# PITTCON Conference and Expo 2016

Abstracts

Atlanta, Georgia, USA
6 - 10 March 2016

Volume 1 of 2

ISBN: 978-1-5108-2394-5

**Printed from e-media with permission by:**

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571


**Some format issues inherent in the e-media version may also appear in this print version.**



Printed by Curran Associates, Inc. (2016)



Pittsburgh Conference
300 Penn Center Boulevard
Suite 332
Pittsburgh, PA 15235-5503
USA

Phone: (412) 825-3220
(800) 825-3221
Fax: (412) 825-3224

info@pittcon.org

**Additional copies of this publication are available from:**

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

# TECHNICAL PROGRAM

# SUNDAY, MARCH 6, 2016 AFTERNOON

## The Wallace H. Coulter Lecture — Session 10

*The Wallace H. Coulter Lecture*

**Sunday Afternoon, Sidney Marcus Auditorium, Bldg A, Level 4**

| | | |
|---|---|---|
| 5:00 | (10-1) | **How Optical Single-Molecule Detection in Solids Led to Super-Resolution Nanoscopy in Cells and Beyond** W.E. (WILLIAM ESCO) MOERNER, Stanford University |

## AWARDS — Session 20

*The Pittcon Heritage Award*

**Sunday Afternoon, Sidney Marcus Auditorium, Bldg A, Level 4**

| | | |
|---|---|---|
| 4:45 | | **Presentation of the 2016 Pittcon Heritage Award posthumously awarded to Kenji Kazato and Kazuo Ito, founders of JEOL - accepted by Gon-emon Kurihara, President of JEOL** |

## SYMPOSIUM — Session 30

*ACS-ANYL - Tracing the Metabolome: Application of Stable-Isotope Tracers in Bioanalytical Chemistry*

arranged by Cynthia K Larive, University of California-Riverside and Gregory A Barding, California State Polytechnic University

**Sunday Afternoon, Room B308**

Cynthia K Larive, University of California-Riverside, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Cynthia K Larive and Gregory A Barding** |
| 1:35 | (30-1) | **Stable Isotope Labeling and UHPLC/MS Strategies for Probing Dynamics of Plant Specialized Metabolism** A DANIEL JONES, Michigan State University, Zhenzhen Wang, Xiaoxiao Liu, Banibrata Ghosh |
| 2:10 | (30-2) | **Developments in $^{13}$C-based Metabolomics** ARTHUR S EDISON, University of Georgia |
| 2:45 | (30-3) | **Chemical Isotope Labeling LC-MS for Quantitative Metabolomics with High Metabolomic Coverage** LIANG LI, University of Alberta |
| 3:20 | | **Recess** |
| 3:35 | (30-4) | **Lipid Metabolic Pro°°filing Using Stimulated Raman Scattering Microscopy** MENG WANG, Baylor College of Medicine |
| 4:10 | (30-5) | **Monitoring the Incorporation of Stable-Isotope Labeled Alcohols by Bacteria with GC-MS** GREGORY A BARDING, California State Polytechnic University, Rakesh Mogul, Nicole G Perkins |

## SYMPOSIUM — Session 40

*Emerging Leaders in Biological Mass Spectrometry*

arranged by Amanda B Hummon, University of Notre Dame and Heather R Desaire, University of Kansas

**Sunday Afternoon, Room B302**

Amanda B Hummon, University of Notre Dame, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Amanda B Hummon and Heather R Desaire** |
| 1:35 | (40-1) | **New Mass Spectrometry Methods Show HIV Vaccine Candidates' Protein Structures are Misfolded** HEATHER R DESAIRE, University of Kansas |
| 2:10 Madison | (40-2) | **Novel Strategies in Top-down Proteomics** YING GE, University of Wisconsin |
| 2:45 | (40-3) | **Multi-Tier Approach to Understand the Biology of Alzheimer's Disease** RENÃ ROBINSON, University of Pittsburgh |
| 3:20 | | **Recess** |
| 3:35 | (40-4) | **Old Photochemistry Brings New Capabilities in Unsaturated Lipid Analysis** YU XIA, Purdue University, Zheng Ouyang, Xiaoxiao Ma, Craig Stinson |
| 4:10 | (40-5) | **Evaluating Small Molecule Histone Inhibitors with High Resolution Mass Spectrometry and 3D Cell Cultures** AMANDA B HUMMON, University of Notre Dame, Simone Sidoli, Peter E Feist, Monica M Schroll, Benjamin A Garcia |

## SYMPOSIUM — Session 50

*Enabling Sample Preconcentration Methods for Bioanalysis*

arranged by Adam T Woolley, Brigham Young University

**Sunday Afternoon, Room B304**

Adam T Woolley, Brigham Young University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Adam T Woolley** |
| 1:35 | (50-1) | **Bottom-up Proteomics of E.coli Using Dynamic pH Junction Preconcentration and CZE-ESI-MS/MS** NORMAN J DOVICHI, University of Notre Dame, Guijie Zhu, Liangliang Sun |
| 2:10 | (50-2) | **Electrokinetic Sample Preconcentration and Hydrodynamic Sample Injection for Capillary Electrophoresis Using a Pneumatic Microvalve** RYAN T KELLY, Pacific Northwest National Laboratory, Yongzheng Cong, Katipamula Shanta, Tang Keqi |
| 2:45 | (50-3) | **Solid Phase Microextraction in Bioanalysis** JANUSZ PAWLISZYN, University of Waterloo |
| 3:20 | | **Recess** |
| 3:35 | (50-4) | **Microfluidic Integration of Solid-Phase Extraction with Fluorescence Labeling for Microfluidic Analysis** ADAM T WOOLLEY, Brigham Young University, Suresh Kumar, Vishal Sahore, Radim Knob, Mukul Sonker |
| 4:10 | (50-5) | **Liquid Biopsies: Microfluidic Enabling the Clinical Utility of These Markers** STEVEN A SOPER, University of North Carolina |

## SYMPOSIUM — Session 60

*Frontiers of In Situ and In Vivo Spectroscopic Imaging*

arranged by Ji-Xin Cheng and Mikhail Slipchenko, Purdue University

**Sunday Afternoon, Room B305**

Ji-Xin Cheng, Purdue University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Ji-Xin Cheng and Mikhail Slipchenko** |
| 1:35 | (60-1) | **Correlated Raman and Mass Spectrometric Chemical Imaging of Multiscale Spatiotemporal Signaling in Microbial Communities** PAUL W BOHN, University of Notre Dame, Nameera Baig, Nydia Morales-Soto, Sage B Dunham, Jonathan V Sweedler, Joshua D Shrout, Sneha Polisetti |
| 2:10 | (60-2) | **Nanotechnology for In-Vivo and Intraoperative Cancer Detection and Image-Guided Surgery** SHUMING NIE, Emory University |
| 2:45 | (60-3) | **Nonlinear Microscopy to Detect and Grade Cancer** WARREN S WARREN, Duke University |
| 3:20 | | **Recess** |
| 3:35 | (60-4) | **Multi-Parametric and Multi-Spectral Photoacoustic Microscopy** SONG HU, University of Virginia |
| 4:10 | (60-5) | **Vibrational Spectroscopic Imaging of Molecular Dynamics in Living Systems** JI-XIN CHENG, Purdue University |

## SYMPOSIUM — Session 70

*Wearable and Point-of-Care Sensor Technologies for Biomonitoring*
arranged by Ian Papautsky and William R Heineman, University of Cincinnati

**Sunday Afternoon, Room B401**
Ian Papautsky, University of Cincinnati, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Ian Papautsky and William R Heineman** |
| 1:35 | (70-1) | **Personal Exposure Monitoring Using Portable Samplers and Paper Analytical Devices** CHARLES HENRY, Colorado State University |
| 2:10 | (70-2) | **Pencil and Paper Diagnostic Devices** ANDRES W MARTINEZ, California Polytechnic State University |
| 2:45 | (70-3) | **Electrochemical Metal Determination for Point-of-Care Assessment of Environmental Exposure** IAN PAPAUTSKY, University of Cincinnati |
| 3:20 | | **Recess** |
| 3:35 | (70-4) | **Ionic Liquid Electrochemistry and Biointerface Design for Reliable and Smart Sensors** XIANGQUN ZENG, Oakland University |
| 4:10 | (70-5) | **Monitoring Corrosion of Biodegradable Magnesium Implants with Hydrogen Gas Sensors** WILLIAM R HEINEMAN, University of Cincinnati, Tingting Wang, Daoli Zhao, Zhongyun Dong, William Hoagland, David Benson |

## WORKSHOPS — Session 80

*Light Sources in Analytical Chemistry: Solid State Light Sources and Beyond*
arranged by Mirek Macka, University of Tasmania

**Sunday Afternoon, Room B402**
Mirek Macka, University of Tasmania, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Mirek Macka** |
| 1:35 | (80-1) | **Gatherers and Foragers? Analytical Scientists in the Quest for Better Light Sources** MIREK MACKA, University of Tasmania |
| 2:05 | (80-2) | **Applications of Cavity Ring-Down and Cavity-Enhanced Absorption Spectroscopy in Atmospheric Chemistry** HANS DIETER OSTHOFF, University of Calgary, Charles A Odame-Ankrah, Youssef M Taha, Jason Pak, Connie Z Ye, Nick R Yordanov |
| 2:35 | (80-3) | **A Fourier-Domain Fluorescence Excitation Emission Matrix Spectrometer and Its Applications in Measuring Oxidative Stability of Industrial Liquids** HANS-PETER LOOCK, Queen's University, Nicholas L Andrews, James Z Fan, Oliver Reich, Alexander Dudelzak, Hengameh Omrani |
| 3:05 | | **Recess** |
| 3:20 | (80-4) | **Deep UV-LEDs in Detectors for HPLC and Capillary Electrophoresis** PETER CH HAUSER, University of Basel, Duy Anh Bui |
| 3:50 | (80-5) | **Solid State Light Sources in Capillary Electrophoresis** DAN XIAO, Sichuan University N/A |
| 4:20 | (80-6) | **Quantum Cascade Lasers: How to Revolutionize Mid-Infrared Gas and Liquid Phase Diagnostics** BORIS MIZAIKOFF, Ulm University |

## ORGANIZED CONTRIBUTED SESSIONS — Session 90

*Advances in Mass Spectrometry of RNA - Half Session*
arranged by Norman Chiu, University of North Carolina at Greensboro

