISHMA KHANAL, Texas Tech University, Bradley Johnson, Dimitri Pappas, Ki Yong Chung, Ximena Solis-Wever

3:35 PM (1380-05) **DNA Electrophoresis in Colloidal Crystals: Opening the Black Box** SCOTT KING, University of Minnesota, Kevin Dorfman

3:55 PM (1380-06) **Negative Enrichment of Target Cells by Microfluidic Affinity Chromatography** PENG LI, Texas Tech University, Dimitri Pappas, Yan Gao

4:15 PM (1380-07) **Nanoparticles for Sample Purification and Signal Enhancement on an Optical Microring Resonator Platform** MELINDA S. MCCLELLAN, University of Illinois at Urbana-Champaign, Ryan Bailey

4:35 PM (1380-08) **Single Molecule Detection in Droplets** TUSHAR D. RANE, Johns Hopkins

University, Chris Puleo, Tza-Huei Wang

**ORAL** Session 1390

## Sensors II - arranged by Rose Ann Clark, Saint Francis University

Tuesday Afternoon, Room: 311D

Rose Ann Clark, Saint Francis University, Presiding

2:00 PM (1390-01) **Acoustic Biosensor: An Analytical Tool for the Study of DNA Hybridization at Surfaces** ELECTRA GIZELI, University of Crete and IMBB-FORTH, Achilleas Tsortos, Elena Ferapontova, Florian Bender, George Papadakis

2:20 PM (1390-02) **Molecular Beacon Micelle Flare for Intracellular mRNA Monitoring** TAO CHEN, University of Florida, Ruowen Wang, Weihong Tan, Zhi Zhu

2:40 PM (1390-03) **Metal-Mediated DNA Hairpin Formation and Stability: A Sensor for the Detection of Mercury Ions** QITAO ZHAO, University of Texas at Arlington, Xiyun Guan

3:00 PM (1390-04) **Nucleic Acid Biosensor for Toxic Compounds Detection Based on Mediated Electrochemical Oxidation of Guanine Residues** ANTON A. CIUCU, University of Bucharest

3:35 PM (1390-05) **Nerve Agents Detection Using $Cu^{2+}$-functionalized Polyaniline Ultrathin Film Chemiresistive Sensor** SIRA SRINIVES, University of California, Riverside, Ashok Mulchandani, Tapan Sarkar

3:55 PM (1390-06) **Electroanalysis of NADH and L-DOPA and Chlorpromazine Utilizing Nanomaterials Versus Conducting Polymers** SUZANNE K. LUNSFORD, Wright State University, Urmimala Chaudhuri

4:15 PM (1390-07) **Evaluation of Oxygen Analyzers in Trace and Pure Levels for Healthcare and Air Separation Units** SRIVIDHYA KIDAMBI, Air Liquide, Janet Graehling, Nathan Ferraro

4:35 PM (1390-08) **Visual Detection of Gene Mutations Based on Isothermal Strand-Displacement Polymerase Reaction and Lateral Flow Strip** YUQING HE, Guangzhou Institute of Dermatology, Anant Gurung, Guodong Liu, Kang Zeng, Meenu Baloda, Xibao Zhang

**ORAL** Session 1400

## Trace Metals - arranged by James Ranville, Colorado School of Mines

Tuesday Afternoon, Room: 209A

James Ranville, Colorado School of Mines, Presiding

2:00 PM (1400-01) **A Comparison of ICP-MS and XRF Analytical Techniques for Air Filter Analysis** FRANK X. WEBER, RTI International, Andrea McWilliams, Eric Poitras

2:20 PM (1400-02) **Investigation of Ag Distribution in Consumer-Products and Environmental Samples by Means of Inductively Coupled Plasma Mass Spectrometry** FRANZISKA BLASKE, Westfaelische Wilhems-Universitaet, Christoph Wehe, Michael Sperling, Uwe Karst

2:40 PM (1400-03) **Field Flow Fractionation Coupled to ICP-MS (FFF-ICP-MS) for the Analysis of Au and Ag Nanoparticles in Complex Media** JAMES RANVILLE, Colorado School of Mines, Aimee Poda, Anthony Bednar, Christopher Higgins, Denise Mitrano, Evan Gray

3:00 PM (1400-04) **Fast and Low Sample Consuming Quantification of Ca, Mn and Pt in Biological Matrices by Means of Flow-Injection ICP-QMS** CHRISTOPH A. WEHE, University of Muenster, Beyer Georg, Giuliano Ciarimboli, Julia Bornhorst, Martin Meier, Michael Holtkamp, Michael Sperling, Tanja Schwerdtle, Uwe Karst

3:35 PM (1400-05) **Direct Determination of Main Components in Thermoelectric Materials as Slurry Samples by High Resolution Graphite Furnace Atomic Absorption Spectrometry and Total Reflection X-Ray Fluorescence** KLAUS-GEORG REINSBERG, University of Hamburg, Christian Schumacher, Jose Broekaert, Katharina Moss

3:55 PM (1400-06) **Electrochemical Synthesis of Hydroxyapatite and Use in Elemental Bone Analysis** VALLERIE DELEON, University of North Texas, Teresa Golden

4:15 PM (1400-07) **ISO/IEC 17043:2010 - A Practical Performance Testing Program for Large-Scale Multiple-Laboratory Validation of Wear-Metals-in-Oils Laboratories on a Worldwide Basis** TIMOTHY J. ALAVOSUS, VHG Labs

4:35 PM (1400-08) **Trace Metal Analysis in Pharmaceutical Formulations** PHILIP J. SALMON, Liverpool John Moores University, Philip Riby

**POSTER** Session 1410

## Capillary Electrophoresis

Tuesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1410-01P) **Electroosmotic Control on PDMS Microchip by Polyelectrolyte Coating** JAMES D. BERGEN-HARTIGAN, Northern Michigan University, Erik Veen, Yan Liu

(1410-02P) **Automated Single-Cell Analysis by Capillary Electrophoresis** ALEXANDRA J. DICKINSON, University of North Carolina, Christopher Sims, Dechen Jiang, Nancy Allbritton

(1410-03P) **A Facile CIEF-ESI-MS/MS System for Protein Digests Analysis** GUIJIE ZHU, University of Notre Dame, Liangliang Sun, Norman Dovichi, Roza Wojcik

(1410-04P) **Squarylium Dyes As Non-Covalent Protein Labels: A Study by Capillary Electrophoresis with Laser Induced Fluorescence Detection** THERESA A. SWANSON, Wake Forest University, Christa Colyer, Hiroyuki Nakazumi, Takeshi Maeda

(1410-05P) **Optimization of Alkaline Phosphatase-Immobilized Magnetic Beads for Diagonal CE-Microreactor-CE MS** SI MOU, University of Notre Dame, Guijie Zhu, Liangliang Sun, Norman Dovichi, Roza Wojcik, Yihan Li

(1410-06P) **Improved Capillary Electrophoresis Separations with Aptamer and pH Mediated Stacking of Analyte** VINCENT T. NYAKUBAYA, West Virginia University, Letha Sooter, Lisa Holland, Stephanie Archer-Hartmann, Ted Langan

(1410-07P) **The Improved Separation of Fluorescence Labeled Glycosphingolipids by Capillary Electrophoresis** SCOTT A. SARVER, University of Notre Dame, Norman Dovichi

(1410-08P) **Fast Simultaneous Determination of Sulfamethoxazole and Trimethoprim by Capillary Zone Electrophoresis with Capacitively Coupled Contactless Conductivity ($C^4D$) Detection** IRANALDO S. SILVA, Universidade de Sao Paulo, Claudimir Lago, Denis Vidal, Lucio Angnes

(1410-09P) **The Characterization of Polycationic Biocides in Multipurpose Contact Lens Solutions Using Capillary Electrophoresis with Contactless Conductivity Detection** BRANDON L. THOMPSON, Furman University, Anne Lucas, John Wheeler, Kenneth Phillips, Sandra Wheeler

(1410-10P) **Accurate Sample Introduction Method for Capillary Electrophoresis** HULIE ZENG, Tokyo Metropolitan University, Hizuru Nakajima, Katsumi Uchiyama, Saori Ikeda

(1410-11P) **Separation of Fluorescent Labeled Phosphoinositides and Sphingolipids by Capillary Electrophoresis** KELONG WANG, University of North Carolina at Chapel Hill, Angela Proctor, Christopher Sims, Dechen Jiang, Nancy Allbritton, Shan Yang

(1410-12P) **CZE-ESI-MS/MS as an Alternative Proteomics Platform to UPLC-ESI-MS/MS for Samples of Intermediate Complexity** YIHAN LI, University of Notre Dame

**POSTER** Session 1420

## Environmental Analysis III

Tuesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1420-10P) **Determination of Zn, Cd, Pb and Cu in Rainwater of the Juiz de Fora City (Brazil) Using Potentiometric Stripping Analysis (PSA)** RENATO C. MATOS, UFJF, Denise Lowinsohn, Marcos Cerqueira, Maria Auxiliadora Matos

(1420-02P) **Radiological Study of Soils in Oil and Gas Producing Areas in Delta State, Nigeria** TCHOKOSSA PASCAL, Obafemi Awolowo University, CA Adesanmi, FA Balogun, James Bolarinwa Olomo

(1420-03P) **Determination of Selected Heavy Metals in Water Sample from River Nyando in Kenya by Atomic Absorption Spectrometry** OUMA O. ANAM, Jomo Kenyatta University

(1420-04P) **Analysis of Persistent Organic Pollutants (POPs) in Developing Countries:**

**Refinement and Confirmation of GCxGC-TOFMS Methodology** JOE BINKLEY, LECO Corporation, Jayne de Vos, Peter Gorst-Allman

(1420-05P) **The Investigation of Suspected Animal Poisonings by Q-TOF MS Using an Atmospheric Pressure Solids Analysis Probe (ASAP)** MICHAEL J. TAYLOR, Scottish Government, George Keenan

(1420-06P) **Characterization of Desert Dust Samples in the Kingdom of Saudi Arabia (KSA)** NOURI M. HASSAN, King Fahd University of Petroleum & Minerals (KFUPM), Abbas Hakeem, Abdul-Nasir Kawde, Nagmeddin Elwaer, Tahir Lawi

(1420-07P) **Concentration and Distribution of Platinum Group Elements (Pt, Pd, Rh) in Airborne Particulate Matter Collected at Selected Canadian Urban Sites: A Case Study** VALBONA CELO, Environment Canada, Ewa Dabek, Jiujiang Zhao

(1420-08P) **Polycyclic Aromatic Hydrocarbons in Puebla City, México** AMADO E. NAVARRO FRÓMETA, Technological University of Izúcar de Matamoros, Christian Villagómez Aburto, Griselda Amaro Hernández, José Marrugo Negrete, Ronnie Pérez Rosete

(1420-09P) **BTEX Measurements in Manufacturing Wooden Furniture Handmade in Sincelejo, Colombia** JOSÉ L. MARRUGO NEGRETE, Universidad de Córdoba, Amado Navarro Frómeta, John Vidal Durango

(1420-11P) **Monitoring of Organochlorine Pesticides in the Sinu River (Córdoba-Colombia) Through Gas Chromatography with Electron Capture Detector (GC/ECD)** EDINELDO LANS CEBALLOS, Universidad De Cordoba, Basilio Diaz Ponguta

(1420-12P) **Monitoring of Organochloride Pesticide Levels in Water and Sediments from the Marsh of Betanci, Colombia** EDINELDO LANS CEBALLOS, Universidad De Cordoba, Basilio Diaz, Fernando Larmat

(1420-13P) **Integrated Quality Assessment of Source and Drinking Waters in the State of São Paulo, Brazil** CASSIANA C. MONTAGNER, UNICAMP, Gisela Umbuzeiro, Igor Pescara, Wilson Jardim

(1420-14P) **Simultaneous Supercritical Fluid Extraction and Chemical Derivatization of Microbial Phospholipids Fatty Acids from Anaerobically Digested Sludge** MUHAMMAD HANIF, Toyohashi University of Technology, Hiroyuki Daimon, Jin Yoshino, Yoichi Atsuta

(1420-15P) **Degradation by Pulse Corona Discharges: Study on the Possible Chemical Degradation Pathway for Diclofenac** CYNTHIA M. TORRES-GODOY, Tennessee Technological University, Andrew Callender, Dennis George, Pedro Arce

(1420-16P) **VOC Analysis at ppq Level via P&T-GC-MS** ANDREA CARRETTA, SRA Instruments, Stefano Pergolotti

(1420-17P) **Innovative Analytical Tools to Elucidate the Missing Total Organic Halogens (TOX)** DALEL BENALI-RACLOT, Veolia Environnement Recherche et Innovation, Christophe Tondelier, Faten Belhadj-Kaabi, Lauriane Barritaud, Pascal Roche

(1420-18P) **Characterization of Microbial Community Structure in Anaerobic Digestion**

**of Palm Oil Mill Effluent** SIDIK MARSUDI, Toyohashi University of Technology, Asri Gani, Hiroyuki Daimon, Muhammad Hanif, Yoichi Atsuta

**POSTER** Session 1430

## Environmental Analysis: Organics I

Tuesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1430-01P) **Long-Term Monitoring of Trihalomethane (THM) Drinking Water Disinfection By-Products Using a Continuous Monitoring System Equipped with a Gas Chromatograph (GC) and Purge and Trap Sampling System** STEVEN D. RUSH, INFICON, Inc.

(1430-02P) **Determination of Volatile Fatty Acids (VFA's) in Wastewater Treatment Fermenters by Ion Chromatography (IC)** HOA HO-SI, EPCOR Water Services

(1430-03P) **GC-MS Analysis of Algal VOCs as Markers of Polluted Waters** AMANDA NGUY, Tennessee Tech University, Andrew Callender

(1430-04P) **Multi Desorption Methodology or the Way to Characterize VOCs Emissions From Solid Material Using a Combination of Three Thermal Desorption Techniques** ANA PEREIRA, Corning European Technology Center

(1430-05P) **High Temperature Arylene Cyanopropylphenyl Stationary Phase for Analysis of Volatile Organics** CHRIS RATTRAY, Restek Corporation, Chris English, Jason Thomas, Michelle Misselwitz, Trent Sprenkle

(1430-06P) **Purge-and-Trap GC Analysis of Water Samples Associated with Hydraulic Fracturing and Natural Gas Extraction** LAURA CHAMBERS, OI Analytical, Gary Engelhart

(1430-07P) **Selective and Sensitive Analysis of Organophosphorus Pesticides in Baby Food Using an Inexpensive GC Detector** LAURA CHAMBERS, OI Analytical, Gary Engelhart

(1430-08P) **Determination of High Molecular Weight Polycyclic Aromatic Hydrocarbons in Drinking Water Samples via Solid Phase Nanoextraction and Laser-Excited Time-Resolved Shpol'skii Spectroscopy** WALTER B. WILSON, University of Central Florida, Andres Campiglia

(1430-09P) **Determination of Monohydroxyl Metabolites of Polycyclic Aromatic Hydrocarbons and Their Parent Compounds in Urine by Solid-Phase Extraction and Capillary Zone Electrophoresis** GASTON KNOBEL, University of Central Florida, Andres Campiglia, Korina Calimag-Williams

(1430-10P) **Sensitivity and Reproducibility of Regulated Semi-Volatile Compounds in Ultra Inert MS Column** ROBERT M. CABRERA, Clinical Lab

(1430-11P) **Selectivity of PCBs at Low Level with High Precision Using GC-MS/MS Triple Quadrupole** ERIC PHILLIPS, Thermo Fisher Scientific, David Steiniger, Dwain Cardona, Jim Edwards, Paul Silcock, Trisa Robarge

(1430-12P) **Analysis of High Molecular Weight Phthalates in Sediments Using Atmospheric Pressure GC Coupled to a Time-of-Flight Mass Spectrometer** KENNETH ROSNACK, Waters Corporation, Frank David, Joseph Romano, Pat Sandra, Peter Hancock

(1430-13P) **GC Determination of Phthalate Esters in River, Rain and Snow Water** YUEGANG ZUO, University of Massachusett Dartmouth, Jinwen Guo, Yiwei Deng

(1430-14P) **Printing Polymer-Dispersed Liquid Crystals into Two-Dimensional Ordered Arrays with Soft Lithography for Gas Sensor Application** WENLANG LIANG, University of Central Florida, Jiyu Fang

**POSTER** Session 1440

## Food Science II

Tuesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1440-01P) **Analysis of Bisphenol A and Other Plasticizers Leaching from Microwaved Food Containers Using GCxGC-TOFMS** CORY S. FIX, LECO Corporation, Joe Binkley

(1440-02P) **Analysis of Phthalates in Food Matrix with Ultra Clean SPE Cartridges** ANDY ZHAI, Agilent Technologies, Joan Stevens, Ritu Arora, Yun Zou

(1440-03P) **Automated Static and Dynamic Headspace Analysis with GC-MS for Determination of Abundant and Trace Flavour Compounds in Alcoholic Beverages Containing Dry Extract** KEVIN MACNAMARA, Irish Distillers, Andreas Hoffmann, Frank McGuigan

(1440-04P) **DisQE Dispersive Sample Preparation Method** HUANG WEI, Bonna-Agela Technologies

(1440-05P) **Determination of Pesticide Residues in Herb Medicine by Modified QuEChERS Extraction Method** HUANG WEI, Bonna-Agela Technologies

(1440-06P) **Active SPME Analysis of Food Requiring Cold Storage Prior to Analysis** THOMAS X. ROBINSON, Entech Instruments, Inc., Daniel Cardin

(1440-07P) **Nitrogen/Protein Determination in Dairy Industry Products by Flash Combustion Using Large Sample Weight in Alternative to Kjeldahl Method** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(1440-08P) **Foodborne Pathogenic Bacteria Detection on Paper-Based Analytical Devices** JACLYN A. ADKINS, Colorado State University, Bledar Bisha, Charles Henry, Jana Jokerst, Lawrence Goodridge

(1440-09P) **Flavor and Fragrance Analysis of Consumer Products - Dynamic Headspace Compared to Some Traditional Analysis Approaches** ANDREAS HOFFMANN, Gerstel GmbH & Co.KG

(1440-10P) **Determination of 3-Monochloropropane-1,2-diol (3-MCPD) in Foodstuff by GC-MS/MS** EVALDO DE ARMAS, Thermo Fisher Scientific

(1440-11P) **Simultaneous Determination of Non-nutritive Sweeteners by LC-MS/MS** MING LE, Robertet Flavors Inc., Jiam Valuckas, John Scire, Rajesh Pandya, Smita Desai

(1440-12P) **Comparing Two New Types of Polymer Enrichment Phases and PDMS for Stir Bar Sorptive Extraction (SBSE) of Aroma Compounds from Beverages** YUNYUN NIE, GERSTEL GmbH & Co.KG, Eike Kleine-Benne

(1440-13P) **QuEChERS, SPE and GPC: A Comparison of Sample Preparation Techniques for Analysis of Pesticides in Problematic Matrices** JESSICA NETZER, J2 Scientific, Jeff Wiseman, Jennifer Salmons, Tom Dobbs

(1440-14P) **Determination of Total Iron In High-and Low-Fiber Breakfast Cereals by the Ferrozine Colorimetric Method and Acid Extraction: Method Assessment and Possible Correlation of Fiber Content to Iron Levels** MARK T. STAUFFER, University of Pittsburgh at Greensburg, Alexandra Cottom, Alyson Kuzmovich, Ashley Pokol, Jade Hamlette

(1440-15P) **Improving Sample Preparation of Mycotoxins Analysis in Complex Food Matrices** MICHAEL . YE, Supelco/Sigma-Aldrich, David Bell, Emily Barrey, Ken Espenschied, Olga Shimelis

(1440-16P) **Breaking Through Sample Preparation Barriers for Trace Metals Analysis in Food with SRC Microwave Digestion** MELISSA S. LIGHTNER, Milestone, Inc.

(1440-17P) **Determination of Furan in Food Samples Using Two Solid Phase Microextraction Fibers Based on Sol–Gel Technique with Gas Chromatography-Flame Ionization Detector** ALI SARAFRAZ YAZDI, Ferdowsi University of Mashhad**,**

(1440-18P) **Analysis of Triazophos Residue (Pesticide) in Citrus Sinesis Using High Performance Liquid Chromatography** JAYA RAJ, All India Institute of Medical Sciences (Aiims)

(1440-19P) **GC-MS System Equipped With Multi-Purpose Injector** RIKI KITANO, Shimadzu Corporation, Atsushi Sato, Haruhiko Miyagawa, Mark Taylor, Mitsuhiro Kurano, Richard Whitney

(1440-20P) **Site Specific Immobilization of Proteins for Electrochemical Biosensors Design** MALLIKARJUNARAO GANESANA, Clarkson University

**POSTER** Session 1450

## Fuels II

Tuesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1450-01P) **Accuracy Profiles for Method Validation: A Reliable Approach for Customers in the Case of Hydrogen Quality for Fuel Cells** JEAN LUC BLANC, Air Liquide

(1450-02P) **FT-IR and FT-NIR Analysis of Heavy Fuels and Diesel Specific Properties** SANDRINE AMAT, University Paul Cezanne, Jacky Kister, Nathalie Dupuy, Patrice Flot, Sylvain Oberti, Zeineb Braham

(1450-03P) **Wax and Oil Analysis** AVIV AMIRAV, Tel Aviv University, Alexander B Fialkov, Alexander Gordin

(1450-04P) **Fast HPLC Analysis Of Furanic Compounds In Transformer Fluids** CHRIS DONG, SempraUtilities/SDGE Lab

(1450-05P) **Ultra-High-Resolution Time-of-Flight Mass Spectrometry for Rapid, Information-Rich Characterization of Petroleum Samples** KEVIN SIEK, Leco Corporation, Cory Fix, David Alonso, Joe Binkley, Li Zhang

(1450-06P) **Characterization of Gulf Region Tar Balls Following the Deepwater Horizon Oil Spill** BARRY BURGER, Restek Corporation, Chris English, Jaap de Zeeuw, Jack Cochran, Jim Witford

(1450-07P) **Determination of Sulfur Compounds in Various Light Hydrocarbon Matrices by Sulfur Chemiluminescence Detector** KENNETH G. LYNAM, Agilent Technologies, Inc., Frans Biermans, Helena Jacobse, Laura Provoost

(1450-08P) **Comparison of GC-FID, GC-Deans Switch and HPLC for the Determination of Aldehydes and Ketones C2-C4 in Oil Derivative Liquid and Gaseous Matrices** FERNANDA VIEIRA, Braskem, Jaciara Araujo, Jailson Andrade, Juliane Lima, Marcio Reboucas, Mercia Andrade

(1450-09P) **Gasoline Range Organic Detection Using Headspace Sampling Techniques** ANNE JUREK, EST Analytical, Jeff Sheriff, Justin Murphy, Lindsey Pyron

**POSTER** Session 1460

## GC-MS Applications

Tuesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1460-01P) **Applications of TG-GC-MS Coupling in Polymer Pyrolysis Studies** ILIR BETA, NETZSCH Instruments North America, LLC

(1460-02P) **Analysis of Plastic Packaging by Headspace** ANNE JUREK, EST Analytical, Jeff Sheriff, Justin Murphy

(1460-03P) **Rapid Evaluation of Photo, Thermal, and Oxidative Degradation of EPDM Rubber by Online Ultraviolet Irradiation Py-GC/MS** NOBORU SHIRO, Frontier Laboratories, Chu Watanabe, Robert Freeman, Tetsuro Yuzawa

(1460-04P) **Measurement and Optimization of Organic Chemical Reaction Yields by GC-MS with Supersonic Molecular Beams** AVIV AMIRAV, Tel Aviv University, Alexander B Fialkov, Gordin Alexander

(1460-05P) **Theoretical GC Studies Using Nano Stationary Phase GC Columns** ALLEN J.

BRITTEN, Cape Breton University, Kelsey AuCoin

(1460-07P) **The Analysis of Bath Salts Using Solid Phase Extraction and GC/MS** LUISA PEREIRA, Thermo Fisher Scientific, Katherine Evans, Scott Adams

(1460-08P) **Determination of Aldehydes and Ketones C2-C4 in Liquid and Gaseous Matrices by Gas Chromatography/Mass Spectrometry (GC/MS)** FERNANDA VIEIRA, Braskem, Jaciara Araujo, Jailson Andrade, Juliane Lima, Marcio Reboucas, Mercia Andrade

(1460-09P) **Automated Dilutions for Volatile Environmental Samples** ANNE JUREK, EST Analytical, Doug Meece, Jeff Sheriff, Justin Murphy

(1460-10P) **Green Chemistry: The Analysis of Palladium Catalyzed Synthesis of Ethers** MERRISSA N. MALCOLM, Westminster College

**POSTER** Session 1470

## Mass Spectrometry I

Tuesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1470-01P) **Investigating the Instrumental Optimization and Sensitivity of Laserspray Ionization for Protein Analysis** CATHERINE BENTZLEY, University of the Sciences

(1470-02P) **Using Gold Nanoparticle–Modified Nitrocellulose Membranes and Surface-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry to Detect Lead Ions in Biofluids** YIN-CHUN LIU, National Taiwan Ocean University

(1470-03P) **Direct Analysis of Thin Layer Chromatography (TLC) Plates Using Laser Ablation Electrospray Ionization Mass Spectrometry (LAESI-MS)** TRUST T. RAZUNGUZWA, Protea Biosciences, Gregory Boyce, Matthew Powell

(1470-05P) **Applying the Equilibrium Partition Theory to Achieve Multiplexed Tandem Mass Spectrometry** KARI BLAIN, Western Michigan University, Andre Venter

(1470-06P) **Two-Dimensional Correlation Mass Spectrometry (2D-CMS) as a Means of Discerning Collision Induced Dissociation Mechanisms in a Quadrupole Ion Trap (QIT)** BALASUBRAMANIAM LINGAM, University of Central Florida, Jessica Frisch, Michael Sigman

(1470-07P) **Three-Dimensional, High Resolution MALDI MS Imaging Investigation of Neuropeptides in the Pond Snail, Lymnaea Stagnalis** AGNES BONA, University of Pécs, Medical School, Eva Jambor, Gabor Maasz, Mark Laszlo, Zita Laszlo, Zsolt Pirger

(1470-08P) **Development of Automatic Matrix Spraying System with an Air Brush and a Turn Table for Drug Distribution Measurement in Organs by Matrix-Assisted Laser Desorption/Ionization Imaging Mass Spectrometry** KUWAYAMA KENJI, National Research Institute of Police Science, Inoue Hiroyuki, Iwata Yuko, Kanamori Tatsuyuki, Miyaguchi Hajime, Tsujikawa Kenji

(1470-09P) **Ion Mobility: An Enabling Technology for Complex Materials Characterisation** MICHAEL J. OLEARY, Waters Corporation, Eleanor Riches

(1470-10P) **Development of N-Glycan Mass Spectral Library for Therapeutic Glycoproteins** MARIA LORNA A. DE LEOZ, National Institute of Standards and Technology/University of Maryland, Michael Tarlov, Stephen Stein

(1470-11P) **Oxygen Rearrangement in Mass Spectrometry** ANZOR MIKAIA, National Institute of Standards and Technology, Karl Irikura, Nino Todua, Stephen Stein

(1470-12P) **Positive Ion Mode Analysis of Metal Ions by ESI-MS Using Cationic Ion Pairing Reagents and Metal Chelating Agents** EDRA DODBIBA, University of Texas at Arlington, Chengdong Xu, Daniel Armstrong, Nilusha Padivitage, Zachary Breitbach

(1470-13P) **Atmospheric Pressure Visible-Wavelength MALDI-MS** ZHEN SUN, The University of Toledo, Dragan Isailovic, Eric Findsen

(1470-14P) **Double Bond Effect on Collision-Induced Dissociation of Wax Esters in Electrospray Ionization Mass Spectrometry Analysis** JIANZHONG CHEN, AFRL/Ohio State University, Kari Green, Kelly Nichols

(1470-15P) **Quantification of Kr and Xe Interferences in a High-Purity Argon ICP-MS** ANTHONY SCHLEISMAN, Air Liquide, Janet Graehling

(1470-16P) **An LC/MS Method for d8-β-arotene and d4-retinyl Esters Useful in Studies of βcarotene Absorption and Its Conversion to Vitamin A in Humans** EARL H. HARRISON, Ohio State University, Janet Novotny, Ken Riedl, Matthew Fleshman, Steven Schwartz

**POSTER** Session 1480

## Mercury Analysis

Tuesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1480-01P) **A Portable Mercury Meter for Ambient Air, Gases, and Waters** JASON P. GRAY, Nippon Instruments North America, Alvin Chua, Koji Tanida

(1480-02P) **Trace-Level Mercury Analysis in Frozen Precipitation** JASON P. GRAY, Nippon Instruments North America, Alvin Chua, Koji Tanida

(1480-03P) **Production of Fish Candidate Reference Material for Hg Speciation** RODRIGO CHELEGÃO, UFABC, Cassiana Nomura, Juliana Naozuka, Vivian Carioni

(1480-05P) **Automated Digestions to Determine Total Mercury Using Cold Vapour Atomic Fluorescence Spectrometry** WARREN T. CORNS, P S Analytical, Bin Chen, Christoph Brombach, Eva Krupp, Jasmina Allen, Joerg Feldmann

(1480-06P) **Field Comparison of Manual and Semi-Automatic Methods for the Measurement of Total Gaseous Mercury in Ambient Air and Assessment of Equivalence** RICHARD J. BROWN, National Physical Laboratory, Andrew Brown,

Matthew Dexter, Warren Corns, Yarshini Kumar

**POSTER** Session 1490

## Pharmaceutical GC and/or MS I

Tuesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1490-01P) **Comparative Analysis of Hydrazine in Pharmaceutical Compounds by Gas Chromatography Nitrogen Phosphorus and Flame Ionization Detectors** MICHAEL J. ROG, Abbott Laboratories, Yanqun Zhao

(1490-02P) **Study of Residual Solvents in Various Matrices by Static Headspace** ROGER BARDSLEY, Teledyne Tekmar, Holly Taylor, Nathan Valentine, Tammy Rellar, Tyler Trent

(1490-03P) **Improving Pharmaceutical Laboratory Throughput in the Analysis of Trace Impurities and Residual Solvents with Liquid/Headspace Unattended Switching** MASSIMO SANTORO, Thermo Fisher Scientific, Eric Phillips, Fausto Pigozzo, Silvia Gemme

(1490-04P) **High-Purity Headspace Grade N,N-Dimethylacetamide in the Analysis of Residual Solvents** SHYAM . VERMA, Supelco/Sigma-Aldrich, Jessica Hoover, Katherine Stenerson, Mark Shapiro, Melissa Grella

(1490-05P) **Extraction of Vitamin D and 25-hydroxyvitamin D with Polydimethylsiloxane Thin Films** MARCEL MUSTEATA, Albany College of Pharmacy and Health Sciences, Henry Appiah, Mazen Saeed, Paul Donabella

(1490-07P) **Identification and Quantification of Se Species in Se-enriched Yeast Using Speciated Isotope Dilution Mass Spectrometry** HEMASUDHA CHATRAGADDA, Duquesne University, HM (Skip) Kingston, Jay Gandhi, Mesay Wolle

(1490-08P) **Analysis of Ultra Trace Elements in Drug Products Using ICP-OES with Sensitivity Enhancing Accessories** MATTHEW CASSAP, Thermo Fisher Scientific, Fergus Keenan, Martin Nash

**POSTER** Session 1500

## Pharmaceutical LC, HILIC and GPC II

Tuesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1500-01P) **Commercially Available Superficially Porous Packing C18 Stationary Phases Similar Phases for Pharmaceutical Quality Applications. Are they Ready for World-Wide Application?** GREGORY K. WEBSTER, Abbott Laboratories, Jacquelyn Strang

(1500-02P) **Comparison of Retention of Commercially Available High Aqueous C18 Stationary Phases Similar Phases for Pharmaceutical Applications** GREGORY K. WEBSTER, Abbott Laboratories

(1500-03P) **Development and Verification of a Stability-Indicating Method for Atropine Sulfate in a Dry Powder Formulation for Inhalation** PRABODHA WIJETUNGE, MicroDose Therapeutx, Bharati Vyas, Craig Oakum, Eugene Reynolds, Robert Cook

(1500-04P) **A Novel Approach to the Certification of Pharmaceutical Reference Standards: Amino Acids by HPLC-Evaporative Light Scattering Detector (ELSD)** NICOLAS J. HAUSER, Sigma-Aldrich RTC Inc, Alan Nichols, Vicki Yearick

(1500-05P) **Simultaneous Determination of Aminoglycosides Using High-Performance Liquid Chromatography Equipped with ELSD** TOMOAKI SAKAMOTO, National Institute of Health Sciences, Haruhiro Okuda, Hidetoshi Watanabe, Noriko Katori

(1500-06P) **UHPLC Method Development and HPLC Method Upgrade: Importance of Selectivity and Efficiency** THOMAS J. WAEGHE, MAC MOD Analytical, Inc., Carl Zimmerman, Robert Moody

(1500-07P) **GPC-IR Hyphenated Technique to Characterize Polymeric Excipients in Pharmaceutical Formulations** MING ZHOU, Spectra Analysis Instruments, Inc., Kanna Ito, Takashi Kotsuka, William Carson

(1500-08P) **Improve the Analytical Recovery by Using Optimal Chromatographic Setup** KANGPING XIAO, Bayer HealthCare

(1500-09P) **Bacitracin/ Bacitracin Zinc Composition Test – Method Improvement** TATIANA PSUREK, US Pharmacopeial Convention, Ahalya Wise, Alan Potts, Cassandra Jones, Luba Parris

(1500-10P) **Simultaneous Determination of Main Ingredient and Its Counter-ions by RPLC×IC** YOSHIKO HIRAO, Shimadzu Corporation, Hoshi Tomoomi, Terada Hidetoshi, Yoshihiro Hayakawa

(1500-11P) **New Silica-Based SEC Columns Designed for the Separation of mAb Monomers and Their Impurities** YASUTOSHI KAWAI, Tosoh Corporation, Hiroyuki Moriyama, Hiroyuki Yamasaki

(1500-12P) **Modeling of Some Amino Acids on RPLC Using 1,3 Dialkyl Substituted Imidazolium Ionic Liquids as Mobile Phase Additives** TARAB AHMAD, Western Illinois University, Ahlam Alalwiat, Azhar Alhejji, Kishore Kumar R Aluguvelli, Tariq Z Ahmad

(1500-13P) **Interference of Hemoglobin Variants in the Measurement of Hemoglobin A1c** IBRAHIM AYDIN, Gata School of Medicine, Erdinc Cakir, Fevzi Nuri Aydin, Halil Yaman, Mehmet Agilli, Ozgur Akgul, Tuncer Cayci, Yasemin Kurt

(1500-14P) **HPLC Method with Fluorescence Detector for Determination of Serum Zolmitriptan Level** BAYRAK ZIYA, Gulhane Military Medical Academy, Ayhan Savaser, Cansel Kose Ozkan, Cetin Tas, Yalcin Ozkan

**POSTER** Session 1505

## Samples and Sampling II

Tuesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1505-01P) **A Tool for Automation of Sample Pre-Treatment Using Solvent Extraction Procedures** HANA SKLENAROVA, Charles University, Jana Skrlikova, Petr Chocholous, Petr Solich, Vasil Andruch

(1505-10P) **On-Line MOSH/MOAH Separation via LC-GC** ANDREA CARRETTA, SRA Instruments, Luca Calamai, Stefano Pergolotti

(1505-02P) **Tenax TA Films for Solid-Phase Microextraction Applications** BASSAM ALFEELI, Kuwait Institute for Scientific Research, Gary Rice, Masoud Agah, Ting Zhang

(1505-03P) **New Developments in Automated Solid Phase Extraction Methodology for Semi-Volatiles** MICHAEL EBITSON, Horizon Technology, Inc., David Gallagher

(1505-05P) **Field Detection of Sub-ppb Organophosphate Pesticides in Drinking Water by Coupling Stir Bar Sorptive Extraction and Enzymatic Testing** JEAN ULRICH MULLOT, French Navy Lab of Toulon (LASEM), Amandine Nasr, Aurelie Gollion, Caroline Garcia-Herra, David François, Marie-Françoise Cordat

(1505-06P) **Application of Sequential Injection Analysis Technique For On-Line Sample Preparation** PETR SOLICH, Charles University, Hana Sklenarova, Jana Skrlikova, Vasil Andruch, Vladimir Wsol

(1505-07P) **A New Procedure Based on a Combination of Direct and Headspace Solid-Phase Microextraction Modes for the Determination of Compounds with Different Volatilities in Environmental Samples** EDUARDO CARASEK, UFSC, Adriana Neves Dias, Edmar Martendal, Giuliana Nardini, Josias Merib, Joyce Dutra

(1505-08P) **A Comparison of Chemiluminescence and Electrochemical Methods for Determination of Total Bound Nitrogen (TNb) in Aqueous Samples** JEFFREY LANE, OI Analytical, Gary Engelhart, William Lipps

(1505-09P) **Utilization of a Matrix Effect to Enhance the Sensitivity of Residual Solvents in Static Headspace Gas Chromatography** ZHI CHEN, Novartis, Abu Rustum, Jing Yang, Wei Huang

# Wednesday Morning, March 14, 2012

**AWARD** Session 1510

**ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science: Ionic Liquids in Microextraction and Separation Methods** - arranged by Susan V. Olesik, Ohio State University

Wednesday Morning, Room: 300

Susan V. Olesik, Ohio State University, Presiding

8:10 AM (1510-01) **Exploiting the Versatility of Ionic Liquids and Polymeric Ionic Liquids in Separation Science** JARED L. ANDERSON, The University of Toledo

8:45 AM (1510-02) **Separations as Intermolecular Interaction Amplifiers** APRYLL STALCUP, University of Cincinnati

9:20 AM (1510-03) **SPME: Quo Vadis** JANUSZ PAWLISZYN, University of Waterloo

10:10 AM (1510-04) **Cyclofructans: The Newest Chiral Macrocycle** DANIEL W. ARMSTRONG, University of Texas at Arlington

10:45 AM (1510-05) **Combining Sensors with Separations for Enhanced Selectivity** JON R. KIRCHHOFF, University of Toledo, Viranga Tillekeratne

**SYMPOSIA** Session 1520

## Accurate Mass and Novel Applications of Mass Spectrometry for Unknown Environmental Analysis - arranged by Michael Thurman, University of Colorado

Wednesday Morning, Room: 206C

Michael Thurman, University of Colorado, Presiding

8:05 AM (1520-01) **Identification of Non-Target Analytes by LC-ELISA Followed by Accurate Mass Spectrometry** RUDOLF J. SCHNEIDER, BAM-Federal Institute for Materials Research

8:40 AM (1520-02) **Identification of New Emerging Contaminants in Water Samples Using LC-Q-TOF-MS** IMMA FERRER, University of Colorado, Michael Thurman

9:15 AM (1520-03) **Identification of "Known Unknowns" Using Accurate Mass Data and Large "Spectraless" Databases** JAMES L. LITTLE, Eastman Chemical Company

9:50 AM (1520-04) **Using Accurate Mass and High Resolution Mass Spectrometry for the Characterization of Athabasca Oil Sands Acids in Environmental Samples** KERRY M. PERU, Environment Canada, John Headley

10:25 AM (1520-05) **A New Environmental Analysis Tool for Unknown Analysis by Accurate Mass: GC/Q-TOF/MS/MS** MICHAEL THURMAN, University of Colorado, Imma Ferrer

**SYMPOSIA** Session 1530

## Advances in Raman Spectroscopy - arranged by Sanford A. Asher, University of Pittsburgh

Wednesday Morning, Room: 308A

Sanford A. Asher, University of Pittsburgh, Presiding

8:05 AM (1530-01) **Surface-Enhanced Femtosecond Stimulated Raman Spectroscopy** RICHARD VAN DUYNE, Northwestern University

8:40 AM (1530-02) **Raman Spectroscopy and Advanced Statistics for Biochemical Research and Analytical Purposes** IGOR K. LEDNEV, University at Albany - SUNY, Vitali Sikirzhytski

9:15 AM (1530-03) **Raman Spectroscopy - A Powerful Tool Within Biophotonics** JUERGEN POPP, Institute of Photonic Technology

9:50 AM (1530-04) **Low Energy Standoff Detection Using Combined Raman and Fluorescence Spectroscopy in the Deep UV** WILLIAM F. HUG, Photon Systems, Inc., Arthur Lane, Prashant Oswal, Quoc Nguyen, Ray Reid, Rohit Bhartia

10:25 AM (1530-05) **UV Raman Investigations of Energetic Materials: Solid and Solution Cross Sections, Photochemistry and the Understanding of the Origins of the Observed Detection Limits** SANFORD A. ASHER, University of Pittsburgh, Luling Wang, Manash Ghosh

**SYMPOSIA** Session 1540

## Analytical Chemistry in Natural Products (Analitica Latin America) - arranged by Doriane Barreto, NurnbergMesse Brasil

Wednesday Morning, Room: 206B

Doriane Barreto, NurnbergMesse Brasil, Presiding

8:05 AM (1540-01) **Analysis of Complex Natural Products Mixtures by NMR** PAULO C. VIEIRA, Universidade Federal De São Carlos

8:40 AM (1540-02) **Application of ESI-MS/MS for the Analysis of *In vivo* and *In vitro* Metabolism Studies with Natural Products** NORBERTO P. LOPES, University of São Paulo

9:15 AM (1540-03) **Volatile Compounds of Wine and Plants Using One Dimensional and Comprehensive Two-Dimensional Gas Chromatography Applied** CLAUDIA A. ZINI, UFRGS

9:50 AM (1540-04) **Strategy for (HP)TLC Analysis for Screening and Quantification of Natural Products** ALAN PASSERO, Johnson & Johnson

10:25 AM (1540-05) **Coffee Diterpenes Processed by Microwave and HPLC-MS** CLAUDIA M. REZENDE, Federal University of Rio de Janeiro, Silvia Oigman

**SYMPOSIA** Session 1550

## Carbon Nanotubes in Electrochemistry - arranged by B Jill Venton, University of Virginia

Wednesday Morning, Room: 311B

B Jill Venton, University of Virginia, Presiding

8:05 AM (1550-01) **Carbon Nanotubes-Based Bioanalytical Sensors** ASHOK MULCHANDANI, University of California, Riverside

8:40 AM (1550-02) **Carbon Nanotubes for Diagnostics and Therapeutics** ALEXANDER STAR, University of Pittsburgh

9:15 AM (1550-03) **The Importance of Electrode Design Architecture for the Use of Single Walled Carbon Nanotubes in Electrochemistry** JULIE V. MACPHERSON, University of Warwick, Aleix Guell, Michael Snowden, Neil Ebejer, Patrick Unwin, Petr Dudin, Siriwat Sansuk

9:50 AM (1550-04) **Nitrogen Doped Carbon Nanotubes for Detection of Biogenic Analytes** KEITH J. STEVENSON, University of Texas at Austin, Jaclyn Wiggins-Camacho, Jacob Goran, Jennifer Lyon

10:25 AM (1550-05) **Carbon Nanotube-Based Microelectrodes for Neurotransmitter Detection** B JILL VENTON, University of Virginia, Christopher Jacobs, Ning Xiao

**SYMPOSIA** Session 1560

**Conquering Diffusion Limit in Monitoring of Biomolecules and Bioparticles** - arranged by Radislav Potyrailo, GE Global Research

Wednesday Morning, Room: 307B

Radislav Potyrailo, GE Global Research, Presiding

8:05 AM (1560-01) **Commercial SPR Instruments - 20 Years of Advancements and Heading for the Future** STEFAN LÖFÅS, GE Healthcare

8:40 AM (1560-02) **Rapid, Attomolar Toxin Detection Enabled with Mass Transport** SHAWN P. MULVANEY, US Naval Research Laboratory, Paul Sheehan

9:15 AM (1560-03) **Nanostructures for Simultaneous Transport, Analyte Concentration and Sensing** DAVID SINTON, University of Toronto

9:50 AM (1560-04) **On the Geometry of Diffusion and the Limits of Nanobiosensing** MUHAMMAD A. ALAM, Purdue University

10:25 AM (1560-05) **Plasmonic Nanohole Arrays for Sensing with Biomolecules and Cellular Membranes** SANG-HYUN OH, University of Minnesota, Twin Cities

**SYMPOSIA** Session 1570

**Integrated Microfluidics (ACS-ANYL)** - arranged by R Scott Martin, Saint Louis University

Wednesday Morning, Room: 308B

R Scott Martin, Saint Louis University, Presiding

8:05 AM (1570-01) **Integrated Microdialysis-Microchip Electrophoresis for On-Animal Analysis** SUSAN M. LUNTE, University of Kansas, Anne Regel, David Scott, Ryan Grigsby

8:40 AM (1570-02) **Feedback Control of a Physiological System on a Microfluidic Device** MICHAEL G. ROPER, Florida State University, Raghuram Dhumpa, Tuan Truong, Zhang Xinyu

9:15 AM (1570-03) **Photonics-on-a-Chip: Enabling Detection Elements for Lab-on-a-Chip Biosensing Applications** RYAN C. BAILEY, University of Illinois at Urbana-Champaign

9:50 AM (1570-04) **High Throughput Analysis versus High Throughput Screening: Can the Microfluidic Device Compete with the Multi-well Plate?** DANA SPENCE, Michigan State University

10:25 AM (1570-05) **Integrating Valving, Electrophoresis and Electrochemical Detection for Monitoring Cellular Release** R SCOTT MARTIN, Saint Louis University

**SYMPOSIA** Session 1580

## Miniature Mass Spectrometries: Reaching for the Exponential on the Growth Cure - arranged by R Graham Cooks, Purdue University

Wednesday Morning, Room: 207A

R Graham Cooks, Purdue University, Presiding

8:05 AM (1580-01) **Miniature Mass Spectrometer Packaging for Portability and Performance** MILTON L. LEE, Brigham Young University, Anthony Rands, Anthony Rands, Charles Sadowski, Charles Sadowski, David Manning, David Manning, Douglas Later, Douglas Later, Edgar Lee, Edgar Lee, Jeffrey Jones, Jeffrey Jones, Randall Waite, Randall Waite, Stephen Lammert, Stephen Lammert

8:40 AM (1580-02) **Vacuum Pumps for Miniature Mass Spectrometers** PAUL H. SORENSEN, Creare Inc., Robert Kline-Schoder, Robert Kline-Schoder

9:15 AM (1580-03) **Mass Analyzers for Miniature Mass Spectrometers** DENNIS J. BARKET, FLIR Systems, James Wells, James Wells

9:50 AM (1580-04) **Atmospheric Pressure Interface for Miniature Mass Spectrometers** ZHENG OUYANG, Purdue University, R Graham Cooks, R Graham Cooks, Sandilya Garimella, Sandilya Garimella, Tsung-Chi Chen, Tsung-Chi Chen, Wei Xu, Wei Xu

10:25 AM (1580-05) **Ionization Methods for Miniature Mass Spectrometers** JENTAIE SHIEA, National Sun Yat-Sen University

**WORKSHOP** Session 1590

## Addressing Challenges in Dietary Supplement Analysis - arranged by Catherine A. Rimmer, National Institute of Standards and Technology

Wednesday Morning, Room: 313

Catherine A. Rimmer, National Institute of Standards and Technology, Presiding

8:05 AM (1590-01) **The ODS Analytical Methods and Reference Materials Program** JOSEPH M. BETZ, ODS/NIH

8:40 AM (1590-02) **Challenges in the Certification of Dietary Supplement Standard Reference Materials** MELISSA M. PHILLIPS, National Institute of Standards and Technology

9:15 AM (1590-03) **Optimization of Chromatographic Selectivity for the Analysis of Dietary Supplements** MARK C. ROMAN, Tampa Bay Analytical Research

10:05 AM (1590-04) **Liquid Chromatography-Particle Beam Electron Ionization Mass Spectrometry Profiling of Botanical Products** R KENNETH MARCUS, Clemson University, Carolyn Quarles

10:40 AM (1590-05) **Fatty Acid Methods and Measurements** MICHELE SCHANTZ, National Institute of Standards and Technology, Katherine Sharpless, Lane Sander, Stephen Wise

**ORGANIZED CONTRIBUTED SESSION** Session 1600

## Ionophore-based Chemical Sensors I - arranged by Philippe Buhlmann, University of Minnesota

Wednesday Morning, Room: 311A

Philippe Buhlmann, University of Minnesota, Presiding

8:00 AM (1600-01) **Ion Detection in Confined Samples with Chemical Amplification and Visualization** ERIC BAKKER, University of Geneva, Alexey Shvarev, Bastien Néel, Ewa Grygolowicz-Pawlak, Gaston Crespo

8:20 AM (1600-02) **Chemically Modified Nanopores for Selective Sensing** RÓBERT E. GYURCSÁNYI, Budapest University of Technology and Economics, Gyula Jágerszki, Péter Fürjes

8:40 AM (1600-03) **Design of a Calibration Buffer for the Analysis of Iron (III) in Seawater Using the Iron Chalcogenide Glass Ion-Selective Electrode (ISE): A Surface Study of the ISE's Modified Surface Layer** ROLAND DE MARCO, University of the Sunshine Coast, Mark Maric

9:00 AM (1600-04) **Water Uptake of Polymeric Ion-Selective Membranes and Solid-Contact Materials Studied by the Oven Based Coulometric Karl Fischer and the FTIR-ATR Technique** TOM LINDFORS, Abo Akademi University, He Ning, Róbert Gyurcsányi

9:35 AM (1600-05) **Electrochemical Quantification of 2,6-Diisopropylphenol (Propofol)** ERNO LINDNER, The University of Memphis, Felynncia Rainey, Fernando Garay, Francine Kivlehan, Jidong Guo

9:55 AM (1600-06) **Teflon AF 2400 – A Tunable Platform for Selective Transport and Extraction** HONG ZHANG, University of Pittsburgh, Candace McGowan, Dujuan Lu, Sijia Wang, Stephen Weber

10:15 AM (1600-07) **Advantages and Limitations of a Reference Electrodes Based on an Ionic Liquid** PHILIPPE BUHLMANN, University of Minnesota, Andreas Stein, Chun-Ze Lai, Melissa Fierke, Tiantian Zhang

10:35 AM (1600-08) **Application of Anion-Selective Ionophores in Various Polymer Matrices** ELZBIETA MALINOWSKA, Warsaw University of Technology, Mariusz Pietrzak

**ORGANIZED CONTRIBUTED SESSION** Session 1610

**It's Not Your Grandmother's Quant Course Anymore: New Tactics for a New Age (ACS-ANYL)** - arranged by Michelle M. Bushey, Trinity University

Wednesday Morning, Room: 206A

Michelle M. Bushey, Trinity University, Presiding

8:00 AM (1610-01) **The View from Grandpa's Quant Lab** LAWRENCE W. POTTS, Gustavus Adolphus College

8:20 AM (1610-02) **Analytical Chemistry 2.0 - An Open-Access Digital Textbook for Quantitative Analysis** DAVID HARVEY, DePauw University

8:40 AM (1610-03) **A Web Enabled Lab Manual and Other Digital Tools for Your Quant Course** CHRISTOPHER R. HARRISON, San Diego State University

9:00 AM (1610-04) **Assessment of Online Video Tutorials in an Undergraduate Analytical Chemistry Course – A Pilot Study** YI HE, John Jay College/CUNY, Nathan Lents, Nathan Lents, Sandra Swenson, Sandra Swenson

9:35 AM (1610-05) **Save the Salmon and More: A New Case Study to Introduce Elements of Chemical Equilibrium and Water Analyses** ANNA G. CAVINATO, Eastern Oregon University, Steven Petrovic, Steven Petrovic, William Otto, William Otto

9:55 AM (1610-06) **Using Forensic Analysis and Expert Witness Testimony to Teach Method Development** KIMBERLEY A. FREDERICK, Skidmore College

10:15 AM (1610-07) **Analytical Chemistry at Seattle University: Academic Service-Learning, Interdisciplinary Collaborations, and Analysis of Environmental Contaminants** DOUGLAS E. LATCH, Seattle University, Lindsay Whitlow, Lindsay Whitlow, Peter Alaimo, Peter Alaimo

10:35 AM (1610-08) **New Tools, New Partners, New Opportunities: Integrating a Portable XRF into the Analytical Curriculum and Integrating Analytical Chemistry Across and Off Campus** MICHELLE M. BUSHEY, Trinity University, Benjamin Supless, Benjamin Supless, Jessica Powers, Jessica Powers, Kate Ritson, Kate Ritson, Madeline Corona, Madeline Corona, Nicolle Hirschfeld, Nicolle Hirschfeld, Pamela Rosser, Pamela Rosser

**ORGANIZED CONTRIBUTED SESSION** Session 1620

**Recent Advances in Capillary Scale Ion Chromatography** - arranged by Kannan Srinivaan, Thermo Fisher Scientific

Wednesday Morning, Room: 308D

Kannan Srinivaan, Thermo Fisher Scientific, Presiding

8:00 AM (1620-01) **Two Dimensional Analysis with Capillary Ion Chromatography for Drinking Water Applications** HERBERT WAGNER, Shaw Environmental

8:20 AM (1620-02) **Application of 2D and 3D Capillary Ion Chromatography for Trace Analysis** GREG DICINOSKI, University of Tasmania, Paul Haddad, Philip Zakaria

8:40 AM (1620-03) **Trials and Tribulations in Open Tubular Ion Chromatography** PURNENDU K. DASGUPTA, University of Texas at Arlington

9:00 AM (1620-04) **New Chromatographic Materials Suitable for Use in Capillary Scale Ion Chromatography** CHRISTOPHER A. POHL, Thermo Fisher Scientific

9:35 AM (1620-05) **Computer-Assisted Method Development in Capillary Ion Chromatography** GREG DICINOSKI, University of Tasmania, Boon Ng, Christopher Pohl, Paul Haddad, Robert Shellie, Yan Liu

9:55 AM (1620-06) **Capillary Ion Chromatography for Improved Determination of Ionic Analytes at Trace Levels** YAN LIU, Thermo Fisher Scientific, Christopher Pohl, Victor Barreto

10:15 AM (1620-07) **Application of Capillary Ion Chromatography in Analysis of Nuclear Reactor Water Samples** RICHARD WALLWORK, Pacific Gas & Electric, Peter Bodsky

10:35 AM (1620-08) **Capillary Analysis of Carbohydrates and Organic Acids: Transition from the Analytical Scale to the Capillary Scale of Operation** KORKI M. MILLER, CP Kelco

**ORGANIZED CONTRIBUTED SESSION** Session 1630

## UHPLC Beyond Reversed Phase and Small Molecules - arranged by Jason A. Anspach, Phenomenex

Wednesday Morning, Room: 308C

Jason A. Anspach, Phenomenex, Presiding

8:00 AM (1630-01) **A Sensitive HPLC Method for Insulin and Insulin-Related Compounds in Insulin Inhalation Powder Using Fused-Core Particle Technology** ELIZABETH HARRIS, Mannkind Corporation

8:20 AM (1630-02) **Using Core-Shell Technology for the Enhanced Analysis of Proteins and Protein Digests** JASON A. ANSPACH, Phenomenex Inc., Jeff Layne, Lawrence Loo, Tivadar Farkas

8:40 AM (1630-03) **UHPLC for Monoclonal Antibodies (Mabs) – Much, Much, More than Reversed Phase** DELL FARNAN, Genentech

9:00 AM (1630-04) **The Development of SFC Stationary Phases for UPSFC Instruments** JACOB FAIRCHILD, Waters Corporation

**ORAL** Session 1640

## Bioanalytical Nanoscience - arranged by Mike Lee, Milestone Development Services

Wednesday Morning, Room: 307A

Mike Lee, Milestone Development Services, Presiding

8:00 AM (1640-01) **Low Nanomolar Detection Limits at Nanoensemble Microelectrodes Coated with Nanoporous 1-3 nm Thick Overoxidized Polypyrrole Membranes** ANNA BRAJTER-TOTH, University of Florida, Abraham Boateng, Florian Irague

8:20 AM (1640-02) **Study of the Chromatographic Performance Differences between Basal Plane, Edge Plane, and Amorphous Carbon Through LSER Evaluation of CEC Experiments** CHERIE N. OWENS, The Ohio State University, Susan Olesik

8:40 AM (1640-03) **Rheological Characterization and Application of Phospholipid Preparations for Non-Mechanical Flow Control in Microfluidic Systems** XINGWEI WU, West Virginia University, Lisa Holland

9:00 AM (1640-04) **Rational Design and Assembly of Engineered Nano-Materials for Sensing and Energy Related Applications** SIMONA HUNYADI MURPH, Savannah River National Laboratory

9:35 AM (1640-05) **Flow Field Flow Fractionation as a Complimentary Tool for Identifying Core Proteins in Nanomaterial-Protein Complexes** JONATHAN ASHBY, University of California, Riverside, Wenwan Zhong

9:55 AM (1640-06) **Rationally Designed SERS Active Silica Coated Silver Nanoparticles as Versatile Reagents for Quantitative Bioanalysis** LOUISE ROCKS, University of Strathclyde, Duncan Graham, Karen Faulds

10:15 AM (1640-07) **Gold Nanoparticle Coupled with Dynamic Light Scattering as a Powerful Tool for Chemical and Biological Detection and Analysis** QUN HUO, University of Central Florida

10:35 AM (1640-08) **Ceria Nanoparticles as Novel Colorimetric Probes in Bioanalysis** ERICA SHARPE, Clarkson University, Maryna Ornatska, Silvana Andreescu

**ORAL** Session 1650

## Bioanalytical Separations I - arranged by Allen Sharkins, The Pittsburgh Conference

Wednesday Morning, Room: 307C

Allen Sharkins, The Pittsburgh Conference, Presiding

8:00 AM (1650-01) **Antibody Solution Kit for Separation and Characterization of Monoclonal Antibodies** HAIYING CHEN, Sepax, Helen Gu, Xueying Huang

8:20 AM (1650-02) **Fast Screening Technique for Evaluation of Metabolites in Pooled Plasma Samples from Physically Trained and Untrained Mice by GCxGC-TOFMS** JOHN

HEIM, LECO Corporation, Jeffrey Patrick, Joe Binkley

8:40 AM (1650-03) **Capillary-Channeled Polymer (C-CP) Films as Platforms for Protein Separations Prior to Analysis by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry (MALDI-MS)** BENJAMIN T. MANARD, Clemson University, Jennifer Pittman, R Kenneth Marcus

9:00 AM (1650-04) **Analysis of Cr(III):DNA Interactions Including Potential Bond Formation and Oxidation Reactions Using LC-MS and Gel Electrophoresis Methods** JAMES H. WADE, Furman University, John Wheeler, Noel Kane-Maguire, Sandra Wheeler

9:35 AM (1650-05) **Developments and New Stationary Phases of Hydrophilic Interaction Chromatography for Protein Analysis** ZHAORUI ZHANG, Purdue University, Mary Wirth, Wu Zhen, Yimin Hua

9:55 AM (1650-06) **A Proteomic Study on the Toxicity of Arylamine Mixtures in Fisher-344 Rats** HENOK D. ABSHIRO, Southern Illinois University at Carbondale, Jay Means, Worlanyo Gato

10:15 AM (1650-07) **Reversed Phase Liquid Chromatography Coupled to Continuous Flow – Extractive Desorption Electrospray Ionization – Mass Spectrometry for the Analysis of Intact Protein Molecules** SAMUEL H. YANG, University of Texas at Arlington, Aruna Wijeratne, Elisa Rice, Kevin Schug, Li Li

10:35 AM (1650-08) **Comparison of Suspension and Fimbriae Protein Fractions of *Escherichia coli* O157:H7 by Mass Spectrometry** VICKY L H BEVILACQUA, Edgewood Chemical Biological Center, Mary Wade, Patrick McCubbin, Rabih Jabbour, Samir Deshpande

**ORAL** Session 1660

## Biomedical Innovations: Virus or Bacteria - arranged by David E. Cliffel, Vanderbilt University

Wednesday Morning, Room: 209A

David E. Cliffel, Vanderbilt University, Presiding

8:00 AM (1660-01) **The Metabolic Effects of Mycobacterial and Gram-Negative Bacterial Exposure** DANIELLE W. KIMMEL, Vanderbilt University, David Cliffel, Leslie Hiatt, Mika Meschievitz

8:20 AM (1660-02) **HS-SPME-GC/MS For Detection of TB Related VOC Patterns in Map Cultures** KLAUS KLEPIK, University of Rostock, Heike Koehler, Jochen Schubert, Petra Reinhold, Phillip Trefz, Wolfram Miekisch

8:40 AM (1660-03) **Detection and Identification of Influenza Virulence Factors by Surface Enhanced Raman Spectroscopy (SERS)** PIERRE NEGRI, University of Georgia, Richard Dluhy

9:00 AM (1660-04) **OnChip Functional Assay of the Binding of the Protective Antigen from Bacillus Anthracis to its Membrane Receptor Through the Sensing of Nitric Oxide Release** RAPHAEL TROUILLON, University of Gothenburg, Danny O'Hare,

Diane Williamson

**ORAL** Session 1670

## Clinical Applications Used for Detection and Evaluation of Disease States - arranged by HM "Skip" Kingston, Duquesne University

Wednesday Morning, Room: 310B

HM "Skip" Kingston, Duquesne University, Presiding

8:00 AM (1670-01) **Pinwheel Assay for Inexpensive and Label-Free Cell Counting of CD4+ T-lymphocytes** QIAN LIU, University of Virginia, Doris Haverstick, James Landers, Jingyi Li

8:20 AM (1670-02) **Quantitative Analysis of Reduced Glutathione and Glutathione Disulfide in Whole Blood from Nonlocal Settings Using Speciated Isotope Dilution Mass Spectrometry** TIMOTHY FAHRENHOLZ, Duquesne University, Becky Peckar, Hemasudha Chatragadda, HM (Skip) Kingston, John Kern, Matt Pamuku, Yosip Vargas

8:40 AM (1670-03) **Investigation of Correlations Between Cancer Development and Modified Nucleosides in Urine Samples of Cancer Patients by Using Capillary Electrophoresis** RUIPU MU, Missouri University of Science and Technology, Qihua Wu, Yinfa Ma

9:00 AM (1670-04) **Microfluidic Dried Blood Spot Analysis Using a Degassed Poly (Dimethylsiloxane) Pump** JOHN B. WYDALLIS, Colorado State University, Charles Henry, Meghan Mensack

9:35 AM (1670-05) **Enhanced Cytotoxicity and Mechanism Study of Zinc Oxide Nanoparticles after Illumination Exposure in A549 Human Lung Epithelial Cells** QINGBO YANG, Missouri University of Science and Technology, Yinfa Ma

9:55 AM (1670-06) **Elemental Quantification in Blood and Hair of Children with Autism and Controls Using Inductively Coupled Plasma-Mass Spectrometry** GREGORY M. ZINN, Duquesne University, GM Mizanur Rahman, HM (Skip) Kingston, John Kern, Matt Pamuku, Scott Faber

10:15 AM (1670-07) **The Measurement of Trace Elements in Clinical Matrices by ICP-OES** MATTHEW CASSAP, Thermo Fisher Scientific, Fergus Keenan, Martin Nash

10:35 AM (1670-08) **Secondhand Smoke Detection by Cation-Selective Exhaustive Injection and Sweeping Micellar Electrokinetic Chromatography** XIN XU, University of Florida, Hugh Fan, Kiri Hamaker

**ORAL** Session 1680

## Electrochemistry - arranged by Timothy Strein, Bucknell University

Wednesday Morning, Room: 311C

Timothy Strein, Bucknell University, Presiding

8:00 AM (1680-01) **A Newly Developed Parallel Dual-Electrode for On-Capillary Detection of Phenolic Acids** MEGAN DORRIS, University of Kansas, Craig Lunte

8:20 AM (1680-02) **Dual-Probe Electrodes for Scanning Ion-Conductance Microscopy** CELESTE A. MORRIS, Indiana University, Chiao-Chen Chen, Lane Baker

8:40 AM (1680-03) **Carbon Electrodes for Electrochemical Detection in Thermoplastic Microfluidic Devices** ANNE REGEL, University of Kansas, Susan Lunte

9:00 AM (1680-04) **Ring vs. Disk Microelectrodes: Increased Diffusion Lengths due to Different Electrode Geometry can Change the Shape of Exocytotic Peaks During Single Cell Release** RAPHAEL TROUILLON, University of Gothenburg, Andrew Ewing, Maria Svensson, Yuqing Lin

9:35 AM (1680-05) **Electrochemical Charge Storage Platform Based on Redox Ligand Functionalized Gold Nanoparticles** KWOK-FAN CHOW, University of North Carolina at Chapel Hill, Rajesh Sardar, Royce Murray, Stephen Feldberg

9:55 AM (1680-06) **A Microfluidic Platform for Dynamic Regulation of Oxygen Exposure to Cells and Downstream Cellular Response** JAYDA ERKAL, Michigan State University, Dana Spence, Stephen Halpin

10:15 AM (1680-07) **Aligned Carbon Nanotube-Modified Microelectrodes for Measurements of Neurotransmitters** NING XIAO, University of Virginia, B Jill Venton

10:35 AM (1680-08) **Magnetically Gated Microelectrodes** JOSEPH R. BASORE, Indiana University, Lane Baker, Nickolay Lavrik

**ORAL** Session 1690

## Energy & Fuels: Advanced Materials and Characterization Methods - arranged by John P. Baltrus, US Department of Energy - NETL

Wednesday Morning, Room: 307D

John P. Baltrus, US Department of Energy - NETL, Presiding

8:00 AM (1690-01) **High-Performance Electrochemical Capacitors Enabled by Metal-Oxide-Decorated Carbon Nanoarchitectures** MEGAN B. SASSIN, U.S. Naval Research Laboratory, Azzam Mansour, Bradley Willis, Debra Rolison, Jean Marie Wallace, Jeffrey Long, Katherine Pettigrew, Steven Greenbaum

8:20 AM (1690-02) **Thermal Analysis and Thermophysical Properties Measurement of Photovoltaic Materials** ROB CAMPBELL, NETZSCH Instruments N.A. LLC, Bob Fidler, Ekkehard Post

8:40 AM (1690-03) **Vibrational Spectroscopy Studies of Ionomer Membrane Materials** CAROL KORZENIEWSKI, Texas Tech University, Kalyn Acker, Liu Shu

9:00 AM (1690-04) **Development of Methanol Sensor Using Shear Horizontal Surface Acoustic Wave Device for Direct Methanol Fuel Cells** JUN KONDOH, Shizuoka University,

Hiromi Yatsuda, Katsuhiko Sato, Koji Kano, Naomi Sawada, Saburo Endo, Toshimasa Mori

9:35 AM (1690-05) **Multi-Species Detection in Fuel Cell Grade Hydrogen Using Continuous Wave Cavity Ring-Down Spectroscopy** KIMBERLY J. REYNOLDS, Tiger Optics, Erika Coyne, Yu Chen

9:55 AM (1690-06) **Energy Efficiency of Ni-MH Battery for Rapid Storage Application** WENHUA H. ZHU, Auburn University, Bruce Tatarchuk, Ying Zhu

10:15 AM (1690-07) **Performance Evaluation of Evaporative Light Scattering Detection for the Quantitation of Petroleum Products** JAY LU, Florida State University, Chang (Sam) Hsu, Winston Robbins

10:35 AM (1690-08) **Headspace Analysis of Gases Dissolved in Transformer Oil for Transformer Condition Monitoring Using Cantilever Enhanced Photoacoustic Technique** JUSSI RAITTILA, Gasera Ltd., Aleksi Helle, Branders Arto, Henrik Kronholm, Ismo Kauppinen, Juha Fonsen, Juho Uotila, Jyrki Kauppinen, Kari Roth

**ORAL** Session 1700

## Fluorescence/Luminescence in Bioanalytical and Sensor Applications - arranged by Colin D. Medley, Genentech

Wednesday Morning, Room: 309B

Colin D. Medley, Genentech, Presiding

8:00 AM (1700-01) **Bioluminescent Stem-Loop Probes for Highly Sensitive Nucleic Acid Detection** ERIC A. HUNT, University of Miami, Leticia Kovalski, Manoj Kumar, Sapna Deo

8:20 AM (1700-02) **Passivation of Conjugated Polymer Nanoparticles for Sensitive Detection of Biomarkers** PRAKASH KANDEL, Clemson University, Kenneth Christensen, Lawrence Fernando, Paige Latham

8:40 AM (1700-03) **Involving Chemiluminescence Resonance Energy Transfer in Immunoassay for Sensitive Measurements** YIMING LIU, Jackson State University, Shulin Zhao

9:00 AM (1700-04) **Optical Properties of Quantum Dots Characterized by Single Molecule Methods** JICUN REN, Shanghai Jiaotong University

9:35 AM (1700-05) **Sensing Applications for Photon Upconverting Nanoparticles** PENG ZHANG, University of Cincinnati, Manoj Kumar

9:55 AM (1700-06) **Engineering of pH Sensor Based on DNA Duplex-Triplex Transition** ZHANG XIAOLING, Beijing Institute of Technology, Weihong Tan

10:15 AM (1700-07) **Porous Silicon Gaseous Analyte Quenching** JUSTIN REYNARD, SUNY at Buffalo, Caley Caras, Frank Bright, Nadine Kraut, Randi Cattoi

10:35 AM (1700-08) **Aptamer Conjugated Nanoparticles for Cancer Cell Detection** COLIN D.