**Sunday Afternoon, Room B403**
Norman Chiu, University of North Carolina at Greensboro, Presiding

| | | |
|---|---|---|
| 1:30 | (90-1) | **Toward Detection of Isomeric/Isobaric MicroRNA Biomarkers** NORMAN CHIU, University of North Carolina at Greensboro |
| 1:50 | (90-2) | **New LC-MS/MS Strategies for Modified Oligonucleotides and RNAs** PATRICK A LIMBACH, University of Cincinnati, Robert L Ross |
| 2:10 | (90-3) | **Mass Spectrometry, RNA and Infectious Disease: tRNA Reprogramming and a Second Genetic Code Control Mycobacterial Dormancy** PETER DEDON, Massachusetts Institute of Technology |
| 2:30 | (90-4) | **Identification and Quantitation of RNA Post-Transcriptional Modifications by Nano-flow Liquid Chromatography - Tandem Mass Spectrometry and Database Searching.** HIROSHI NAKAYAMA, RIKEN CSRS, Masato Taoka, Nobuhiro Takahashi, Toshiaki Isobe |

## ORGANIZED CONTRIBUTED SESSIONS — Session 100

*Ionophore-Based Chemical Sensors I*
arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

**Sunday Afternoon, Room B404**
Philippe Buhlmann, University of Minnesota, Presiding

| | | |
|---|---|---|
| 1:30 | (100-1) | **pH Independent Fluorescent Ion Sensors** ERIC BAKKER, University of Geneva |
| 1:50 | (100-2) | **Measurement of Carbon Dioxide in Urine to Guide the Treatment of Patients in Severe Sepsis or Septic Shock** ERNO LINDNER, The University of Memphis, James G Atherton, Marcin Guzinski, Jasinski Artur, Bradford D Pendley |
| 2:10 | (100-3) | **Potentiometric Nanosensors Towards Direct Detection of Nucleic Acids** RÓBERT E GYURCSÁNYI, Budapest University of Technology and Economics, Istvan Makra, Gyula Jágerszki, Alexandra Brajnovits, Peter Fürjes, Márton Bojtár |
| 2:30 | (100-4) | **Potentiometric Detection of Biomacromolecules Based on Surface Molecular Imprinting** RONGNING LIANG, Yantai Institute of Coastal Zone Research, CAS, Wei Qin N/A |
| 2:50 | | **Recess** |
| 3:05 | (100-5) | **Voltammetric Ionophore-Based Electrode for Protamine in Human Blood** SHIGERU AMEMIYA, University of Pittsburgh |
| 3:25 | (100-6) | **Conducting Polymer-Coated Electrode and Its Application to the Thin Layer Electrolysis Cell for Coulometric Determination** YUMI YOSHIDA, Kyoto Institute of Technology, Mao Fukuyama, Kohji Maeda |
| 3:45 | (100-7) | **Biofouling of Ionophore-Doped Ion-Selective Electrode Membranes Revisited** PHILIPPE BUHLMANN, University of Minnesota, Adam Dittmer |
| 4:05 | (100-8) | **Metastable Photoacids Towards Activatable and Controllable Ion Sensing Bulk Membranes for Cations Detection** KARIN Y CHUMBIMUNI-TORRES, University of Central Florida, Parth K Patel |

## ORGANIZED CONTRIBUTED SESSIONS — Session 110

*R&D to QC: Bridging the Gap - Half Session*
arranged by Justin Shearer, Dow AgroSciences

**Sunday Afternoon, Room B312**
Justin Shearer, Dow AgroSciences, Presiding

| | | |
|---|---|---|
| 1:30 | (110-1) | **Back to the Future: Bringing Life to an Old Crop Protection Product** JENNIFER HOLLIE JONES, Dow AgroSciences, Tammy Hamilton, Grant Von Wald, Maciej Turowski, Binghe Gu, Chengli Zu, Scott Kelso, Edward Bellinger, Justin Shearer N/A |
| 1:50 | (110-2) | **Effective Method Transfer: Ensuring End Results** MARY ELLEN P MCNALLY, DuPont Crop Protection, Stephen Platz |
| 2:10 | (110-3) | **Transferring Analytical Methods to a Quality Control Laboratory** AMANDA DARLAND, Dow AgroSciences N/A |
| 2:30 | (110-4) | **R&D to QC: An R&D Perspective in Chromatographic Method Development** JUSTIN SHEARER, Dow AgroSciences, Suresh Annangudi Palani, Daniel Knueppel, Rose Nelson |

## ORAL SESSIONS — Session 120

*Bioanalytical: LC Techniques - Half Session*

**Sunday Afternoon, Room B315**
Sean M Burrows, Oregon State University, Presiding

| | | |
|---|---|---|
| 1:30 | (120-1) | **Characterization of New 2 µm Particle Size, 25 nm Pore Size Analytical Size Exclusion Chromatography Column with Larger Exclusion Limit Useful for the Separation of Biomolecules Using UHPLC and HPLC** CRYSTAL BENNER, Tosoh Bioscience LLC, Atis Chakrabarti |
| 1:50 | (120-2) | **Studies of Drug Interactions with Alpha$_1$-Acid Glycoprotein by Using On-Line Immunoextraction and High Performance Affinity Chromatography** CONG BI, University of Nebraska-Lincoln, Ryan Matsuda, Zitha Isingizwe, Chenhua Zhang, David Hage |
| 2:10 | (120-3) | **HPAE-PAD Applications for Stepwise Biosimilar Development Processes: Monosaccharide and Sialic Acid Determinations** HUA YANG, Thermo Fisher Scientific, Linda Lopez |
| 2:30 | (120-4) | **Analysis of Hormone-Protein Binding in Solution by Ultrafast Affinity Extraction** XIWEI ZHENG, University of Nebraska-Lincoln, Cong Bi, Marrisa Brooks, David Hage |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

## ORAL SESSIONS — Session 130

*Bioanalytical: LC/MS Techniques - Half Session*

**Sunday Afternoon, Room B315**
Sean M Burrows, Oregon State University, Presiding

| | | |
|---|---|---|
| 3:05 | (130-1) | **Discovery of Brown Recluse Spider Sex Pheromones Using Advanced Ultrafast Liquid Chromatography – Tandem Mass Spectrometry Methodologies** CASEY BURTON, Missouri University of Science and Technology, Ariel Donovan, Jennifer Parks, William Stoecker, Honglan Shi |
| 3:25 | (130-2) | **Analysis of Herceptin Oxidation Variants Using a Supermacroporous Reverse Phase Column Coupled with an Orbitrap Mass Spectrometer** SHANHUA LIN, Thermo Fisher Scientific, Ilze Birznieks, Christopher Pohl, Xiaodong Liu, Jessica Wang, Terry Zhang, Jonathan Josephs |
| 3:45 | (130-3) | **Quantitation of Endogenous Adenosine in Mouse Blood, Cell Lysate and Lysosomes by LC-MS/MS Using SurrogateMatrix Method** XIAO DING, Genentech |
| 4:05 | (130-4) | **Isomeric Separation of Glycopeptides Using Porous Graphitic Carbon (PGC) LC at High Temperature** RUI ZHU, Texas Tech University, Jingfu Zhao, Yehia Mechref |

## ORAL SESSIONS — Session 140

*Chemical Methods - Half Session*

**Sunday Afternoon, Room B316**
Richard Bormett, Renishaw, Presiding

| | | |
|---|---|---|
| 1:30 | (140-1) | **Bromide-Assisted Anisotropic Growth of Surfactant-Free Gold Nanoparticles** MELISSA KERR, North Carolina Central University, Fei Yan |
| 1:50 | (140-2) | **Simultaneous Reduction of Metal Ions by Multiple Reducing Agents Initiate the Asymmetric Growth of Metallic Nanocrystals** MAHMOUD MAHMOUD, Georgia Institute of Technology |
| 2:10 | (140-3) | **Novel Optical Properties of Segmented Au-Ag Nanocylinders: Effects of Metallic Junctions on Surface Plasmon Resonance** VINEET KUMAR, North Carolina State University, Gufeng Wang |
| 2:30 | (140-4) | **Measurement of Oxidative Potential of Particulate Matter by DTT assay** SHIORI OTA, Tokai University, Kazuhiro Misawa, Yoshika Sekine |

## ORAL SESSIONS — Session 150

*Gas Chromatography Innovations*

**Sunday Afternoon, Room B310**
Olujide T Akinbo, Butler University, Presiding

| | | |
|---|---|---|
| 1:30 | (150-1) | **Method Translation in Gas Chromatography to Get the Same Chromatogram** JAAP DE ZEEUW, Restek, Chris English, Chris Nelson, Jack Cochran |
| 1:50 | (150-2) | **Chemometric Treatment of GC-VUV Data - Samples in a New Light** JAMES J HARYNUK, University of Alberta, Keisean Stevenson, Seo Lin Nam, Lawrence A Adutwum |
| 2:10 | (150-3) | **All 5 Phases are Not the Same! Considerations for Method Development and Selection** RAMKUMAR DHANDAPANI, Phenomenex, Tim Anderson, Kristen Parnell |
| 2:30 | (150-4) | **Flow-through Microfluidic Photoionization Detectors for Rapid and Highly Sensitive Vapor Detection** HONGBO ZHU, University of Michigan, Robert Nidetz, Menglian Zhou, Jiwon Lee, Sanketh Buggaveeti, Katsuo Kurabayashi, Xudong Fan |
| 2:50 | | **Recess** |
| 3:05 | (150-5) | **Safeguarding a Mass Detector from Difficult Sample Components** AMANDA B DLUGASCH, Waters Corporation, Thomas E Wheat, Patricia R McConville |
| 3:25 | (150-6) | **Wide Range Inert Dilution System for Gas Standard Generation** STANLEY D STEARNS, Valco Instruments Co. Inc., Alex Plistil, Sunny Sinlapadech, David McCharthy, Huamin Cai |
| 3:45 | (150-7) | **Multimode Plasma Emission Detector** YVES GAMACHE, Analytical Flow Products |
| 4:05 | (150-8) | **Polyionic Ionic Liquid GC Stationary Phase Evaluations** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Greg A Baney, James L Desorcie, Gustavo Serrano, Daniel Shollenberger |

## ORAL SESSIONS — Session 160

*GC Optimization - Half Session*

**Sunday Afternoon, Room B309**
David Benanou, Veolia, Presiding

| | | |
|---|---|---|
| 1:30 | (160-1) | **Evaluation and Application of Sample Preparation Techniques for the Determination of Residual Volatiles in Biological Matrices Using GC-FID** ADRIENE MALSBURY, Bristol-Myers Squibb, William Fish, Frank Tomasella |
| 1:50 | (160-2) | **A New Web-Based Application for Modelling Gas Chromatographic Separations** REBECCA STEVENS, Restek Corporation, Jaap de zeeuw, Amanda Rigdon, Linx Waclaski, Dan Li |
| 2:10 | (160-3) | **Overcoming New Problems With Old Solutions: Enhanced Separations With GC Retention Gap Columns** RAMKUMAR DHANDAPANI, Phenomenex, Tim Anderson, Kristen Parnell |
| 2:30 | (160-4) | **Improved Inertness Performance for Polyethylene Glycol GC Columns** KENNETH G LYNAM, Agilent Technologies, Ngoc-A Dang, Allen Vickers, Yun Zou |