MEDLEY, Genentech, Joshua Smith, Weihong Tan

**ORAL** Session 1705

## Forensic Analysis: General - arranged by Melissa Visnikar, US Dept of Environmental Protection

Wednesday Morning, Room: 207B

Melissa Visnikar, US Dept of Environmental Protection, Presiding

8:00 AM (1705-01) **Have (XRF) Gun – Will Travel: To Museums and Historical Sites. XRF Analysis of Objects of Artistic and Archaeological Interest** MADELINE J. CORONA, Trinity University, Jessica Powers, Michelle Bushey, Pamela Rosser

8:20 AM (1705-02) **Quantitative Analysis of Illicit Drugs, Their Metabolites, and Common Adulterants in Urine Using Solid Phase Extraction-Isotope Dilution Mass Spectrometry and I-Spike via Electrospray Ionization-Time of Flight-Mass Spectrometry** REBECCA WAGNER, Duquesne University, HM (Skip) Kingston, Matt Pamuku, Stephanie Wetzel

8:40 AM (1705-03) **Reproducible Dynamic Vapor-Time Profiles Using Solid-Phase Microextracton with an Externally-Sampled Internal Standard (SPME-ESIS)** WILLIAM MACCREHAN, National Institute of Standards and Technology, Michele Schantz, Stephanie Moore

9:00 AM (1705-04) **A Novel Heterogeneous Sensor Array (Dachs) for Detection and Identification of Hazardous Compounds in Complex Mixtures** ANDREAS WALTE, Airsense Analytics GmbH, Bert Ungethuem, Gerhard Matz, Hendrik Fischer, Joern Frank, Wolf Muenchmeyer

9:35 AM (1705-05) **Microbial Degradation of Gasoline Used in Incendiary Devices: Triclosan as a Solution** DEE A. TURNER, Indiana University-Purdue University Indianapolis, John Goodpaster

9:55 AM (1705-06) **Recent Development of Electrospray Ionization High Performance Ion Mobility Spectrometry as Green Analytical Technology for Pharmaceutical Analysis** CINDY QIN, Boehringer Ingelheim, Alice Granger, Carol Moraff, Ching Wu, Clinton Krueger, Daniel Norwood

10:15 AM (1705-07) **Racemization of Amino Acids in Teeth for the Determination of Age** DARWIN B. DAHL, Western Kentucky University, Andrea Toll

10:35 AM (1705-08) **The Rapid and Facile Synthesis of Amorphous Silver Substrates for Surface Enhanced Raman Scattering (SERS)** SAMUEL B. MABBOTT, University of Manchester, Royston Goodacre

**ORAL** Session 1710

## Pharmaceutical Innovations: General - arranged by Perry G. Wang, US FDA

Wednesday Morning, Room: 209A

Perry G. Wang, US FDA, Presiding

9:35 AM (1710-01) **Localized Pharmaceutical Impurities Analysis in Drug Products with Energy Dispersive Spectroscopy** TARA NYLESE, EDAX, Lisa Chan

9:55 AM (1710-02) **Lifetime Studies of a Silica-Based Diol-Bonded Size-Exclusion Chromatography Column for Protein Separations** ATIS CHAKRABARTI, Tosoh Bioscience LLC, Roy Eksteen

10:15 AM (1710-03) **High-Throughput Palladium(Pd) Analysis Using Catalysis-Based Fluorometric Detection Method for Pharmaceutical Compounds** XIAODONG BU, Merck & Co., Inc., Christopher Welch, Evan Carder, Kazunori Koide, Tiebang Wang, Xiaoyi Gong

10:35 AM (1710-04) **Selective Electrode Construction for Oxymetazoline HCl Based on Complex (Oxymetazoline HCl - [BiI4 ] ) on a PVC** SUHAM T. AMEEN, University of Tikrit, Sheren Bahjat

**ORAL** Session 1720

## Sensors III - arranged by Gregg Gould, California University of Pennsylvania

Wednesday Morning, Room: 311D

Gregg Gould, California University of Pennsylvania, Presiding

8:00 AM (1720-01) **Development of Novel Chemically Modified Electrodes for Assessment of Neurotransmitters Involved in Neurodegenerative Diseases** ANTON A. CIUCU, University of Bucharest, Lulia David, Vasile David

8:20 AM (1720-02) **Enabling the Ultrasensitive Detection of MicroRNAs with Arrays of Silicon Photonic Microring Resonators** ABRAHAM QAVI, University of Illinois at Urbana-Champaign, Ryan Bailey

8:40 AM (1720-03) **Optical Thin Film Sensors for the Detection of Alcohol Vapors** JONATHAN FONG, University of Tennessee - Knoxville, Adam Lamb, Kisholoy Goswami, Royce Dansby-Sparks, Thomas Owen, Uma Sampathkumaran, Zi-Ling Xue

9:00 AM (1720-04) **Graphene Nanomesh-Based Gas Sensors** RAJAT K. PAUL, University of California, Riverside, Ashok Mulchandani, Badhulika Sushmee, Edward Delao

9:35 AM (1720-05) **On-Chip Fabry-Pérot Sensors for Rapid, Ultra Sensitive Organic Vapor Detection** KARTHIK REDDY, University of Michigan, Jing Liu, Maung Khaing Oo, Wonsuk Lee, Xudong Fan, Yunbo Guo

9:55 AM (1720-06) **Quantification of Proteins Using Fluorescence Emission of Fluorophore Loaded Liposomes** JULIA C. REYES, Southern Illinois University at Carbondale, Navneet Dogra, Punit Kohli

10:15 AM (1720-07) **Biowarfare Agent Detection on Silicon Photonic Microring Resonators** WINNIE W. SHIA, University of Illinois at Urbana-Champaign, George Anderson, Ji-Yeon Byeon, Ryan Bailey

10:35 AM (1720-08) **Multi-Marker Detection Using Phase Change Nanoparticles** MING SU, University of Central Florida

**POSTER** Session 1730

## Bioanalytical LC-MS II

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1730-01P) **Age-Related Proteome Analysis of Rat Brain by FD-LC-MS/MS Method** HIROMICHI ASAMOTO, Nihon University, Hiroaki Minamisawa, Kazuhiro Imai

(1730-02P) **Reduced Ion-Suppression in Bioanalysis by Liquid Chromatography Mass Spectrometry Applying Specially Treated Solid Phase Extraction** MIKE CHANG, Agilent Technologies, Paul Boguszewski

(1730-03P) **Diimine Systems of Cr(III) as Potential Phototherapeutic Agents: Oxidizing Power and Extent of Photoadduct Formation as a Function of Ligand Identity** HILLARY D. RODGERS, Furman University, John Wheeler, Morgan Sprinkle, Noel Kane-Maguire, Sandra Wheeler

(1730-04P) **Offline Two Dimensional Chromatography and Tandem Mass Spectrometry of Primary Fatty Acid Amides** ERIN B. DIVITO, Duquesne University, Michael Cascio

(1730-05P) **Preparative Separation of Amyloid-Beta Oligomers by High-Speed Countercurrent Chromatography Coupled with Electrospray Mass Spectrometry** MARI NUNOME, Kinjo Gakuin University

(1730-06P) **A Simple, Selective and Rapid Validated Method for Estimation of New Anti-Cancer Drug in Human Plasma by Liquid Chromatography - Tandem Mass Spectrometry and Its Application to Bioequivalence Study** TUSHARKUMAR V. PATEL, M.G. Science Institute, Popatbhai Patel

(1730-07P) **Developing a Selected Reaction Monitoring Analysis for MicroRNA** ALISSA SCHUNTER, University of Notre Dame, Amanda Hummon

(1730-08P) **Application of Advanced Fused-Core Particle Technologies to Proteomics** BARRY E. BOYES, Advanced Materials Technology, Inc., Darryl Johnson, Joseph Kirkland, Ronald Orlando, Stephanie Schuster

(1730-09P) **Hyperhomocysteinemia and Diabetes: Monitoring the Nonenzymatic Gycation of Homocysteine and Its Advanced Glycation Endproducts** SREEKANTH SURAVAJJALA, University of Rhode Island, Joel Dain, Liu Weixi, Menashi Conhenford, Praveen Pampati

(1730-10P) **Nonenzymatic Glycation of Branched Chain Amino Acids: A Study of Advanced Glycation Endproducts** SREEKANTH SURAVAJJALA, University of Rhode Island, Joel Dain, Menashi Cohenford, Praveen Pampati, Weixi Liu

(1730-11P) **Simultaneous Quantitation of Bisphosphonate Pharmaceuticals and**

**Excipients by Capillary Ion Chromatography Mass Spectrometry** JINYUAN WANG, Thermo Fisher Scientific, William Schnute

(1730-12P) **A Simple Method for Resolution of 22 Amino Acids in LC** KEN BUTCHART, Fortis Technologies Ltd, Mark Woodruff

(1730-13P) **Applications of Capillary Ion Chromatography Mass Spectrometry to Metabolomics Research** JINYUAN WANG, Thermo Fisher Scientific, William Schnute

(1730-14P) **Analysis of Keto-Enol Tautomers of Curcumin by Hydrogen/Deuterium Exchange Liquid Chromatography/Mass Spectrometry** ICHIRO HIRANO, Shimadzu Corporation, Shinichi Kawano, Yusuke Inohana

**POSTER** Session 1740

## Electrochemistry III

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1740-01P) **Improving the Temporal Resolution of Ultra-Trace Neurochemical Analysis by HPLC with Electrochemical Detection** BRUCE A. BAILEY, Thermo Fisher Scientific, Christopher Crafts, Ian Acworth, Marc Plante, Paul Ullucci

(1740-10P) **Polypyrrole in Design of Molecularly Imprinted Polymers** VILMA RATAUTAITE, Vilnius University, Almira Ramanaviciene, Arunas Ramanavicius, Jaroslav Voronovic, Leva Baleviciute, Yasemin Oztekin

(1740-02P) **Photo-Assisted Electrochemical Detection (PAED) Following HPLC-UV for the Determination of Nitro Explosives and Degradation Products** JENNIFER FEDOROWSKI, University of Maryland, Baltimore County, Michelle Lorah, William LaCourse

(1740-03P) **Analysis of Substituted Benzoquinones: A Quantitative Cyclic Voltammetry Experiment for Instrumental Analysis Lab** GRETCHEN E. POTTS, The University of Tennessee at Chattanooga, Samantha Hughey

(1740-04P) **Nafion-Coated Electrodes for Tyramine and Octopamine Detection** VO B. PHUONG, University of Virginia

(1740-05P) **Spectroelectrochemical Analysis of a N-aryl-$^{2}$-pyrazoline Derivative** MICHAEL KUBICSKO, Metrohm USA, Lutz Grubert, Sandro Haug

(1740-06P) **Gold Linked Electrochemical Immunoassay on Single Walled Carbon Nanotube for High Sensitive Detection of Human Chorionic Gonadotropin Hormone** VIET X. NGUYEN, School of Materials Science, JAIST, Eiichi Tamiya, Kazuhiko Matsumoto, Kenzo Maehashi, Miyuki Chikae, Yoshiaki Ukita, Yuzuru Takamura

(1740-07P) **A pH Sensor Based on Deposited Film of Polymer Brushes Film on ITO Substrate** VALBER PEDROSA, UNESP, Lidiane Coffiane

(1740-08P) **Characterization of Multilayered Gold Nanoparticles Electrodes and Their Application Based on Label-Free Capacitive Immunosensor** SALUMA SAMANMAN, Prince of Songkla University, Panote Thavarungkul, Proespichaya Kanatharana

(1740-09P) **Fabrication of Polyaniline Nanorods/MWCNTs Graphite Electrode a as Bisphenol A Sensor** SUJITTRA POORAHONG, Prince of Songkla University, Chongdee Thammakhet, Panote Thavarungkul, Proespichaya Kanatharana

**POSTER** Session 1750

## Environmental Analysis IV

Wednesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1750-01P) **Testing and Phytoremediation of Lead in Soil From Older Houses in Rochester NY** IRENE KIMARU, St John Fisher College, Cara Patrick, Drew Merkel, Erin Semple, Kimberly Chichester, Maryann Herman

(1750-02P) **Preliminary Results for Metals Uptake by Plants Exposed to Abandoned Mine Drainage, Part 1: The Topper Creek Study and Other Recent Work** MARK T. STAUFFER, University of Pittsburgh at Greensburg, Michael Weymers, Zachary Willis

(1750-03P) **Routine and Rapid Sample Preparation Techniques for Elemental Speciation of Sn, Hg, Se and Cr in Environmental Matrices Using Open Focused Microwave Systems** JOAUDIMIR CASTRO GEORGI, CNRS-IPREM, Emmanuel Tessier, Fabienne Seby, Jean Dumont, Olivier Donard

(1750-04P) **Potential of GC-ICP/MS for the Speciation of Hg and Sn in Environmental Samples** JOAUDIMIR CASTRO GEORGI, CNRS-IPREM, Emmanuel Tessier, Jean Dumont, Olivier Donard

(1750-05P) **Determination of Antimony Species in Food and Hair Samples Using LC-Hydride Generation Atomic Fluorescence Spectrometry** BIN CHEN, P S Analytical, Warren Corns

(1750-06P) **Synthesis of Bimetallic AuPt Nanoparticles for Sensing Hg2+ Ions in Biological Samples Through Inhibit Their Catalytic Activity** CHAO-WEI TSENG, National Taiwan Ocean University

(1750-07P) **Approach to REACH/SVHC Analysis: Chemical Specification of Arsenic in Industrial Samples by XAFS and ICP-MS** SAYAKA MORIMOTO, Toshiba Corporation, Mitsuhiro Oki, Miyuki Takenaka

(1750-08P) **Determination of Hexavalent Chromium(VI) in Drinking Water According to a US EPA Method** JAY GANDHI, Metrohm USA, Katinka Meike Ruth

(1750-09P) **Development of On-Line HPLC-Chip-Based Photocatalytic Reduction-ICP-MS System for the Determination of Arsenic Species in Natural Water** YU CHEN, National Tsing Hua University, Cheng-Hsing Lin, Yuh-Chang Sun

(1750-11P) **Pushing the ICP-Q-MS Collision Reaction Cell To Its Limit: Optimizing Gas and Energy Conditions for Accurate Analysis of Trace Elements in the Toughest Matrices** LOTHAR ROTTMANN, Thermo Fisher Scientific, Gerhard Jung, Julian Wills, Meike Hamester, Tomoko Oki

(1750-12P) **Measurement of Trace Elements in Very Hard Water Using Ultrasonic/Enhanced Nebulization with ICP-AES Detection** FRED G. SMITH, CETAC Technologies

(1750-13P) **Investigation of Occuptional Exposure to Toxic Trace Elements Among Construction Industry Workers** ELMUKHTAR A. BELGASEM, Tripoli University, Ramadan Damka

(1750-14P) **Trace Elements Contents of Wild Medicinal Plants by Inductively Coupled Plasma Spectrometry** RAMADAN I. DAMJA, Tripoli University, Elmukhtar Belgasem

(1750-15P) **Rapid and Convenient Determination for the Multi-Elements of LiFePO4/C Composite in Li-Ion Batteries by TOC and ICP-AES** YUKI HASHI, Shimadzu (China) Co., Ltd, Jian Li, Taohong Huang, Xiaoling Ma, Youbao Sun

(1750-16P) **The Effect of Substituent on the Response of 3,4-dihydro-2-quinoxalinone Towards Binding of $Cu^{2+}$** EFRAT KORIN, Ben-Gurion University of the Negev, Beny Cohen, Cheng-Chu Zeng, James Becker

**POSTER** Session 1760

## Fluorescence and Luminescence I

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1760-01P) **Luminescence-Based Detection of Mirna in Complex Matrices** DAVID BROYLES, University of Miami, Leticia Kovalski, Sapna Deo

(1760-02P) **Direct Determination of Monohydroxy–Polycyclic Aromatic Hydrocarbons on Octadecyl Membranes via Room Temperature Fluorescence Spectroscopy - Excitation Emission Matrices** KORINA J. CALIMAG-WILLIAMS, University of Central Florida, Andres Campiglia, Hector Goicoechea

(1760-03P) **Collection of Fluorescence Data Directly from Textile Fibers Via Micro-Spectrofluorimetry** ANTHONY F. MOORE, University of Central Florida, Andres Campiglia, Krishnaveni Appalaneni

(1760-04P) **Emissive Lanthanide-Macrocyclic Polyazacarboxylate Complexes Specifically Recognizing Sialic Acid by Acid Dissociation Reaction of a Coordinated Water Molecule** KAZUKI OHUCHI, Saitama University, Masami Shibukawa, Shingo Saito

(1760-05P) **Fluorescence Enhancement of Organic Dye** XU SHUPING, Jilin University, Cao Yanxin, Wang Xumei, Xu Weiqing, Zhou Ji

(1760-06P) **Microproperty Estimation Utilizing Anilinonaphthalene Sulfonate (1):**

**Fluorescent Lifetime Probe for Solvent Microviscosity** YUU SOMEYA, Tokyo University of Science, Hiroharu Yui

(1760-07P) **Microproperty Estimation Utilizing Anilinonaphthalene Sulfonate (2): Micropolarity Estimation by Near-Infrared Two-Photon Excitation for Local Properties Analyses on Biological Tissues** YUU SOMEYA, Tokyo University of Science, Hiroharu Yui, Natsumi Sakurai, Satoshi Kawano

(1760-08P) **On-Demand Synthesis of Emissive Solvatochromic Dyes Using Successive Suzuki-Miyaura Cross-Coupling and Their Applications** SANG-HYUN SON, Hokkaido University, Ken-ichi Maruyama, Koji Yamada, Maya Endo, Michiko Tani, Natsuko Ohya, Yutaka Yamagishi

**POSTER** Session 1770

## Food Science III

Wednesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1770-01P) **The Spectro-Electro Array: A Novel Platform for the Measurement of Secondary Metabolites in Botanicals, Supplements, Foods and Beverages - Part 1: Theory and Concepts** PAUL A. ULLUCCI, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth, Marc Plante

(1770-02P) **The Spectro-Electro Array: A Novel Platform for the Measurement of Secondary Metabolites in Botanicals, Supplements, Foods and Beverages - Part 2: Targeted Analyses** PAUL A. ULLUCCI, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth, Marc Plante

(1770-03P) **Comparison of Static and Dynamic Headspace for Volatile Organic Compounds in Orange Juice** ROGER BARDSLEY, Teledyne Tekmar, Holly Taylor, Nathan Valentine, Tammy Rellar, Tyler Trent

(1770-04P) **Infrared Study of Chemical Interaction between Natural Extract in Nutritional Supplements** SANDRINE AMAT, University Paul Cezanne, Florence Mehl, Gaetano Zannini, Jacky Kister, Magali Claeys-Bruno, Nathalie Dupuy

(1770-05P) **Aroma Coffee Profile Using Dynamic Headspace Sampler and Time-of-Flight Detector** ILARIA FERRANTE, DANI Instruments SpA, Chiara Abate, Manuela Bergna

(1770-06P) **PCR-ESI-MS for Rapid Foodborne Bacterial Pathogen Detection and Identification** SARAH E. PIERCE, U.S. FDA, Chorng-Ming Cheng, Donna Williams-Hill, Kai-Shun Chen, Rosalee Hellberg, William Martin

(1770-07P) **Association of Multivariate Analysis with Mid-Infrared Spectrometry as a Tool for the Evaluation of Waste Frying Oil Blends** LEONARDO S. TEIXEIRA, Universidade Federal da Bahia, Fábio Oliveira, Luciano Hocevar, Maria das Graças Korn, Vitória Regina Soares

(1770-08P) **The Determination of 16 Phthalate Esters in Oil by Solid Phase Extraction and GC-MS** SUZI QIN, Tianjin Bonna-Agela Technology Co., Ltd., Wan Wang

(1770-09P) **Discrimination of Brazilian Beans Using Emission Intensities, UV-VIS Spectra and Chemometrics Tools** JULIANA NAOZUKA, UNIFESP, Alessandra Sayuri Ferreira, Angerson Nascimento, Gislayne Rodrigues Kelmer, Pedro Oliveira, Thiago Longo Cesar da Paixao

(1770-10P) **Automated Liner Exchange and Its Benets in GC Pesticide Analysis** OLIVER LERCH, GERSTEL GmbH & Co. KG, Andreas Hoffmann, Carlos Gil

(1770-11P) **Application of Multidimensional and Olfactometry Gas Chromatography to Detect Trace Level Compounds from Complex Mixtures of Flavor Samples** MING LE, Robertet Flavors Inc., Jiam Valuckas, Rajesh Pandya

(1770-12P) **Automation of AOAC 988.13 for Increased Throughput in the Identification of FD&C Color Additives in Food** MEGAN YORK, Gilson, Inc., Judy Hadley, Rick Laurell, Toni Hofhine

**POSTER** Session 1780

## Liquid Chromatography Applications

Wednesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1780-01P) **Validated Stability – Indicating HPLC and HPTLC Methods for the Determination of Ritonavir in Bulk Powder and in Capsules** MOHAMMED ABDELHAY, Alexandria University, Azza Gazy, Heba Ashour, Rasha Shaalan

(1780-02P) **Novel, Universal Approach for the Measurement of Natural Products in a Variety of Botanicals and Supplements** IAN N. ACWORTH, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Marc Plante, Mark Roman

(1780-03P) **Ultra Security Guard System for Use with UHPLC Technologies** JASON A. ANSPACH, Phenomenex Inc., Jeff Layne, Mark Brown, Peter Rahn, William Cash

(1780-04P) **Increasing the Throughput of UHPLC** WILLIAM HEDGEPETH, Shimadzu, Rachel Lieberman

(1780-05P) **Magnetophoretic Measurement of Porosity of Single HPLC Particles** MAKOTO KAWANO, Osaka Flow Meter Manufacturing Co., Ltd, Hitoshi Watarai

(1780-06P) **Multi-Pore Type Linear-Calibration SEC Column for the Analysis of High-Molecular-Weight Range Polymers** TORU MATSUI, Shodex/Showa Denko K.K., Haruhiko Ikeda, Kanna Ito, Masatoshi Murakami, Ryouichi Hamasaki, Takashi Kotsuka, Yoshiji Okada

(1780-07P) **Advances in Detection for UPLC** PATRICIA R. MCCONVILLE, Waters Corporation, Tanya Jenkins, Thomas Wheat

(1780-08P) **Development of Reliability Testing Protocols for Nano-LC Columns** DAFYDD MILTON, Thermo Fisher Scientific, Joanna Freeke, Valeria Barattini

(1780-09P) **Bridging the Gap Between UHPLC and HPLC: Easy Method Transfer Using Fused-Core Columns** THOMAS J. WAEGHE, MAC MOD Analytical, Inc., Stephanie

Schuster

(1780-10P) **The Use of PRINT Particles as Stationary Phase Supports in Ultra-High Pressure Liquid Chromatography** JAMES P. GRINIAS, University of North Carolina at Chapel Hill, Edward Franklin, James Jorgenson, Joseph DeSimone, Yapei Wang

(1780-11P) **New On-line High Pressure Electrolytic Eluent Generators for Ion Chromatography** YAN LIU, Thermo Fisher Scientific, Christopher Pohl, Zhongqing Lu

(1780-12P) **Solid-Phase Nanoextraction and Laser-Excited Time-Resolved Shpol'skii Spectroscopy for the Direct Analysis of Co-eluted High-Molecular Weight Polycyclic Aromatic Hydrocarbons in HPLC Fractions** WALTER B. WILSON, University of Central Florida, Andres Campiglia

(1780-13P) **Improvement of Efficiency for the Method Development in the Laboratory** HIROSHI OHASHI, Shimadzu, Hidetoshi Terada, Masatoshi Takahashi, Tadayuki Yamaguchi, Yoshihiro Hayakawa, Yosuke Iwata

(1780-14P) **A Novel Stationary Phase for Antibody Purification** IMRE SALLAY, Daiso Co., Ltd, Junichi Kadoya, Seiji Ohtaka, Shinji Kan

**POSTER** Session 1790

## Magnetic Resonance

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1790-01P) **High-Performance q-NMR - How to Get Traceability of Organic CRM at the <0.1% Uncertainty Level** MICHAEL . WEBER, Sigma-Aldrich, Christine Hellriegel, Jurg Wuthrich, Rudolf Kohling, Vicki Yearick

(1790-02P) **New Generation of Certified qNMR Reference Materials** ALEX . RUECK, Sigma-Aldrich, Christine Hellriegel, Matthias Nold, Michael Weber, Vicki Yearick

(1790-03P) **Characterization and Structure Interpretation of Polar Lipids from GWE1 Strain of Thermophilic Bacteria Found in Sterilization Ovens** SIDDHARTH SHAH, Temple University, Daniela Correa-Llanten, Jenny Blamey, Leeandrew Taylor, Parkson Lee-Gau Chong, Susan Jansen

(1790-04P) **Extraction of Pure Two Dimensional NMR Spectra from Three Dimensional Diffusion Ordered Spectroscopy in a Mixture by Independent Component Analysis** JUNYAN ZHONG, Old Dominion University, Patrick Hatcher

(1790-05P) **Quantitative Analysis of Urea in Human Urine and Serum by 1H Nuclear Magnetic Resonance** LINGYAN LIU, Purdue University, Daniel Raftery, Huaping Mo, Siwei Wei

(1790-06P) **Structure, Function, and Dynamics of the Pitx2 Homeodomain** JAMIE BAIRD-TITUS, College of Mount St. Joseph

(1790-07P) **NMR Chemical Shifts Report on Bile Salt Self-Aggregation and Intermolecular Interactions: Effects of pH, Temperature, and Concentration** BRANDY TAYLOR, Bucknell University, David Rovnyak, Thomas Mann, Timothy Strein

(1790-08P) **Nuclear Magnetic Resonance – Mobile Universal Surface Explorer (NMR-MOUSE) Profiling of Chemical Warfare Agent Simulant Mass-Transport in Absorbent Materials** EHSAN GAZI, Dstl

(1790-09P) **An NMR Study of the Mechanistic Basis of Bravanib Alaninate Sticking During Tableting** QINGMEI YE, Bristol-Myers Squibb, Ajit Narang, Mark Bolgar, Sherif Badawy, Yande Huang

**POSTER** Session 1800

## Nanotechnology I

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1800-01P) **Comparing Nanoparticle Characterization Methods: Dynamic Light Scattering and Laser Diffraction** JEFFREY T. BODYCOMB, Horiba, Amy Hou, Kiwan Park, Mark Bumiller

(1800-02P) **Measuring Carbon Nanotube Surface Deposition with a Quartz Crystal Microbalance** DERMONT BOUCHARD, US EPA/ORD/NERL, Tremaine Powell

(1800-03P) **Lanthanide Phosphate-Based Nanoparticles as Elemental Bar Code Labels** OLGA REIFSCHNEIDER, University of Muenster, Michael Sperling, Torsten Vielhaber, Uwe Karst

(1800-04P) **Gold Nanoparticle Microarray Fabricated by LbL and Calcination Process for Peptides and Small Molecules Using Matrix-Free Laser Desorption/Ionization Mass Spectrometry** CHIH-YUAN CHEN, University of California, Riverside, Jicheng Duan, Quan Cheng

(1800-05P) **Surface Characterizations of Cyclic Brush-Like Polymers at the Molecular-Level Using Scanning Probe Microscopy** LU . LU, Louisiana State University, Donghui Zhang, Jayne Garno, Samuel Lahasky, Wilson Serem

(1800-06P) **Ferrocenated 6 nm Indium-Tin Oxide Nanoparticles** JOSEPH J. ROBERTS, University of North Carolina at Chapel Hill, Royce Murray

(1800-07P) **VOCs Detection by (poly)porphyrin Modified Single-Walled Carbon Nanotubes Sensors** TAPAN SARKAR, University of California Riverside, Ashok Mulchandani, Nosang Myung

(1800-08P) **Characterization of Coatings on Nanomaterials by the Hyphenated Analytical Technique of TGA-GC-MS, (Evolved Gas Analysis)** ANDREW W. SALAMON, PerkinElmer Corporation, Amy Zhao, Endalkachew Salhe-Demessie

(1800-09P) **Determination of Mercuric Ion Using Oligonucleotide-Gold Nanoparticle Conjugates and Magnetic Separation Coupled with Colorimetric**

**Detection** CHEN CHEN-YU, National Tsing Hua University, I-Hsiang Hsu, Liu I-Hung, Sun Yuh-Chang

(1800-10P) **Antimicrobial Properties of Copper Loaded Silica Nanomaterials: Design and Study** SWADESHMUKUL SANTRA SANTRA, University of Central Florida

(1800-11P) **Laser Microfabrication of Plasmonic Silver Nanoparticles for Biosensing Applications** TAKAYUKI HIRONAKA, Osaka University, Eiichi Tamiya, Hiroyuki Yoshikawa, Masato Saito

**POSTER** Session 1810

## Pharmaceutical Spectroscopy II

Wednesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1810-01P) **Towards the Quantification of Anthrax and Food Poisoning Bacteria Using Portable Surface-Enhanced Raman Scattering** DAVID P. COWCHER, University of Manchester, Royston Goodacre

(1810-02P) **Differently Prepared Amorphous Forms of Some Oral Hypoglycaemic Agents - Thermoanalytical and Spectroscopic Studies** SWATI BHANDARI, Panjab University, Renu Chadha

(1810-03P) **Characterization and Thermodynamic Parameters of Ramipril-Cyclodextrin Complexes** RENU CHADHA, Panjab University, Swati Bhandari

(1810-04P) **Differential Scanning Calorimetry – A Screening Tool for Drug-Excipient Compatibility** INDERESH JAIN, Ranbaxy Laboratories Limited

(1810-05P) **Instrumental Method to Reliably Select the Best Flavour Candidate for a Stable Masking of Active Principle Bitterness Over Time** MITCHELL LAMBOY, Alpha MOS, Carol Schneider, Jean-Christophe Mifsud, Mike Parada

(1810-06P) **Identifying the Causes of Off-Flavor in Generic Tablets Using Electronic Nose and Electronic Tongue** MITCHELL LAMBOY, Alpha MOS, Carol Schneider, Jean-Christophe Mifsud, Mike Parada

(1810-07P) **New Ion-Selective Sensor Materials for Food, Environmental, Biomedical and Industrial Applications** INGRID . HAYENGA, Sigma-Aldrich, Casper Demuth, Donald Hobbs, Michael Jeitziner, Nicola Staheli, Shyam Verma

(1810-08P) **An Analytical Detector Based on Liquid Drop RC Filter Apparatus** YASITH S. NANAYAKKARA, The University of Texas at Arlington, Daniel Armstrong

**POSTER** Session 1820

## Process Analytical Techniques

Wednesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1820-01P) **Dugway Fixture (dFIX) Multipurpose Test Fixture for Swatch and Small Filter Testing: Capabilities** LARRY RUSSON, Jacobs Dugway Team, Darren Jolley, Laurence Adair, Petr Serguievski, Tsenu Mamo

(1820-02P) **Collective Protection Barrier Material Swatch Testing Using the dFIX** LARRY RUSSON, Jacobs Dugway Team, Darren Jolley, Laurence Adair, Petr Serguievski, Tsenu Mamo

(1820-03P) **Application of Grewia Gum Matrix in Sustained Release of Chlorpheniramine Maleate From Tablets** LGNATIUS L. OKAFOR, University of Jos, Lilian Oguguo

(1820-04P) **Novel Analytical Methods to Verify Effectiveness of Cleaning Processes** CHRISTOPHER CRAFTS, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth, Marc Plante

(1820-05P) **Utility of Spectroscopic Tools for Reaction Monitoring** TASNEEM H. PATWA, Pfizer, Inc., Javier Magano, Shelly Li

(1820-06P) **Quantitation and Characterization of Copper Plating Bath Additives by Liquid Chromatography with Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth

(1820-07P) **Cell Microarray "Halo-Chip" Based Rapid Radiation Bio-Dosimeter** CHAOMING WANG, University of Central Florida

(1820-08P) **A New On-Line Cyanide Analyzer for Measurement of Cyanide in Hydrometallurgical Processing of Precious Metal Ores** WILLIAM LIPPS, OI Analytical, Gary Engelhart

(1820-09P) **Using a New Powerful Nitrogen Laser with Two Active Volumes as Pumping Dye Lasers in Universal Laser Photoionization Spectrometer** AKTAM T. KHALMANOV, Samarkand State University, Akbar Suvanov, Napas Eshkobilov, Nodira Toshkuvatova

(1820-10P) **Strategies for the Purity Determination of Reactive Pinacolboronate Esters** QIQING ZHONG, Genentech, Jane Li, Ken Ngim, Megan Sun

(1820-11P) **Improving the Reliability of Analytical Systems in Challenging and Corrosive Environments** GARY BARONE, SilcoTek Corporation, David Smith, Marty Higgins

(1820-12P) **Novel Microfluidic Channel Device for Electro-Analytical Applications** ELENI BITZIOU, University of Warwick, Julie Macpherson, Michael Snowden, Patrick Unwin

(1820-13P) **Cleaning Validation: Did You Make the Right Choice of Techniques?** YOSHIO IKEZAWA, Shimadzu Corporation, Minako Tanaka

**POSTER** Session 1825

## Samples and Sampling III

Wednesday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(1825-01P) **Automated Sample Preparation Using a Digital Syringe with Embedded SPE Capability** ROB FREEMAN, SGE Analytical Science, Dan DiFeo

(1825-02P) **Water Analysis Using Poly(ionic liquid) Network Hydrogel Sorbent Coatings in Solid-Phase Microextration** HONGLIAN YU, The University of Toledo, Jared Anderson, Manishkumar Joshi

(1825-03P) **Automated Liquid-Liquid Extraction of Copper** SIKANDER GILL, Aurora Instruments Ltd., Dong Liang, Marco Garate, Rajwant Gill

(1825-04P) **Isolation of Genomic DNA from Human Saliva with Mag 96 Tissue DNA Isolation Kit** SIKANDER GILL, Aurora Instruments Ltd., Dong Liang, Marco Garate, Rajwant Gill

(1825-05P) **Cyclophosphamide Pharmacokinetics in Mice: A Comparison Between Retro Orbital Sampling Versus Serial Tail Vein Bleeding** RANA SAID, Stockholm University

**POSTER** Session 1827

## Sampling Volatile Organics

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1827-01P) **Development and Application of a Simple Noninvasive Method for In Situ Skin Volatiles Sampling** JIANG RUIFEN, University of Waterloo, Barbara Bojko, Erasmus Cudjoe, Janusz Pawliszyn, Tatjana Abaffy

(1827-02P) **Determination of Volatile Organic Compounds as Markers for Early Detection of Lung Cancer by SPME-GC-TOF/MS** JOANNA RUDNICKA, Nicolaus Copernicus University, Boguslaw Buszewski, Tomasz Kowalkowski

(1827-03P) **Hyphenated Techniques For Cancer Markers Seaching** TOMASZ LIGOR, Nicolaus Copernicus University, Boguslaw Buszewski

(1827-04P) **The Volatile Compounds and Antioxidant Activity of Essential Oils Extracted from Shell and Seed of Abrus Precatorius L** SUNDAY O. OKOH, University of Lagos, Olayinka Asekun

**POSTER** Session 1830

## Spectroscopy

Wednesday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(1830-01P) **Characterization of Poly-L-Lactic Acid Bone Tissue Scaffolds by High Resolution Vibrational Spectroscopy** VENKATA N K RAO BOBBA, Cleveland State University, John Turner

(1830-02P) **Optical Microscopy and UV-VIS Spectroscopy for Determination of Concentration and Extinction Coefficients of Bacterial Spores in Aqueous**

**Suspension** SERGEY V. KAZAKOV, Pace University, Nicholas Imperial

(1830-03P) **A Single Molecule Platform for Free Solution Hydrodynamic Separation with Picoliter Sample Volumes and Yoctomole Detection Limits** KELVIN J. LIU, Johns Hopkins University, Cyrus Beh, Dong Jin Shin, Sarah Friedrich, Tushar Rane, Tza-Huei Wang, Yi Zhang

(1830-04P) **Micro-Absorption Spectroscopy as a Non-Destructive Optical Probe for Biological and Chemical Analysis** SILKI ARORA, University of Central Florida, Alfons Schulte, Debopam Chakrabarti, Jennifer Mauser

(1830-05P) **Fast Spectrometric Method for Mercury(II) Determinations Based on Glucose-Oxidase Inhibition** ANTON A. CIUCU, University of Bucharest, Irina Trandafir

(1830-06P) **Quantitative Analysis of RNA by ICP-OES in Undigested, *In vivo* Test Articles** ERIC A. KEMP, Merck and Co. Inc., Tiebang Wang

(1830-07P) **Studying Diffusion in Polymers: An FT-IR-ATR Approach** JAMES M. SLOAN, US Army Research Laboratory

(1830-08P) **Study of the Wavelength of the Diode Laser Wavelength Used as Radiation Source in a New Polarimeter** CELIO PASQUINI, Instituto De Quimica - Unicamp, Livia Ribeiro, Matheus Jardim

(1830-09P) **Calibration Samples Selection in Near-Infrared Spectroscopy** NANNING CAO, Iowa State University, Charles Hurburgh

(1830-10P) **Photoinduced Ligand Exchange and Covalent DNA Binding by Two New Dirhodium Acetamide Complexes** SCOTT J. BURYA, The Ohio State University, Claudia Turro, Judith Gallucci

(1830-11P) **Variable Temperature Study of the Infrared Spectra by Utilizing Rare Gas Solution for the Conformational Determination of Cyclobutylisocyanate** XIAOHUA ZHOU, UMKC, Gamil Guirgis, James Durig

(1830-12P) **Synchronous Scanning Luminescence for In-Situ pH and Endogenous Fluorophore Measurement** SEAN M. BURROWS, Duke University, Tuan Vo-Dinh

# Wednesday Afternoon, March 14, 2012

**AWARD** Session 1840

## Capstone Lecture (Mixer immediately following in the Valencia Room)

Wednesday Afternoon, Room: Chapin Theater

5:00 PM (1840-01) **Redesigning DNA: Fixing God's Mistakes** STEVEN BENNER, Foundation for Applied Molecular Evolution

**AWARD** Session 1850

## Ralph N Adams Award - arranged by Norman Dovichi, University of Notre Dame

Wednesday Afternoon, Room: 300

Norman Dovichi, University of Notre Dame, Presiding

2:10 PM (1850-01) **Neurometabolomics: The Cell by Cell Chemical Characterizations of the Brain** JONATHAN V. SWEEDLER, University of Illinois

2:45 PM (1850-02) **Spatial Heterocorrelation of Confocal Raman Scattering with Secondary Ion and Laser Desorption-Ionization Mass Spectrometry** PAUL BOHN, University of Notre Dame, Bei Nie, Jonathan Sweedler, Rachel Masyuko

3:20 PM (1850-03) **Top Down Proteomics on a High Throughput Basis: Driving Towards High Coverage of the Endogenous Proteome** NEIL L. KELLEHER, Northwestern University

4:10 PM (1850-04) **Thin Film Sensors for Zeptomole Analysis of Neurotransmitters** MICHAEL L. HEIEN, University of Arizona, Nicholas Laude, Richard Vreeland, Saliya Ratnayaka

4:45 PM (1850-05) **Diagonal Capillary Electrophoresis** NORMAN J. DOVICHI, University of Notre Dame, Guijie Zhu, Liangliang Sun, Roza Wojcik, Yihan Li

**AWARD** Session 1860

## Williams-Wright Award - The Coblentz Society - arranged by Howard Mark, Mark Electronics

Wednesday Afternoon, Room: 206A

Howard Mark, Mark Electronics, Presiding

2:10 PM (1860-01) **Adventures in Spectroscopic Instrumentation: Accessing, Enabling, Disrupting** RICHARD A. CROCOMBE, Thermo Fisher Scientific

2:45 PM (1860-02) **From Pallet to Pocket – The Enabling Technologies of Handheld Spectrometers** MICHAEL BURKA, Thermo Fisher Scientific

3:20 PM (1860-03) **Development and Recent Advances in Applying Near Infrared Spectroscopy to Process Analytical Technology Applications** LARRY MCDERMOTT, Applied Instrument Technologies

4:10 PM (1860-04) **High Performance Infrared Cameras for Spectroscopic Applications** ARNOLD L. ADAMS, IRCameras, LLC

4:45 PM (1860-05) **Integration of Near-Infrared Handheld Analyzers into a Field-to-Lab-to-Line Strategy for Qualitative and Quantitative Analysis** DAVID DRAPCHO, Thermo Fisher Scientific, Chris Heil, David Day

**SYMPOSIA** Session 1870

## Biosensors for Environmental Applications (IEAC) - arranged by Antje J. Baeumner, Cornell University

Wednesday Afternoon, Room: 206B

Antje J. Baeumner, Cornell University, Presiding

2:05 PM (1870-01) **Using Biosensor-Based Assays to Detect Environmental Microorganisms and Human Exposure to Pathogens** ANN GRIMM, U.S. EPA

2:40 PM (1870-02) **Microfluidic Bioseparation for Environmental Pathogens** BRIAN KIRBY, Cornell University

3:15 PM (1870-03) **Towards Whole-Cell Bacterial Biosensor Arrays for Environmental Monitoring** SHIMSHON BELKIN, Hebrew University of Jerusalem

3:50 PM (1870-04) **Continuous Underwater Monitoring of Phytoplankton** JEFFREY S. ERICKSON, Naval Research Laboratory, Alan Weidemann, Frances Ligle, Joel Golden, Laura Bracaglia, Nastaran Hashemi

4:25 PM (1870-05) **Label-Free Physical Sensors to Monitor the Cytotoxicity of Nanoparticles and Environmental Pollutants** JOACHIM WEGENER, Universitaet Regensburg

**SYMPOSIA** Session 1880

## Hydrogen Deficient Radicals for Biomolecular Characterization by MS (ACS-ANYL) - arranged by Ryan Julian, University of California, Riverside

Wednesday Afternoon, Room: 308B

Ryan Julian, University of California, Riverside, Presiding

2:05 PM (1880-01) **Radical Directed Dissociation for MS Identification of D-Amino Acids** RYAN JULIAN, University of California, Riverside

2:40 PM (1880-02) **Big Fat Radicals: Radical Directed Dissociation for Structure Elucidation of Complex Lipids** STEPHEN J. BLANKSBY, University of Wollongong, Adam Trevitt, Huong Pham, Todd Mitchell, Tony Ly

3:15 PM (1880-03) **Free Radical Initiated Peptide Sequencing Based on Hydrogen Abstraction Followed by Backbone Cleavage and Side Chain Loss Using a Regiospecific Covalently Attached Acetyl Radical** JESSE L. BEAUCHAMP, California Institute of Technology, Chang-Ho Sohn, Daniel Thomas

3:50 PM (1880-04) **Structures and Dissociations of z-Type Peptide Ions** FRANTISEK TURECEK, University of Washington, Aaron Ledvina, Joshua Coon, Thomas Chung

4:25 PM (1880-05) **Energetics, Dynamics and Mechanisms of Dissociation of Peptide Radical Cations** JULIA LASKIN, Pacific Northwest National Laboratory, Ivan Chu, Ricky Kong, Tao Song

**SYMPOSIA** Session 1890

**Mass Spectrometry Advances Conversion of Biomass to Biofuels** - arranged by Roland F. Hirsch, US Department of Energy Office of Science

Wednesday Afternoon, Room: 307B

Roland F. Hirsch, US Department of Energy Office of Science, Presiding

2:05 PM (1890-01) **Proteomics for Biofuels: A Tale of Microbes, Plants and Microbial Communities** MARY S. LIPTON, Pacific Northwest National Laboratory, Carrie Nicora, Gordon Anderson, Kristin Burnum, Roslyn Brown, Stephen Callister

2:40 PM (1890-02) **Integrated Metabolomics Provides Novel Insight into Legume Natural Product Biosynthesis** LLOYD W. SUMNER, The Samuel Roberts Noble Foundation, Chen Fang, David Huhman, Dong Sik Yang, Huanzhong Wang, John Snyder, Lina Gallego-Giraldo, Richard Dixon, Stacy Allen, Yuhong Tang

3:15 PM (1890-03) **Proteome Characterization of the Enzymatic Systems Used by Thermophilic Bacteria to Degrade Cellulosic Biomass** ROBERT HETTICH, Oak Ridge National Laboratory, Andrew Dykstra, Paul Abraham, Rachel Adams, Richard Giannone

3:50 PM (1890-04) **Nanometer-Scale Secondary Ion Mass Spectrometry (NanoSIMS) Applications in Microbial Biology and Biofuels Research** JENNIFER PETT-RIDGE, Lawrence Livermore National Lab

4:25 PM (1890-05) **Targeted Proteomics for the Optimization of Biofuel Pathways** CHRIS PETZOLD, Lawrence Berkeley National Laboratory, Alyssa Redding-Johanson, Becky Rutherford, Jay Keasling, Paul Adams, Pragya Singh, Taek Soon Lee, Tanveer Batth

**SYMPOSIA** Session 1900

**New Alternatives in High-Resolution Mass Spectrometry** - arranged by Gary M. Hieftje, Indiana University

Wednesday Afternoon, Room: 308C

Gary M. Hieftje, Indiana University, Presiding

2:05 PM (1900-01) **Fourier Transform Ion Cyclotron Resonance: The Mass Spectrometry Zenith** ALAN G. MARSHALL, Florida State University, Amy McKenna, Chris Hendrickson, Greg Blakney, Ryan Rodgers

2:40 PM (1900-02) **Orbitrap Mass Spectrometry: Ultra-High Resolution for Every Lab** ALEXANDER A. MAKAROV, Thermo Fisher Scientific

3:15 PM (1900-03) **Another Lap Around the Racetrack: Multi-Turn Time-of-Flight Mass Spectrometers** ROBERT B. CODY, JEOL USA, Inc.

3:50 PM (1900-04) **High-Resolution Time-of-Flight Mass Spectrometry via a Mass Analyzer** VIATCHESLAV ARTAEV, Leco Corporation, Anatoly Verenchikov, Jeffrey Patrick, Michael Mason

4:25 PM (1900-05) **Zoom-TOFMS: Examining the Potential of Constant Momentum Acceleration to Achieve High Resolution in Time-of-Flight Mass Spectrometry** STEVEN J. RAY, Indiana University, Alexander Graham, Anthony Carado, Charles Barinaga, Christie Enke, David Koppenaal, Elise Dennis, Gary Hieftje

**SYMPOSIA** Session 1910

## New Developments in Forensic Chemistry for Use at the Crime Scene and in the Laboratory - arranged by Jose R. Almirall, Florida International University

Wednesday Afternoon, Room: 206C

Jose R. Almirall, Florida International University, Presiding

2:05 PM (1910-01) **Raman Spectroscopy Offers a Great Potential for an Easy-to-use, On-field, Rapid, Nondestructive, Confirmatory Identification of Body Fluid Traces** IGOR K. LEDNEV, University at Albany - SUNY, Aliaksandra Sikirzhytskaya, Aliea Afnan, Gregory McLaughlin, Vitali Sikirzhytski

2:40 PM (1910-02) **Collection and Analysis of Human Scent as Forensic Evidence from Crime Scenes** KENNETH G. FURTON, Florida International University

3:15 PM (1910-03) **LIBS and LAMIS: New Forensic Tools** RICK RUSSO, Lawrence Berkeley National Laboratory, Alexander Bol'shakov, Dale Perry, Inhee Choi, Jong Yoo, Osman Sorkhabi, Xianglei Mao

3:50 PM (1910-04) **A Geochemical and Probabilistic Approach to Geographical Origin** JURIAN HOOGEWERFF, Oritain Global Ltd

4:25 PM (1910-05) **Rapid Instrumental Detection of Explosives and Drugs in the Field** JOSE R. ALMIRALL, Florida International University

**SYMPOSIA** Session 1920

## Nitroxide Spin Labels in NMR and ESR Studies of Protein - arranged by Sunil Saxena, University of Pittsburgh

Wednesday Afternoon, Room: 207A

Sunil Saxena, University of Pittsburgh, Presiding

2:05 PM (1920-01) **Conformational Sampling of HIV-1 Protease by Pulsed EPR Spectroscopy** GAIL E. FANUCCI, University of Florida

2:40 PM (1920-02) **Protein Fold Determined by Paramagnetic Magic-Angle Spinning Solid-State NMR Spectroscopy** CHRISTOPHER P. JARONIEC, The Ohio State University

3:15 PM (1920-03) **Protein Conformational Dynamics from Spin Labeling EPR Spectroscopy** HASSNANE MCHAOURAB, Vanderbilt University

3:50 PM (1920-04) **Hydration Dynamic Landscape of Proteins and Lipid Membranes by Overhauser Dynamic Nuclear Polarization** SONGI HAN, University of California,

Santa Barbara

4:25 PM (1920-05) **The Dynamics and Orientations of Spin Labeled Side Chains in the Restriction Endonuclease EcoRI and Protein-G** SUNIL SAXENA, University of Pittsburgh

**WORKSHOP** Session 1930

**Industry, Academic, and Government Responses to Emerging Food Contaminants** - arranged by Randall K. Pegg, Florida State College at Jacksonville

Wednesday Afternoon, Room: 313

Randall K. Pegg, Florida State College at Jacksonville, Presiding

2:05 PM (1930-01) **The First Food Safety Response Center** VINCENT PAEZ, Thermo Fisher Scientific

2:30 PM (1930-02) **Rapid Screening for DEHP in Food and Beverage Products** JOSEPH P. ROMANO, Waters Corporation, Evelyn Goh, Melvin Gay

2:55 PM (1930-03) **Responding to Widespread Food Safety Threats with Analytical and Bioanalytical Tools** PHILIP L. WYLIE, Agilent Technologies, Inc., Steven Royce

3:35 PM (1930-04) **Advanced Technician Training in Response to Global Food Threats** RANDALL K. PEGG, Florida State College at Jacksonville, Christian Bush

**ORGANIZED CONTRIBUTED SESSION** Session 1940

**Detection Strategies for Microfluidic Devices** - arranged by Jose A. da Silva, Chemistry Institute, State University of Campinas

Wednesday Afternoon, Room: 207B

Jose A. da Silva, Chemistry Institute, State University of Campinas, Presiding

2:00 PM (1940-01) **On-Chip Analysis of Pharmaceuticals Using Capacitively Coupled Contactless Conductivity Detection** JESSICA S. CREAMER, University of Kansas, Jose Alberto da Silva, Susan Lunte

2:20 PM (1940-02) **Surface Plasmon Resonance Detection in Microfluidic Devices** CHRISTOPHER T. CULBERTSON, Kansas State University

2:40 PM (1940-03) **Integrated Microfluidic Systems with On-Chip Fluorescence Labeling** ADAM T. WOOLLEY, Brigham Young University, Jayson Pagaduan, Ming Yu, Pamela Nge

3:00 PM (1940-04) **Microfluidic Electrochemical Enzymatic Sensor Arrays for Measuring Extracellular Biomarkers** MEGHAN MENSACK, Colorado State University, Charles Henry

3:35 PM (1940-05) **Microchip Electrophoresis with Electrochemical Detection for the Investigation of Reactive Nitrogen Species in Cells** JOSE A. SILVA, State University of Campinas, Dulan Gunasekara, Susan Lunte

3:55 PM (1940-06) **Microfab-Less Microchips with Integrated Optical and Conductimetric Detection** CARLOS D. GARCIA, University of Texas at San Antonio, Claudimir do Lago, Eric Tavares da Costa, Matthew Gordon

4:15 PM (1940-07) **Measuring Single Cell Mass, Volume, and Density** WILLIAM H. GROVER, Massachusetts Institute of Technology, Andrea Bryan, John Higgins, Monica Diez-Silva, Scott Manalis, Subra Suresh

4:35 PM (1940-08) **Integration of Microchip Electrophoresis with Electrochemical Detection Using an Epoxy-Based Molding Method to Embed Multiple Electrode Materials** ALICIA S. JOHNSON, Saint Louis University, R Scott Martin

**ORGANIZED CONTRIBUTED SESSION** Session 1950

## Ionophore-based Chemical Sensors II - arranged by Philippe Buhlmann, University of Minnesota

Wednesday Afternoon, Room: 311A

Philippe Buhlmann, University of Minnesota, Presiding

2:00 PM (1950-01) **Non-Scanning Electrochemical Microscopy and Optochemical Imaging** MIKLOS GRATZL, Case Western Reserve University

2:20 PM (1950-02) **Polymeric Membrane Electrodes Selective for Nitrate and Nitrite: Current Status and Potential Biomedical/Environmental Applications** MARK E. MEYERHOFF, University of Michigan, Kebede Gemene, Lajos Hofler, Natalie Crist, Si Yang

2:40 PM (1950-03) **Photodefined Micro/Nano Structured Electrodes** RONEN POLSKY, Sandia National Laboratories

3:00 PM (1950-04) **Ion-Selective Capsules: An Optrode Geometry** ELIZABETH (LISA) A. HALL, University of Cambridge, Jamie Walters

3:35 PM (1950-05) **Biodegradation Enhances Biocompatibility in Optode-Based Nanosensors** MARY K. BALACONIS, Northeastern University, Heather Clark, J Matthew Dubach, Kevin Cash

3:55 PM (1950-06) **Polymeric Sensor Based on Upconversion Fluorescent Nanoparticles** YU QIN, Nanjing University, Liangxia Xie

4:15 PM (1950-07) **Screen Printed Solid-Contact Ion-Selective Electrodes for Autonomous In situ Monitoring of Heavy Metals** DERMOT DIAMOND, Clarity, Dublin City University, Claudio Zuliani, Giusy Matzeu, Kim Lau

4:35 PM (1950-08) **Multiple Roles of Ionic Liquids in Ionophore-Based Sensors** ALEKSANDAR RADU, University of Portsmouth, Andrew Kavanagh, Dermot Diamond, Dimitrije Cicmil, Salzitsa Anastasova

**ORGANIZED CONTRIBUTED SESSION** Session 1960

## **Modeling Chromatographic Systems (ACS-ANYL)** - arranged by Thomas Chester, University of Cincinnati

Wednesday Afternoon, Room: 308D

Thomas Chester, University of Cincinnati, Presiding

2:00 PM (1960-01) **Effect of Pressure on Retention and Efficiency in Micellar Liquid Chromatography** JOE P. FOLEY, Drexel University, Alexander Adair

2:20 PM (1960-02) **Modeling of Elution Peak Profiles in Supercritical Fluid Chromatography** GEORGES GUIOCHON, University of Tennessee - Knoxville, Donald Poe, Krzysztof Kaczmarski

2:40 PM (1960-03) **Modeling and Visualizing Interactions of HPLC Parameters** THOMAS L. CHESTER, University of Cincinnati

3:00 PM (1960-04) **Comparison of Dual-Opposite-Injection Capillary Electrophoresis (DOI-CE) with Equal and Unequal Anion/Cation Migration Distances for the Separation of Pharmaceutical Anions and Cations** JOE P. FOLEY, Drexel University, Donna Blackney Beckett

**ORAL** Session 1970

## **Bioanalytical Mass Spectrometry** - arranged by Ronald Orlando, CCRC/University of Georgia

Wednesday Afternoon, Room: 310A

Ronald Orlando, CCRC/University of Georgia, Presiding

2:00 PM (1970-01) **Comparative Analysis of Lipids and Other Metabolites Extracted from Corn and Other Crop Leaves Using DESI with Ultra Performance Time of Flight Mass Spectrometry** JEFFREY S. PATRICK, LECO Corporation, Joe Binkley, Kevin Siek, Li Zhang

2:20 PM (1970-02) **Next Generation Protein Immunoassay Using MALDI-TOF for Rapid and Quantitative Identification of Isoforms and PTM States** STEVEN M. PATRIE, University of Texas Southwestern Medical Center, Michael Roth

2:40 PM (1970-03) **High-Resolution Time-of-Flight Mass Spectrometry for Profiling of Steroids and Steroid Metabolites in Urine** KEVIN SIEK, Leco Corporation, David Alonso, Jeffrey Patrick, Joe Binkley, John Heim

3:00 PM (1970-04) **Single-Gene Metabolomics: Multiplatform Analysis of the Rice Metabolome Comparing a Submergence Tolerant and Intolerant Rice Variety** GREGORY A. BARDING, University of California, Riverside, Cynthia Larive, Julia Bailey-Serres, Szabolcs Beni, Takeshi Fukao

3:35 PM (1970-05) **Nanosecond Time-Resolved Ion Imaging System** JAMES MILNES, Photek Ltd

3:55 PM (1970-06) **MALDI Imaging Mass Spectrometry of Three-Dimensional Cell Culture Systems** AMANDA B. HUMMON, University of Notre Dame, Eric Weaver, Haohang Li

4:15 PM (1970-07) **Mass Spectrometry Imaging Using Infrared Laser Ablation Sample Transfer** KERMIT K. MURRAY, Louisiana State University, Sung Gun Park

4:35 PM (1970-08) **Imaging Mass Spectrometry of Intact Neurons at Subcellular Length Scales** JÖRG HANRIEDER, Chalmers University of Technology, Andrew Ewing

**ORAL** Session 1980

## Bioanalytical Neurochemistry - arranged by Dean Tzeng, The Pittsburgh Conference

Wednesday Afternoon, Room: 311B

Dean Tzeng, The Pittsburgh Conference, Presiding

2:00 PM (1980-01) **Dopamine Release and Uptake Measurements in Chemotherapy-Treated Rats** SAM V. KAPLAN, University of Kansas, Cory Gutovitz, Greg Osterhaus, Jenny Fulks, Kayla Raider, Michael Johnson, Susi Eckelmann

2:20 PM (1980-02) **Dynamin Effect on Platelet Secretion Is Revealed by Carbon-Fiber Microelectrode Amperometry** SECIL KOSEOGLU, University of Minnesota, Christian Peters, Christy Haynes, James Dilks, Nathalie Fadel, Robert Flaumenhaft

2:40 PM (1980-03) **Steady-State Amperometry Measurements of Lipid Nanotube Diameters of Varying Composition: Evidence for Curvature Induced Sorting** MICHAEL KURCZY, Chalmers University of Technology, Andrew Ewing, Ann-Sofie Cans, Lisa Mellander

3:00 PM (1980-04) **Post-Spike Features Observed in Amperometric Recordings of Exocytosis from PC12 Cells Support the Hypothesis of Partial Release** LISA MELLANDER, Gothenburg University, Andrew Ewing, Maria Svensson

3:35 PM (1980-05) **Fluorescence Measurements of Cell Membrane Receptor Organization and Dynamics at Diffraction and Sub-diffraction Spatial Scales** EMILY SMITH, Iowa State University, Dipak Mainali, Michael Lesoine, Neha Arora, Suzanne Sander

3:55 PM (1980-06) **Adsorption and Diffusion Kinetics of Biogenic Amines at Carbon-Fiber Microelectrodes Under Hydrodynamic Flow** SALIYA N. RATNAYAKA, University of Arizona, Christopher Atcherley, Michael Heien

4:15 PM (1980-07) **Precisely Quantifying Cholinergic and Glutmatergic Modulation of the Mesolimbic Dopamine System in Real-Time Using Fast-Scan Cyclic Voltammery at Carbon Fiber Microelectrodes** MARINA SPANOS, North Carolina State University, Audrey Sanford, Kendall Lough, Leslie Sombers

4:35 PM (1980-08) **Enhanced CE-MALDI Imaging Platform for Quantitative Analysis of Complex Peptides** ZICHUAN ZHANG, University of Wisconsin, Hui Ye, Junhua Wang, Lingjun Li

**ORAL** Session 1990

## Biomedical Applications of Nanotechnology - arranged by Abd El-Moneim MR Afify, Cairo

University

Wednesday Afternoon, Room: 307D

Abd El-Moneim MR Afify, Cairo University, Presiding

2:00 PM (1990-01) **Fabrication of Stable Gold Nanoconjugates with Controllable Surface Modification and Functionalization** WEI QIAN, IMRA America, Inc., Ichikawa Yuki, Murakami Makoto, Yong Che

2:20 PM (1990-02) **Synthesis of Polymer Nanograss and Nanotubes by Surface-Initiated Photopolymerization in Cylindrical Alumina Nanopores** GUOFANG CHEN, St. John's University, Chunxiao Zou

2:40 PM (1990-03) **Bulk and Surface Analytical Techniques to Characterize Bioinspired Degradable Polymers** MELISSA M. REYNOLDS, Colorado State University

3:00 PM (1990-04) **Aptamer/Antibody-Tethered DNA Nanostructures Self-Assembled on Cell Surfaces** GUIZHI ZHU, University of Florida, Jin Huang, Weihong Tan

**ORAL** Session 2000

**Biomedical: Neurochemistry** - arranged by Abd El-Moneim MR Afify, Cairo University

Wednesday Afternoon, Room: 307D

Abd El-Moneim MR Afify, Cairo University, Presiding

3:35 PM (2000-01) **Two-Dimensional Electrophoretic Separation of Nitrosylated Protein Using Poly (methyl methacrylate) Microchips** SIYANG WANG, Louisiana Tech University, Bryant Hollins, June Feng, Katrina Battle, Samuel Njoroge, Steven Soper

3:55 PM (2000-02) **Principal Component Analysis Reveals Disease Progression- and Genotype-Related Differences in Glutathionyl Electrophoretic Profiles of Brain and Blood Proteins of an Alzheimer 's Disease Transgenic Mouse Model** CHENG ZHANG, Louisiana Tech University, June Feng

4:15 PM (2000-03) **Accelerated Aging of Neural Implants: Fast Bench Test for Reliability of Brain-Machine Interface** PAVEL TAKMAKOV, US Food and Drug Administration, Cristin Welle, Eugene Civillico, Irada Isayeva, Kenneth Phillips, Victor Krauthamer

4:35 PM (2000-04) **Monitoring Multiple Neurotransmitters in Sub-Millimeter Regions of the Brain with High Temporal Resolution using Low-Flow Push-Pull Sampling** THOMAS R. SLANEY, University of Michigan, Erik Guetschow, Omar Mabrouk, Peng Song, Robert Kennedy

**ORAL** Session 2010

**Education Innovation** - arranged by Hubert MacDonald, The Pittsburgh Conference

Wednesday Afternoon, Room: 308A

Hubert MacDonald, The Pittsburgh Conference, Presiding

2:00 PM (2010-01) **Use of Checklists to Help Students Prepare Better for Examinations** ENRIQUE ARCE-MEDINA, ESIQIE-IPN

2:20 PM (2010-02) **Undergraduate Participation in Nanoscience Research** TED J. LANGAN, West Virginia University, Michelle Richards-Babb

2:40 PM (2010-03) **A Toolbox for Enhancing the Teaching of Calibration in Chemical Quantitative and Instrumental Analysis Courses – A Project of the Analytical Sciences Digital Library** DAVID E. THOMPSON, Sam Houston State University, Grady Hanrahan, Sandra Barnes

3:00 PM (2010-04) **The Benefits and Importance of a Mutually Recognized Accreditation to ISO IEC 17025** CHRISTOPHER M. GUNNING, American Association for Laboratory Accreditation

**ORAL** Session 2020

## Electrochemistry Methodology II - arranged by Leonid Moroz, University of Florida

Wednesday Afternoon, Room: 311C

Leonid Moroz, University of Florida, Presiding

2:00 PM (2020-01) **Controlled Assembly of Molecular Redox Systems Based on a Porphyrin Dimer Bearing Calix(4)arene** TAKASHI . ARIMURA, AIST, Youichi Tsuchiya

2:20 PM (2020-02) **Graphene Used as a Chemiresistive Sensing Film** FRANCISCO J. IBANEZ, Instituto de Investigaciones Fisicoquimicas, Celeste Dalfovo, Francis Zamborini, Gamini Sumanasekera, Kasun Fernando, Monica A Moreno, Roberto Salvarezza

2:40 PM (2020-03) **Pyrolyzed Parylene C: An Alternative Strategy for Carbon Electrodes for Scanning Electrochemical Microscopy** RAHUL THAKAR, Indiana University, Celeste Morris, Kirstin Morton, Lane Baker, Maksymilian Derylo

3:00 PM (2020-04) **Size Dependent Electrogenerated Chemiluminescence from Dual-Stabilizer-Capped CdTe Nanocrystals** WUJIAN MIAO, The University of Southern Mississippi, Guizheng Zou

**ORAL** Session 2030

## FTIR/Raman- Instrumentation and Applications - arranged by Emil Ciurczak, Doramaxx Consulting

Wednesday Afternoon, Room: 309B

Emil Ciurczak, Doramaxx Consulting, Presiding

2:00 PM (2030-01) **Polarized Mid-IR ATR Spectra of Crystalline Powders** RICHARD SPRAGG, Perkin Elmer LAS, Dean Brown

2:20 PM (2030-02) **Infrared Microspectroscopic Detection and Identification of Individual Wheat Kernel Botanical Parts in a Matrix of Starch or Endosperm** MARK D. BOATWRIGHT, Microbeam Molecular Spectroscopy Laboratory, David Wetzel

2:40 PM (2030-03) **Examining the Effect of Data Resolution on Spectral Database Search Results** GREGORY BANIK, Bio-Rad Laboratories, Marie Scandone, Ty Abshear

3:00 PM (2030-04) **Exploring Early Cherokee Culture Through Infrared and Raman Spectroscopies** SCOTT W. HUFFMAN, Western Carolina University, Lindsey Perry

3:35 PM (2030-05) **Molecular Structure and Orientation Analysis of Octadecylamine in a Langmuir Monolayer Film Studied by Polarization-Modulation Infrared Reflection Absorption Spectroscopy** TAKAFUMI SHIMOAKA, Kyoto University, Takeshi Hasegawa, Yuki Itoh

3:55 PM (2030-06) **Trace Analysis by FTIR/ATR Spectroscopy** PETER MELLING, Remspec Corporation, Mary Thomson

4:15 PM (2030-07) **FT-IR Spectroscopy and Chemometrics for Detection of Contaminated or Counterfeit Ingredients** BEN PERSTON, Perkin Elmer, Richard Spragg

4:35 PM (2030-08) **Effect of Tailoring Surface Silanol Groups on Adsorption Properties of Silica Gel: A Near Infrared Spectroscopic Study** ALFRED A. CHRISTY, University of Agder

**ORAL** Session 2035

## Fuel Analysis - arranged by Barbara Manner, The Pittsburgh Conference

Wednesday Afternoon, Room: 310B

Barbara Manner, The Pittsburgh Conference, Presiding

2:00 PM (2035-01) **Maximizing Biodiesel Production from Yarrowia Lipolytica Po1g Biomass Using Sub-Critical Water Pre-Treatment** YESHITILA A. TSIGIE, National Taiwan University of Science and Technology, Yi-Hsu Ju

2:20 PM (2035-02) **Rapid and Specific Determination of Additives and Contaminants in Insulating Oils with Electrospray Mass Spectrometry** RACHADAPRN SEEMAMAHANNOP, University of Missouri, Shubhen Kapila

2:40 PM (2035-03) **New Reduced Volume TAN (Total Acid Number) System Saves Cost and Use of Organic Solvents by 75%** GEORGE ROBERTSON, G.R. Scientific Ltd, Trevor Blows

3:00 PM (2035-04) **Determination of Ultra Trace Level of Arsenic and Mercury in Hydrocracker Feedstocks by ICP-MS** GALLA JAYAKRISHNA, Indian Oil Corporation Ltd., Ahmed Saeed, Basu Biswajit, Patel Mitra Bhanu, Sarpal Amarjeet Singh, Vivekanand Kagdiyal

3:35 PM (2035-05) **A Simple Wet Extraction Method for Determination of Total Mercury in Crude Oil** RAZI UDDIN, Saudi Aramco, Ayman Al-Rashwan, Mohammed Al-Qarni, Mossaed Al-Fahad

3:55 PM (2035-06) **Biomass to Drop-In Biofuels via Gasification and Catalytic Conversion** YU FEI, Mississippi State University, Eugene Columbus, James Wooten, Qiangu Yan

4:15 PM (2035-07) **Pulsed Flow Modulated Comprehensive Two Dimensional Gas Chromatography for Crucial Industrial Applications in Petrochemical and Chemical Industries** TAYLOR HAYWARD, Dow Chemical, Jim Luong, Ronda Gras

**ORAL** Session 2040

## Liquid Chromatography: Small Molecule Separations - arranged by James Manner, The Pittsburgh Conference

Wednesday Afternoon, Room: 307C

James Manner, The Pittsburgh Conference, Presiding

2:00 PM (2040-01) **Ion Chromatographic Determination of Carboxylic and Phosphonic Chelating Agents Using Direct Pulsed Amperometric Detection on Boron Doped Diamond Electrodes** JUN CHENG, Thermo Fisher Scientific, Christopher Pohl, Petr Jandik, Yan Liu

2:20 PM (2040-02) **Documenting Reversed Phase Chromatography, Separation Chemistry, and Purification Fundamentals from an Undergraduate's Perspective with Readily Available Pharmaceutical Compounds Using a Benchtop Semi-Preparative System** TONI R. HOFHINE, Gilson, Inc., Amanda Bayer, Megan York

2:40 PM (2040-03) **Determination of Praziquantal in Adult Artemia Using Reverse-Phase Liquid Chromatography** SHERRY COX, University of Tennessee - Knoxville, Jason Yarbrough, Matthew Allender

3:00 PM (2040-04) **Challenges in the Development of a Reversed Phase HPLC Impurity Profile Method under High pH Conditions** JANE LI, Genentech

3:35 PM (2040-05) **Recent Developments in Analyzing Phenolic Compounds in New Hampshire Maple Sap Using HPLC** ELIZABETH BRADY, University of New Hampshire, Barrett Rock, Christoper Devine, Martha Carlson, Sterling Tomellini, Walter Shortle

3:55 PM (2040-06) **Performance Comparison of New Porous and Superficially-Porous Particles for UHPLC** RICHARD A. HENRY, Supelco/Sigma-Aldrich, Carmen Santasania, David Bell, William Campbell

4:15 PM (2040-07) **Development of an LC-UV Assay for Determination of 3-AP (3-Aminopyridine-2-Carboxaldehyde Thiosemicarbazone), a Chelating Inhibitor of Ribonucleotide Reductase, through Optimization of Assay Conditions** YE FENG, Cleveland State University, Yan Xu

4:35 PM (2040-08) **Rational Selection of the Mobile Phase Modifier in Generic Chiral Screening Protocols** LIMING PENG, Phenomenex Inc., Bezhan Chankvetadze, Thuylinh Tran, Tivadar Farkas

**ORAL** Session 2050

## Microfluidics/Lab-on-a-Chip - Bioanalytical, Biomedical and Pharmaceutical - arranged by Dana Spence, Michigan State University

Wednesday Afternoon, Room: 309A

Dana Spence, Michigan State University, Presiding

2:00 PM (2050-01) **Utilizing Polymerized Polyethylene Glycol Diacrylate for Microfluidic Valves** CHAD ROGERS, Brigham Young University, Adam Woolley, Gregory Nordin, Jayson Pagaduan

2:20 PM (2050-02) **Microfluidic Devices for Studying the Impact of Microenvironments on Bacterial Motility** ANDREW WILKENS, Indiana University, David Kysela, Pamela Brown, Stephen Jacobson, Yves Brun

2:40 PM (2050-03) **Quantitative Infrared-Mediated Polymerase Chain Reaction on a Microfluidic Chip** YINGJIE YU, Florida State University, Bowei Li, Michael Roper

3:00 PM (2050-04) **The Study of Cellular Heterogeneity in Multidrug Resistant Cancer Cells Using Microfluidic Same-Single-Cell Analysis** XIUJUN LI, University of Texas, Paul CH Li

3:35 PM (2050-05) **Integrated Affinity and Reverse-Phase Monoliths for Extraction and Preconcentration in Microfluidic Chips** PAMELA N. NGE, Brigham Young University, Adam Woolley, Jayson Pagaduan, Ming Yu, Weichun Yang

3:55 PM (2050-06) **Zeptomole Quantification of Small Molecules Loaded within Large Unilamellar Vesicles** NICHOLAS LAUDE, University of Arizona, Michael Heien, Saliya Ratnayaka

4:15 PM (2050-07) **A Convenient Way for Patterning Multiple Cell Lines in Microfluidic Channels Using PDMS Stamps** YAN LIU, Texas Tech University, Dimitri Pappas

4:35 PM (2050-08) **Parallel Analysis of Drug-Treated Blood Components and Controls on a Single Microfluidic Device** SARAH Y. LOCKWOOD, Michigan State University, Dana Spence, Stephen Halpin

**ORAL** Session 2060

## Nanotechnology - MS and Lab-on-a-Chip - arranged by Seth Madren, Indiana University

Wednesday Afternoon, Room: 307A

Seth Madren, Indiana University, Presiding

2:00 PM (2060-01) **Nanoparticle Characterization by Inductively Coupled Plasma Mass Spectrometry in Single-Particle Mode** CARSTEN ENGELHARD, University of Muenster, Bastian Franze, Christoph Wehe, Michael Sperling, Uwe Karst

2:20 PM (2060-02) **Immobilization of Lambda Exonuclease Enzyme in a Solid-Phase Reactor for On-Chip Digestion of DNA** NYOTE J. OLIVER, Louisiana State University, Franklin Uba, Steven Soper, Yoon-Kyoung Cho