## ORAL SESSIONS — Session 170

*Instrument Innovations - Half Session*

**Sunday Afternoon, Room B316**
Richard Bormett, Renishaw, Presiding

| | | |
|---|---|---|
| 3:05 | (170-1) | **Rapid Analysis of $SO_2$ to Determine Catalyst Efficiency** DEBBIE ALCORN, INFICON |
| 3:25 | (170-2) | **Portable Gas Analyzer for Continuous Monitoring of Sulfur Dioxide in Gas Streams** SAYED A MARZOUK, UAE University, Mohamed Alnaqbi, Muna Bufaroosha, Mohamed Al-Marzouqi |
| 3:45 | (170-3) | **Triple Mode of Action of L-tyrosine Derived Probes: Solvent Mediated Flip-Flop Halide (iodide/fluoride) Sensors and Reversible Chromogenic pH Indicators** SANJAY KUMAR MANDAL, IISER Mohali |
| 4:05 | (170-4) | **Saving Time and Improving Accuracy by Eliminating the Need for Standards and Calibration in GC/FID Analyses** JONES ANDREW, Activated Research Company, Charlie Spanjers |

## ORAL SESSIONS — Session 180

*Measurement Strategies - Sensors and Spectroscopy*

**Sunday Afternoon, Room B313**
Stephanie Archer-Hartmann, Complex Carbohydrate Research Center, Presiding

| | | |
|---|---|---|
| 1:30 | (180-1) | **Real-Time Voltammetric Characterization of Non-Electroactive Metal Complexation** THUSHANI SIRIWARDHANE, University of South Carolina, Shawn McElmurry, Parastoo Hashemi |
| 1:50 | (180-2) | **Phthalocyanine Based Microfluidic Sensors for the Detection of Oxidative Stress** KEVIN J KLUNDER, Colorado State University |
| 2:10 | (180-3) | **Multiple Light Scattering to Characterize Emulsions with Polymers** JONATHAN DENIS, Formulaction, Yoann Lefeuvre, Pascal Bru, Christelle Tisserand, Gérard Meunier |
| 2:30 | (180-4) | **A Practical Approach for Maximizing ICP-MS Data: A Closer Look at Microwave Sample Prep, The Steps that Precede It, and How to Minimize External Factors that Affect Data Quality** JOHAN NORTJE, Milestone Inc. |
| 2:50 | | **Recess** |
| 3:05 | (180-5) | **Obtaining Maximum Information from Fast Chemical Reactions Using a Photodiode Array (PDA) UV-Visible Spectrophotometer** IAN ROBERTSON, PerkinElmer Limited, Steve Upstone, Christopher Lynch |
| 3:25 | (180-6) | **Microfluidic Visual Rheometer** CHRISTELLE TISSERAND, Formulaction, Patrick Abgrall, Patrycja Adamska, Gérard Meunier |
| 3:45 | (180-7) | **Real-time Investigation of Antibiotics-induced Oxidative Stress and Superoxide Release in Bacteria Using an Electrochemical Biosensor** XIAOBO LIU, Clarkson University, Mouna Marrakchi, Michael Jahne, Shane Rogers, Silvana Andreescu |
| 4:05 | (180-8) | **Fabrication of Micro Ir/$IrO_x$ pH Sensor for Dental Applications** CHINDANAI RATANAPORNCHAROEN, Tokyo Medical and Dental University, Miyuki Tabata, Yuji Miyahara, Tatsuro Goda, Akira Matsumoto, Junji Tagami, Yuichi Kitasako, Masaomi Ikeda |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

## ORAL SESSIONS — Session 190

*Process Analytical Techniques - Half Session*

**Sunday Afternoon, Room B309**
David Benanou, Veolia, Presiding

| | | |
|---|---|---|
| 3:05 | (190-1) | **A Model Study of Pseudo-Absolute Quantitative Analysis Using Gas Chromatography – Vacuum Ultraviolet Spectroscopy** LING BAI, The University of Texas at Arlington, Jonathan Smuts, Phillip Walsh, Kevin A Schug |
| 3:25 | (190-2) | **Rapid Process Control Using GC-ION Mobility Spectrometry** CHANDRASEKHARA HARIHARAN, ION-GAS GmbH, Wolfgang Vautz |
| 3:45 | (190-3) | **Facilitating Complex Analysis Using Multiple Fast Temperature Programming Zones** DALE ASHWORTH, Valco Instruments Co. Inc., Huamin Cai, Martin Brisbin, Chris Bishop, William Coontz, Andrew Rochon, Steve Werner, Stanley D Stearns |
| 4:05 | (190-4) | **Analyzing Trace Level Nitric Oxide in a Flammable Gas Matrix** KENNETH WONG, Air Liquide |

## SUNDAY POSTER SESSION — Session 200

**Sunday posters will be on display from 3:30 PM to 7:30 PM with authors present from 5:30 PM to 7:30 PM. The location for the Sunday posters is Room A412.**

*Sunday Poster Session*
**Sunday Afternoon, Room A412**

| | |
|---|---|
| (200-1 P) | **Influence of Particle Size Distribution on Protein Digestibility and Functionality** ALBERTA ARYEE, Agriculture & Agri-Food Canada, Joyce I Boye N/A |
| (200-2 P) | **Increasing Stability of a Core-Shell Particle** MARK WOODRUFF, Fortis Technologies, Ken Butchart |
| (200-3 P) | **Rapid Screening of Virgin and Recycled Polymer Resins Using FTIR and Raman Libraries of Pre-Computed Mixture Spectra** WILLIAM COSTA, Fiveash Data Management, Inc., Bill McCarthy, Todd Strother |
| (200-4 P) | **The Complimentary Nature of NMR and SPME GCMS for the Analysis of Fermented Beverages** NEIL FITZGERALD, Marist College, Samantha E Soprano, Sarah R Johnson, John C Edwards |
| (200-5 P) | **Evaluation of an Integrated Optic-Fiber-Microfluidic Analyzer for Polyphenols Measurement** MARIA CAÑIZARES-MACÍAS, Universidad Nacional Autónoma de México, Oscar Sandoval-Ventura, Luis F Olguín-Contreras N/A |
| (200-6 P) | **Selective Separation and Detection of Catecholamines with Capillary Electrophoresis** MAOJUN GONG, Wichita State University, Qiyang Zhang |
| (200-7 P) | **Cold EI – Approaching the Ideal GC-MS Interface and Ion Source** AVIV AMIRAV, Tel Aviv University, Bogdan Belgorodsky, Uri Keshet, Alexander Fialkov, Tal Alon |
| (200-8 P) | **New Sampling Device for the Analysis of Lung Cancer Biomarkers in Exhaled Breath** MOHAMED ABDEL-REHIM, Stockholm University N/A |
| (200-9 P) | **Ceramic Ion Source for Catalytic Pyrolysis and Catalytic Combustion Ionization Detection of Selected Constituents in Complex Petroleum and Biofuel Samples** PAUL L PATTERSON, Detector Engineering & Technology, Inc., Jennifer Seroy |
| (200-10 P) | **Using Microscopy to Measure Rates of Heterogeneous Reactions** WALTER BOWYER, Hobart and William Smith Colleges, Gabriella Mylod |
| (200-11 P) | **Crowding in Cell-Like Environments Alters Diffusion and Enzyme Kinetics** KRISTIN M SLADE, Hobart and William Smith Colleges, Michael Conroy, Sophia Melvin |
| (200-12 P) | **Effects of Macromolecular Crowding on YADH Enzyme Mechanism** KRISTIN M SLADE, Hobart and William Smith Colleges, Allison Wilcox |
| (200-13 P) | **Mixed Valence Mn,La,Sr-oxide based Magnetic Nanoparticles Coated with Silica Nanoparticles for Immunosensor Fabrication** AMOS MUGWERU, Rowan University |
| (200-14 P) | **Hydrophilic Interaction Chromatography (HILIC) and Enzymatic/Spectrometric Methods for the Determination of Uric Acid and Creatinine in Human Biofluids** YUEGANG ZUO, University of Massachusetts Dartmouth, Si Zhou, Xiaofei Lu, Ningning Zhang, Faten Albalawi |
| (200-15 P) | **Profiling/Monitoring Activated Carbons for Drinking Water** HENRY G NOWICKI, PACS Inc |
| (200-16 P) | **Profiling/Monitoring Gas Phase Activated Carbon Systems** HENRY G NOWICKI, PACS Inc |
| (200-17 P) | **Lignin Waste Transformed to High Quality Activated Carbons** HENRY G NOWICKI, PACS Inc |
| (200-18 P) | **A Rapid Hydrophilic Interaction Liquid Chromatography (HILIC) Method for Determination of Trace Nitrate and Nitrite in Snow and Rain Samples** XIAOFEI LU, University of Massachusetts Dartmouth, Yuegang Zuo |
| (200-19 P) | **Occurrence and Identification of Bisphenol A and Other Alkylphenols in Sea Shore Crabs** JOSEPH MICHAEL, University of Massachusetts Dartmouth, Yuegang Zuo |
| (200-20 P) | **Evaluation of Porous Layer Thickness of Core Shell Particle for Separation of Proteins** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tsukamoto |

## ACS POSTER — Session 210

**ACS posters will be on display from 3:30 PM to 7:30 PM with authors present from 5:30 PM to 7:30 PM. The location for the ACS posters is Room A412.**

*ACS Division of Analytical Chemistry Poster Session*
**Sunday Afternoon, Room A412**

| | |
|---|---|
| (210-1 P) | **Phospholipid/Aromatic Thiol Hybrid Bilayers** CHAO LI, Auburn University, Mingming Wang, Matthew Ferguson, Wei Zhan |
| (210-2 P) | **Dynamic Records of Spatiotemporal Pb: Lichens versus Trees and Sediments** NATHAN W BOWER, Colorado College, Ben Greydanus, Sam Kramer, Eric Wolatz, Stephen Getty, Craig Lundstrom |
| (210-3 P) | **Dating Paintings and Prints Using ATR-FTIR: A Philatelic Case Study from Lodz Ghetto** NATHAN W BOWER, Colorado College, Conor J Blanchet, Michael S Epstein |
| (210-4 P) | **SPME/GC-MS Analysis of Dynamic Compositional Changes in the Volatile Components in Red Wine After "Breathing"** AMBER I HILLS, East Stroudsburg University, Jon S Gold, Richard S Kelly |
| (210-5 P) | **Development of Portable Elisa System for Infectious Disease Diagnosis** KAZUHIRO MORIOKA, Tokyo Metropolitan University, Harpal Singh, Hizuru Nakajima, Akihide Hemmi, Masayuki Shimojima, Le Van An, Sazaly AbuBakar, Hulie Zeng, Shungo Kato, Masami Sugamata, Ming Yang, Katsumi Uchiyama |
| (210-6 P) | **Applications of a Quartz Crystal Microbalance for Monitoring Bacterial Biofilm Growth and Removal** HUNTER J SISMAET, Northeastern University, Pegah N Abadian, Edgar D Goluch |
| (210-7 P) | **A Capillary Electrophoresis Approach to the Characterization and Application of Graphene Quantum Dots as Sensing Agents** LEONA SIRKISOON, Wake Forest University, Honest Makamba, Shingo Saito, Christa Colyer |
| (210-8 P) | **A pH Sensor for Non-Invasive In Vivo Detection and Imaging of Implant Associated Infection** UNAIZA UZAIR, Clemson University |
| (210-9 P) | **Scanning Electrospray Microscopy with Nanopipettes** ELIZABETH M YUILL, Indiana University, Wenqing Shi, Lane A Baker |
| (210-10 P) | **Phosphoproteomics Studies of Human Immunodeficiency Virus-1** KEVIN MARK, LaGuardia Community College City University of NY, Pratikkumar Rathod, Emmanuel Chang, Hsin-Pin Ho, Xu Yu, Mathias Lichterfeld |
| (210-11 P) | **Segmented Flow Sampling with Theta Pipettes** ANUMITA SAHA-SHAH, Indiana University, Curtis M Green, Lane A Baker |
| (210-12 P) | **Mapping Local Permeability Change During Degradation with Scanning Ion Conductance Microscopy-Scanning Electrochemical Microscopy (SICM-SECM)** WENQING SHI, Indiana University, Lane A Baker |
| (210-13 P) | **Profiling N, N′-Dibutylbenzimidazolium Salt and Its Derivatives Using CYCLIC Voltammetry** HUGGINS Z MSIMANGA, Kennesaw State University, Andrew Montalvo, Daniela Tapu |
| (210-14 P) | **Comparative Study of Elemental Nutrients in Organic and Conventional Vegetables by Laser Induced Breakdown Spectroscopy (LIBS)** CHET R BHATT, Mississippi State University |
| (210-15 P) | **Photoacoustic Spectroscopy with SF6, An Optically Thick Greenhouse Gas** HAN PARK, University of Tennessee at Chattanooga |
| (210-16 P) | **Integrating Authentic Research Experiences into Undergraduate Analytical Chemistry** FEI YAN, North Carolina Central University, Melissa Kerr |
| (210-17 P) | **Proteomic Analysis of Tetrahymena Thermophila Using MALDI-TOF/TOF** DOUGLAS BEUSSMAN, St. Olaf College, Harrison VanDolah |
| (210-18 P) | **Possible Age and Location Differences in Human Scent Profiles** DOUGLAS BEUSSMAN, St. Olaf College, Laura Muehlbauer |
| (210-19 P) | **LC-QTOF Detection of Methamphetamine in Packaging Residue** DOUGLAS BEUSSMAN, St. Olaf College, Matthew Bock |
| (210-20 P) | **Environmental Toxins from Decorative Candles** DOUGLAS BEUSSMAN, St. Olaf College, Allison Sager |
| (210-21 P) | **Analysis of Fibers Via Isotope Ratio Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Elaine Macon, Hannah Brown |
| (210-22 P) | **Withdrawn** |
| (210-23 P) | **HPLC Method Development for Analysis of Dissolution Samples of a Highly Soluble Drug Substance in a Hydrophobic Matrix** MATTHEW LOUCKS, Banner Life Sciences, Angela Moore, Wayne Craig, Sara Draper |
| (210-24 P) | **Confocal Raman Microscopy Investigation of the Kinetic Barrier to PAH Partitioning into Individual $C_{18}$–Silica Particles** DAVID A BRYCE, University of Utah, Jay P Kitt, Joel M Harris |
| (210-25 P) | **Development of a Flow-Based Electrogenerated Chemiluminescent Detection of Biogenic Amines on a Microfluidic Chip** ERIN GROSS, Creighton University, Leah Schaffer, Emily Lowry, Charles Henry, Rachel M Feeny, John Wydallis |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

## MONDAY, MARCH 7, 2016
## MORNING

**AWARDS** **Session 220**

*Chromatography Forum of Delaware Valley Dal Nogare Award*
arranged by Mary Ellen McNally, E.I. DuPont de Nemours and Company

**Monday Morning, Room B312**
Mary Ellen McNally, E.I. DuPont de Nemours and Company, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Mary Ellen McNally** |
| 8:35 | | **Presentation of the 2016 Dal Nogare Award to Stephen Weber, University of Pittsburgh, by Mary Ellen McNally, E.I. DuPont de Nemours and Company** |
| 8:40 | (220-1) | **Opportunities and Challenges with Capillary Liquid Chromatography** STEPHEN WEBER, University of Pittsburgh |
| 9:15 | (220-2) | **How Much Performance is Lost in LC by Optimizing Only Velocity and Column Length Using Limited Number of Particle Size?** PETER W CARR, University of Minnesota, Adam Matula, Dwight R Stoll |
| 9:50 | (220-3) | **UHPLC-MS for Multiplexed Neurochemical Analysis** ROBERT T KENNEDY, University of Michigan |
| 10:25 | | **Recess** |
| 10:40 | (220-4) | **Integrated Microfluidic Separations Devices Interfaced to Mass Spectrometry** J MICHAEL RAMSEY, University of North Carolina at Chapel Hill, Erin Redman, William Black |
| 11:15 | (220-5) | **The Second Dimension is a Strange Place - Fundamental Aspects of the Optimization of the Second Dimension in Two-Dimensional Liquid Chromatography** DWIGHT R STOLL, Gustavus Adolphus College, John Halvorson, Carston Dammann, Eli Larson, Alex Wilson, David C Harmes, Monika Dittmann, Sarah C Rutan, Abraham Lenhoff |

**AWARDS** **Session 230**

*The Pittsburgh Conference Achievement Award*
arranged by Amit Ghosh, Bayer Materials Science LLC

**Monday Morning, Room B314**
Amit Ghosh, Bayer Materials Science LLC, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Amit Ghosh** |
| 8:35 | | **Presentation of the 2016 Pittsburgh Conference Achievement Award to Jared L Anderson, Iowa State University, by Elias S Absey, Chair, Society for Analytical Chemists of Pittsburgh** |
| 8:40 | (230-1) | **Exploiting Ionic Liquids, Magnetic Ionic Liquids, and Polymeric Ionic Liquids in Sample Preparation and Multidimensional Gas Chromatography** JARED L ANDERSON, Iowa State University |
| 9:15 | (230-2) | **The Impact and Evolution of High Efficiency Chiral and Achiral Separations** DANIEL W ARMSTRONG, University of Texas at Arlington |
| 9:50 | (230-3) | **Use of Metal-Organic Frameworks in Sample Preparation Analytical Schemes: An Overview of Their Performance in Solid-Phase Extraction Modes** VERÓNICA PINO, University of La Laguna, Priscilla Rocío-Bautista, Juan H Ayala, Jorge Pasán, Catalina Ruiz-Pérez, Ana M Afonso |
| 10:25 | | **Recess** |
| 10:40 | (230-4) | **Achiral LSER Investigation of HPLC Retention on Cinchona Alkaloid-Based Chiral Stationary Phases** APRYLL M STALCUP, Dublin City University |
| 11:15 | (230-5) | **Applications of Conductive Ionic Liquids in Chemical Analysis** JON R KIRCHHOFF, University of Toledo, Joshua A Young, Amila M Devasurendra, LM Viranga Tillekeratne, Jared L Anderson, Cheng Zhang |

**SYMPOSIUM** **Session 240**

*ACS-ANYL - BRAIN Initiative Advancements in Neurochemical and Physiological Measurements*
arranged by Michael L Heien, University of Arizona

**Monday Morning, Room B308**
Michael L Heien, University of Arizona, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Michael L Heien** |
| 8:35 | (240-1) | **New Platforms for Multiplexing Electrochemical Measurements In Vivo** MICHAEL L HEIEN, University of Arizona |
| 9:10 | (240-2) | **Simultaneous Detection of Dopamine Release and Multiple Single-Unit Activity in Awake and Behaving Rats** STEPHEN COWEN, University of Arizona, Michael L Heien, Kate L Parent, Daniel F Hill, Jean-Paul Wiegand, Michael A Miller, Christopher W Atcherley |
| 9:45 | (240-3) | **New Nano Tools for Molecular Sensing and Imaging of Single Neuron-Neuron Communication** X NANCY XU, Old Dominion University, Pavan K Cherukuri, Preeyaporn Songkiatisak |
| 10:20 | | **Recess** |
| 10:35 | (240-4) | **In Vivo Multiphoton Microscopy of Mouse Brain** CHRIS XU, Cornell University |
| 11:10 | | **Open Discussion** |

**SYMPOSIUM** **Session 250**

*Advances in Raman Spectroscopy*
arranged by Sanford A Asher, University of Pittsburgh

**Monday Morning, Room B304**
Sanford A Asher, University of Pittsburgh, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Sanford A Asher** |
| 8:35 | (250-1) | **Micro-Scale Spatially Offset Raman Spectroscopy (Micro-SORS)** PAVEL MATOUSEK, Rutherford Appleton Laboratory, Claudia Conti, Marco Realini, Chiara Colombo, Giuseppe Zerbi |
| 9:10 | (250-2) | **Recent Advances in Raman Optical Activity (ROA) Methodology and Applications** LAURENCE A NAFIE, Syracuse University, Rina K Dukor |
| 9:45 | (250-3) | **Fast Raman Imaging Using Optimized Binary Compressive Detection** DOR BEN-AMOTZ, Purdue University, Owen G Rehrauer, Bharat R Mankani, Gregery T Buzzard, Bradley J Lucier, Stanley Chan |
| 10:20 | | **Recess** |
| 10:35 | (250-4) | **Stimulated Raman Scattering Microscopy of Vibrational Tags** WEI MIN, Columbia University |
| 11:10 | (250-5) | **Nanoparticle Based Analysis of Cells, Molecules and Tissue by SERS** DUNCAN GRAHAM, University of Strathclyde, Samuel Mabbott, Lee Barrett, Steven Asiala, Kirsten Gracie, Karen Faulds |

**SYMPOSIUM** **Session 260**

*Innovative Applications of Mass Spectrometry in Biopharmaceutical and Diagnostic Development*
arranged by William Christopher Lamanna, Sandoz