2:40 PM (2060-03) **A Novel Strategy for Hepcidin Biomarker Measurement from Human Biological Fluids Based on Nanoporous Silica Chips** JIA FAN, The Methodist Hospital Research Institute, Guangjun Nie, Jian Shi, Mauro Ferrari, Ye Hu, Yuliang Zhao

3:00 PM (2060-04) **Photopolymerization of Narrow Monolithic Membranes in Microchannels** SETH MADREN, Indiana University, Stephen Jacobson

**ORAL** Session 2070

## Sensors IV - arranged by Mustafa Culha, Yeditepe University

Wednesday Afternoon, Room: 311D

Mustafa Culha, Yeditepe University, Presiding

2:00 PM (2070-01) **Some Analytical Applications of Electrochemically Generated Polymers and Conducting Polymers** ARUNAS RAMANAVICIUS, Vilnius University, Almira Ramanaviciene, Asta Kausaite, Jaroslav Voronovic, Viktor Mazeiko, Yasemin Oztekin

2:20 PM (2070-02) **Size-Exclusive Nanosensor for Quantitative Analysis of Fullerene C60** OKELLO A. VERONICA, SUNY at Binghamton, Sadik Omowunmi, Samuel Kikandi

2:40 PM (2070-03) **Two-Dimensional Crystalline Colloidal Array Sensors** JIANTAO ZHANG, University of Pittsburgh, Sanford Asher

3:00 PM (2070-04) **Development of Amperometric Dual-Channel FIA Systems for the Determination of Clinically Important Free-, Bound- and Total Sialic Acid** SAYED MARZOUK, UAE University, Amr Amin, Jody Haddow

3:35 PM (2070-05) **Heterogeneous Porous Silicon Oxidation for Analyte Response** CALEY A. CARAS, SUNY at Buffalo, Frank Bright, Justin Reynard, Melissa Ugelow, Nadine Kraut

3:55 PM (2070-06) **Synthesis and Characterization of a Fluorescent Molecularly Imprinted Polymer for Selective Recognition of Cu(II) Ions** IVO M. RAIMUNDO JR, UNICAMP, Ana Descalzo, Guillermo Orellana, Maria Moreno-Bondi, Sílvia Lopes Pinheiro

4:15 PM (2070-07) **A Fully Integrated Microfluidic Droplet Platform for Point-of-Care Molecular Diagnostics** YI ZHANG, Johns Hopkins School of Medicine, Tza-Huei Wang

4:35 PM (2070-08) **Chitosan Based Electrochemical Microsensors for *In vivo* Detection of Serotonin in Zebrafish Embryos** RIFAT E. OZEL, Clarkson University, Kenneth Wallace, Silvana Andreescu

**POSTER** Session 2080

## 'Omics

Wednesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2080-01P) **Compact Continuous-Flow PCR System and On-Line DNA Analysis** HAN-OK KIM, Pohang University of Science and Technology, Byoung-Joo Kwak, Jong Hoon Hahn

(2080-02P) **Quantifying the Effects of FLASH Knockdown on Regulation of Histone Synthesis by LC-MS/MS** JOSHUA REAVIS, University of Notre Dame

(2080-03P) **Mitochondria and Toxicity of Single-Walled Carbon Nanotubes** LEI REN, University of California, Riverside, Wenwan Zhong

(2080-04P) **Examining the Effects of Low Doses of Ionizing Radiation on Mammalian Phosphoproteomes** XIAOSHAN YUE, University of Notre Dame, Amanda Hummon

(2080-05P) **Validation of Automated Workstation for Dispensing Insect Diet into Target Vessels** SIKANDER GILL, Aurora Instruments Ltd., Dong Liang, Marco Garate, Rajwant Gill

(2080-06P) **Analysis of Single Amino Acid Mutations in Intact Proteins** ROB FREEMAN, SGE Analytical Science, Dan DiFeo, Hans Jurgen Wirth

(2080-07P) **Characterization of Metabolites of *Medigaco tuncatula* Using Comprehensive Two-Dimensional Gas Chromatography with Time-of-Flight Mass Spectrometry** CORY S. FIX, LECO Corporation, Jeffrey Patrick, Joe Binkley

(2080-08P) **Metabolic Profiling for Colorectal Cancer and Adenomatous Polyps Using 1H NMR, GCxGC/MS, and LC/MS** LINGYAN LIU, Purdue University, Daniel Raftery, Jian Zhang, Nagana Gowda, Siwei Wei

(2080-09P) **The Preparation and Characterization of Biomimetic Silica Microsphere and Its Application in Protein Purification** TING-YANG KUO, National Tsing Hua University, Chii-Chang Chen, Ja-An Ho, Li-Kang Chu

(2080-10P) **Trypsin-Immobilizd Magnetic Nanoparticles Coated with Polymer for Fast, Highly Efficient Protein Digestion, 18O Labeling and Protein Quantification** YANGJUN ZHANG, Beijing Institute of Radiation Medicine, Weijie Qin, Xiaohong Qian, Zifeng Song

(2080-11P) **High Throughput Proteomic Investigation of Bacterial Degradation of Arsenicals** JOHN A. THOMAS, Duquesne University, John Stolz, Partha Basu

**POSTER** Session 2090

## Environmental Analysis V

Wednesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2090-01P) **An Innovative System for Combined Analysis of 'Air Toxics' Using Canister and/or Sorbent Tube Sampling for US EPA Methods TO-15 and TO-17** LARA KELLY, Markes International, Kurt Thaxton, Nicola Watson

(2090-02P) **Optimization of Environmental Methods for Improved Laboratory Throughput** KORY KELLY, Phenomenex Inc., Art Miranda, Kristen Parnell

(2090-03P) **Selective and Stable Nano Stationary Phase GC Capillary Columns for Environmental Analysis** KRISHANT P. NAIKWADI, J & K Scientific Inc., Allen Britten

(2090-04P) **Innovative Ninety Percent Phenyl Ten Percent Methyl Polysiloxane Nano Stationary Phase GC Columns for Analysis of Environmental Samples** KRISHANT P. NAIKWADI, J & K Scientific Inc., Allen Britten

(2090-05P) **Comparison of Analytical Traps for USEPA Method 8260C** TYLER TRENT, Teledyne Tekmar, Holly Taylor, Nathan Valentine, Roger Bardsley, Thomas Hartlein

(2090-06P) **USEPA Method 8260 Analysis Employing the EST Analytical Sampling System** ANNE JUREK, EST Analytical, Jeff Sheriff, Justin Murphy, Lindsey Pyron

(2090-07P) **Drinking Water Analysis Conditions for USEPA Method 524.3 and the Newly Proposed Method 524.4 Using the EST Analytical Purge and Trap** ANNE JUREK, EST Analytical, Jeff Sheriff, Justin Murphy, Lindsey Pyron, Richard Whitney

(2090-08P) **Mercury Determinations in Sludge, Soils and Wastewater Using an Aqua Regia Dissolution and ICP-AES** DAVID BEST, Savannah River National Laboratory, Charles Coleman

(2090-09P) **Analytical Application of Laser Breakdown in Tap and Pure Water by 1.064 µm Nanosecond Pulses** VALERY BULATOV, Technion- Israel Institute of Technology, Grigory Toker, Israel Schechter, Tatiana Kovalchuk

(2090-10P) **Preliminary and Ongoing Work Using Ferene S for Field Determination of Iron in Natural Waters: Speciation of Fe(II) and Fe(III) in Abandoned Mine Drainage** MARK T. STAUFFER, University of Pittsburgh at Greensburg

(2090-11P) **An Online VOCs Monitoring System Using Ion Trap based Gas Chromatography Mass Spectrometry Technology** LUHONG WEN, Focused Photonics (Hangzhou) Inc., Jiancheng Yu, Xiaoxu Li

(2090-12P) **Climate Change Analysis on Himalayan Glacier Using Remote Sensing** ANUL HAQ, Indian Institute of Technology Roorkee, Kamal Jain, KPR Menon

(2090-13P) **Screening and Quantitation of Targeted and Non-Targeted Environmental Pollutants in Water Samples** ANDRE SCHREIBER, AB SCIEX, Christopher Borton

**POSTER** Session 2100

## Environmental Analysis: Organics II

Wednesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2100-01P) **Utilization of GCxGC-TOFMS as a Broad-Spectrum Analysis for Endocrine Disruptor Compounds in Urban and Rural Watersheds** JOHN HEIM, LECO Corporation, Doug Staples, Joe Binkley

(2100-02P) **Optimization and Validation of Fast Ultrahigh Performance Liquid Chromatographic Method for Simultaneous Determination of Selected Veterinary Antibiotics in Environmental Water Samples Using Fully Porous Sub 2-µm Columns at Elevated Temperature** HEBA SHAABAN, University of Waterloo, Tadeusz Gorecki

(2100-03P) **A Novel Approach for Automating 6mL Solid Phase Extraction Cartridge Methods** MICHAEL EBITSON, Horizon Technology, Inc., David Gallagher

(2100-04P) **Advances in Automating Solid Phase Extraction for UCMR3: Hormones and 1, 4-Dioxane** MICHAEL EBITSON, Horizon Technology, Inc., David Gallagher

(2100-05P) **Tracking Organics in the Santa Cruz River- Sources and Attenuation Effects** ALANDRA KAHL, University of Arizona, Darryl Jones, Leif Abrell, Robert Arnold, Shane Snyder

(2100-06P) **Evaluation of Coverage of In-Source CID Fragmentation of Emerging Contaminants Using LC-TOFMS** ANTONIO MOLINA-DÍAZ, University of Jaen, Amadeo R Fernández-Alba, Ana Agüera, Andrés Péres-Parada, José Robles-Molina, Juan C Domínguez-Romero, Juan F García-Reyes, María del Mar Gómez-Ramos

(2100-07P) **Oiled Penguins In South Atlantic: Source Identification of an Unknown Remote Spill Using Fingerprinting Techniques by GC-MS** ALFREDO LO BALBO, Centro de Investigaciones Toxicológicas, Carlos Gotelli, Mariano Gotelli

(2100-08P) **Multidimensional Separation, Derivatization, and Mass Spectral Characterization of Complex Natural Mixtures** ALEXANDRA C. STENSON, University of South Alabama, Nicole Novotny

(2100-09P) **Inlet Liner Geometry and the Impact on GC Sample Analysis** ROB FREEMAN, SGE Analytical Science, Dan DiFeo, Kayte Parlevliet

(2100-10P) **Sample Preparation Effects on Data Quality in Total Organic Carbon (TOC) Analysis of Bauxite Ore Samples** J GARRETT SLATON, OI Analytical, Gary Engelhart, Jeffrey Lane

(2100-11P) **Poly(N-isopropylacrylamide) Ratiometric Fluorescent Ion Indicators for Free Copper Sensing** DEANNA M. SILVA, University of New Hampshire, Alex Papantones, John Csoros, Justin Massing, Roy Planalp, Shawn Burdette, William Seitz

**POSTER** Session 2110

## Food Science IV

Wednesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2110-01P) **Headspace Solid Phase Microextraction Combined with Gas Chromatography/Mass Spectrometry for the Analysis of Dark Chocolate** MARISA BONILLA, Thermo Fisher Scientific

(2110-02P) **Analysis of 4-methylimidazole: Creamy Caramel Colors, Cola and**

**Cancer?** RICHARD LAKE, Restek Corporation, Chris Denicola, Julie Kowalski, Sharon Lupo, Ty Kahler

(2110-03P) **Determination of Amylose Content of Corn Starch by Raman Spectroscopy** RANDY L. WEHLING, University of Nebraska, Brandon Holder

(2110-04P) **Determination of Patulin in Apple Juice** PADMAJA PRABHU, PerkinElmer, Anil Nimkar, William Goodman

(2110-05P) **Evaluation of Organochlorine Residues Present in Raw Milk Sold in the Department of Cordoba-Colombia** EDINELDO LANS CEBALLOS, Universidad De Cordoba, Basilio Diaz Ponguta

(2110-06P) **Analysis and Comparison of Solvent Systems for Evaluating Migration of Bisphenol A Into Food and Food Simulants Utilizing Reversed Phase HPLC** VIRGINIA BURKEL, NSF International

(2110-07P) **High Speed Analysis of Mycotoxins** WILLIAM HEDGEPETH, Shimadzu, Jeff Dahl

(2110-08P) **Measurement of Cinnamon Flavonoids by LC-FLD** JONNA L. PRATT, McCormick & Co., Inc., Michael Madsen, Roman Grypa

(2110-09P) **Analysis of the Odour Profile of Food Products Using A Micro-Chamber/Thermal Extractor System and Detection by Thermal Desorption–GC/TOF MS** GARETH M. ROBERTS, Markes International, Daniel Cooper, Paul Morris

(2110-10P) **Hot Injection and Trapping Using SHS/SPME and a Thermal Desorption System for GC-MS Analysis** JUN TSUNOKAWA, GERSTEL KK, Kikuo Sasamoto, Nobuo Ochiai

(2110-11P) **Unveiling an Undergraduate Story of How Sample Properties of Various Food/Beverage Samples and Pipetting Modes Impact Volumetric Pipetting Accuracy of Positive and Air Displacement Pipettes** TONI R. HOFHINE, Gilson, Inc., Seth Hanson, Terra Thimm

(2110-12P) **Fluorescence Chemical Sensor** MARZIEH SADEGHI, Razi University

(2110-13P) **The Development of Infrared Spectroscopy and Chemometrics on Rapid Detection of Cocoa Butter Adulteration** TING WANG, The Ohio State University, Luis Rodriguez-Saona

(2110-14P) **Quantitative Determination of Zinc (Zn) in Milk by Differential Pulse Anodic Stripping Voltametry (DPASV) Technique** JAYA RAJ, All India Institute of Medical Sciences (Aiims), Anupuma Raina, Mohineesh Chandra, Tirath Dogra

(2110-15P) **Evaluation of a Liquid Chromatography-Tandem Mass Spectrometry Screening Method to Monitor 58 Antibiotics in Honey** ESTELLE DUBREIL, ANSES

## Forensics I

Wednesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2120-01P) **Rapid Ink Analysis Using Capillary Electrophoresis and UV-VIS Spectroscopy** LING HUANG, Hofstra University, Courtney Grimes, Lykourgos "Luke" Demas

(2120-02P) **Forensic Analysis of Wear Metals in Used Motor Oils** CHRISTOPHER R. DOCKERY, Kennesaw State University, Heather Overman, Kathleen O'Rourke, Khiem Truong, Laurie Mulqueeny, Veronica Langley

(2120-03P) **DART-MS and GC-MS of Lubricants as Trace Evidence Associated with Sexual Assault** JASON SHEPARD, University at Albany - SUNY, Rabi Musah, Robert Cody

(2120-04P) **Effect of Environmental Contaminants on Fluorescence of Forensic Textile Fibers** KRISHNAVENI APPALANENI, University of Central Florida, Andres Campiglia, Matthew Rex

(2120-05P) **Determination of Elemental Fingerprints of Beer Samples Using Inductively Coupled Plasma – Mass Spectrometry (ICP-MS): Multivariation Analysis and Potential Application to Forensic Sample Comparison** YI HE, John Jay College/CUNY

(2120-06P) **IC Analysis of Nuclear Forensics Samples Requiring ISO-17025 Certification** THOMAS WHITE, Savannah River National Laboratory, Boyd Wiedenman

(2120-07P) **Improvement of Detection Canine Training: Validation of a Prototype Surrogate Explosives Kit** KATYLYNN BELTZ, Florida International University, Kenneth Furton

(2120-08P) **Method Optimization for the Detection of Volatile Organic Compounds from Decomposing Remains** NORMA IRIS CARABALLO, Florida International University, Kenneth Furton

(2120-09P) **Fast Detection of Synthetic Cannabinoids in Consumer Products Through DART-MS and NMR** LING HUANG, Hofstra University, Amanda Rivera, Mercurio Veltri, Robert Cody, Woen Kim

(2120-10P) **Direct Analysis of Amphetamines and Cannabis by Headspace APCI / ITMS** MAKOTO HASHIMOTO, Hitachi High-Technologies Corporation, Hiroyuki Inoue, Masuyoshi Yamada, Takefumi Yokokura, Yukiko Nakazono

(2120-11P) **Differentiation of Methylenedioxybenzylpiperazines (MDBPs) and Ethoxybenzylpiperazines (EBPs) By GC-IRD and GC-MS** KARIM M. ABDEL-HAY, Auburn University, C Randall Clark, Jack DeRuiter, Tamer Awad

(2120-12P) **Method Development for the Isolation and Detection of Synthetic Cannabinoids in Saliva** MELISSA TOMS, Northern Kentucky University, Heather Bullen

(2120-13P) **Differentiation of Regioisomeric Methoxyamphetamines and Fluoroamphetamines by GC-MS** HIROYUKI INOUE, National Research Institute of Police Science, Fumiyo Kasuya, Kazuna Miyamoto, Kenji Tsujikawa, Tatsuyuki Kanamori, Yukiko Nakazono

(2120-14P) **Forensic Analysis of the Chemical Composition of Trace Evidence from Fingerprints, Lips and Other Skin Residues** JOSHUA G. GOBER, Southern Polytechnic State University, Ahmed Ali, Bo Ri Kim, Heather Bishop, Wei Zhou, William Anderson

**POSTER** Session 2130

## Fuels III

Wednesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2130-01P) **Measurement of Essential Nutrients for Algae Growth and Biofuels Production Using a Discrete Analyzer** ELIZABETH A. BADGETT, OI Analytical, Gary Engelhart, William Lipps

(2130-02P) **A Single Method for the Direct Determination of Total Glycerols in All Biodiesels Using Liquid Chromatography and Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth

(2130-03P) **Reverse Flow Split/Splitless Injector: Simplification of ASTM D3606 and D4815** MASSIMO SANTORO, Thermo Fisher Scientific, Eric Phillips, Fausto Pigozzo, Paolo Magni, Stefano Pelagatti

(2130-05P) **Diesel Vehicle Performance on Unaltered Waste Soybean Oil Blended with Petroleum Fuels** EUGENE P. WAGNER, University of Pittsburgh, Maura Koehle, Patrick Lambert, Todd Moyle

(2130-06P) **A New Method for Determination of FAME Trace Contamination in Aviation Turbine Fuel Using Gas Chromatography** ERWIN BARENDREGT, PAC, Rik Suijker, Rob de Jong

(2130-07P) **Identification of Nitrogen Containing Contaminants in Jet Fuel by HPLC-MS and Chemical Derivatization** DAVID W. JOHNSON, University of Dayton, Ryan Adams, Steven Zabarnick, Striebich Richard, Zachary West

(2130-08P) **Increasing Sample Throughput of In-Service Oil Samples Using ICP-OES and Sample Introduction Accessories** MATTHEW CASSAP, Thermo Fisher Scientific, Fergus Keenan, Martin Nash

(2130-09P) **Measurement of 18 Chemical and Physical Fuel Properties in Less than 5 Minutes, Anywhere** STUART FARQUHARSON, Real-Time Analyzers, Inc., Carl Brouillette, Frank Inscore, Michael Donahue, Wayne Smith

(2130-10P) **Development of Biofuel Cells Based on Nanostructured Electrodes Using Gold Nanoparticles and Carbon Nanotubes** HIROYUKI YOSHIKAWA, Osaka University, Eiichi Tamiya, Le Quynh Hoa, Tomohiko Ikeuchi

**POSTER** Session 2140

## LC-MS Applications

Wednesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2140-01P) **Carbohydrate Analysis Using HPLC with PAD, FLD, CAD and MS Detectors** BRUCE A. BAILEY, Thermo Fisher Scientific, Christopher Crafts, Ian Acworth, Marc Plante, Paul Ullucci, Rainer Bauder

(2140-02P) **LC/MS/MS Determination of Taurine and Related Metabolites in Urine as Bladder Cancer Biomarkers** SANJEEWA GAMAGEDARA, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma

(2140-03P) **NonenzymaticGlycation of Deoxy Guanosine Monophosphate (dGMP) by Methyl Glyoxal and Glucosamine: An *In vitro* Study of AGE Formation** LASKER S. LASKER, University of Rhode Island, Dain Joel, Puneet Gupta, Weixi Liu

(2140-04P) **Rapid Liquid Chromatography-Multistage Mass Spectrometry Neuropeptide Analysis Using Large Diameter Particulate Phase** ZHOU YING, University of Michigan

(2140-05P) **Repeatability Evaluation of a Liquid Chromatography (HILIC)-High Resolution TOF Mass Spectrometry System in Analysis of Biological Samples** LI ZHANG, LECO Corporation, Jeffrey Patrick, Joe Binkley, Kevin Siek, Xiang Zhang, Xiaoli Wei, Xue Shi

(2140-07P) **Establishment of Chemical Warfare Agent Instrument and Method Detection Limits for Liquid Chromatography and Mass Spectrometer Instrumentation** DONALD R. GUSTAVSON, US Army, Benjamin Hunt, Richard Phan

(2140-08P) **A Novel LC-MS Method For Sensitive Detection of Inorganic Azide by Employing a Strain Promoted Click Chemistry** LIFANG WANG, Georgia State University, Binghe Wang, Chaofeng Dai, Siming Wang, Weixuan Chen

(2140-09P) **The Determination of Fruit Juice Authenticity Using High Resolution Chromatography, UV, Time of Flight MS and Multivariate Analysis** ANTONIETTA GLEDHILL, Waters Corporation, Dana Krueger, Jennifer Burgess, Marian Twohig

(2140-10P) **Noise Removal from Deconvoluted Spectral Data for On-Line 2DLC-MS Top-Down Proteomics** KAITLIN M. FAGUE, University of North Carolina at Chapel Hill, James Jorgenson, James Parks, Jordan Stobaugh

(2140-11P) **Derivatization of Nitroaromatics for Trace Analysis by LCMS** WU XINGHUA, Celgene Corporation, Dora Visky, Feifei Tian, Leon Liang, Li Zhu, Lisa Fan, Ruimin Xie, Shan Shao, Xiaolin Fu

(2140-12P) **Analysis of Calcitriol in Plasma Using LC-MS/MS** LUISA PEREIRA, Thermo Fisher Scientific, Joanna Denbigh, Kim Phipps, Stephen Westwood, Tim Liddicoat

(2140-13P) **Simultaneous Quantification of 17--oestradiol and Oestrone in Human Plasma by Liquid Chromatography-Tandem Mass Spectrometry** LUISA PEREIRA, Thermo Fisher Scientific, Anthony Edge, Kevin He, Kim Phipps, Stephen Westwood, William Faulkner

(2140-14P) **A New Active Sampling Device for LC/MS Determination of Vapor Phase and Particulate Isocyanate Derivatives in Workplace Environments** KRISTEN L. SCHULTZ, Supelco/Sigma-Aldrich, Daniel Karlsson, Gunner Skarping, Jamie Brown, Leonard Sidisky, Maryann Dalene

(2140-15P) **Development of a UHPLC-MS/MS Method for the Measurement of Chlortetracycline Degradation in Swine Manure** WEILIN L. SHELVER, USDA, Vincent Varel

(2140-16P) **Quantitative Analysis of Drug Analytes in Rat and Human Plasma Using LC/MS with Online Sample Preparation** GUIFENG JIANG, ThermoFisher Scientific, Kayvon Jalali, Terry Zhang

(2140-17P) **Applying Japanese Pharmacopeia Purity Test Methods to Atrovastatin Calcium Hydrate Impurity Profiling Using 2D-LCMS-IT-TOF System** ICHIRO HIRANO, Shimadzu Corporation, Tairo Ogura, Yusuke Inohana

**POSTER** Session 2150

## Mass Spectrometry II

Wednesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2150-01P) **Analysis of Melamine Glycation Endproducts Using Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry and Electrospray Ionization Mass Spectrometry** WEIXI LIU, University of Rhode Island, Joel Dain, Menashi Cohenford

(2150-02P) **Atmospheric Pressure Gas Ionizer to Replace Radioactive Sources** RICHARD L. FINK, Applied Nanotech, Inc., Thuesen Leif, Tikhonski Alexei

(2150-03P) **The Development of an Ultra Low Noise Microchannel Plate Ion Detector** SHARON MROTEK, Photonis USA, Bruce Laprade

(2150-04P) **Proton-Transfer-Reaction Mass Spectrometry (PTR-MS) with Real-Time Nosespace Air Sampling - An Essential Tool for Food and Flavor Analysis** LUKAS MAERK, IONICON Analytik, Alfons Jordan, Christian Lindinger, Eugen Hartungen, Philipp Sulzer, Simone Juerschik, Tilmann Maerk

(2150-05P) **Evaluating the Flowing Afterglow for Real Time Identification and Quantification of Multiple VOCs** KATHRYN T. MICKO, University of Pittsburgh, Joseph Grabowski

(2150-06P) **A New, Intuitive and User Friendly Software Platform with Optimized Analytical Workflow, Extended Functionality and Comprehensive Peripheral Control for ICP-Q-MS** HOLGER JEGLINSKI, Thermo Fisher Scientific, Julian Wills, Lothar Rottmann, Meike Hamester

(2150-07P) **Assignment of Molecular Formula in Extractable Testing by Software Enhancement of Unit Mass Data** YIN LIU, Mannkind Corporation, Arthur Bailey, Baiba Cabovska, John Cunningham, Sam Shum

(2150-08P) **Tetraalkyl Ammonium Bromides for the Standardization and Performance Evaluation of Thermal Desorption Ion Mobility Spectrometers** LEONARD DEMORANVILLE, National Institute of Standards and Technology, Greg Gillen, Laurent Houssiau

**POSTER** Session 2160

## Pharmaceutical GC and/or MS II

Wednesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2160-01P) **Analysis of 2,4,6-tribromoanisole (TBA) and 2,4,6-tribromophenol (TBP) in Pharmaceutical Container Closure Systems Using GC-MS** ERIC L. SPAHLINGER, Catalent Pharma Solutions, Alan Hendricker, James Mclean, James Robb, III, Tom Feinberg

(2160-03P) **Characterization and Identification of Essential Oils by GC-MS** VIVEK R. DHOLE, Thermo Fisher Scientific, Balasubramanian Sitharaman, Inderjit Kaur

(2160-04P) **Detection and Quantification of Formaldehyde by Derivatisation with Pentafluorobenzylhydroxyl Amine in Pharmaceutical Excipients by GC-SHS-Mass Spectrometry** PADMAJA PRABHU, PerkinElmer, Anil Nimkar, William Goodman

(2160-05P) **USP 467: A Dynamic Headspace Approach to Reach Low Concentration Limits** ILARIA FERRANTE, DANI Instruments SpA, Daniele Recenti, Manuela Bergna

(2160-07P) **Residual Solvents USP <467> - Problems and Solutions** PETTER TOLLBACK, Syntagon AB, Magnus Ericsson

(2160-08P) **A Sub-2µm Particle Supercritical Fluid Chromatography Coupled to Mass Spectrometry Method Development Strategy for Lipid Analysis** MICHAEL D. JONES, Waters Corporation, Giorgis Isaac, Stephen McDonald

**POSTER** Session 2165

## Pharmaceutical LC Methodology

Wednesday Afternoon, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2165-01P) **Assessment of a New Generation of Evaporative Light-Scattering Detectors for Liquid Chromatography: Sensitivity, Linearity, Dynamic Range, Analyte Dispersion and Response Variation with Eluent Composition** ERIC VERETTE, Sedere

(2165-02P) **Applications of Type-C Silica based HPLC Columns in Pharmaceutical Analyses** JOSH YOUNG, MicroSolv Technology Corporation, Joseph Pesek, Maria

Matyska, William Ciccone

(2165-03P) **Application of a Unique HPLC Phase When Exploring HPLC Method Development Challenges for a Pharmaceutical Combination Therapy Containing Five Active Ingredients** ALAN P. MCKEOWN, Advanced Chromatography Technologies

(2165-04P) **Exploring and Leveraging Mixed Mode Interactions to Maximize Chromatographic Selectivity with Uniquely Designed HPLC/UHPLC Stationary Phases** ALAN P. MCKEOWN, Advanced Chromatography Technologies

(2165-05P) **Using a Quality-by-Design Approach for Development and Validation of a Stability Indicating UPLC Method for Ebastine** ALEXANDER H. SCHMIDT, Steiner Pharmaceuticals, Mijo Stanic

(2165-06P) **Using UPLC/MS/MS for Forced Degradation Studies and Impurity Profiling of Pharmaceuticals** MIJO STANIC, Steiner Pharmaceuticals, Alexander Schmidt

(2165-07P) **Detection of Protein Heterogeneity by HPLC** FUMIYA NAKATA, TOSOH Corporation, Atis Chakrabarti, Toshito Kamichika

**POSTER** Session 2170

## Pharmaceutical LC Techniques

Wednesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2170-01P) **The Use of Methyl-β-Cyclodextrin as a Mobile Phase Additive for the Reversed-Phase Chromatography of Pharmaceutically-Relevant Compounds** JASON W. COYM, University of South Alabama, Ariel Armstrong, Shauna Charlton

(2170-02P) **Monitoring of Anions and Cations in Early Stage Product Formulation** CHRISTOPHER CRAFTS, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth, Marc Plante

(2170-03P) **Synthesis and Characterization of Wider Bore Methacrylate-Based Polymeric Monolithic HPLC Columns** NEIL D. DANIELSON, Miami University, Fotouh Mansour

(2170-04P) **Eliminating Tedious Fraction Transfer of Natural Product in Low Concentration by Implementing Automated Fraction Pooling in a Semi-Preparative Environment of Lycopene in Various Tea Extracts via Flash Chromatography Using a Manual Purification System** TONI R. HOFHINE, Gilson, Inc., Seth Hanson

(2170-05P) **HPTLC Method Development and Validation** VIDHYA K. BHUSARI, Poona College of Pharmacy, Sunil Dhaneshwar

(2170-06P) **Sensitive Quantitation of Genotoxic Impurities in Active Pharmaceutical Ingredients by LC-ICP-MS with Iodo Derivertization** HARIGAYA KOKI, Mitsubishi Tanabe Pharma Corporation, Katsumata Tsunenobu

(2170-07P) **HPLC Quantification of Aphidicolin in Different Extracts of the Endophytic Fungus Nigrospora Sphaerica** ADRIANA A. LOPES, FCFRP-USP, Keyller Borges, Monica Pupo

(2170-08P) **Transfer of Methods in LC and UHPLC, What Calculations Do I Need?** KEN BUTCHART, Fortis Technologies Ltd, Mark Woodruff

(2170-09P) **Development of Chemically Modified Carbohydrate Based Chiral Stationary Phases to Improve Chiral Separations** MATTHEW PRZYBYCIEL, ES Industries

(2170-10P) **The Development and Application of Unique Stationary Phases for Sub 2 Micron HPLC Columns** MATTHEW PRZYBYCIEL, ES Industries

(2170-11P) **Development of Ion-Pairing HPLC Methods to Determine EDTA and DTPA in Two Pharmaceutical Formulations** GEORGE WANG, Bristol-Myers Squibb, Frank Tomasella

(2170-12P) **Development of a New HPLC Method for Characterization of Carbonyl Reductases in Biotransformation of Tobacco Specific Carcinogen NNK** VLADIMIR WSOL, Charles University, Lucie Skarydova, Michaela Zverinova, Petr Solich

(2170-13P) **Improving LC/MS Performance with UHPLC Columns** ANNE MACK, Agilent Technologies, Jason Link, Maureen Joseph, William Long

(2170-14P) **Characterization of New Reversed Phase Columns Designed for Protein Separation Based on Wide Pore Silica Gel with C4 Phase** YASUTOSHI KAWAI, Tosoh Corporation, Hiroyuki Moriyama, Hiroyuki Yamasaki

(2170-15P) **Investigation of the Effect of 1-butyl -3-methyl Imidazolium Terafluoroborate Ionic Liquid on the Separation and Retention Behavior of Amitriptyline and Nortriptyline on Reversed Phase Liquid Chromatography** TARIQ Z AHMAD, Western Illinois University, Azhar Alhejji, Sahar Salam, Tarab Ahmad

(2170-16P) **The Effect of the Concentration of 1-butyl- 2, 3 Dimethylimadzolium Tetrafluoroborate Ionic Liquid as a Mobile Phase Additive on the Retention and Adsorption Behavior of Tryptophan** KISHORE KUMAR R ALUGUVELLI, Western Illinois University, Azhar Alhejji, Tarab Ahmad, Tariq Z Ahmad

(2170-17P) **The Effect of Counter Ions of 1-methy, 3-butyl Imidazolium Ionic Liquid as a Mobile Phase Additive on the Adsorption Behavior of Tryptophan on Reversed Phase Liquid Chromatography** TARAB AHMAD, Western Illinois University, Azhar Alhejji, Kishore Kumar R Aluguvelli, Tariq Z Ahmad

**POSTER** Session 2175

## Samples and Sampling IV

Wednesday Afternoon, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2175-01P) **Improving Standard N-Glycan Sample Preparation with Manual Automation**

**Using Microchromatography to Improve Efficiency, Accuracy, and Reproducibility** TONI R. HOFHINE, Gilson, Inc.

(2175-02P) **Automating Sample Preparation to Reduce Running Costs and Environmental Impact** GAVIN J. JONES, Biotage, Tobias Nordin

(2175-03P) **Optimized Sample Preparation Using a Novel SPE Solution** LUISA PEREIRA, Thermo Fisher Scientific, Ken Meadows, Mike Oliver, Tim Liddicoat

(2175-04P) **Evaluation of a Biocide Release from a Paint Film – Application of Sorptive Stirring Bar Technique/HPLC for Marine Antifouling Paints** BORIS POLANUYER, Dow Chemical, David Laganella, John Ashmore, Peter Eastman

(2175-05P) **Automatic Sample Measurement in Karl Fischer Titration** GEORGE PORTER, Metrohm USA, Andreas Trinkle, Birgit Faas, Michael Margreth

(2175-06P) **A New QuECheRS Dispersive SPE Material and Method for Analysis of Veterinary Drug Residue by LC-MS-MS** OLGA . SHIMELIS, Supelco/Sigma-Aldrich, Daniel Vitkuske, Emily Barrey, Michael Ye

# Thursday Morning, March 15, 2012

**SYMPOSIA** Session 2180

## Advanced Glycomics and Glycoproteomics Approaches - arranged by Yehia Mechref, Texas Tech University

Thursday Morning, Room: 308D

Yehia Mechref, Texas Tech University, Presiding

8:05 AM (2180-01) **Development of an Ion Mobility/Ion Trap/Photodissociation Instrument for Characterizing Glycan Structures** DAVID E. CLEMMER, Indiana University, James Reilly, Nathaniel Webber, Stephen Valentine, Steven Zucker, Sunyoung Lee

8:40 AM (2180-02) **Automated Site-Specific Glycosylation of Protein Mixtures with Glycan Heterogeneity** CARLITO B. LEBRILLA, University of California, Davis

9:15 AM (2180-03) **An Integrated Mass Spectrometry Platform for Confident Assignment of Site Specific N-Glycans on Glycoproteins Associated with Influenza Infectivity** JOSEPH ZAIA, Boston University, Barbara Seaton, Kevan Hartshorn, Michael Rynkiewicz, Nancy Leymarie

9:50 AM (2180-04) **Gas-Phase Ion-Electron and Ion-Photon Reactions for Carbohydrate Structural Characterization in Both Positive and Negative Ion Mode** KRISTINA HAKANSSON, University of Michigan, Di Gao, Wen Zhou

10:25 AM (2180-05) **Mass Spectrometric Quantification of Permethylated Glycans Derived from Blood Serum** YEHIA MECHREF, Texas Tech University, Janie DeSantos-Garcia, Sarah Khalil, Yunli Hu

**SYMPOSIA** Session 2190

## Advancing Analytical Technologies for Human Health and Security (RSC) - arranged by May Copsey, Royal Society of Chemists