**Monday Morning, Room B305**
William Christopher Lamanna, Sandoz, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - William Christopher Lamanna** |
| 8:35 | (260-1) | **Characterization of Filgrastim Using Intact and Top-Down MS** WILLIAM CHRISTOPHER LAMANNA, Sandoz, Johann Holzmann, Hansjoerg Toll |
| 9:10 | (260-2) | **Tandem Mass Spectrometry as an Excellent Quantification Tool to Guide Process Development for Optimal Host Cell Protein Removal in Biopharmaceutical Products** DONALD WALKER, Genentech |
| 9:45 | (260-3) | **Antibody Characterization with Ultrahigh-Resolution Mass Spectrometry: Selecting Well Behaved Molecules for Optimal Product Quality Attributes** LISA MARZILLI, Pfizer, Inc., Mellissa Ly, Elaine Stephens, Heather S DeGruttola, Andrew E Saati, Jason C Rouse |
| 10:20 | | **Recess** |

| | | |
|---|---|---|
| 10:35 | (260-4) | **Advanced Process Control Using Fast Analytics to Monitor Multiple Critical Quality Attributes of a Monoclonal Antibody** LI ZANG, Biogen |
| 11:10 | (260-5) | **Analysis of Glycosaminoglycan Non-Reducing End Structures by Liquid Chromatography Tandem Mass Spectrometry and Its Uses in Discovering New Disease-Specific Biomarkers** ROGER LAWRENCE, BioMarin, Heather Prill, Evelyn Wang, Raymond Y Wang, Jeffery D Esko, Brett Crawford, Marzia Pasquali, Toni Pollock, William Christopher Lamanna, Nancy Pryer |

**SYMPOSIUM** **Session 270**

***Neurotransmission at Single and Nano-Resolved Bio-Structures***
arranged by Mei Shen, University of Illinois at Urbana-Champaign and Christian A Amatore, CNRS & ENS

**Monday Morning, Room B303**
Mei Shen, University of Illinois at Urbana-Champaign, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Mei Shen and Christian Amatore** |
| 8:35 | (270-1) | **Electrochemical Cytometry of the Contents of Nanometer Vesicles Out and Inside Cells** ANDREW EWING, University of Gothenburg and Chalmers University |
| 9:10 | (270-2) | **Detection of Ionic Neurotransmitters at Biological Nanostructures via Versatile Nanosensor Probes** MEI SHEN, University of Illinois at Urbana-Champaign |
| 9:45 | (270-3) | **Electrochemical Approaches to Monitoring Neural Activity** R MARK WIGHTMAN, University of North Carolina at Chapel Hill |
| 10:20 | | **Recess** |
| 10:35 | (270-4) | **Full Fusion During Vesicular Exocytosis: A Real Release Stage or a Hoax?** CHRISTIAN A AMATORE, CNRS & ENS |
| 11:10 | (270-5) | **Coulter Counter Voltage Trapping of Nanoparticles with Sub-Nanometer Size Resolution** HENRY WHITE, University of Utah, Sean German, Martin Edwards, Yulun Zhang |

**SYMPOSIUM** **Session 280**

***Omics for Environmental and Public Health Protection***
arranged by Jeanette Van Emon, U.S. EPA and Hercules Moura, CDC

**Monday Morning, Room B309**
Jeanette Van Emon, U.S. EPA, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Jeanette Van Emon and Hercules Moura** |
| 8:35 | (280-1) | **Applications of Accelerator Mass Spectrometry to Human Health Research** TED OGNIBENE, Lawrence Livermore National Laboratory |
| 9:10 | (280-2) | **Proteomic Approaches for Molecular Epidemiological Studies** ROLF U HALDEN, Arizona State University, Nicole Hansmeier, Tzu-Chiao Chao, Julie B Herbstman, Lynn R Goldman, Frank R Witter |
| 9:45 | (280-3) | **Proteomic Applications in Microbiology** HERCULES MOURA, CDC NCEH-DLS, John R Barr |
| 10:20 | | **Recess** |
| 10:35 | (280-4) | **Development of Metagenomic Tools for Identification and Characterization of Infectious Agents from Clinical Samples and for Microbiome Association Studies** JAMES POSEY, CDC |
| 11:10 | (280-5) | **Proteomics for Adverse Outcome Pathway Discovery for Environmental Contaminants** JEANETTE VAN EMON, U.S. EPA |

**SYMPOSIUM** **Session 290**

***SEAC - Nano-Electroanalysis for a Sustainable World***
arranged by Joaquin Rodriguez Lopez, University of Illinois

**Monday Morning, Room B310**
Joaquin Rodriguez Lopez, University of Illinois, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Joaquin Rodriguez Lopez** |
| 8:35 | (290-1) | **Chemically Modified 3D Energy-Storage Architectures** DEBRA R ROLISON, U.S. Naval Research Laboratory, Jeffrey W Long, Christopher N Chervin, Joseph F Parker, Megan B Sassin |
| 9:10 | (290-2) | **Sunlight-Driven Hydrogen Formation by Membrane-Supported Photoelectrochemical Water Splitting** NATHAN S LEWIS, Caltech |
| 9:45 | (290-3) | **Elucidating Charge Transfer on Polymer Nano-Structures for a New Concept in Energy Storage** JOAQUIN RODRIGUEZ LOPEZ, University of Illinois |
| 10:20 | | **Recess** |
| 10:35 | (290-4) | **Ion Transport in 1D and 3D Networked Porous Nanostructure Electrodes** SANG BOK LEE, University of Maryland, Eleanor Gillette |
| 11:10 | (290-5) | **Operando Methods for the Characterization Energy Materials** HECTOR D ABRUNA, Cornell University |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 300**

***Infrared Spectroscopy Beyond the Diffraction Limit***
arranged by Ellen Miseo, Hamamatsu Corporation and Craig Prater, Anasys Instruments

**Monday Morning, Room B311**
Ellen Miseo, Hamamatsu Corporation, Presiding

| | | |
|---|---|---|
| 8:30 | (300-1) | **Advancing the Field of Infrared Nanospectroscopy for Materials and Life Sciences** CRAIG PRATER, Anasys Instruments |
| 8:50 | (300-2) | **Resonance Enhanced AFM-IR Induced by Quantum Cascade Laser** ALEXANDRE DAZZI, University Paris-Sud, Jeremie Mathurin, Ariane Deniset-Besseau, Johanna Saunier, Najet Yagoubi, Kevin Kjoller |
| 9:10 | (300-3) | **Unprecedented Nanoscale Chemical Characterization of Materials Using AFM-Based Infrared Spectroscopy** CURTIS MARCOTT, Light Light Solutions, Dillon Eoghan, Kevin Kjoller |
| 9:30 | (300-4) | **Withdrawn** |
| 9:50 | | **Recess** |
| 10:05 | (300-5) | **AFM-IR Spectroscopy and Imaging of Biodegradable Polymers** JOHN F RABOLT, University of Delaware, Liang Gong, Isao Noda, Bruce Chase |
| 10:25 | (300-6) | **Nanoscale Molecular Imaging of Polymer Systems Using AFM-IR** MARK RICKARD, Dow Chemical, Gregory Meyers, Carl Reinhardt, Jamie Stanley |
| 10:45 | (300-7) | **Absorption Spectroscopy and Imaging from the Visible through Mid-IR with 20 nm Resolution Using AFM Probes** ANDREA CENTRONE, NIST |
| 11:05 | (300-8) | **Open Discussion** |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 310**

***Ionophore-Based Chemical Sensors II***
arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

**Monday Morning, Room B404**
Philippe Buhlmann, University of Minnesota, Presiding

| | | |
|---|---|---|
| 8:30 | (310-1) | **Magnetic Nanoparticles as Dispersible Electrodes** JUSTIN J GOODING, University of New South Wales, Roya Tavallaie, Elizabeth Morago, Saimon M Silva, Kyloon Chuah |
| 8:50 | (310-2) | **Development of an Ultra-Selective Optode Nanosensor for Potassium Imaging** ALI SAHARI, Northeastern University, Tim Ruckh, Richard Hutchings, Heather Clark |
| 9:10 | (310-3) | **Low Detection Limit of Ion-Selective Electrodes; Is the Story Really Over?** ALEKSANDAR RADU, Keele University, Lukasz K Mendecki, Sergio Granados-Focil, Christina McGraw, Peter Dillingham |
| 9:30 | (310-4) | **Multifunctional Detection and Delivery** ELIZABETH (LISA) HALL, University of Cambridge, Nadia Tsao |
| 9:50 | | **Recess** |

# TECHNICAL PROGRAM

| | | |
|---|---|---|
| 10:05 | (310-5) | **Printed Paper-Based Ion-Selective Optode Devices** DANIEL CITTERIO, Keio University, Hiroyuki Shibata, Terence G Henares, Nobutoshi Komuro, Koji Suzuki |
| 10:25 | (310-6) | **Conducting Polymers Nanospheres for Sensors – Receptor or Transducers?** AGATA MICHALSKA, University of Warsaw, Katarzyna Klucinska, Anna Kisiel, Krzysztof Maksymiuk N/A |
| 10:45 | (310-7) | **Signal Transduction Based on Constant-Potential Coulometry for Solid-Contact ISEs** JOHAN BOBACKA, Åbo Akademi University, Ulriika Vanamo, Elisa Hupa, Ville Yrjänä |
| 11:05 | (310-8) | **Plasticizer-Free Paper-Based Ion-Selective Optodes** XUEWEI WANG, University of Michigan, Mark Meyerhoff, Yu Qin |

## ORGANIZED CONTRIBUTED SESSIONS — Session 320

*New Perspectives on the History of Chromatography*

arranged by Richard Ulrych, Chemical Heritage Foundation

**Monday Morning, Room B407**

Sarah Reisert, Chemical Heritage Foundation, Presiding

| | | |
|---|---|---|
| 8:30 | (320-1) | **Building the Market for Ion Chromatography: The Early Days** ARTHUR WILLIAM FITCHETT, Thermo Fisher Scientific |
| 8:50 | (320-2) | **Early Days in GC 1957-1962** HAROLD MONROE MCNAIR, Virginia Tech |
| 9:10 | (320-3) | **Evolution of Capillary Chromatography and Capillary Electrophoresis: A Personal Perspective** MILOS V NOVOTNY, Indiana University |
| 9:30 | (320-4) | **The Development of HPLC Method Development** LLOYD R SNYDER, LC Resources Inc. |
| 9:50 | | **Recess** |
| 10:05 | (320-5) | **Pioneering Days of Chromatography in Lab Automation** JACK GILL, Chemical Heritage Foundation |
| 10:25 | (320-6) | **The Role of Temperature Programming in F&M's Success** AARON J MARTIN, Marlabs, Retired |
| 10:45 | | **Liquid Chromatography Before It Became HPLC** JAMES WATERS, Chemical Heritage Foundation N/A |
| 11:05 | (320-7) | **Chromatography In, or Next to Chemistry? Discipline Formation and Identity of Chromatography Practitioners in the 1960s and 1970s** APOSTOLOS GERONTAS, Coburg University of Applied Sciences |

## ORAL SESSIONS — Session 330

*Biomedical: Advances in Point-of-Care Technologies*

**Monday Morning, Room B313**

Mustafa Culha, Yeditepe University, Presiding

| | | |
|---|---|---|
| 8:30 | (330-1) | **Low-Cost Molecular Diagnostics on a Smartphone** HYUNGSOON IM, Massachusetts General Hospital, Cesar M Castro, Huilin Shao, Monty Liong, Jun Song, Divay Pathania, Lioubov Fexon, Changwook Min, Rosemary H Tambouret, Misha Pivovarov, Ralph Weissleder, Hakho Lee |
| 8:50 | (330-2) | **Smartphone Based Detection of Stress Biomarkers in Saliva** AADHAR JAIN, Cornell University, Elizabeth Rey, David Erickson, Dakota O'Dell, Seoho Lee |
| 9:10 | (330-3) | **A Smartphone Platform for Quantitative Point-of-Care Detection of Micronutrient Deficiencies** DAKOTA O'DELL, Cornell University, Seoho Lee, Jessica Hohenstein, David Erickson |
| 9:30 | (330-4) | **Bed-Side Detection of Volatile Human Metabolites for Medical Applications** CHANDRASEKHARA HARIHARAN, ION-GAS GmbH, Wolfgang Vautz, Sascha Liedtke |
| 9:50 | | **Recess** |
| 10:05 | (330-5) | **Improved Optical Cavity Based Biosensor with Differential Detection Method Through Simultaneous Detection** TONY BUJANA, Letourneau University, DongGee Rho, Cody Joy, Peter Cowles, Seunghyun Kim |
| 10:25 | (330-6) | **A PDMS/Paper Hybrid Microfluidic Biochip for Multiplexed Instrument-Free Bacterial Meningitis Diagnosis** MAOWEI DOU, University of Texas El Paso, Sanjay Sharma Timilsina, Juan Sanchez, Delfina Dominguez, Xiujun James Li |
| 10:45 | (330-7) | **Measuring Biochemical Effects of Pulmonary Rehabilitation and OMT on COPD Patients through LC-MS-MS Analysis of Plasma Metabolites** CHEN ZHANG, Michigan State University, Sherman Gorbis, John Wang, A Daniel Jones |
| 11:05 | (330-8) | **Surface-Enhanced Raman Scattering for In Situ Analysis of Living Systems** MUSTAFA CULHA, Yeditepe University |

## ORAL SESSIONS — Session 340

*Capillary Electrophoresis*

**Monday Morning, Room B302**

Christopher R Harrison, San Diego State University, Presiding

| | | |
|---|---|---|
| 8:30 | (340-1) | **Quantitation of Kinase Activity in a Social Amoeba Using Capillary Electrophoresis and a Peptide Substrate Reporter** MICHELLE L KOVARIK, Trinity College, Kunwei Yang, Allison J Tierney |
| 8:50 | (340-2) | **Development of a Degradation Resistant Peptide Reporter for Monitoring E3 Ligase and Proteasome Activity** GREGERY WOSS, University of North Carolina at Chapel Hill, Nancy Allbritton, Marcey Waters, Adam Melvin, Kaiulani Houston |
| 9:10 | (340-3) | **A New Analytical Technique to Profile Multiple Steroids in Individual Female Zebrafish to Study Endocrine Disruption** VINCENT T NYAKUBAYA, West Virginia University, Paige A Reed, William J Feeney, Regina Rockwell, Amber Kantes, Jennifer Ripley-Stueckle, Lisa A Holland |
| 9:30 | (340-4) | **A Miniaturized Immunoaffinity Capillary Electrophoresis Based-Biomarker Analyzer for Bioanalytical Applications** NORBERTO A GUZMAN, Princeton Biochemicals, Inc., Daniel E Guzman |
| 9:50 | | **Recess** |
| 10:05 | (340-5) | **Electrophoretic Technologies for Catecholamine Detection** MAOJUN GONG, Wichita State University, Qiyang Zhang, Maddukuri Naveen |
| 10:25 | (340-6) | **Integrating Microscale Enzyme Reactions Into Capillary Separation** SRIKANTH GATTU, West Virginia University, Cassandra Crihfield, Lisa A Holland, Anthony Moncrief |
| 10:45 | (340-7) | **Investigation of Oxidative Metabolism by Electrochemistry/Capillary Electrophoresis/Mass Spectrometry Using a Novel Sheathless Interface Design** NHAN TO, University of Kansas, Ryan T Johnson, John Stobaugh, Craig E Lunte |
| 11:05 | (340-8) | **Manipulation of the EOF in Phospholipid Coated Capillaries Through the Incorporation of Different Metal Cations** CHRISTOPHER R HARRISON, San Diego State University, Shane Wells, Eduardo De La Toba, Srilatha Vydha |

## ORAL SESSIONS — Session 350

*Data Analysis and Manipulation*

**Monday Morning, Room B301**

A Peter Snyder, Retired Government, Presiding

| | | |
|---|---|---|
| 8:30 | (350-1) | **Quantitative Evaluation of Spectral Interferences in Atomic Emission Spectroscopy** MATTHIEU BAUDELET, University of Central Florida, Jessica Chappell, Brandon Seesahai, Martin Richardson, Michael Sigman |
| 8:50 | (350-2) | **Comparison of Various Methods for the Determination of Uncertainty due to Long Term Stability** DANIEL BIGGERSTAFF, o2si Smart Solutions, Huichen Stavros, Mark Filla |
| 9:10 | (350-3) | **Lifecycle of Analytical Methods: Development of Equivalent Dissolution Methods for Immediate-Release Oral Dosage Forms Post-Approval** IVELISSE COLON, Vertex Pharmaceuticals, Taryn Ryan, Joseph Medendorp |
| 9:30 | (350-4) | **Investigating Robustness and Ruggedness of Analytical Methods Employing aQBD Principles** PETER ANDREAS LUND JACOBSEN, Fertin Pharma |
| 9:50 | | **Recess** |
| 10:05 | (350-5) | **Chemometrics for Big Data** ROBERT A LODDER, University of Kentucky, Anne Brooks |
| 10:25 | (350-6) | **Air Quality Networks- Results from Validation and Lessons on Calibration** JOHN R SAFFELL, Alphasense Ltd., Roderic L Jones |
| 10:45 | (350-7) | **Using Prior Probabilities to Increase the Confidence of Chemical Identification** TYLER A ZIMMERMAN, NIST, Tytus D Mak, W Gary Mallard, Nirina R Andriamaharavo, Dmitrii V Tchekhovskoi, Stephen E Stein |
| 11:05 | (350-8) | **Applied Analytics: Using Performance-Based Analytical Test Methodology for Monitoring Laboratory Methods Required by EPA Tier III Standards** JOHN MAURER, Valero |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

## ORAL SESSIONS — Session 360

*Environmental LC*

**Monday Morning, Room B408**
Ariel Donovan, Missouri University Science and Technology, Presiding

| | | |
|---|---|---|
| 8:30 | (360-1) | **Intrigues of Analyte Peak Distortion in Ion Chromatography by Overloaded Matrix Ions –Trace Analysis of Bromate in High Ionic Strength Samples** MICHAEL K PAPPOE, University of Alberta, Mohammad H Naeeni, Charles A Lucy |
| 8:50 | (360-2) | **Multi-Dimensional Ion Chromatography for Trace Ion Analysis** RONG LIN, Thermo Fisher Scientific, Kannan Srinivasan, Herb Wagner |
| 9:10 | (360-3) | **Assessment of Amino Acid Stability in the Early Oceans by Liquid Chromatography-Mass Spectrometry** ERIC T PARKER, Georgia Institute of Technology, Karen L Britnon, Aaron S Burton, Daniel P Glavin, Jason P Dworkin, Jeffrey L Bada |
| 9:30 | (360-4) | **Increase Sample Productivity in the Environmental Lab with High Pressure Ion Chromatography** FRANK HOEFLER, Thermo Fisher Scientific, David G Moore, Yan Liu |
| 9:50 | | **Recess** |
| 10:05 | (360-5) | **A Novel Cation Exchange Stationary Phase for Analysis of Common Cations and Amines Using Ion Chromatography** MANI JAYARAMAN, Thermo Fisher Scientific, Christopher Pohl, Charanjit Saini, Yan Liu |
| 10:25 | (360-6) | **Effects of Titanium Dioxide Nanoparticles on Endocrine Disruption in Zebrafish** MARRIAH ELLINGTON, West Virginia University, Cassandra Crihfield, Sara Melow, Lisa A Holland |
| 10:45 | (360-7) | **Trace Analysis of Guanidine Compounds in Surface Water with Resorcinarene-Based Ion Chromatography Columns** ROGER G HARRISON, Brigham Young University, Tayyabeh Panahi, John Lamb |
| 11:05 | (360-8) | **Analysis of Molecular Markers of Animal Waste by LC-MS/MS** SREE HARSHITHA VELAGA, Tennessee Technological University, Sreedharan Lakshmi Narayanan, John Harwood |

## ORAL SESSIONS — Session 370

*Fluorescence and Luminescence Advances*

**Monday Morning, Room B315**
Chenzhong Li, Florida International University, Presiding

| | | |
|---|---|---|
| 8:30 | (370-1) | **Measuring Displacement on the Micron Scale: Novel Luminescent Spectral Rulers for Orthopedic Applications** MELISSA M ROGALSKI, Clemson University, Donald Benza, Hunter Pelham, Nakul Ravikumar, Dakotah Anderson, Johnathan Heath, John D DesJardins, Jeffrey N Anker |
| 8:50 | (370-2) | **Simplified Two-Photon Synchronous Scanning Fluorescence for Resolution of Co-Localized Emitters** CHRISTOPHER K ALMLIE, Oregon State University, Sean M Burrows, Kuan-Jen Chen, Karan A Patel |
| 9:10 | (370-3) | **Development of Chitosan-Modified Near Infrared Fluorescent Graphene Oxide Nanocomposite** MINH H DUONG, University of North Dakota, Steve Xu Wu, Julia Xiaojun Zhao |
| 9:30 | (370-4) | **Studying Chemical Reaction, Mass Transport and Their Coupling in 3D Multi-layer Catalysts at Single-Molecule Level** BIN DONG, Georgia State University, Chen Y Pei, Xiao X Chao, Wen Y Huang, Ning Fang |
| 9:50 | | **Recess** |
| 10:05 | (370-5) | **Slowing Down of Nanoparticle Diffusion on Sub-Micrometer Oil Droplet-Aqueous Buffer Interface Studied with Three Dimensional Tracking** YANING ZHONG, North Carolina State University, Luyang Zhao, Gufeng Wang |
| 10:25 | (370-6) | **Two-Photon Metal Enhanced Fluorescence Properties of Gold Nanostars** LIXIA ZHOU, Oregon State University, Sean M Burrows |
| 10:45 | (370-7) | **DNA-Aligner Controlled Nicking and Extension for Isothermal Amplification of Nucleic Acids** TAO ZHANG, Zhejiang University N/A |
| 11:05 | (370-8) | **Construction of Convenient Biosensors Based on Optical Techniques** QIAOLI YUE, Liaocheng University, Chenzhong Li |