Thursday Morning, Room: 300

May Copsey, Royal Society of Chemists, Presiding

8:05 AM (2190-01) **Ambient Mass Spectrometry to Promote Human Health and Security** GARY M. HIEFTJE, Indiana University, Jacob Shelley, Justin Wiseman, Kevin Pfeuffer, Nicolas Bings, Niklas Schaper

8:40 AM (2190-02) **Metallomics to Study Macrophage Infection Fighting and to Study Selenium to Reduce Arsenic Toxicity** JOSEPH CARUSO, University of Cincinnati, Edward Merino, George Deepe, Karnakar Chitta, Kavitha Subramanian, Landero Julio, Mike Winters, Qilin Chan

9:15 AM (2190-03) **Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) Sources: Practical Approaches for Atomic Spectrometry Miniaturization** R KENNETH MARCUS, Clemson University, Anthony Carado, C Derrick Quarles, Charles Barinaga, David Koppenaal, Rick Russo

9:50 AM (2190-04) **Mass Spectrometry-Based Metabolomics for Investigating Human Health and Disease** ROY GOODACRE, University of Manchester

10:25 AM (2190-05) **Mass Spectrometry for Human Health and Security** ZHENG OUYANG, Purdue University, He Wang, Nicholas Manicke, R Graham Cooks, Ryan Espy, Zhiping Zhang

**SYMPOSIA** Session 2200

## High Resolution Separations of Complex Samples Using UHPLC - arranged by Michael W. Dong, Genentech

Thursday Morning, Room: 307B

Michael W. Dong, Genentech, Presiding

8:05 AM (2200-01) **High-Resolution Separations of Complex Drug Molecules with Multiple Chiral Centers** MICHAEL W. DONG, Genentech, Christine Gu, Derrick Yazzie, Emily VanHassel, Nik Chetwyn

8:40 AM (2200-02) **High Resolution Separations of Peptides and Proteins with Sub-2µm and Shell Particles** DAVY GUILLARME, University of Geneva, Aline Staub, Jean-Luc Veuthey, Josephine Ruta, Szabolcs Fekete

9:15 AM (2200-03) **Analysis of Lipids by Ultra High Pressure Capillary LC Coupled to Mass Spectrometry** JAMES W. JORGENSON, University of North Carolina, Edward Franklin

9:50 AM (2200-04) **Application of Sub 2 µm** ROBERT S. PLUMB, Imperial College London

10:25 AM (2200-05) **Multi-Dimensional UHPLC for Pharmaceutical Analysis** KELLY ZHANG, Genentech, Midco Tsang, Yi Li

**SYMPOSIA** Session 2210

## Ion Cyclotron Resonance Mass Spectrometry: Recent Developments - arranged by Charles L. Wilkins, University of Arkansas

Thursday Morning, Room: 206B

Charles L. Wilkins, University of Arkansas, Presiding

8:05 AM (2210-01) **High Field FTICR MS for Top-Down Investigation of Protein Assemblies** MICHAEL L. GROSS, Washington University in St Louis

8:40 AM (2210-02) **21 Tesla Hybrid Fourier Transform Ion Cyclotron Resonance Mass Spectrometer: A National Resource for Ultrahigh Resolution Mass Analysis** CHRIS HENDRICKSON, Florida State University, Alan Marshall, Greg Blakney, John Quinn, Nate Kaiser

9:15 AM (2210-03) **Ion Cyclotron Resonance: Then and Now** CHARLES L. WILKINS, University of Arkansas

9:50 AM (2210-04) **High Resolution Imaging Mass Spectrometry** RON M. HEEREN, FOM-AMOLF, Donald Smith, Errol Robinson, Ljiljana Pasa-Tolic, Marc Duursma

10:25 AM (2210-05) **Neuropeptide Profiling, Quantitation and Imaging by High Resolution MALDI FTMS Technology** LINGJUN LI, University of Wisconsin

**SYMPOSIA** Session 2220

## Multidimensional Chromatography (ACS-ANYL) - arranged by Dwight Stoll, Gustavus Adolphus College

Thursday Morning, Room: 308B

Dwight Stoll, Gustavus Adolphus College, Presiding

8:05 AM (2220-01) **Effect of Second Dimension Cycle Time on Resolving Power in On-Line Comprehensive Two Dimensional Liquid Chromatography** PETER W. CARR, University of Minnesota, Haiwei Gu, Marcelo Filgueira, Yuan Huang

8:40 AM (2220-02) **Improving Two-Dimensional Peak Capacity and Separation Efficiency with Segmented Flow Chromatography Columns** ROSS A. SHALLIKER, University of Western Sydney, Harald Ritchie, James LaDine, Michelle Camenzuli

9:15 AM (2220-03) **Data Analysis in Multidimensional High Performance Liquid Chromatography** PAUL G. STEVENSON, University of Tennessee - Knoxville, Georges Guiochon

9:50 AM (2220-04) **A Comprehensive LCxLC Approach to Separation of Phytochemicals in Dietary Supplements** PIERLUIGI DELMONTE, US Food And Drug Administration, Cynthia Tyburczy, Fardin Kia Ali Reza, Jeanne Rader, Rahul Pawar

10:25 AM (2220-05) **Selective Comprehensive Two-Dimensional Separation for Resolution Enhancement in Liquid Chromatography** DWIGHT STOLL, Gustavus Adolphus College, Christopher Harmes, Elliot Larson, Stephen Groskreutz

**SYMPOSIA** Session 2230

## Pulsed Lasers, Non-linear Spectroscopies, and Vibrations: From a Laboratory Curiosity to Practical Applications (SAS) - arranged by Bruce Chase, University of Delaware

Thursday Morning, Room: 207A

Bruce Chase, University of Delaware, Presiding

8:05 AM (2230-01) **Picosecond Time-Resolved Infrared Spectroscopy in Conventional and Supercritical Fluids** MICHAEL W. GEORGE, University of Nottingham

8:40 AM (2230-02) **Enhancing Resolution and Contrast in Coherent Raman Microscopy: Towards Superresolution Chemical Imaging** STEPHAN J. STRANICK, National Institute of Standards and Technology

9:15 AM (2230-03) **Structure and Orientation in Electrospun Fibers** BRUCE CHASE, University of Delaware, Craig Prater

9:50 AM (2230-04) **Nonlinear Optical Studies of Solvent Structure and Organization at Solid/Liquid Interfaces** ROBERT WALKER, Montana State University

**WORKSHOP** Session 2240

## Analytical and Spectroscopic Advances and Their Impact on Biofuel Analysis - arranged by James Mott, Shimadzu Scientific Instruments

Thursday Morning, Room: 313

James Mott, Shimadzu Scientific Instruments, Presiding

8:05 AM (2240-01) **An Integrative Separations Approach to Characterize the "Residuals" of Biofuel Fermentations** DONALD M. CANNON, Genencor, a Danisco Division

8:35 AM (2240-02) **Fermentation Monitoring in Bioethanol Production; A Trainers Perspective on Calibration** JAMES MOTT, Shimadzu Scientific Instruments

9:05 AM (2240-03) **Algae Polar Lipids Characterized by On-Line Liquid Chromatography Coupled with Hybrid Linear Quadrupole Ion Trap/Fourier Transform Ion Cyclotron Resonance Mass Spectrometry** ALAN G. MARSHALL, Florida State University, Chang (Sam) Hsu, Huan He, Ryan Rodgers

9:50 AM (2240-04) **Recent Advances in Chromatographic Technologies for Biofuel Analysis** MICHAEL D. MCGINLEY, Phenomenex Inc., Jeff Layne, Kory Kelly

10:20 AM (2240-05) **Approaches and Limitations of Current Analytical Methods for the Characterization of Algae Crude Oils** STILIANOS ROUSSIS, Sapphire Energy

10:50 AM (2240-06) **An Anchor in a Sea of Biofuel Diversity: The Formulation of Reference Materials for the Analysis of BioFuels for Metals and Sulfur** TIMOTHY J. ALAVOSUS, VHG Labs

**ORGANIZED CONTRIBUTED SESSION** Session 2250

## Current Status and Trends in Chromatography and Mass Spectrometry for the Analysis of Biologics and Small Molecules - arranged by Arindam Roy, Oakwood Laboratories

Thursday Morning, Room: 207B

Arindam Roy, Oakwood Laboratories, Presiding

8:00 AM (2250-01) **Use of Chromatography and Mass Spectrometry for Pharmaceutical Development with Case Studies** HEEWON LEE, Boehringer Ingelheim, Nelu Grinberg, Shengli Ma, Sherry Shen

8:20 AM (2250-02) **LC/MS and GC/MS Accurate Mass Applications for the Identification of Trace Level Impurities and Metabolites** JEFFREY R. GILBERT, Dow AgroSciences, Jeffrey Godbey, Jesse Balcer, Yelena Adelfinskaya

8:40 AM (2250-03) **siRNA Analysis by UPLC and MS Related Techniques** BING MAO, Merck & Co., Inc, Huimin Yuan, Rong Xiang

9:00 AM (2250-04) **Pushing the Limits in Mass Spectrometry** ROBERT I. ELLIS, AB Sciex

9:35 AM (2250-05) **Advances in the Characterization of Biologics: Strategies and Approaches** GUODONG CHEN, Bristol-Myers Squibb, Adrienne Tymiak, Hui Wei, Jingjie Mo

9:55 AM (2250-06) **Analytical Challenges and Opportunities in Pharmaceutical API (Active Pharmaceutical Ingredient) Development** YONG CHEN, Abbott Laboratories

10:15 AM (2250-07) **Method Development, Validation and Out of Specification Investigations in Developing Sterile Injectable/Lyophilized Drug Products** ARINDAM ROY, Oakwood Laboratories, Dong Wen

10:35 AM (2250-08) **Novel Formats for Nanospray Enabled Mass Spectrometry: Combination of On- and Off-Line Workflows with Active Pumping and Feedback Control for High Throughput Analysis** GARY A. VALASKOVIC, New Objective Inc.

**ORGANIZED CONTRIBUTED SESSION** Session 2260

## Forensic Analysis: From the Lab to the Crime Scene - arranged by Igor K. Lednev, University at Albany - SUNY

Thursday Morning, Room: 206C

Igor K. Lednev, University at Albany - SUNY, Presiding

8:00 AM (2260-01) **Glass Evidence: From the Crime Scene to Crime Lab and Beyond** CHIP POLLOCK, Sacramento County District Attorney Office - Laboratory of Forensic Services

8:20 AM (2260-02) **Advances in the Field and Laboratory Detection of Human Remains** KENNETH G. FURTON, Florida International University, Jessica Brown, Lauryn DeGreeff, Norma Iris Caraballo

8:40 AM (2260-03) **UV Resonance Raman Studies of Energetic Materials: The Exciting Story** SANFORD A. ASHER, University of Pittsburgh, Luling Wang, Manash Ghosh

9:00 AM (2260-04) **Gunshot Residue - Identification and Interpretation** ELANA A. SOMPLE, RJ Lee Group, Inc.

9:20 AM (2260-05) **Raman Microspectroscopy and Advanced Statistics for Detection and Characterization of Gunshot Residue** JUSTIN BUENO, University at Albany - SUNY, Igor Lednev, Vitali Sikirzhytski

**ORAL** Session 2270

## Analysis of Neurochemical Systems II - arranged by Michael Johnson, University of Kansas

Thursday Morning, Room: 311B

Michael Johnson, University of Kansas, Presiding

8:00 AM (2270-01) **Evaluation of Reactive Oxygen Species Production upon Subacute $MnCl_2$ Exposure** MADIHA KHALID, Wayne State University, Tiffany Mathews

8:20 AM (2270-02) **Analyte Specific Waveform for the Voltammetric Detection and Characterization of Met-Enkephalin in Brain Tissue** ANDREAS C. SCHMIDT, North Carolina State University, Greg McCarty, James Roberts, Leslie Sombers

8:40 AM (2270-03) ***In vivo* Electrochemical Measurement of Exogenously Applied Dopamine in Metylphenidate Fed Fruit Flies** E CARINA BERGLUND, University of Gothenburg, Andrew Ewing, Micheal Heien, Monique Makos

9:00 AM (2270-04) **The Heterogeneity of Evoked Dopamine Release in the Rat Nucleus Accumbens Core** ZHAN SHU, University of Pittsburgh, Adrian Michael

9:35 AM (2270-05) **Measuring Caged Compound Photoactivation and Dopamine Release in Neuronal Tissues** MICHAEL A. JOHNSON, University of Kansas

9:55 AM (2270-06) **Using Electrochemistry to Monitor Pain: Fast-Scan Cyclic Voltammetry of Adenosine in Spinal Nociceptive Circuits** PAUL L. WALSH, University of North Carolina at Chapel Hill, Mark Zylka, R Mark Wightman, Sarah Street

10:15 AM (2270-07) **Using Microfluidics and Mass Spectrometry to Study Peptide Release in Neurons** CALLIE CROUSHORE, University of Illinois, Chang Young Lee, Jonathan Sweedler, Ming Zhong, Sam-ang Supharoek

10:35 AM (2270-08) **Neurotransmitter Control of Brain Oxygen Levels** ANNA BELLE, University of North Carolina, Kevin Wood, Parastoo Hashemi, R Mark Wightman

**ORAL** Session 2280

## Applications: Quality and Safety - arranged by Denise Wilkins, Bechtel Bettis, Inc.

Thursday Morning, Room: 307D

Denise Wilkins, Bechtel Bettis, Inc., Presiding

8:00 AM (2280-01) **LES (Lab Execution Systems) - The Convergence of LIMS and ELN's in the cGMP QC/QA Environment** JOHN HELFRICH, VelQuest Corporation

8:20 AM (2280-02) **Automated Procedure Execution Provides a Future for Quality Operations with Unmatched OPEX and cGMP Benefits** DAVID SCHULTENOVER, Meda Pharmaceuticals

8:40 AM (2280-03) **NIST Dietary Supplement Laboratory Quality Assurance Program: The First Five Years** CATHERINE A. RIMMER, National Institute of Standards and Technology, David Duewer, Katherine Sharpless, Katrice Lippa, Lane Sander, Laura Wood, Melissa Phillips, Stephen Wise

9:00 AM (2280-04) **Cantilever Enhanced Tunable Diode Laser Photoacoustic Spectroscopy in Gas Purity Measurement – Case Study: Acetylene in Ethylene** JUHO UOTILA, Gasera Ltd., Ismo Kauppinen, Jussi Raittila

9:35 AM (2280-05) **Preparation and Examination of Imported Children's Toys for Phthalates and Bisphenol A Using Novel Cryogenic Grinding Methods, Certified Reference Materials and GC-MS Analysis** PATRICIA L. ATKINS, SPEX CertiPrep, Charles Helms, Richard Bostwick, Thomas Mancuso, Thomas Schultze

9:55 AM (2280-06) **Development of an Accurate Method for the Improved Determination of Trace Lead in Different Dairy Products** JIANMIN CHEN, PerkinElmer Inc., Zoe Grosser

10:15 AM (2280-07) **High Performance Ion Mobility Spectrometry for Rapid and Low Cost In situ Analysis in Food Safety Monitoring** CHING WU, Excellims Corporation, Anthony Midey, Jayanthi Sampathkumaran

10:35 AM (2280-08) **Safety Requirements for Gas Supply Systems in Laboratories Using AA and GC Applications Using Flammable Gases** FRANK C. KANDL, Airgas

**ORAL** Session 2290

## Bioanalytical Separations II - arranged by Janusz Pawliszyn, University of Waterloo

Thursday Morning, Room: 308C

Janusz Pawliszyn, University of Waterloo, Presiding

8:00 AM (2290-01) **Development of Force Field for Span80 Using *ab initio***

**Calculations** KUMUDITHA M. RATNAYAKE, Louisiana State University, Bhupendur Thakur, Dorel Moldovan, Steven Soper

8:20 AM (2290-02) **Differentiation of Endogenous and Exogenous Gamma-Hydroxybutyrate (GHB) in Urine by GC-IRMS** JENN RU SHAO, National Tsing Hua University

8:40 AM (2290-03) **GC/MS Reveals Variation in Uropygial Secretions Among West Nile Virus Avian Reservoir Hosts** REBECCA WHELAN, Oberlin College, Amy Austin, Jordan Rutter, Mary Garvin, Norberth Stracker, Samuel Slowinski

9:00 AM (2290-04) **Comprehensive Study on Ligand-Protein Interaction by the Use of Various Analytical Techniques** BARBARA BOJKO, University of Waterloo, Dajana Vuckovic, Janusz Pawliszyn

9:35 AM (2290-05) **Sorting Rare Cells by Micropallet Technology** PHILIP C. GACH, University of North Carolina, Nancy Allbritton

9:55 AM (2290-06) **Lab-on-a-Chip Device to Evaluate Real-Time Detection of Multiplex Biomarkers in Single Cells** PRATIKKUMAR SHAH, Florida International University, Shradha Prabhulkar

10:15 AM (2290-07) **Measurement of Lipoproteins in Treatment with SPX-106** ROBERT A. LODDER, University of Kentucky, Brittney Metts, Claire Kruger, Dietrich Conze

10:35 AM (2290-08) **To Study the Adsorption Capacity of Egg White Matrix for the Purification of Cellulase Enzyme from Brevibacillus Parabrevis** JAGDISH SINGH, Mata Gujri College, Gagandeep Anand

**ORAL** Session 2300

## Biomedical: Cancer Diagnosis/Treatment - arranged by Chenzhong Li, Florida International University

Thursday Morning, Room: 311A

Chenzhong Li, Florida International University, Presiding

8:00 AM (2300-01) **Targeted Electrical Field Manipulation of Cancer Cells Using Antibody Functionalized Gold Nanoparticles** EVANGELIA HONDROULIS, Florida International University, Chen-zhong Li

8:20 AM (2300-02) **Increasing Throughput and Sensitivity of DNA Methylation Analysis with Functional Nanoparticles** YI ZHANG, Johns Hopkins School of Medicine, Tza-Huei Wang

8:40 AM (2300-03) **Plasmon-Enhanced Fluorescent Nanosensors for Studying ROS and Oxidative Stress** KUI CHEN, Louisiana State University, Shreveport, Jamie Johnson, John Provenza, Nick Pelliccio

9:00 AM (2300-04) **Paper Based Point of Care Testing Sensor for DNA Oxidative Damage Biomarker Detection** XUENA ZHU, Florida International University, Chen-zhong Li, Joe Simpson, Pratikkumar Shah

9:35 AM (2300-05) **Interaction of Platinum-Based Cytostatic Drugs in the Human Blood** MICHAEL SPERLING, University of Muenster, Christine Brauckmann, Claudia Lanvers-Kaminsky, Uwe Karst

9:55 AM (2300-06) **Highly Efficient Isolation of Circulating Tumor Cells Using an Aptamer-Modified Micropillar-Based Microfluidic Device** WEIAN SHENG, University of Florida, Hugh Fan, Rahul Kamath, Tao Chen, Weihong Tan

10:15 AM (2300-07) **PCR-Free, Microfluidic Single Molecule Analysis of Circulating Nucleic Acid Biomarkers in Lung Cancer Patient Serum** KELVIN J. LIU, Johns Hopkins University, Le-Ming Shih, Malcom Brock, Tza-Huei Wang

10:35 AM (2300-08) ***In Situ* Study of Proteomic Cancer Biomarker Secretion** CHANG LIU, Florida International University, Chen-zhong Li

**ORAL** Session 2310

## **Chemometrics** - arranged by J David Hwang, Chevron Energy Technology Center

Thursday Morning, Room: 311D

J David Hwang, Chevron Energy Technology Center, Presiding

8:00 AM (2310-01) **Disambiguation of pH and Hydrogen Peroxide Variability in Fast Scan Cyclic Voltammetry Using a Double Wave Form Approach** JONATHAN V. TOUPS, North Carolina University at Chapel Hill, Audrey Sanford, Greg McCarty, Jeremy Letchworth, Leslie Sombers, Marina Spanos

8:20 AM (2310-02) **Objective Decision Making Tools for Modeling the Fate of Complex Petroleum Products in the Environment** JOHN W. MCILROY, Michigan State University, A Jones, Victoria McGuffin

8:40 AM (2310-03) **Applications of the Nonparametric Permutation Test for the Analysis of LIBS Spectra of Forensic Samples** CAITLIN N. RINKE, University of Central Florida, Liqiang Ni, Michael Sigman

9:00 AM (2310-04) **Fast and Non-Destructive Characterization of Hops and Hop Products Using MIR-Spectroscopy and Chemometric Model** STEFAN CASTRITIUS, Research and Teaching Institute for Brewing in Berlin (VLB), Diedrich Harms, Mirko Geier

9:35 AM (2310-05) **Comparison of Variable Selection Techniques for the Construction of Chemometric Models** JAMES J. HARYNUK, University of Alberta, A Paulina De la Mata, Nikolai Sinkov

9:55 AM (2310-06) **An Innovative Approach to Accurately Quantify *In vivo* Voltammetric Data that Eliminates the Need for Standard Electrode Calibration** JONATHAN V. TOUPS, North Carolina University at Chapel Hill, Andreas Schmidt, Eyob Eyualem, Greg McCarty, James Roberts, Leslie Sombers, Leyda Lugo-Morales

10:15 AM (2310-07) **Improved Detection Power in Trace Analysis by Wavelet Transform** SIMON PRIKLER, Friedrich Schiller University of Jena, Jürgen Einax

10:35 AM (2310-08) **From Laboratory Bench to Patient Bedside: Global Analysis of VOCs in Drug Development and *In Vitro* Diagnostics** THIERRY R. ZESIGER, VOCscan AG, Colin Mitchell, Hans Wiech, Rene Trost

**ORAL** Session 2320

## Environmental Analysis: Water - arranged by John Jackovitz, University of Pittsburgh

Thursday Morning, Room: 311C

John Jackovitz, University of Pittsburgh, Presiding

8:00 AM (2320-01) **Fabrication of a Nano-Insulator Layer by Electroinactive Polypyrrole for Contactless Conductivity Detection of Perchlorate in Drinking Water** JASON M. EMORY, Colorado State University, Charles Henry, Donald Cropek

8:20 AM (2320-02) **The Occurrence and Control of N-Nitrosamines and Precursors by Powdered Activated Carbon and Activated Carbon Nano-Powders in Drinking Water Treatment Plants** QIHUA WU, Missouri University of Science & Technology, Chuan Wang, Craig Adams, Honglan Shi, Terry Timmons, Yinfa Ma

8:40 AM (2320-03) **The Development and Analysis of Ionochromic Azo Dyes for Aqueous Halide Detection** HEATHER ROBISON, The Ohio State University, Justin Harris, Noel Paul

9:00 AM (2320-04) **Trace Analysis of Contaminants in Waste Water Using High Performance Time-of-Flight Mass Spectrometry** JEFFREY S. PATRICK, LECO Corporation, David Alonso, Joe Binkley, Kevin Siek

9:35 AM (2320-05) **Task-Specific Ionic Liquids as a New Class of Extraction Media for the Removal of Boron from Water** MANISHKUMAR D. JOSHI, The University of Toledo, Daniel Steyer, Jared Anderson

9:55 AM (2320-06) **Coupling of an Inert Ion Chromatographic System with ICP-Q-MS for Robust and Accurate Metal Speciation Analyses** SHONA MCSHEEHY, Thermo Fisher Scientific, Jianfeng Cui, Julian Wills

10:15 AM (2320-07) **Nanoscale Modification of Carbon Electrodes for the Detection of Harmful Organic Chemicals** SUZANNE K. LUNSFORD, Wright State University, Miyong Hughes

10:35 AM (2320-08) **Development of an Immobilized FRET-Peptide Sensor for Selective Trace and Ultratrace Metal Detection** SHELLY CASCIATO, University of Texas at Austin, James Holcombe

**ORAL** Session 2330

## Fluorescence/Luminescence Nano and General Applications - arranged by John F. Turner, Cleveland State University

Thursday Morning, Room: 309B

John F. Turner, Cleveland State University, Presiding

8:00 AM (2330-01) **Manipulate the Function of Protein by DNA Aptamer Circuit** DA HAN, University of Florida, Weihong Tan, Zhi Zhu

8:20 AM (2330-02) **Characterization of Fluorescent Nano-Probes for Use in the Analysis of Mass Transport in Porous Metal Oxide Thin Films** EDWARD E. REMSEN, Bradley University, Daniel Turner

8:40 AM (2330-03) **Novel "Non-Blinking" Quantum Dots Used in 3D High-Resolution Molecular Tracking** KYLE MARCHUK, Iowa State University

9:00 AM (2330-04) **Binding Kinetics and Affinity of AfArsR for Methylated Arsenite** DALI SUN, Florida International University

9:35 AM (2330-05) **Two Color Quantum Dots and pH-Indicator Doped Two Layer Sol-Gel Film for Ratiometric Fluorescent pH Sensing** YUKI HIRUTA, Keio University, Daniel Citterio, Koji Suzuki, Naoto Yoshizawa

9:55 AM (2330-06) **Effects of Glycerol Masking on Porous Silicon Oxidation by Ozone** IAN J. HORNER, SUNY at Buffalo, Frank Bright, Nadine Kraut

10:15 AM (2330-07) **Simultaneous Measuring Fluorescence and Absorption Spectra of Bio Samples Using a Small Volume Spectrophotometer** IN-SUNG KANG, Scinco Co., Ltd., Byoung-Do Jeong, Kyung-Won Ro, Sung In Cho, Won-Bin Jeong, Young Dong Park

10:35 AM (2330-08) **A Fundamental Shift in Water Disinfection - Research Into An Innovative UV LED Design** JENNIFER . PAGAN, Dot Metrics Technologies

**ORAL** Session 2340

## Food Analysis for Metals and Contaminants - arranged by Rabih Jabbour, Edgewood Chemical Biological Center

Thursday Morning, Room: 209B

Rabih Jabbour, Edgewood Chemical Biological Center, Presiding

8:00 AM (2340-01) **Food Sample Preparation Throughput Improvements for Metals Analysis** JASON D. KEITH, CEM Corporation, Bob Lockerman, Elaine Hasty, Ivana Mrvalj, Tina Restivo

8:20 AM (2340-02) **Determination of Oxidation Profiles and Products of Carnosic Acid, Carnosol, Rosmarinic Acid and Rosemary Extract by HPLC-MS** YING ZHANG, University of Texas at Arlington, Daniel Armstrong, Edra Dodbiba, Jonathan Smuts

8:40 AM (2340-03) **A Procedure for the Determination of Mercury in Complex Matrices Employing Slurry Sampling and Cold Vapor - Atomic Absorption Spectrometry** SERGIO L. FERREIRA, Universidade Federal da Bahia, Daniel Lima, Geraldo Matos, Laiana Silva, Samuel Macedo, Walter dos Santos

9:00 AM (2340-04) **Expanding Selenium Speciation in Water and Food** ZOE GROSSER, PerkinElmer, Kenneth Neubauer, Pamela Perrone

9:35 AM (2340-05) **Rapid Analysis of Foodborne Pathogens** ATANU SENGUPTA, Real-Time Analyzers, Inc., Chetan Shende, Frank Inscore, Hermes Huang, Stuart Farquharson

9:55 AM (2340-06) **Standard Methods for the Evaluation of Elemental Contamination in Nutritional Supplements Using Inductively Coupled Plasma-Mass Spectrometry** GREGORY M. ZINN, Duquesne University, GM Mizanur Rahman, HM (Skip) Kingston, Matt Pamuku, Scott Faber

10:15 AM (2340-07) **Multiresidue Analysis of Pesticides in Fresh Foodstuffs by Solid-Phase Microextraction Using Gas Chromatography - Tandem Mass Spectrometry: Comparison with QuEChERS Method** ERICA SILVA, University of Waterloo, Janusz Pawliszyn

10:35 AM (2340-08) **The QuEChERS Sample Preparation Approach with Dispersive and Cartridge SPE Cleanup, GCxGC-TOFMS, and LC-MS/MS for the Analysis of Pesticides in Tobacco** MICHELLE MISSELWITZ, Restek Corporation, Jack Cochran, Jason Thomas, Julie Kowalski

**ORAL** Session 2350

## GCMS, Homeland Security and Environmental Applications - arranged by Ibolya Molnar-Perl, L Eotvos University

Thursday Morning, Room: 310B

Ibolya Molnar-Perl, L Eotvos University, Presiding

8:00 AM (2350-01) **A Near Real-Time Chemical Warfare Analytical System for the Chemical/Biological Agent Resistance Test (CBART)** BRUCE D. MCVEETY, Battelle Memorial Institute, Anthany Ellingson, Kris Dietrich, Shawn Shumaker

8:20 AM (2350-02) **A Natural and Artificial Nose as Methods of Identification Biomarkers for Early Detection of Cancer** BOGUSLAW BUSZEWSKI, Nicolaus Copernicus University, Joanna Rudnicka, Tadeusz Jezierski, Tomasz Ligor

8:40 AM (2350-03) **Improved Search Results for Ion Trap Mass Spectrometers Using the NIST Mass Spectral Reference Library** CHARLES S. SADOWSKI, Torion Technologies Inc., Chad Grant, Edgar Lee, Greger Andersson, Kenneth Nemelka, Kevin Judge

9:00 AM (2350-04) **A New State of the Art in Thermal Desorption** STEPHEN D. WESSON, CDS Analytical, Inc., Karen Jansson, Thomas Wampler

9:35 AM (2350-05) **System and Method Optimization in SemiVolatiles Analysis for Improved Results** KORY KELLY, Phenomenex Inc., Art Miranda, Kristen Parnell

9:55 AM (2350-06) **A Novel High Sensitivity Mass Spectrometric Detector for Gas Chromatography** ANDREW TIPLER, PerkinElmer Inc., Frank DeLorenzo, Ruben Garnica, Yuri Kaplan

10:15 AM (2350-07) **The Role of the Acquisition Methods in the Analysis of Natural and Synthetic Steroids and Cholic Acids by Gas Chromatography - Mass Spectrometry** IBOLYA MOLNÁR-PERL, L Eötvös University, András Helenkár, Anikó

Vasanits-Zsigrai, Gyula Záray, Nóra Andrási

10:35 AM (2350-08) **Environmental Forensic Investigation of Source of Organic Contaminants in Stream Water** MELINDA PHAM, Pennsylvania State University, Frank Dorman

**ORAL** Session 2360

## LC-MS, Others - arranged by A Peter Snyder, US Army

Thursday Morning, Room: 209A

A Peter Snyder, US Army, Presiding

8:00 AM (2360-01) **Development of Phenylboronic Acid-Polyacrylonitrile 96-Thin-Film SPME-LC-MS/MS System, Capable of Extracting a Wide Polarity Range of Analytes from Biological Fluids** FATEMEH S. MIRNAGHI, University of Waterloo, Janusz Pawliszyn

8:20 AM (2360-02) **Development of Reference Materials for Nutritional Biomarkers** KAREN W. PHINNEY, National Institute of Standards and Technology, Katherine Sharpless, Lane Sander, Michele Schantz, Stephen Wise

8:40 AM (2360-03) **Quantitative Determination of Securinine, A Potential Anticancer Agent, in Mouse Plasma by Liquid Chromatography–Tandem Mass Spectrometry** SIMULI L. WABUYELE, Cleveland State University, David Wald, Yan Xu

9:00 AM (2360-04) **Sensitive and High-Throughput Method by Direct Elution of Dried Blood Spots and Online SPE Followed by LC-MS/MS for the Quantitative Determination of Guanfacine** YUANYUAN LI, Advion, Jack Henion, Phillip Wang, Richard Abbott

9:35 AM (2360-05) **Development of Trace Terrorist Explosives Simulants for the Detection of Semtex and TATP** WILLIAM MACCREHAN, National Institute of Standards and Technology

9:55 AM (2360-06) **A Specialty Column for Fast and Sensitive Paraquat and Diquat Analysis by LC-MS** XIAODONG LIU, Thermo Fisher Scientific, Christopher Pohl, Leo Wang

10:15 AM (2360-07) **Generation and Identification of Reactive Metabolites Using On-Line Liquid Chromatography/Electrochemistry/Mass Spectrometry** UWE KARST, University of Muenster

10:35 AM (2360-08) **Mass Spectrometric Analysis of the Interaction Between Human Serum Transferrin and Gadolinium** KRISTINA WENTKER, University of Muenster, Uwe Karst

**ORAL** Session 2370

## Nanotechnology - Microscopy and Imaging - arranged by Adam Gilmore, Horiba

Thursday Morning, Room: 307A

Adam Gilmore, Horiba, Presiding

8:00 AM (2370-01) **Investigating Heterogeneity of multiple-pore Membrane with Ion Conductance Microscopy** YI ZHOU, Indiana University, Chiao-Chen Chen, Lane Baker

8:20 AM (2370-02) **Design of Far-Field Photostable Optical Nanoscopy for Real-Time Super-Resolution Single-Molecule Imaging of Single Live Cells** X NANCY XU, Old Dominion University, Lauren M Browning, Tao Huang

8:40 AM (2370-03) **Preparation, Characterization, and Electrochemical Performance of Discrete Pd/Fe Bimetallic Nanotubes** ELSAYED M. ZAHRAN, University of Miami, Dibakar Bhattacharyya, Leonidas Bachas, Mamantos Prodromidis

9:00 AM (2370-04) **Single Nanopore Investigation with Ion Conductance Microscopy** CHIAO-CHEN CHEN, Indiana University, Lane Baker, Yi Zhou

9:35 AM (2370-05) **Single-Molecule Nanoparticle Optical Biosensors for Super-Resolution Imaging of Single Protein-Ligand Binding Complexes** X NANCY XU, Old Dominion University, Lauren M Browning, Tao Huang

9:55 AM (2370-06) **Raman Spectroscopy and Imaging of Biomolecules Using Targeted Nanoparticles** ZACHARY D. SCHULTZ, University of Notre Dame

10:15 AM (2370-07) **Creating Novel Nanorod-Dye Conjugates for Multimodal Optical Imaging** ALISON MCLINTOCK, University of Strathclyde, Alastair Wark

10:35 AM (2370-08) **Detection of Chitin via InSb Focal Plane Array Near-Infrared Chemical Imaging** DAVID L. WETZEL, Microbeam Molecular Spectroscopy Laboratory, Daniel Madgwick

**ORAL** Session 2380

## Separation Sciences I - arranged by Joseph Zewe, Ohio State University

Thursday Morning, Room: 307C

Joseph Zewe, Ohio State University, Presiding

8:00 AM (2380-01) **Enhanced Separation Performance Using A New Column Technology** MICHELLE CAMENZULI, University of Western Sydney, Harald Ritchie, James La Dine, Ross Shalliker

8:20 AM (2380-02) **Peptide and Protein Analysis of Individual Drosophila Hemolymph** QI ZENG, University of Illinois, Scott Shippy

8:40 AM (2380-03) **Protein A Functionalization of Polypropylene (PP) Capillary-Channeled Polymer (C-CP) Fibers for the Purification of Immunoglobulin G (IgG)** ABBY J. SCHADOCK-HEWITT, Clemson University, R Kenneth Marcus

9:00 AM (2380-04) **Fundamental Studies of Porous Polymer Monoliths, Exploring the**

**Thermodynamics of Retention and the Relationship Between Retention and Diffusion** JING LIU, Trinity University, Douglas Nolan, Jessica Lam, Michelle Bushey, Nicholas Kuklinski, Si Ying Li-Gonzalez, Trisha Patel

9:35 AM (2380-05) **Comparison of Nylon-6 Capillary-Channeled Polymer (C-CP) Fiber HPLC Stationary Phases for Protein Separations** ABBY J. SCHADOCK-HEWITT, Clemson University, Jennifer Pittman, R Kenneth Marcus

9:55 AM (2380-06) **Enhancing the Speed of Characterizing Biotherapeutic Medicines Using Novel Column Technology** MELISSA R. THOMPSON, Pfizer, Inc., Charles Demarest, Deanna Schuchmann, Nathan Lacher