## ORAL SESSIONS — Session 380

*FTIR and Terahertz Applications*

**Monday Morning, Room B316**
Chin I Shyr, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (380-1) | **EPA Methods 320 and 18 by Portable GC/FTIR for Total Source Emission Determination** MARTIN L SPARTZ, Prism Analytical Technologies, Inc., Anthony S Bonanno, Charles Mark Phillips, Peter P Behnke, Kelly R McPartland |
| 8:50 | (380-2) | **A Novel Infrared Interferometer Suitable for 3D Infrared Hyperspectral Imaging** RYUJI TAO, Kagawa University, Akira Nishiyama, Kenji Wada, Ichiro Ishimaru |
| 9:10 | (380-3) | **New Methodology for Finding Optimal Spectral Matches in Reference Databases** GREGORY BANIK, Bio-Rad Laboratories, Inc., Ty Abshear, Karl Nedwed |
| 9:30 | (380-4) | **Experimental Optimization of IR pMAIRS Using A New Analytical Concept** TAKESHI HASEGAWA, Kyoto University, Nobutaka Shioya, Takafumi Shimoaka, Miyako Hada |
| 9:50 | | **Recess** |
| 10:05 | (380-5) | **ATR-FTIR Spectroscopic Imaging of Pharmaceutical Formulations Under Continuous Flow** SERGEI KAZARIAN, Imperial College London, Andrew Ewing |
| 10:25 | (380-6) | **Advances in Pattern Recognition for the Remote Detection of Sulfur Dioxide by Passive Infrared Spectrometry** BRIAN W DESS, University of Iowa, Gary W Small |
| 10:45 | (380-7) | **Demonstration of Detection of Hidden Persons and Illegal Substances with an Array of Quantum Cascade Lasers and Cantilever Enhanced Photoacoustic Spectroscopy** SAULI SINISALO, Gasera Ltd., Ismo Kauppinen |
| 11:05 | (380-8) | **Measurement of Trace HF in Clean Rooms and Ambient Air** ISMO KAUPPINEN, Gasera Ltd., Tuomas Hieta, Timo Rajamäki, Sauli Sinisalo |

## ORAL SESSIONS — Session 390

*GCMS of Environmental Analysis*

**Monday Morning, Room B401**
Archana Kumar, Genentech, Presiding

| | | |
|---|---|---|
| 8:30 | (390-1) | **Continuous Monitoring of Polycyclic Aromatic Hydrocarbons Using Automatic Thermal Desorption-Gas Chromatography** FRANCK AMIET, Chromatotec Inc., Michel Robert, Damien Bazin |
| 8:50 | (390-2) | **Method Development for Evaluation of Pesticides Residue in Lake Lanier-Georgia Gwinnett County's Drinking Water Resource Using Disposable Pipette Extraction (DPX) and Gas Chromatography–Mass Spectrometry (GC-MS)** HONGXIA GUAN, Georgia Gwinnett College, Huang Wenlin, Xiaoping Li, Simon Mwongela, Rashad Simmons |
| 9:10 | (390-3) | **Overcoming Cost and Supply: Let's Use Nitrogen** LEE MAROTTA, PerkinElmer, Jacob Rebholz, Roger Bardsley, Tom Hartlein |
| 9:30 | (390-4) | **Analytical Method Development for 2,4,6,8-Tetrachlorodibenzothiohiophene (TCDT) in River Sediments Utilizing GCxGC-TOFMS and APGC-TQS** MAURA K MCGONIGAL, Penn State, Frank Dorman, Kari Organtini, Robert Parette, Wendy Pearson, Doug Stevens, Adam Ladak |
| 9:50 | | **Recess** |
| 10:05 | (390-5) | **A Kendrick Mass Defect Approach Towards the Characterization of Hydraulic Fracturing Fluids** PAULINA PIOTROWSKI, The Pennsylvania State University, Frank Dorman, Jonathan D Byer, Joseph E Binkley |
| 10:25 | (390-6) | **Collaboration of Government (EPA), Industry, Academia to Update EPA Method 625 to Solid Phase Extraction for Drinking and Wastewater Analysis Combining Stir-Bar Sorptive Extraction and EPA Method 6800** ANIL SRINIVAS CHAITANYA VISHNUVAJJHALA, Duquesne University, Weier Hao, Matt Pamuku, Andrew Boggess, Mizanur Rahman, Skip Kingston, David Singer, Ed Pfannkoch |
| 10:45 | (390-7) | **Analysis of Vapor Mercury in Ambient Air and Flue Gas Emissions Using Thermal Desorption Trap Hyphenated with Gas Chromatography/Mass Spectrometry** PAOLO BENEDETTI, IIA - CNR, Carlo Crescenzi, Ettore Guerriero |
| 11:05 | (390-8) | **Soil Gas: Are Targets Being Missed?** LEE MAROTTA, PerkinElmer, Roberta Provost |

# TECHNICAL PROGRAM

## ORAL SESSIONS — Session 400

*Innovative Approaches to Science Education - Half Session*

**Monday Morning, Room B409**
Hubert MacDonald, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (400-1) | **Teaching Through Research (Mini) Projects of Industrial Relevance** JURICA BAUER, Inholland, Rosalba Bellini, Gertjan Heijne, Mark Jansen, Iris Kuiper, Maarten Kuiper, Lieke van Hemert, Mark Verheij, John Vessies, Niek Persoon |
| 8:50 | (400-2) | **Promote Science Education Through Collaborative Learning** YI HE, John Jay College/CUNY, Sandra Swenson |
| 9:10 | (400-3) | **Open Source Instruments for Environmental Monitoring and Science Education** JACK SUMMERS, Western Carolina University, Benjamin Hickman |
| 9:30 | (400-4) | **Application of Environmental Data for Public Health Response Actions** JAMES S HOLLER, ATSDR |

## ORAL SESSIONS — Session 410

*Microfluidics/Lab-on-a-Chip - Bioanalytical and Others*

**Monday Morning, Room B406**
Vishal Sahore, Brigham Young University, Presiding

| | | |
|---|---|---|
| 8:30 | (410-1) | **Droplet Microfluidic Device: Application of Nucleosome Preparation to Nucleosome Analysis** YI XU, University of Illinois at Urbana-Champaign, Richard M Graybill, Mallika V Modak, Jeong-Heon Lee, Tamas Ordog, Ryan C Bailey |
| 8:50 | (410-2) | **3D-Printed Analytical Devices Facilitate Investigation of Stored Erythrocytes Used in Transfusion Medicine** CHENGPENG CHEN, Saint Louis University, Dana Spence, R Scott Martin |
| 9:10 | (410-3) | **Investigation of Bacterial Behavior in Water Filtration Processes by Using Nanofluidic Devices** NIL TANDOGAN, Northeastern University, Kai-Tak Wan, Edgar D Goluch |
| 9:30 | (410-4) | **A Novel Chemiluminescence Signal Amplification Strategy Based on Microchip Electrophoresis Platform for Highly Sensitive MicroRNA Detection** SHULIN ZHAO, Guangxi Normal University, Jian Li, Jingjin Zhao, Yong Huang, Yi-Ming Liu |
| 9:50 | | **Recess** |
| 10:05 | (410-5) | **Singe Molecule Nanoelectrophoresis within Thermoplastics** COLLEEN ONEIL, University of North Carolina at Chapel Hill, Swathi Pullagurla, Steven A Soper |
| 10:25 | (410-6) | **Parallel Functionality Determination of shRNA Knockdown Constructs Using Microfluidic Technologies** KRISTEN ENTWISTLE, Michigan State University, Dana Spence |
| 10:45 | (410-7) | **A Universal Droplet Microfluidic Strategy for On-Chip Operations Including Reagent Injection, Sample Washing, and Droplet Tagging** STEVEN R DOONAN, University of Illinois at Urbana-Champaign, Richard M Graybill, Dongkwan Lee, Yi Xu, Ryan C Bailey |
| 11:05 | (410-8) | **Reversible Wettability Switching in Fabric-Based Microfluidic Devices** TANYA NARAHARI, Northeastern University, Dhananjaya Dendukuri, Tripurari Choudhary, Shashi K Murthy |

## ORAL SESSIONS — Session 420

*Neurochemistry*

**Monday Morning, Room B402**
Rose Ann Clark, Saint Francis University, Presiding

| | | |
|---|---|---|
| 8:30 | (420-1) | **Fast-Scan Cyclic Voltammetry Measurements of Serotonin Release and Reser Pools in R6/2 Huntington's Disease Model Mice** RACHEL C GEHRINGER, The University of Kansas, Sam V Kaplan, Sarah Fantin, Michael A Johnson |
| 8:50 | (420-2) | **Combining Voltammetry, Mathematical Modeling and 2-Photon Microscopy to Correlate In Vivo Serotonin Chemistry to Physiology** AYA ABDALLA, University of South Carolina, Christopher W Atcherley, Yunju Jin, Michael L Heien, Janet Best, Michael C Reed, David Linden, Parastoo Hashemi |
| 9:10 | (420-3) | **Coregulation of Serotonin and Histamine in the Mouse Premammilary Nucleus** SRIMAL A SAMARANAYAKE, University of South Carolina, Aya Abdalla, Rhiannon Robke, H Frederick Nijhout, Michael C Reed, Janet Best, Parastoo Hashemi |
| 9:30 | (420-4) | **Application of In Vivo Fast-scan Cyclic Voltammetry to Examine the Impact of (+)-Methamphetamine of the Regulation of Norepinephrine and Dopamine** KEN WAKABAYASHI, State University of New York at Buffalo, Jinwoo Park |
| 9:50 | | **Recess** |
| 10:05 | (420-5) | **Characterization of Spontaneous Transient Adenosine in Rat Brain Slices** SCOTT T LEE, University of Virginia, B Jill Venton |
| 10:25 | (420-6) | **Comparing Contralateral Catecholamine Release with Simultaneous Voltammetric Measurements** MEGAN E FOX, University of North Carolina at Chapel Hill, R Mark Wightman |
| 10:45 | (420-7) | **Insights into the Effects of Non-stimulant ADHD Drugs on Catecholamine Transmission in the Rat Brain Using In Vivo Fast-scan Cyclic Voltammetry** ROHAN BHIMANI, The State University of New York at Buffalo, Jinwoo Park |
| 11:05 | (420-8) | **Investigation of Enkephalin-Evoked Catecholamine Secretion in Adrenal Tissue by Fast-Scan Cyclic Voltammetry** LARS DUNAWAY, North Carolina State University, Leslie A Sombers |