10:15 AM (2380-07) **Development of Green Purification Technique- SFC Flash Chromatography** ZIQIANG WANG, Waters Corporation, Harbaksh Sidhu, John Whelan, Luo Chuping

10:35 AM (2380-08) **New Ceramic Ultrafiltration Membranes with Monodisperse Pores** OLEG POLYAKOV, Synkera Technologies, Inc., Brent Lutz, Lynn Pruisner, Michael Stowell

**POSTER** Session 2390

## Chemical Methods

Thursday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2390-01P) **Antioxidants Determination: New Reactions and Methods** YURY A. ZOLOTOV, Lomonosov Moscow State University, Denis Anisimov, Elena Morosanova, Mikhail Belyakov

(2390-02P) **Salt Effects in the Analysis of Nutrients in Saline and Brackish Waters Using Segmented-Flow and Discrete Analyzers** STEPHEN COVERLY, SEAL Analytical, Joseph Redovich, Katie Parkhurst, Rachel Timmerman, Timothy Bahowick

(2390-03P) **Automated Method for the Simultaneous Measurement of Nitrogen and Phosphorus in Waters Using Flow Injection Analysis** LYNN EGAN, Hach

(2390-04P) **Novel Synthesis and Characterization of Silver Nanoshells and Their Application to Surface Enhanced Raman Spectroscopy** DAVID D. EVANOFF, Western Carolina University, James Cook

(2390-05P) **Microwave Assisted Convergent One Pot Synthesis of Thiazolo Pyrimidine and Their Antimicrobial Studies** BALBIR KAUR, Punjabi University, Lovepreet Kaur, Monika Bansal

(2390-06P) **Simultaneous Analysis of Available and Total Cyanide by Gas Diffusion Amperometry Methods USEPA OIA-1677 and ASTM D 7511-09** WILLIAM LIPPS, OI Analytical, Gary Engelhart

(2390-07P) **Nucleic Acid Signal Amplification for Detection of Proteins** LEIJI ZHOU, University of Florida, Da Han, Mingxu You, Weihong Tan, Zhi Zhu

(2390-08P) **Synthesis and Characterization of Ruthenium Monomer and Dimer**

**Complexes** ANWAR A. BHUIYAN, Arkansas Tech University, Shotaro Kudo

(2390-09P) **Updates on Supercritical Water Oxidation as an EPA ATP** THOMAS SZAKAS, GE Analytical Instruments, Erin England, Greg Conway

(2390-10P) **Spectrophotometric Titrations - A Picture Tells the Story** NICHOLAS T. DAUGHERTY, University of Tennessee at Chattanooga, John Lynch

(2390-11P) **Pre-Concentrated Tablets for Use as a Calibration Standard in Karl Fischer Titration** SHOUNAK BOSE, Facet Analytical Sercives & Technology LLC, Scott Miller

(2390-12P) **Determination of Potential Genotoxic Impurities with Low Molecule Weight** JIANBING ZHANG, Novartis, Jiayu Li, Qin Ji, Xiang Zhou

(2390-13P) **Advanced Sequential Zymographic Detection of Thermophilic Lipases and Proteases** LILIANA KURZ, University of Carabobo, Jeff Wilkesman, Lellys Contreras, Zully Hernandez

(2390-14P) **Application of a Mixed-Mode Column in Pharmaceutical Analysis: A Case Study** HUI ZHAO, Bristol-Myers Squibb, Elvin Lee, Xin Bu, Yan Zha

(2390-15P) **Preserving the Size Evolution of Gold Monolayer-Protected Clusters During Ligand Place-Exchange Reactions** CHUN-TING KUO, National Taiwan University

**POSTER** Session 2400

## Drug Discovery

Thursday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2400-01P) **Correlating the Order of Compound Extraction with Their Physical Properties in Supercritical Fluid Extraction for Natural Product Research** RUI CHEN, Waters Corporation, Harbaksh Sidhu, Jacquelyn Runco, Jeff Wright, John McCauley

(2400-02P) **Formulation and HPLC Analysis of Water Soluble Lipid Complexes** ETTIGOUNDER PONNUSAMY, Sigma-Aldrich, Rita Palsmeier

(2400-03P) **The Determination of Dexamethasone in Human Plasma with Solid Supported Liquid-Liquid Extraction** WAN WANG, Bonna-Agela Technologies

(2400-04P) **Electrochemistry as an Adjunct to Mass Spectrometry in Drug Development** JOHN WARASKA, Thermo Fisher Scientific, Ian Acworth, Paul Gamache

(2400-05P) **An Investigation into the Interactions Between Polycations and Tissue Factor Using a Quartz Crystal Microbalance** WUJIAN MIAO, The University of Southern Mississippi, Arthur Chu, Ramsey Hanna, Rebekah Shows

(2400-06P) **Quantification of Drug Metabolites in Early Stage Drug Discovery Testing** CHRISTOPHER CRAFTS, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth, John Waraska

(2400-07P) **The Quantitative Role of High Resolution Accurate Mass Spectrometry in Drug Discovery** DANIEL MORGAN, Bristol-Myers Squibb, Marc Browning, Timothy Olah

**POSTER** Session 2410

## Electrochemistry IV

Thursday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2410-01P) **Monitoring Reaction Rates Using Delayed-Timing Voltammetry** CHRISTOPHER W. ATCHERLEY, University of Arizona, Michael Heien, Saliya Ratnayaka

(2410-02P) **Quantification of Fenton Chemistry** OINDREE BANERJEE, North Carolina State University, Jonathan Toups, Leslie Sombers

(2410-03P) **The Electrochemical Behavior of 4-nitro-1-naphtyleamine on Glassy Carbon Electrode Surface** ESRA CAVUS, Selcuk University, Arunas Ramanavicius, Esra Bilici, Humeyra Menekse, Mutahire Tok, Zafer Yazicigil

(2410-04P) **Spontaneous Grafting of Substituted Nitrophenyl Groups to Glassy Carbon Electrodes** KRISTIN K. CLINE, Wittenberg University, Heepke Wendroth, Patrick Westmoreland

(2410-05P) **Fluorescence-Coupled Single-Molecule Electrochemistry** JOSHUA P. GUERRETTE, University of Washington, Bo Zhang, Stephen Percival

(2410-06P) **Surface Pre-Accumulation Mechanism in Electron Transfer of the Alzheimer Amyloid-β Zinc Complex** SHUBO HAN, Fayetteville State University, Lior Vered

(2410-07P) **Electrochemical and Computational Study of Epicatechin Antioxidant Mechanism** XIAOYAN HAN, Jack Britt High School, Kaodi Umera

(2410-08P) **Dilute Solution Structures of Amphiphiles from Ionic Conductivity and Ion Mobility Mass Spectrometry** ROBERT G. KEIL, University of Dayton, John Mclean, Kellen Harkness, Michael Manhart

(2410-09P) **Optimization of the Adsorptive Stripping Voltammetry Methodology For Determine Cobalt in Water Samples Using Morin as Complexing and Adsorbing Agent** VERONICA ARANCIBIA, Pontificia Universidad Catolica de Chile, Carlos Rojas

(2410-10P) **Electrodialytical Generation of Buffers** YONGJING CHEN, University of Texas at Arlington, Brian Edwards, Kannan Srinivasan, Purnendu Dasgupta

(2410-11P) **Improvement of Zinc-Nickel and Copper-Nickel Corrosion Resistant Coatings through Incorporation of Layered Silicates** HEIDI A. CONRAD, University of North Texas, Teresa Golden

(2410-12P) **Functional Gold Nanorod Particles on Conducting Polymer Poly(3octylthiophene) as Non-Enzymatic Glucose Sensor** HAKAN CIFTCI,

Krkkale University, Ugur Tamer

(2410-13P) **HDCV: An Open Source Software Suite for Fast-Scan Cyclic Voltammetry Data Collection and Analysis** ELIZABETH S. BUCHER, The University of North Carolina at Chapel Hill, Catarina Owesson White, Collin McKinney, Kenneth Brooks, Matthew Verber, Pavel Takmakov, Richard Keithley, Susan Carroll

**POSTER** Session 2420

## Environmental Analysis VI

Thursday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2420-01P) **Evaluation of the Separation Performance of Nano Stationary Phase Capillary Columns Using GC-FID and GC-MS Techniques** ALLEN J. BRITTEN, Cape Breton University, Christiaan Barron, Kelsey AuCoin, Krishant Naikwadi

(2420-02P) **Determination of VOCs in School Facilities with Needle Extraction Device** MITSURU INOUE, Toyohashi University of Technology, Ikuo Ueta, Kazuya Takahashi, Kiyokatsu Jinno, Yoshihiro Saito

(2420-03P) **Quantification of Parent and Alkyl Polycyclic Aromatic Hydrocarbons in Crude Oil Samples Using Comprehensive Two-Dimensional Gas Chromatography** JACOLIN A. MURRAY, National Institute of Standards and Technology, Michele Schantz

(2420-04P) **Extended Dynamic Range, High Precision Analysis of Polynuclear Aromatic Hydrocarbon Compounds by GC-MS** ERIC PHILLIPS, Thermo Fisher Scientific, David Stieniger, Dwain Cardona, Jim Edwards, Trisa Robarge

(2420-05P) **Development of a Novel Sample Preparation Needle Designed for the Extraction of VOCs in In-Door Room Air** IKUO UETA, University of Yamanashi, Ayako Mizuguchi, Kenzo Kotera, Yoshihiro Saito

(2420-06P) **Using Nitrogen Purge Gas for US EPA Drinking Water Methods** NATHAN VALENTINE, Teledyne Tekmar, Holly Taylor, Roger Bardsley, Thomas Hartlein, Tyler Trent

(2420-07P) **The Effects of Natural Colloids on the Adsorption of Polycyclic Aromatic Hydrocarbons (PAHs) by Multi-Walled Carbon Nanotubes** RACHEL YANG, Southern Illinois University at Carbondale, Henok Abshiro, Jay Means, Worlanyo Gato

(2420-08P) **An Innovative Strategy for the Characterization of Microbial Lipid Biomarkers in the Environment Using Supercritical Fluid Extraction** MUHAMMAD HANIF, Toyohashi University of Technology, Hiroyuki Daimon, Keita Ito, Yoichi Atsuta

(2420-09P) **Stability of Stationary Phases and Preservatives Under Subcritical Water Chromatography Conditions** BRAHMAM KAPALAVAVI, East Carolina University, Chris Gamsky, Ronita Marple, Yu Yang

(2420-10P) **Development of a Method for Analyzing 3-Sulfanylhexanol in Gulupa (Passiflora Edulis Sims f. edulis)** DIANA C. SINUCO, Universidad Nacional de Colombia, Karen Mejia

**POSTER** Session 2430

## Fluorescence and Luminescence II

Thursday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2430-01P) **A General Light-Switching Excimer Signaling Approach for Aptamer Beacons** CUICHEN SAM WU, University of Florida, Chaoyong Yang, Weihong Tan

(2430-02P) **Microwave-Assisted Solvothermal Synthesis of $NaYF_4$:Yb,Er Upconversion Nanoparticles and Their Application in HeLa Cell Imaging** SHUKUN XU, Northeastern University, Can Cao, Chuanbin Mao, Congcong Mi, Zhenhuang Tian, Zhijia Wang

(2430-03P) **Photochemical Protein Scissors - DNA Aptamer for Target-Selective and Site-Specific Cleavage of PDGF** MINGXU YOU, University of Florida, Basri Gulbakan, Meghan O'Donoghue, Sena Cansiz, Weihong Tan

(2430-04P) **Target-Specific, Synergistic Photothermal and Photodynamic Therapy by Gold Nanorod-Activatable Aptamer Conjugates** JIAN WANG, University of Florida

(2430-05P) **High Accuracy Fluorescence Measurements and Standards in the Near Infrared (NIR) 800 nm to 1600 nm** PAUL C. DEROSE, National Institute of Standards and Technology, Aaron Urbas

(2430-06P) **Fluorescent Imaging of the Platelet Cytoskeleton** SOLAIRE FINKENSTAEDT-QUINN, University of Minnesota

(2430-07P) **Characterization and Manipulation of Semi-Synthetic Hydrogel Mimics of the Nuclear Pore Complex** ALICIA K. FRIEDMAN, Indiana University, Lane Baker, Sean Bird

(2430-08P) **Development of a Molecular Beacon Assay for the Detection of Breast Cancer Metastasis** VINAY SHARMA, Kalamazoo College, Amy Ong, Erik Guetschow, Jennifer Furchak, Will Black

(2430-09P) **Fluorescence Correlation Spectroscopy of Apoptotic Cells Using a Red-Fluorescent Probe** MICHELLE M. MARTINEZ, Texas Tech University, Dimitri Pappas, Meicong Dong

(2430-10P) **Measuring the Role of Membrane Proteins in Altering the Diffusion and Clustering of Integrin Receptors Using Fluorescence Microscopy** NEHA ARORA, Iowa State University, Dipak Mainali, Emily Smith

(2430-11P) **A Conjugated Polyelectrolytes Based Sensor Array for Protein Using Fluorescence Correlation Spectroscopy** DANLU WU, University of Florida, Kirk Schanze

**POSTER** Session 2440

## Food Science V

Thursday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2440-01P) **Isoflavone in Soy Products** NJIES PEDJIE, Perkin Elmer, April Deatley

(2440-02P) **Fully Automated Miniaturized Solvent Extraction and Large Volume Injection for GC-MS Analysis of Odor Compounds** NOBUO OCHIAI, GERSTEL KK, Jun Tsunokawa, Kikuo Sasamoto

(2440-03P) **Photochemistry of β Cartene in Hexane Solution in the Presence of Carbon Tetrachloride** DAVID W. JOHNSON, University of Dayton, Mark Masthay, Yuan Zhao

(2440-04P) **Improved Pesticide Analysis with GC-MS with Supersonic Molecular Beams** AVIV AMIRAV, Tel Aviv University, Alexander B Fialkov, Alexander Gordin

(2440-05P) **Evaluation and Characterization of Ginkgo Biloba Extracts by a Liquid Chromatography-High Resolution TOF Mass Spectrometry System** LI ZHANG, LECO Corporation, Jeffrey Patrick, Joe Binkley

(2440-06P) **Sensitive HPLC Method for Triterpenoid Analysis Using Charged Aerosol Detection with Improved Resolution** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth

(2440-07P) **A Rugged Quantitative Technique for the Determination of Ultra-Trace Level Flavour Compounds in Beer Using Sorptive Extraction and Thermal Desorption GC-TOF-MS** NICK BUKOWSKI, ALMSCO International, Gareth Roberts, Kurt Thaxton

(2440-08P) **Profiling of Highly Complex Citrus Juice Samples Using UPLC Ion Mobility Time-of-Flight Mass Spectrometry** ANTONIETTA GLEDHILL, Waters Corporation, Mike McCullagh

(2440-09P) **The Spectro-Electro Array: A Novel Platform for the Measurement of Secondary Metabolites in Botanicals, Supplements, Foods and Beverages - Part 4: Beer Polyphenols, Proanthocyanidins and Bitter Acids** PAUL A. ULLUCCI, Thermo Fisher Scientific, Bruce Bailey, Christopher Crafts, Ian Acworth, Marc Plante

(2440-10P) **Identification of Environmental Aromatic Hydrocarbons in Human Breast Milk by Two-Dimensional Gas Chromatography-Time-of-Flight Mass Spectrometry** BRIAN C. LEMANSKI, New York State DOH, Robert Jansing, Stephen Connor

(2440-11P) **Simultaneous Determination of Nucleotides and Nucleosides in Infant Formula** JINYUAN WANG, Thermo Fisher Scientific, William Schnute

(2440-12P) **Volatile Constituents and Antioxidant Activity of Essential Oils Extracted from Leaf and of Stem Jatropha Gossypifolia (L)** OLAYINKA T. ASEKUN,

University of Lagos, Sunday Okoh

(2440-13P) **Determination of Four Marine Toxins in Shellfish by Ultra Fast Triple Quadrupole Mass Spectrometer** YUKI HASHI, Shimadzu (China) Co., Ltd, Hengtao Dong, Hongyuan Hao, Jinting Yao, Luying Zhou

(2440-14P) **Advanced Multi-Target Comparative Screening Using High Resolution and Accurate Mass LC–MS/MS** ANDRE SCHREIBER, AB SCIEX, Axel Besa

(2440-15P) **Automatic Screening and Identification of Food Residues with High Confidence Based on High Resolution and Accurate Mass LC-MS/MS** ANDRE SCHREIBER, AB SCIEX, David Cox

(2440-16P) **Quantitation and Identification of Phthalates in Food and Beverage Samples Using Highly Selective LC-MS/MS** ANDRE SCHREIBER, AB SCIEX, Eric Wan, Fanny Fu, Long Gu

(2440-17P) **High Resolution TOF-MS and TOF-MS/MS Profiling of Listeria Monocytogenes** ANDRE SCHREIBER, AB SCIEX, Patrick Pribil

(2440-18P) **Advanced LC-MS/MS Tools to Screen for Non-targeted Contaminants in Food Samples** ANDRE SCHREIBER, AB SCIEX, Christopher Borton

(2440-19P) **Characterization of Oils and Fats by 1H NMR and GC/MS Fingerprinting: Classification, Prediction and Detection of Adulteration** SAM LI, National University of Singapore

(2440-20P) **Characterization of Coffee Adulterants Through Carbohydrate Profile** ELIS D. PAULI, UEL, Carlos Alberto da Camara, Franciele Barbieri, Ieda Scarminio, Julia Estéfane de Abreu, Leticia Marques, Suzana Nixdorf

**POSTER** Session 2450

## Forensics II

Thursday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2450-01P) **Differential Mobility Spectrometry (DMS) for the Detection of Explosive Vapors** PAUL J. RAUCH, Chemring Detection Systems, Brian Ince, Gretchen Blethen, M Todd Griffin, Steve Harden, Vince McHugh

(2450-02P) **Field Test of High-Throughput Walkthrough Portal for Detecting Improvised Explosive Devices (IEDs) at Airport and Train Station** HISASHI NAGANO, Hitachi, Ltd., Masuyuki Sugiyama, Minoru Sakairi, Yasuaki Takada, Yasutaka Suzuki, Yohei Kawaguchi, Yuichiro Hashimoto

(2450-03P) **The Detection and Identification of Trace-Level Chemical Warfare Agents and Explosives Using an Online Thermal Desorption System in Conjunction with a High-Sensitivity Time-of-Flight Mass Spectrometer** GARETH M. ROBERTS, Markes International, Gerhard Horner, Gudrun Bunte

(2450-04P) **Wide-Area Standoff Raman Spectroscopy Using a High Throughput, Non-**

**Scanning Spatial Heterodyne Raman Spectrometer** NATHANIEL R. GOMER, University of South Carolina, Stanley Angel

(2450-05P) **Fast Trap for Detection of Explosives and Hazardous Compounds** ANDREAS WALTE, Airsense Analytics GmbH, Bert Ungethuem, Wolf Muenchmeyer

(2450-06P) **Determination of Chemical Warfare Agents in Forensic Samples by Selectable One-Dimensional or Two-Dimensional Gas Chromatography-Mass Spectrometry** YASUO SETO, National Research Institute of Police Science, Eriko Noguchi, Hirooka Kanda, Isaac Ohsawa, Kikuo Sasamoto, Koichiro Tsuge, Masumi Tachikawa, Mieko Kanamori-Kataoka, Nobuo Ochiai, Takafumi Satoh, Takeshi Ohmori

(2450-07P) **A Preliminary Analysis Linking Avian Olfaction to Potential Forensic Applications** CLAUDIA L. SANCHEZ, Florida International University, Gabrielle Nevitt, Kenneth Furton, Paola Prada

(2450-08P) **Chemometric Analysis of Mammalian Decomposition Chemistry Using SPME-GC-MS** PATRICIA T. CALDWELL, Federal Bureau of Investigation, Brian Eckenrode, David Cho, Deanna Snyder, Martin Grime, Rex Stockham

(2450-09P) **Forensic Analysis of Volatile and Microbial Contributors to Human Scent via Multiple Extraction Methodologies** LAURYN DEGREEFF, Federal Bureau of Investigation, Brian Eckenrode, Chris Tipple, Deanna Synder, Patricia Caldwell, Rex Stockham

(2450-10P) **Quantifying the Loss of Trace Explosives in Polymer Microspheres** TIM BREWER, National Institute of Standards and Technology, Matthew Staymates, Robert Fletcher

(2450-11P) **Onsite Detection of Fumigants and Tic in Containers Using a New Sampling Tool with a Hybrid Sensor Array** ANDREAS WALTE, Airsense Analytics GmbH, Bert Ungethuem, Wolf Muenchmeyer

(2450-12P) **Development of Explosives Trace Detection System Using Cyclone-Type Particle Concentrator** YUICHIRO HASHIMOTO, Hitachi, Ltd., Hideo Kashima, Hisashi Nagano, Koichi Terada, Masakazu Sugaya, Masuyuki Sugiyama, Minoru Sakairi, Yasuaki Takada, Yasunori Doi, Yasutaka Suzuki

(2450-13P) **An Automated QCM Sensor Array System with Integrated Prediction Module for Kinetic Evaluation of Sensors** XIUBIN QI, CSIRO, Andrew Ross

(2450-14P) **Visible and Infrared Microspectrometry of Ink and the Order of Deposition Where Lines Cross** GARY H. NAISBITT, Utah Valley University, Elizabeth Purser

(2450-15P) **Development of Reversed Phase HPLC Method for Simultaneous Determination of Triazophos Extracted from Rat's Blood** MOHINEESH CHANDRA, All India Institute of Medical Sciences (Aiims), Anupuma Raina, Jaya Raj, Tirath Dogra

(2450-16P) **Analysis of Sapphire and Ruby by EDXRF** ALEXANDER SEYFARTH, Thermo Fisher Scientific, Christopher Breeding, Rich Philips

(2450-17P) **Investigation of the Retention Behavior and Separation of Nitroaromatic, Nitramine and Nitrate Ester Explosives on RPLC Using Ionic Liquids as Mobile Phase Additives** TARAB AHMAD, Western Illinois University, Azhar Alhejji, Bartlomiej Redlinski, Tariq Z Ahmad

**POSTER** Session 2460

## Ionophore-based Chemical Sensors

Thursday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2460-01P) **Preparation of Ionophores for Selective Detection of Nitrite via Only Charged or Neutral Carrier Mechanism** SI YANG, University of Michigan, Mark Meyerhoff

(2460-02P) **Novel Approach to Liquid Junction-Free Reference Electrodes: Current-Pulsing of Receptor-Doped Membranes** XU U. ZOU, University of Minnesota, Philippe Buhlmann

(2460-03P) **Electrochemical *In Situ* Cyanide Monitoring in Gold Mine** LI D. CHEN, University of Minnesota, Jon Thompson, Jozsef Rabai, Philippe Buhlmann, Xu Zou

(2460-04P) **An Alternative Ion-Selective Electrode Matrix: Development of Perfluoroelastomer Thin Films** ELIZABETH C. LUGERT-THOM, University of Minnesota, Louis Pitet, Marc Hillmyer, Philippe Buhlmann, Rajvi Mehta, Sarah Wegwerth

(2460-05P) **Receptor-Based Electrochemical Detection of 2,4-Dinitrotoluene** ERIC J. OLSON, University of Minnesota, Andreas Stein, Jason Brennan, Melissa Fierke, Philippe Buhlmann

**POSTER** Session 2470

## Microfluidics/Lab-on-a-Chip

Thursday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2470-01P) **Levitated Drops as Microreactors: The Road We've Traveled, The Road Ahead** ALEXANDER SCHEELINE, University of Illinois at Urbana-Champaign, Christopher Nellessen, Edward Chainani, Khanh Ngo, Woo-Hyuck Choi

(2470-02P) **Simultaneous Monitoring of Fatty Acid and Glycerol Secretion from Adipocytes Using Microfluidic Enzyme Assays** COLLEEN DUGAN, University of Michigan, Ormond MacDougald, Robert Kennedy

(2470-03P) **Analytical Methodology for the Investigation of L-DOPA Transport and Metabolism Using Microchip Electrophoresis with Electrochemical Detection** RACHEL A. SAYLOR, University of Kansas, Susan Lunte, Thomas Linz

(2470-04P) **Improving the Limits of Detection Using Epoxy-Embedded Pillar Electrodes for Microchip-Based Analysis Systems** ASMIRA SELIMOVIC, Saint Louis University, R Scott Martin

(2470-05P) **Simultaneous Determination of Harmful Levels of Nitrate and Nitrite on A Microfluidic Paper Based Device** JYOTHIR GANESHWAR REDDY UMMADI, Tennessee Tech University, Andrew Callender

(2470-06P) **Development of the Hybrid LC Micro-Column Device Combined with Droplet-Based Microfluidics** JIN-YOUNG KIM, Imperial College London, Andrew de Mello, Danny O'Hare, Jongin Hong, Soo-ik Chang

(2470-07P) **Thermoset Polyester Microfluidic Channel Devices for Polymer Monolithic LC Columns** JIN-YOUNG KIM, Imperial College London, Danny O'Hare, Soo-ik Chang

(2470-08P) **Application of Micro-Electromagnetic Traps Utilized in Optical Sensing Schemes** RASHID ZAKERI, Indiana University, Joseph Basore, Lane Baker, Srinivas Beeram

(2470-09P) **Using Microfluidics and Segmented Flow for Trace Analysis of Primary Fatty Amines** ANDREW P. DAVIC, Duquesne University, Michael Cascio

(2470-10P) **A Novel Fabrication Method for Polyester Microchips Used for Analysis Biological Samples** YIWEN OUYANG, University of Virginia, James Landers, Paul Riehl

(2470-11P) **Integration of Polymer Micro-Electrodes for Bio-Sensing** AIKATERINI ARGYRAKI, Technical University of Denmark - DTU Nanotech

(2470-12P) **Low Cost and Versatile Electrodes for Capacitively Coupled Contactless Conductivity Detection on Electrophoresis Microchips** GERSON F. DUARTE JUNIOR, Universidade Federal de Goiás, Ellen Flavia Gabriel, Paulo Garcia, Wendell Karlos Coltro

(2470-13P) **Fabrication of Low Aspect Ratio, Injection Molded Structures for Use in dsDNA Elongation** PETER F. OSTERGAARD, Technical University of Denmark - DTU Nanotech, Anders Kristensen, Marco Matteucci, Rafael Taboryski, Rodolphe Marie

**POSTER** Session 2480

## Nanotechnology II

Thursday Morning, Room: Red Area on Exposition Floor, Aisles 1300-1500

(2480-01P) **Hydrogenation and Isomerization Reactions of ,-unsaturated Alcohols by Pd and PdAg Monolayer Protected Clusters in Solution** MONICA A MORENO, University of Louisville, Francis Zamborini, Lyndsay N Kissell

(2480-02P) **A Study of Aged Carbon Nanotubes by Thermogravimetric Analysis** ANDREW W. SALAMON, PerkinElmer Corporation, Amy Zhao, Endlkachew Sahle-Demessie

(2480-03P) **An *In vitro* Study of the Effect of Gold Nanoparticles in Non-Enzymatic Glycation of Human Serum Albumin by Glyceraldehyde** CHAMPIKA SENEVIRATNE, University of Rhode Island, Joel Dain, Radha Narayanan, Weixi Liu

(2480-04P) **Self-Polymerization of Chloromethylphenyltrichlorosilane Nanostructures Revealed at the Molecular-Level by Scanning Probe Microscopy** TIAN . TIAN, Louisiana State University, Jayne Garno, Zorabel LeJeune

(2480-05P) **Enzyme-Linked Immunosorbent Assay on Temperature Responsive Filter** YING WENG, Tokyo Metropolitan University, Hizuru Nakajima, Hulie Zeng, Katsumi Uchiyama

(2480-06P) **Hybrid Nanoflowers: Single Platform For Targeting, Metabolite Sensing and Analysis** ISMAIL OCSOY, University of Florida, Basri Gulbakan, Emir Yasun, Guizhi Zhu, Mohammed Ibrahim Shukoor, Weihong Tan, Xiangling Xiong

(2480-07P) **DNA-Mediated Controllable Growth of Multi-Layer Shells of Multilayered Nanostructures** ERQUN SONG, University of Florida, Tao Chen, Weihong Tan

(2480-08P) **Pt/Ru/nanoceria Composites Supported on MWCNT for Alcohol Oxidation** JORDAN M. ANDERSON, University Central Florida

(2480-09P) ***In vivo* Cell Fate Tracking of Mesenchymal Stem Cells Using PLGA-QD Nanoparticles** NIEN-CHU FAN, National Tsing Hua University, Chen-Sheng Yeh, Chih-Chia Huang, Fong-Yu Cheng, Ja-An Ho, Patrick Ching-Ho Hsieh

(2480-10P) **Optimization of Process Parameters to Control the Size of Calcium Carbonate Nanoparticles Using Polymer Mediated Growth Technique** SANTOSHKUMAR BIRADAR, Norfolk State University, Govindarajan Ramesh

(2480-11P) **Visual Semi-Quantification of Copper and Iron via the Formation of Phase Segregation** CHENG-HAN LIN, National Taiwan University

(2480-12P) **Spectroscopic Investigations of Protein-Nanoparticles Interactions Under Normal and Oxidative Stress Conditions** MD A. FAZAL, St. John's University, Krista Barzen-Hanson, Valdez Rahming

**POSTER** Session 2490

## Polymers and Plastics Characterization

Thursday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2490-01P) **Characterization of Electrolyte Membrane for Polymer Electrolyte Fuel Cell by Humidity Control Thermal Analysis** NOBUAKI OKUBO, SII NanoTechnology Inc., Fred Klein, Hidehiro Takahashi, Joe Rivas

(2490-02P) **Measuring Environmental Transformation of Carbon Nano-Fiber Composite Using Integrated Thermal Analysis and Related Hyphenated Techniques** ENDLKACHEW SAHLE-DEMESSIE, U.S. EPA, Amy Zhao, Andrew Salamon, Nick Gagliardi

(2490-03P) **Multi-Step Thermal Characterization of Food Packaging.** THOMAS WAMPLER, CDS Analytical, Inc., Gary Deger, Karen Jansson, Stephen Wesson

(2490-04P) **Long Term Creep Prediction for PET Bottles via Dynamic Mechanical Analysis** GEORG STORCH, NETZSCH Gerätebau GmbH, Bob Fidler, Casper Chiang, Ekkehard Post, Elena Moukhina, Tobias Pflock

(2490-05P) **Phase Transition Behavior of Organic Thin Film Observed High Sensitive DSC** NOBUAKI OKUBO, SII NanoTechnology Inc., Hirohisa Yoshida, Kana Emoto

(2490-06P) **Quantitation of Hindered Amine Light Stabilizers (HALS) by Liquid Chromatography and Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian Acworth

(2490-07P) **Unattended Quantitative Determination of VOCs in Food Packaging Samples Using A Robotic Sampler for Automatic Standard Addition and Subsequent Headspace Analysis** MASSIMO SANTORO, Thermo Fisher Scientific, Eric Phillips, Fausto Pigozzo, Silvia Gemme, Stefano Pelagatti

(2490-08P) **The Use of Pyrolysis-GC/MS to Study Biobased Plastics** KAREN JANSSON, CDS Analytical, Inc., Thomas Wampler

(2490-09P) **High Throughput Screening of Food Contact Materials** KENNETH ROSNACK, Waters Corporation, Antony Lloyd, Gregory Noonan, James Morphet, Joseph Romano, Malcolm Driffield, Peter Hancock

(2490-10P) **Analysis Measurements of Cancer Drug Released From Synthesized Polymeric Carrier Network** FAHIMA M. HELALY, National Research Centre

(2490-11P) **An Enzyme Free Potentiometric Detection of a Glucose Base on a Conducting Polymer Poly (3-aminophenyl boronic acid-3-octylthiophene)** UGUR TAMER, Gazi University, Hakan Ciftci

(2490-12P) **High Temperature Headspace Vial Septa: The Difference Between the Success and Failure of High Temperature Headspace Gas Chromatography Analyses** LIMIAN ZHAO, Agilent Technologies, Jared Bushey, Melanie Rothermich

(2490-15P) **Fraction Collector for Micro-Scale Size-Exclusive Chromatography Separation Followed by Pyrolysis/Gas Chromatography/Mass Spectrometry Analysis** RIKI KITANO, Shimadzu Corporation, Chuichi Watanabe, Haruhiko Miyagawa, Shouta Nakanishi, Takatoshi Noguchi, Tetsurou Yuzawa, Tomoyuki Ozawa, Yuzou Yamazaki

**POSTER** Session 2500

## Raman/Infrared Materials Applications

Thursday Morning, Room: Blue Area on Exposition Floor, Aisles 3300-3500

(2500-01P) **A Marriage of Two Popular Nanofabrication Methods, Physical Vapor Deposition and Electroless Deposition, for the Development of a Novel SERS-SEIRA Substrate** CHAD LEVERETTE, University of South Carolina at Aiken, Eliel Villa-Aleman, Michelle Killian, Rachel Strickhouser

(2500-02P) **Conformational and Structural Studies of Isopropylamine from Temperature**

**Dependent Raman Spectra of Xenon Solutions and ab Initio Calculations** JOSHUA J. KLAASSEN, UMKC, Darkhalil Ikhlas, James Durig

(2500-03P) **A Comparative Surface Characterization of ZnO Nanoparticles and Nanowires by Fourier Transform Infrared Spectroscopy** SATHEESHKUMAR ELUMALAI, National Chung Hsing University, Jyisy Yang

(2500-04P) **An Evaluation of Alternate Stainless Steel Finishing Techniques for Liquid Cell Optical Mirrors Used in the Mid-Infrared** JOSEPH P. LUCANIA, Harrick Scientific Products, Inc., Ali Kocak

(2500-05P) **A Novel Virtually Imaged Phased Array Surface Plasmon Wavelength Filter for High Resolution Spectroscopy** AJAYKUMAR ZALAVADIA, Cleveland State University, John Turner

(2500-06P) **A Facile Approach for the Analysis of Aqueous Solutions by SERS** RAJA PANDIYAN, National Chung Hsing University, Jyisy Yang

(2500-07P) **Characterization of an Infinity Corrected Widefield Raman Imaging System Based on the Non-Collinear Acousto-Optic Tunable Filter** NIKOLAS J. NERIC, Cleveland State University, John Turner

(2500-08P) **A Compact High Resolution Grating-Less Imaging Spectrograph** JONATHAN R. DAMSEL, Cleveland State University, John Turner

(2500-09P) **Real Time 2D-Correlation Spectroscopy for Process Understanding as PAT Tool Using a NIR/IR Dual-Wavelength System** MASAHIRO WATARI, Yokogawa Electric Corp/Kwansei Gakuin University, Takashi Nishii, Takuma Genkawa, Yukihiro Ozaki

(2500-10P) **Monitoring Glycoproteins Using Raman Spectroscopy** VICTORIA L. BREWSTER, University of Manchester, Elon Correa, Lorna Ashton, Royston Goodacre

(2500-11P) **3D HOT-Raman** WEI-CHUAN SHIH, University of Houston, Ji Qi

# Thursday Afternoon, March 15, 2012

**SYMPOSIA** Session 2510

**Analyzing Intrinsically Disordered Proteins** - arranged by Vladimir N. Uversky, University of South Florida

Thursday Afternoon, Room: 307B

Vladimir N. Uversky, University of South Florida, Presiding

2:05 PM (2510-01) **Analyzing Intrinsically Disordered Proteins: Seeing Invisible and Detecting Undetectable** VLADIMIR N. UVERSKY, University of South Florida, Leonid Breydo

2:40 PM (2510-02) **Characterization of Intrinsically Disordered Proteins with Mass Spectrometry** IGOR KALTASHOV, University of Massachusetts - Amherst

3:15 PM (2510-03) **Using Vibrational, Optical and NMR Spectroscopy to Explore Unfolded States of Peptides** REINHARD SCHWEITZER-STENNER, Drexel University, Andrew Hagarman, Siobhan Toal, Stephanie Zimmer, Thomas Measey

3:50 PM (2510-04) **Single-Molecule Dynamics and Coupled Binding-Folding of Intrinsically Disordered Proteins** ASHOK DENIZ, The Scripps Research Institute

4:25 PM (2510-05) **Proteomic Identification of Intrinsically Disordered Proteins (IDPs)** PETER TOMPA, VIB Department of Structural Biology, Brussels

**SYMPOSIA** Session 2520

## Electrochemical Imaging in Neurochemistry with Microelectrodes and Nanoelectrodes - arranged by Bo Zhang, University of Washington

Thursday Afternoon, Room: 206A

Bo Zhang, University of Washington, Presiding

2:05 PM (2520-01) **Expanding the Scope of Electroanalytical Neurochemistry: Adenosine, Histamine and Molecular Oxygen** R MARK WIGHTMAN, University of North Carolina at Chapel Hill

2:40 PM (2520-02) **Probing the Spatiotemporal Details of Dopamine Release in Brain Tissue** ADRIAN C. MICHAEL, University of Pittsburgh, Ian Taylor, Zhan Shu

3:15 PM (2520-03) **Imaging Release at Single Cells with Electrochemical Arrays: Pushing the Limits** ANDREW G. EWING, Chalmers University and University of Gothenburg, Lin Yuging, Maria Svensson, Raphael Trouillon

3:50 PM (2520-04) **Electrochemical Imaging of Individual Nanostructures** SHIGERU AMEMIYA, University of Pittsburgh

4:25 PM (2520-05) **Electrochemical Imaging of Single-Cell Exocytosis at the Nanoscale** BO ZHANG, University of Washington, Joshua Guerrette, Marissa Wood

**SYMPOSIA** Session 2530

## Label-free Biosensing Techniques - arranged by Ryan C. Bailey, University of Illinois at Urbana-Champaign

Thursday Afternoon, Room: 308C

Ryan C. Bailey, University of Illinois at Urbana-Champaign, Presiding

2:05 PM (2530-01) **Ultrasensitive Multiplexed DNA, microRNA and Protein Biosensing via Aptamers, Enzymatic Nanoparticle and Microarray Surface Chemistry, and Nanoparticle-Enhanced SPR Phase Imaging Methods** ROBERT M. CORN, University of California-Irvine

2:40 PM (2530-02) **Ultrasensitive Electrochemical Bio- and Molecular Sensing** SHANA KELLEY, University of Toronto

3:15 PM (2530-03) **Optical Biosensors Based On Surface Plasmon Resonance: Advances and Applications** JIRI HOMOLA, Institute of Photonics and Electronics

3:50 PM (2530-04) **Label-Free Bioanalysis Using Silicon Photonic Microring Resonators** RYAN C. BAILEY, University of Illinois at Urbana-Champaign

**SYMPOSIA** Session 2540

**Laser Induced Breakdown Spectroscopy (LIBS): A Viable Analytical Tool (SAS)** - arranged by James A. Holcombe, University of Texas at Austin

Thursday Afternoon, Room: 207A

James A. Holcombe, University of Texas at Austin, Presiding

2:05 PM (2540-01) **LIBS as an Analytical Technique: Past, Present and Future** NICOLO OMENETTO, University of Florida

2:40 PM (2540-02) **Determination of U, H, and Li Isotopes in Atmospheric Pressure Air Using LIBS and a High-Resolution Spectrometer** DAVID CREMERS, Applied Research Associates, Inc.

3:15 PM (2540-03) **Laser Induced Breakdown Spectroscopy in Extreme Environments** STANLEY M. ANGEL, University of South Carolina, Janna Register, Nirmal Lamsal

3:50 PM (2540-04) **LIBS in Industrial Applications - Inline Analysis for Efficient Process Control** REINHARD NOLL, Fraunhofer Institute for Laser Technology

4:25 PM (2540-05) **Armed with Fundamentals and Experience: Where Next for LIBS?** RICK RUSSO, Lawrence Berkeley National Laboratory, Alexander Bol'shakov, Vassilia Zorba, Xianglei Mao

**SYMPOSIA** Session 2550

**LC/MS Quantification of Protein Therapeutics in Drug Discovery and Development** - arranged by Guodong Chen, Bristol-Myers Squibb

Thursday Afternoon, Room: 206B

Guodong Chen, Bristol-Myers Squibb, Presiding

2:05 PM (2550-01) **Overcoming Challenges in Protein and Peptide Bioanalysis: Tools and Techniques for Chromatographic and Extraction Optimization** ERIN E. CHAMBERS, Waters Corporation

2:40 PM (2550-02) **The Rapid Integration of LC-MS-Based Bioanalytical Methods to Quantify Protein Therapeutics in Drug Discovery** TIMOTHY V. OLAH, Bristol-Myers Squibb

3:15 PM (2550-03) **Large Molecule LC-MS/MS-Based Bioanalytical Method Validations: What Should Be Different?** RAND G. JENKINS, PPD, Inc., Dongliang Zhan, Eric Ma, Kumar Shah, Moucun Yuan

3:50 PM (2550-04) **Detection and Quantification of Modifications in Protein Therapeutics by Mass Spectrometry** GUODONG CHEN, Bristol-Myers Squibb, Adrienne Tymiak, Hui Wei

4:25 PM (2550-05) **Mass Spectrometry as an Orthogonal Method to Ligand Binding Assays for Measuring the Pharmacokinetics of Biotherapeutics** SURINDER KAUR, Genentech

**SYMPOSIA** Session 2560

## Nanotechnology Meets Liquid Chromatography: Nanomaterials-based Stationary Phases - arranged by Luis A. Colon, SUNY at Buffalo

Thursday Afternoon, Room: 308D

Luis A. Colon, SUNY at Buffalo, Presiding

2:05 PM (2560-01) **Nanoparticles as Stationary Phases** LUIS A. COLON, SUNY at Buffalo, Amber Moore, Ivonne Ferrer, Jared Baker, John Vinci, Lisandra Santiago-Capeles

2:40 PM (2560-02) **Polymer Monoliths Functionalized with Nanostructures** FRANTISEK SVEC, Lawrence Berkeley National Laboratory

3:15 PM (2560-03) **Stable, Microfabricated Thin Layer Chromatography Plates Prepared on Infiltrated, Patterned Carbon Nanotube Forests** MATTHEW R. LINFORD, Brigham Young University, Andrew Dadson, Cody Cushman, David Jensen, Laurel Peacock, Michael Vail, Richard Vanfleet, Robert Davis, Supriya Kanyal

3:50 PM (2560-04) **Carbon Nanotubes for Separations and Microconcentrations** SOMENATH MITRA, New Jersey Institute of Technology, Chaudhery Hussain, Chutarat Saridara, Mahesh Karwa, Ornthida Sae-Khow, Smruti Ragunath

4:25 PM (2560-05) **The Application of Nano-Carbonaceous Materials in Separation Science** BRETT PAULL, University of Tasmania, Pavel Nesterenko

**SYMPOSIA** Session 2570

## Single Molecule Technologies in Biological Explorations - arranged by Joseph M. Irudayaraj, Purdue University

Thursday Afternoon, Room: 207B

Joseph M. Irudayaraj, Purdue University, Presiding

2:05 PM (2570-01) **From Single Molecule Research to Clinical Applications: Bone** PAUL HANSMA, University of California, Santa Barbara

2:40 PM (2570-02) **Single-Molecule Chromosome Analysis** HAROLD CRAIGHEAD, Cornell University

3:15 PM (2570-03) **Chief, Section on High Resolution Optical Imaging** HARI SHROFF, NIH

3:50 PM (2570-04) **Single Molecule Spectroscopy Probes Live Cell Protein Interactions** JOSEPH M. IRUDAYARAJ, Purdue University

4:25 PM (2570-05) **Exploring the Dynamic Properties of Molecular Assemblies in Live Cells with Single Molecule and Nanoparticle Imaging** MAXIME DAHAN, ENS/HHMI JFRC

**WORKSHOP** Session 2580

## Unleashing AnIML 1.0: Adoption Strategies for the New ASTM Data Standards - arranged by Gary W. Kramer, National Institute of Standards and Technology

Thursday Afternoon, Room: 313

Gary W. Kramer, National Institute of Standards and Technology, Presiding

2:05 PM (2580-01) **Getting Started with AnIML 1.0** GARY W. KRAMER, National Institute of Standards and Technology

2:35 PM (2580-02) **Scientific Data Management and Archiving with AnIML** MAREN FIEGE, Waters GmbH

3:05 PM (2580-03) **AnIML in a Fully Integrated Laboratory** BURKHARD SCHAEFER, BSSN Software

3:50 PM (2580-04) **Techniques for Data Analysis of AnIML Files** STUART J. CHALK, University of North Florida

4:20 PM (2580-05) **Data Management - An EPA Perspective** ANAND R. MUDAMBI, U.S. EPA, Joseph Solsky

**ORGANIZED CONTRIBUTED SESSION** Session 2590

## Analytical Techniques for Nanotoxicology - arranged by Katherine Tyner, FDA

Thursday Afternoon, Room: 311A

Katherine Tyner, FDA, Presiding

2:00 PM (2590-01) **Lessons Learned from Preclinical Assessment of Nanomaterial** ANIL KUMAR PATRI, SAIC Frederick, NCI Frederick

2:20 PM (2590-02) **Nanomaterial Registry: Analytical Needs for Well-Characterized Nanomaterials in Environmental and Biological Studies** MICHELE OSTRAAT, RTI International

2:40 PM (2590-03) **The Challenge of Nanoparticle Characterization: Linking Toxicity to Workplace Exposure** ALEKSANDR B. STEFANIAK, National Institute for Occupational Safety and Health

3:00 PM (2590-04) **NMR as an Analytical Tool to Characterize the Behavior of Nanoparticulate**

**Dispersions** DAVID FAIRHURST, XiGo Nanotools LLC, Stuart Prescott

3:35 PM (2590-05) **Biomarker Discovery and Disease Staging on Proteomic Nanochips** TONY Y. HU, The Methodist Hospital Research Institute

4:15 PM (2590-07) **Tissue Scaffold Constructs as a Branch Between *In vitro* and *In vivo* Studies for Nanoparticle Toxicity Studies** ELISABETH MANSFIELD, National Institute of Standards and Technology, Kavita Jeerage

4:35 PM (2590-08) **Evaluating the Safety of Medically Relevant Nanoparticles *In vivo*** KATHERINE TYNER, FDA

**ORGANIZED CONTRIBUTED SESSION** Session 2600

## Elemental Speciation in the Real World: Clinical, Industrial and Environmental Applications - arranged by Olivier F. Donard, LCABIE CNRS/IPREM

Thursday Afternoon, Room: 311B

Olivier F. Donard, LCABIE CNRS/IPREM, Presiding

2:00 PM (2600-01) **Arsenic Speciation and the Need to Include Bioaccessibility and Biotransformation into Exposure Assessment** JOHN T. CREED, U.S. Environmental Protection Agency, Adam Yeary, Carol Schwegel, David Thomas, Douglas Heitkemper, John Trent, Joseph Caruso, Karen Herbin-Davis, Kevin Kubachka, Madhavi Mantha, Michael Kohan, Nohora Shockey, Patricia Creed, Robert Wilson, Tatyana Pinyayev, Traci Hanley, Xue Jianping

2:20 PM (2600-02) **Standard Reference Materials for Elemental Speciation Measurements and Environmental Monitoring Studies** CLAY DAVIS, National Institute of Standards and Technology

2:40 PM (2600-03) **A Triple-Isotope Method for Measurement of Inorganic, Methyl and Ethyl Mercury in Human Whole Blood by Solid Phase Microextraction (SPME) Gas Chromatography Coupled to ICP-MS** CARL P. VERDON, CDC, Kathleen Caldwell, Mark Fresquez, Robert Jones, Yuliya Sommer

3:00 PM (2600-04) **A New Sample Introduction Module for the Analysis of Total Nitrogen and Total Sulfur in Refinery Samples** MATTHEW CASSAP, Thermo Fisher Scientific, Angela Seipel, Kristian Hoffman, Marco Van Aken, Steve Herre

3:35 PM (2600-05) **Development and Certification of Standard Reference Materials for Hexavalent Chromium in Contaminated Soils** STEPHEN LONG, National Institute of Standards and Technology, Brian Buckley, Clay Davis, John Sieber, Julien Malherbe, Stuart Nagourney

3:55 PM (2600-06) **Isotopically Labeled Compounds for Routine Biological and Environmental Speciation Analysis** JOSE IGNACIO GARCIA ALONSO, University of Oviedo, Pablo Rodriguez-Gonzalez

4:15 PM (2600-07) **Collision-Cell Free Quantitation in ICP-MS by Spectral Accuracy** MING GU, Cerno Bioscience, Hongliang (Leo) Xu, Yongdong Wang, Zhi Xing

4:35 PM (2600-08) **Multielemental Speciation: Feasibility and Applications** RUTH E. WOLF, US Geological Survey

**ORAL** Session 2610

## Characterization of Polymers and Plastics - arranged by Fu-Tyan Lin, The Pittsburgh Conference

Thursday Afternoon, Room: 308A

Fu-Tyan Lin, The Pittsburgh Conference, Presiding

2:00 PM (2610-01) **Studying the Crystallization of Nylon-6 Using Simultaneous Raman-DSC** RICHARD SPRAGG, Perkin Elmer LAS, Dean Brown, Geert Van den Poel, Liliam Willems

2:20 PM (2610-02) **Thermal Decomposition Kinetic Study of Polymer Pattern Materials Used in Investment Casting** PAUL K. NAM, Missouri University of Science & Technology, Hongfang Zhao, Simon Lekakh, Von Richards

2:40 PM (2610-03) **Applications of GC-MS and Accurate Mass UPLC/Q-TOF- MS to Leachable Studies of a Plasma Pre-Filter** JIANFENG HONG, Fenwal Inc., Domenico Schiavone, Robert Payton

3:00 PM (2610-04) **Analysis of the Bisphenol A Polymers Epoxies and Polycarbonate by Pyrolysis-GC/MS** THOMAS WAMPLER, CDS Analytical, Inc., Gary Deger, Karen Jansson, Stephen Wesson

3:35 PM (2610-05) **Fast, Easy and "Green" Thermal Desorption-GC/MS Method for the Analysis of Phthalate Esters in PVC: Effect of Calibration Technique on Accuracy and Precision** ROBERT FREEMAN, Frontier Laboratories, Chu Watanabe, Dave Randle, Tetsuro Yuzawa

3:55 PM (2610-06) **Passive Microrheology: Non Contact Measurement of Viscoelastic Properties of Biopolymers** CHRISTELLE TISSERAND, Formulaction, Gérard Meunier, Laurent Brunel, Mathias Fleury, Pascal Bru

4:15 PM (2610-07) **Synthesis and Characterization of Novel Polyurea-urethane Dyes with Good Dyeing Properties** SMITA M. JAUHARI, Sardar Vallabhbhai National Institute of Technology, Kishor Desai, Medha Joshi

4:35 PM (2610-08) **Improved Bleachability of Bagasse and Cotton Stalk Pulp by Xylanase Enzyme** ZENAT A. NAGIEB, National Research Centre

**ORAL** Session 2620

## Chemical Methods - arranged by Chad Cowles, University of Nevada Reno

Thursday Afternoon, Room: 307D

Chad Cowles, University of Nevada Reno, Presiding

2:00 PM (2620-01) **Facile Synthesis and Biological Application of Thioglycolic Acid Modified ZnO**

**Nanoparticles** CHAD L. COWLES, University of Nevada Reno, Benjamin Chen, Xiaoshan Zhu

2:20 PM (2620-02) **The Effect of Silver Islands on Fluorescence Resonance Energy Transfer (FRET) Between Phycobiliproteins** YU TIAN, Texas Tech University, Dimitri Pappas

2:40 PM (2620-03) **Synthesis, Characterization and Antibacterial Activity of Copper Loaded Core-Shell Silica Nanoparticles** PAVITHRA MANIPRASAD, University of Central Florida

3:00 PM (2620-04) **Electrochemical Sensing of Organophosphate Compounds through a Nanopore** QITAO ZHAO, University of Texas at Arlington, Xiyun Guan

3:35 PM (2620-05) **Manometric BOD – Old Parameter with Great Potential** FRANK D. HONOLD, ITT-WTW GmbH, Peter Rauch

3:55 PM (2620-06) **A New Recuctimetric Reagent: Iron(II) in Acetic Acid Medium and in Presence of Orthophosphate and Its Applications** VIJAYA R. KURIMELLA, Andhra University

4:15 PM (2620-07) **Simultaneous Measurement of Particulate and Dissolved Residue Concentrations in Colloidal Dispersions** DONALD C. GRANT, CT Associates, Inc., Erik Willis, Gary Van Schooneveld, Jacob Scheckman, Jim Farnsworth, Mark Litchy, Rob Caldow

4:35 PM (2620-08) **Thermodynamics of Eu(III) Complexation with -picolinate** RAMA MOHANA RAO DUMPALA, Bhabha Atomic Research Centre, BS Tomar, Neetika Rawat, RM Sawant

**ORAL** Session 2630

## Environmental Analysis: Pharmaceutical and Biologically Active Materials - arranged by David Benanou, Veolia Environnement Recherche & Innovations

Thursday Afternoon, Room: 311C

David Benanou, Veolia Environnement Recherche & Innovations, Presiding

2:00 PM (2630-01) **Optimization and Application of Solid Phase Microextraction (SPME/LC/MS/MS) for Determination of Pharmaceuticals in Urban Wastewater Effluent** PAUL O. TOGUNDE, University of Waterloo, Erasmus Cudjoe, Fatemeh Mirnaghi, Janusz Pawliszyn, Mark Servos

2:20 PM (2630-02) **Fast Ultra High Performance Liquid Chromatographic Method for the Simultaneous Determination of Some Selected Emerging Contaminants in Environmental Water Samples Using Superficially-Porous Fused Core Particles as an Alternative to Sub 2 µm Particles** HEBA SHAABAN, University of Waterloo, Tadeusz Gorecki

2:40 PM (2630-03) **Identification of Oxidation By Products of Selected Pharmaceutical and Personal Care Products in Drinking Water Treatments** QIHUA WU, Missouri University of Science & Technology, Craig Adams, Honglan Shi, Terry Timmons,

Yinfa Ma

3:00 PM (2630-04) **Analysis of ß-blockers and ß2-agonists in Distilled and Waste Waters Using Liquid Chromatography–Tandem Mass Spectrometry in Conjunction with Solid-Phase Extraction** ALAA SALEM, Uae University, Ibrahim Wasfif, Salama Al-Nassibi

3:35 PM (2630-05) **Speciation Analysis of Gadolinium Chelates in Hospital Effluents and Wastewater Treatment Plant Sewage** UWE KARST, University of Muenster, Lena Telgmann, Michael Sperling

3:55 PM (2630-06) **Rapid Separations on a Portable GC with Resistively Heated Columns** JACK DRISCOLL, PID Analyzers, LLC, Stanley Stearns

4:15 PM (2630-07) **Sensitized Chemiluminescence System Based on Hydrogen Peroxide and Fenton Reagent** MOHIT P. PATEL, Temple University, Andrew Fedetz, Atinuke Omolara, C Martoff, Susan Jansen, Vincent Pesce

4:35 PM (2630-08) **Quantitative Improvement of the POCIS (Polar Organic Chemical Integrative Sampler) for Pharmaceutical and Pesticide Compounds** HELENE BUDZINSKI, University of Bordeaux, Angel Belles, Nathalie Tapie

**ORAL** Session 2640

## Food Products and Components - arranged by Joan Stevens, Agilent Technologies, Inc.

Thursday Afternoon, Room: 209B

Joan Stevens, Agilent Technologies, Inc., Presiding

2:00 PM (2640-01) **On-Line Photo-Ionization (PI) Time-of-Flight Mass Spectrometry for Real-Time Characterization of Tobacco Products and Tobacco Smoke: Puff-Resolved Smoke Analysis and Evolved Gas Analysis in Thermogravimetry** RALF ZIMMERMANN, University of Rostock / Helmholtz Zentrum München, Andreas Walte, Markus Eschner, Matthias Bente von Frowein, Mohammad Saraji-Bozorgzad, Thomas Gröger

2:20 PM (2640-02) **Development of an LC-MS Method for Determining Isoflavones in Soy Standard Reference Materials** MARY BEDNER, National Institute of Standards and Technology, Katherine Sharpless, Lane Sander

2:40 PM (2640-03) **Comparative Analysis of Green Tea, Oolong Tea and Lemon Balm Tea Infusions** JERZY MIERZWA, Tennessee State University

3:00 PM (2640-04) **Aging of Indonesian Nutmeg Essential Oil: Chemometric Approach from Mid-infrared and Gas Chromatography Data** SANDRINE AMAT, University Paul Cezanne, Florence Mehl, Jacky Kister, Nathalie Dupuy, Robert Valls

3:35 PM (2640-05) **An Improved Method for Amino Acid Analysis of Feeds, Foods and Beverages** THOMAS E. WHEAT, Waters Corporation, Jennifer Burgess, Margaret Maziarz, Mark Benvenuti, Patricia McConville

3:55 PM (2640-06) **The Determination of Benzene, Toluene, Ethyl Benzene, Xylenes and Styrene in Olive Oil Using Headspace Extraction and Gas Chromatography-Mass Spectrometry** ANDREW TIPLER, PerkinElmer Inc.

4:15 PM (2640-07) **Determination of 2- and 4-Methylimidazole in Caramel Coloring in Food Products: Comparison of Two Extraction Methods: Ion Exchange Monolithic Disk and QuEChERS with LC/MS/MS Analysis** JOAN M. STEVENS, Agilent Technologies, Ritu Arora

4:35 PM (2640-08) **Practical Food Applications by Thermal Analysis** PENG YE, Perkin Elmer

**ORAL** Session 2650

## Forensic Analysis: Applications - arranged by Charles Gardner, ChemImage Corporation

Thursday Afternoon, Room: 206C

Charles Gardner, ChemImage Corporation, Presiding

2:00 PM (2650-01) **Investigation of Aptamer Based Assays for the Colorimetric Detection of Cocaine for Forensics Applications** JOSHUA E. SMITH, National Research Council, Jorge Chávez, Morley Stone, Nancy Kelley-Loughnane

2:20 PM (2650-02) **Confirmatory Quanitation of Benzodiazepines in Post-Mortem Matrices Using HPLC/MS with Online Cleanup** GUIFENG JIANG, ThermoFisher Scientific, Terry Zhang

2:40 PM (2650-03) **Forensic Analysis of Regioisomeric Aminoketones Related to Methylenedioxypyrovalerone (MDPV)** C RANDALL CLARK, Auburn University, Jack DeRuiter, Karim Abdel-Hay, Younis Abiedalla

3:00 PM (2650-04) **Drugs, Drug Precursor and Hazardous Chemical Sensing by Quantum Cascade Laser and Cantilever Enhanced Photoacoustic Spectroscopy** JUHO UOTILA, Gasera Ltd., Ismo Kauppinen, Jussi Raittila

**ORAL** Session 2660

## GCMS, General Interest - arranged by Huamin Cai, Valco Instruments Co., Inc.

Thursday Afternoon, Room: 310B

Huamin Cai, Valco Instruments Co., Inc., Presiding

2:00 PM (2660-01) **GC-MS Sensitivity and How to Improve it** AVIV AMIRAV, Tel Aviv University, Alexander B Fialkov, Alexander Gordin

2:20 PM (2660-02) **A Portable Field Vacuum Extractor (FVE) for SPME Collection and GC/MS Detection of Semivolatile Contaminants from Surfaces** EDGAR D. LEE, Torion Technologies Inc., Christopher Bailey, Gary Groenewold, Jeffrey Jones, Jill Scott, Stephen Lammert

2:40 PM (2660-03) **A Turn-Key Accurate Mass Solution for A Quadrupole GC/MS**

**System** YONGDONG WANG, Cerno Bioscience, Leo Xu, Ming Gu

3:00 PM (2660-04) **Simple Method to Add Internal Standard Vapors to a Packed Needle Trap for Use in Hand-Portable GC-MS** NATHAN L. PORTER, Torion Technologies Inc., Anthony Rands, Charles Sadowski, Douglas Later, Edgar Lee, Joseph Oliphant, Tai Truong

3:35 PM (2660-05) **A Flexible Chip-Based Pneumatic Modulator for Comprehensive Two-Dimensional Gas Chromatography** PETER Q. TRANCHIDA, University of Messina, Flavio Franchina, Luigi Mondello

3:55 PM (2660-06) **Petroleum Biomarkers Quantified by Comprehensive Two-dimensional GC (GCxGC)** CHANG (SAM) HSU, Florida State University, Cory Fix, Jack Cochran, Jay Lu, Joe Binkley, Mark Merrick, Michael Mason, Ron Stricek

4:15 PM (2660-07) **The Use of Deconvolution Software to Identify Polymer Additives in Pyrolysis-GC/MS Analyses** KAREN JANSSON, CDS Analytical, Inc., Thomas Wampler

4:35 PM (2660-08) **Detection and Identification of Stachybotrys Chartarum Microbial Volatile Organic Compounds (MVOCs) On-Site Using Person-Portable Gas Chromatography/Mass Spectrometry (GC-MS) Using a Thermal Desorption Accessory** AMY GIFFORD, INFICON, Inc.

**ORAL** Session 2670

## Genomics, Proteomics, and Metabolomics - arranged by Timothy J. Garrett, University of Florida

Thursday Afternoon, Room: 209A

Timothy J. Garrett, University of Florida, Presiding

2:00 PM (2670-01) **Live Cell Arrays to Quantitatively Characterize Noise in Gene Expression** JASON SHEPARD, University at Albany - SUNY, Hua Shi, Maureen Walling

2:20 PM (2670-02) **Solid-Phase Amplification for Next Generation Sequencing on 3D Lithographically Fabricated SU8 Micropillars** MALGORZATA A. WITEK, Louisiana State University, Daniel Park, Francis Barany, Hong Wang, Jianmin Huang, Steven Soper

2:40 PM (2670-03) **Novel Utilization of Outer Membrane Proteins as Biomarkers for the Differentiation of Pathogenic Strains Using Mass Spectrometry-Based Proteomics Approach** RABIH JABBOUR, Edgewood Chemical Biological Center, A Peter Snyder, Alan Zulich, Mary Wade, Michael Stanford, Samir Deshpande

3:00 PM (2670-04) **Comparative LC-MS/MS Analysis of Colorectal Adenocarcinoma Cells via Stable Isotope Labeling by Amino Acids in Cell Culture (SILAC) Following Silencing of CASP8AP2/FLASH** PAUL A. LAMBERT, University of Notre Dame, Amanda Hummon, Kerry Bauer

3:35 PM (2670-05) **Metabolomics of Colon Cancer by Analysis of Human Plasma with LC/TOF and LC/Q-TOF** NOELLE M. ELLIOTT, University of Florida, David Powell, David

Shibata, Erin Siegel, John Koomen, Richard Yost, Umut Oguz, Y Chen

3:55 PM (2670-06) **Characterization of Metabolites of Medigaco Truncatula Using UHPLC and High Performance Time-of-Flight MS and High Performance Fragment Ion Analysis** JEFFREY S. PATRICK, LECO Corporation, Joe Binkley, Kevin Siek, Li Zhang

4:15 PM (2670-07) ***In vivo* and *Ex vivo* Solid Phase Microextraction in Plant Metabolomics: New Opportunities for Direct Investigation of Biological Systems** SANJA RISTICEVIC, University of Waterloo, Janusz Pawliszyn, Jennifer Deell

4:35 PM (2670-08) **Comparison of *In vivo* Solid-Phase Microextraction to Solvent Precipitation and Ultrafiltration for Untargeted Metabolite Profiling by Liquid-Chromatography-Mass Spectrometry** DAJANA VUCKOVIC, University of Toronto, Brad Gien, Inés de Lannoy, Janusz Pawliszyn, Leonard Sidisky, Robert Shirey

**ORAL** Session 2680

## Microfluidics/Lab-on-a-Chip - Others - arranged by Kimberley Frederick, Skidmore College

Thursday Afternoon, Room: 309A

Kimberley Frederick, Skidmore College, Presiding

2:00 PM (2680-01) **Inkjet Printing for Simple and Rapid Fabrication of Microfluidic Paper-Based Analytical Devices (µPADs)** DANIEL CITTERIO, Keio University, Bernat Guirao, Kento Maejima, Koji Suzuki, Nobutoshi Komuro, Shota Imoto, Yuta Katayama

2:20 PM (2680-02) **A Pneumatic Interface for Coupling Digital Microfluidics to Paper Spray Ionization Mass Spectrometry** CHRISTOPHER A. BAKER, Florida State University, Michael Roper

2:40 PM (2680-03) **Microfabrication of a Polymer-Based Multi-Channel Fluidic Network for High Throughput Processing for Drug Discovery** MICHAEL D. VINCENT, Louisiana State University, Daniel Park, Mateusz Hupert, Steven Soper, Varshni Singh

3:00 PM (2680-04) **Optical Temperature Monitoring of Microfluidic Coflow Reactions Using Nanohole Arrays** MEHMET A. SEN, Northeastern University, Dale Larson, Gregory Kowalski, Jason Fiering

**ORAL** Session 2690

## Nanotechnology - Other Applications - arranged by Alexandre A. Shvartsburg, Pacific Northwest National Laboratory

Thursday Afternoon, Room: 307A

Alexandre A. Shvartsburg, Pacific Northwest National Laboratory, Presiding

2:00 PM (2690-01) **Analysis of Nanographene Oxide Containing Solutions by HPLC** JOHN VINCI, SUNY at Buffalo, Luis Colon, Robert Dennis, Sarbajit Banerjee, Wendy Yang

2:20 PM (2690-02) **Nucleotide Separation with Fluorescent Ultra-Thin Layer Chromatography Plates Using Electrospun Polyhydroxyalkanoates** CHERIE N. OWENS, The Ohio State University, Susan Olesik

2:40 PM (2690-03) **Utilizing Capillary Electrophoresis for the Fundamental Analysis and Characterization of Magic-Sized Cadmium Chalcogenide Nanocrystals** JARED S. BAKER, Elmira College

3:00 PM (2690-04) **Determining Nanoparticle Purity and the Presence of Nanoparticle Surface Coatings through Microscale TGA** ELISABETH MANSFIELD, National Institute of Standards and Technology

3:35 PM (2690-05) **Differential Magnetic Catch and Release Purification of Magnetic Nanoparticles and Hybrid Nanostructures** MARY BETH WILLIAMS, Penn State, Jacob Beveridge, Jason Stephens

3:55 PM (2690-06) **Nano Editor: A Dynamic Nano Plotter- Eraser System** PRADEEP RAMIAH RAJASEKARAN, Southern Illinois University, Punit Kohli

4:15 PM (2690-07) **Nanoscale Molecular Junctions with Electrochemically Fabricated Silver Nanowire Contacts: Nanoelectronics, Raman Enhancement, and Sensing** FRANCIS P. ZAMBORINI, University of Louisville, Radhika Dasari

4:35 PM (2690-08) **A Light-Powered DNA Walker Enabling Autonomous and Controllable Movement** MINGXU YOU, University of Florida, Weihong Tan, Yan Chen

**ORAL** Session 2700

## Pharmaceutical - LC, GC, and Raman - arranged by Michael D. McGinley, Phenomenex

Thursday Afternoon, Room: 311D

Michael D. McGinley, Phenomenex, Presiding

2:00 PM (2700-01) **Automated Quality by Design (QbD) Approach to HPLC Method Development for Genotoxic Impurities in Active Pharmaceutical Ingredients** JEFF D. TRENCK, Boehringer Ingelheim, Shaun Mendonsa

2:20 PM (2700-02) **Propagation of Impurities - Characterization of Pharmaceutical Synthetic Starting Materials by High Performance Liquid Chromatography and Gas Chromatography Coupled to High Resolution Time-of-Flight Mass Spectrometry** JEFFREY S. PATRICK, LECO Corporation, David Alonso, Joe Binkley, Kevin Siek

2:40 PM (2700-03) **Ionic Liquids: A New Type of Diluent for the Determination of High Boiling Residual Solvents in Drug Substances by Headspace Gas Chromatography** QICHAO ZHAO, The University of Toledo, Jared Anderson, Ken Ngim, Qiqing Zhong, Sigrid Hubbell

3:00 PM (2700-04) **Rapid Raw Materials, In-Process, and Finished Product Verification by Multivariant Spectroscopy** TODD BLONSHINE, Mustard Tree Instruments

3:35 PM (2700-05) **Microwave Sample Preparation of Pharmaceutical Samples for the Approaching USP Method 233** JASON D. KEITH, CEM Corporation, Bob Lockerman, Elaine Hasty, Ivana Mrvalj, Michael Collins, Tina Restivo

3:55 PM (2700-06) **Analysis of Intact Monoclonal Antibodies and Other Large Proteins by LC/MS Using Widepore Core-Shell Columns** MICHAEL D. MCGINLEY, Phenomenex Inc., Deborah Garrett, Jeff Layne

4:15 PM (2700-07) **Validation of Ingredient Specific Particle Sizing for Nasal Suspension Products** RYAN PRIORE, Gateway Analytical, Oksana Olkhovyk

4:35 PM (2700-08) **A Vibrational Spectroscopic Approach to Evaluate the Stability of an Antiretroviral Drug Under ICH Defined Stress Conditions** PARUL SINGH, National Physical Laboratory, Ranjana Mehrotra

**ORAL** Session 2710

## Separation Sciences II - arranged by Michael Woodman, Agilent Technologies

Thursday Afternoon, Room: 307C

Michael Woodman, Agilent Technologies, Presiding

2:00 PM (2710-01) **Effect of Catalyst Thickness on Carbon Nanotube (CNT) Morphology in CNT-Templated Fabrication of Thin Layer Chromatography Plates** SUPRIYA S. KANYAL, Brigham Young University, Andrew Dadson, Cody Cushman, David Jensen, Matthew Linford, Michael Vail, Richard Vanfleet, Robert Davis

2:20 PM (2710-02) **Aligned Electrospun Ultra-Thin Layer Chromatography Devices** JOSEPH W. ZEWE, The Ohio State University, Michael Beilke, Susan Olesik

2:40 PM (2710-03) **Versatile Sedimentation Field-Flow Fractionation Instrumentation Without the Use of Rotating Seals** FRED SENFTLEBER, Jacksonville University

3:00 PM (2710-04) **CO2 Recycling in Supercritical Fluid Chromatography** ZIQIANG WANG, Waters Corporation, John Whelan

3:35 PM (2710-05) **Challenges of Method Development in the Low Density Region of the Mobile Phase Used in Supercritical Fluid Chromatography** ABHIJIT TARAFDER, University of Tennessee - Knoxville, Georges Guiochon

3:55 PM (2710-06) **The Enantiomeric Separation of Functionalized Ethano-Bridged Trger Bases by HPLC and SFC Using Cyclodextrin and Cyclofructan Based Chiral Stationary Phases** ZACHARY S. BREITBACH, The University of Texas at Arlington, Choyce Weatherly, Daniel Armstrong, Nilusha Padivitage, Ross Woods, Sarah Hughes

4:15 PM (2710-07) **Compensating for Column Geometry Variations in Thermodynamic Models of GC Retention** JAMES J. HARYNUK, University of Alberta, Jeffry Witty

4:35 PM (2710-08) **Development of an Analytical Method for the Determination of Methylarginines in Serum Using Capillary Electrophoresis with Fluorescence Detection** THOMAS LINZ, University of Kansas, Susan Lunte