## ORAL SESSIONS — Session 430

*Pharmaceutical-GC and LC*

**Monday Morning, Room B403**
Sam Subramaniam, Miles College, Presiding

| | | |
|---|---|---|
| 8:30 | (430-1) | **Analyte Stability and Side Reactions During Pharmaceutical Analysis** LEAH XIONG, Merck Co., Nathan D Contrella, Leih-Shan Yeung, Cory Bottone, Brian Regler, Justin Pennington, Eugenia Muschajew |
| 8:50 | (430-2) | **A New Tool for Residual Solvent Analysis of Technical Grade Hexanes** KENNETH G LYNAM, Agilent Technologies, John Oostdijk, Johan Kuipers, Ramaprasad Ganni |
| 9:10 | (430-3) | **Development and Validation of a Fast Ion-Paired Reversed Phase Stability-Indicating Method for the Assay of Thiabendazole and Estimation of its Related Compounds** PENG ZHANG, Merial, A Sanofi Company, Jingzhi Tian, Abu Rustum |
| 9:30 | (430-4) | **Determining Lithium in Pharmaceutical Products** SACHIN P PATIL, Thermo Fisher Scientific, Jeffrey Rohrer |
| 9:50 | | **Recess** |
| 10:05 | (430-5) | **Two Dimensional Liquid Chromatography (2D-LC), A "Must-Have" Tool in Pharmaceutical Development, When 1D-LC is Inadequate** IMAD A HAIDAR AHMAD, Novartis, Adrian Clarke, James Tam, Xue Li, Thomas Tarara, Andrei Blasko |
| 10:25 | (430-6) | **Enantioresolution of Several Amino Alcohol Drugs Containing Multiple Stereogenic Centers Using Immobilized Polysaccharide-Based HPLC Chiral Stationary Phases** MOHAMED HEFNAWY, King Saud University N/A |
| 10:45 | (430-7) | **Introducing Modern LC Column Technology into a Research-Led Pharmaceutical Teaching Environment** WILLIAM J LOUGH, University of Sunderland |
| 11:05 | (430-8) | **Improved Gas Chromatographic (GC) Quantification of Acidic and Neutral Cannabinoids** AMANDA RIGDON, Restek Corporation, Jack Cochran, Joan Serdar, Corby Hilliard, Linx Waclaski, Rebecca Stevens |

## ORAL SESSIONS — Session 440

*Synthesis and Characterization of Nano Particles*

**Monday Morning, Room B405**
Ashish Tripathi, Leidos, Inc., Presiding

| | | |
|---|---|---|
| 8:30 | (440-1) | **Antibacterial Activities and Cytotoxicity of Green Synthesized Stable Gold Nanoparticles from Flavonoid Derivatives** FRANCIS JUMA OSONGA, Binghamton University, Idris Yazgan, David C Luther, Apryl P Jimenez, Phuong N Lee, Omowunmi Sadik |
| 8:50 | (440-2) | **Wavelength Selective Photocatalysis Using Gold-Platinum Nano-Rattles** MAHMOUD MAHMOUD, Georgia Institute of Technology, Batyr Garlyyev, Mostafa A El-Sayed |
| 9:10 | (440-3) | **Reversible Electron Delocalization of Molecule-Like CdSe Nanoclusters Using Z-Type Ligand Functionalization** KATIE N LAWRENCE, Indiana University-Purdue University Indianapolis |
| 9:30 | (440-4) | **Characterization Techniques for Nanomaterials – An Overview** CHADY STEPHAN, PerkinElmer |
| 9:50 | | **Recess** |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

| | | |
|---|---|---|
| 10:05 | (440-5) | **A Novel Nanoparticle Tracking Analysis System for Improved Determinations of Nanoparticle Concentration and Size Distribution** DARIUSZ STRAMSKI, Manta Instruments Inc, Kuba Tatarkiewicz, Rick A Reynolds, Monette Karr, Rick Cooper |
| 10:25 | (440-6) | **Coupled Calorimetric-Manometric Technique for the Study of Sorption and Thermodynamic Properties of Macroscopic and Nanosized Materials** KRISTINA LILOVA, Setaram Inc., Link Brown |
| 10:45 | (440-7) | **Exploring the Effects of Surface Ligand Structural Parameters on Exciton Delocalization of CdSe Nanocrystals** MEGHAN TEUNIS, Indiana University-Purdue University Indianapolis |
| 11:05 | (440-8) | **Metallic and Hybrid Nanomaterials: Fabrication and Applications** SIMONA HUNYADI MURPH, Savannah River National Lab |

## POSTER SESSION — Session 450

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Agriculture*

**Monday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (450-1 P) | **Growth Performance of Chicory to Plant Growth Regulators** RAMESHBHAI P DABHI, J & J College of Science, Alpesh M Patel, Maheshkumar B Chauhan N/A |
| (450-2 P) | **Analysis of Sugarcane Growing Soils at Kakamega North District Kenya for Micro and Macro Nutrients** ONDITI O ANAM, Jomo Kenyatta University of Agriculture and Technology N/A |
| (450-3 P) | **Fast and Precise Nitrogen and Carbon Determination Using an Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone, Dominique Chevalier |
| (450-4 P) | **Carbon/Nitrogen Ratio in Soils and Plants Using an Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz |
| (450-5 P) | **Development of Electrochemical Detection System Combining with Nitrocellulose Membrane for Quantitative Immunochromatography** WATARU IWASAKI, Natl. Inst. Adv. Ind. Sci. Technol. (AIST), Mizuki Ryu, Ramachandra Rao Sathuluri, Ryoji Kurita, Osamu Niwa, Masaya Miyazaki |

## POSTER SESSION — Session 460

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Clinical/Toxicology*

**Monday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (460-1 P) | **Benzo[a]pyrene Levels in Mainstream Smoke from Spectrum Research Cigarettes** JARED HUGHES, Centers for Disease Control and Prevention, Wayne Chen, Bryan Hearn, Shirley Ding, Clifford Watson |
| (460-2 P) | **Selected Carbonyl Levels in Mainstream Smoke from Spectrum Research Cigarettes** MICHELE CHAN, Centers for Disease Control and Prevention, Shirley Ding, Clifford Watson, Xizheng Yan |
| (460-3 P) | **Absolute Quantification of Apolipoproteins in Serum and the Efficacy of Trypsin While Utilizing Ultra Performance Liquid Chromatography - Isotope Dilution Mass Spectrometry (UPLC-IDMS)** MICHAEL L ANDREWS, Centers for Disease Control and Prevention, Bryan A Parks, Christopher Toth, Jeffrey Jones, Kuklenyik Zsuzsanna, Michael S Gardner, Jon Rees, David Schieltz, John R Barr |
| (460-4 P) | **Mainstream Smoke Deliveries of Tobacco Specific Nitrosamines in Spectrum Clinical Research Cigarettes** PATRICK CHEN, Centers for Disease Control and Prevention, Clifford Watson, Shirley Ding, Liqin Zhang, Josh Wong |
| (460-5 P) | **Separation of Vitamin D2 and D3 for Clinical Application** MARK WOODRUFF, Fortis Technologies, Ken Butchart |
| (460-6 P) | **Measurement of Ammonia Emanating from Human Skin as a Possible Biomarker for Physical/Mental Stress Responses** SHOTA FURUKAWA, Tokai University, Minami Takahashi, Keita Kimura, Shiro Ikeda, Yoshika Sekine, Asai Satomi, Umezawa Kazuo, Hayato Miyachi |
| (460-7 P) | **Measurement of Acetic Acid Emanating from Human Skin as a Potential Biomarker for Quality of Sleep** MINAMI TAKAHASHI, Tokai University, Furukawa Shota, Keita Kimura, Yoshika Sekine, Satomi Asai, Kazuo Umezawa, Miyachi Hayato |
| (460-8 P) | **LC-MS/MS Determination of Interactions Between Sunitinib and Green Tea Polyphenol by Equilibrium Dialysis** MATTHEW VERGNE, Lipscomb University, Lincoln Shade |
| (460-9 P) | **Identification of Hypocretin-1 in Cerebrospinal Fluid: A Potential Diagnostic Biomarker for Narcolepsy** HEMASUDHA CHATRAGADDA, Duquesne University, Skip Kingston, Birgitte R Kornum, Matt Pamuku |
| (460-10 P) | **ICP-MS – A Perfect Tool for the Bio-monitoring of Trace Elements in Body Fluids** EWA M PRUSZKOWSKI, PerkinElmer, Inc. |
| (460-11 P) | **Incorporation of Amphiphilic Dendrimers in Supported Lipid Bilayers to Enhance Stability and Functionalization** CHARLES J RUIZ, University of California, Riverside, Samuel S Hinman, Quan Cheng, Ling Peng |
| (460-12 P) | **Chiral Capillary Electrophoresis-Mass Spectrometry: Turning an Analytical Technique into High Throughput Screening of Chiral Compounds Using Novel Polymerized beta-D-Glucopyranoside Surfactants** LIU YIJIN, Georgia State University, Shahab S Shamsi |
| (460-13 P) | **Measurement of Diacetyl and 2-Nonenal Emanating from Human Skin by Passive Flux Sampler** KEITA KIMURA, Tokai University, Shota Furukawa, Minami Takahashi, Yoshika Sekine, Kazuo Umezawa, Satomi Asai, Hayato Miyachi |
| (460-14 P) | **Aptamer-Modified Gold Nanoparticles Coupled with Nitrocellulose Membranes for Detection of Thrombin by LDI-MS** CHIA-YIN CHANG, National Taiwan Ocean University |
| (460-15 P) | **On-line Membrane Assisted Distillation Coupled with Ion Chromatography: A Novel Approach to Determine Trace Fluoride in Serum** LOU CHAOYAN, Zhejiang University |
| (460-16 P) | **SERS Probe for Rapid Detection of Erythropoietin in Urine** UGUR TAMER, Gazi University, Yesim Selbes, Gokhan M Caglayan, Nejdet Saglam N/A |
| (460-17 P) | **Electrochemical Measurement of Thyroid Hormone for Rapid Diagnostics Technology** BARBARA CATA, Northern Kentucky University, Celeste A Morris |
| (460-18 P) | **Forensics Meets Green Chemistry: Removing Known Carcinogens from Blood Alcohol Content Protocols for Safer Applied Spectroscopy Laboratories** SARAH E GRAY, Armstrong State University, Mathew Holmes |
| (460-19 P) | **Preparation and Evaluation of Nifedipine-Cyclodextrin Complex Microspheres with In-Vitro Studies** SUNILKUMAR H CHAUDHARI, Mantri Health Care, Shailesh Jain N/A |
| (460-20 P) | **A Rapid and Sensitive SERS Based Measles Detection** RAMESH KATTUMENU, Argent Diagnostics Inc |
| (460-21 P) | **The Efficiency of Multi-Sample Analysis Using Dual Gradient LCMS System** WATANABE SATORU, Shimadzu Corporation, Nakayama Daisuke, Yamaguchi Tadayuki, Inohana Yusuke |

## POSTER SESSION — Session 470

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Drug Discovery*

**Monday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (470-1 P) | **Automated Mass-Directed Purification of Bioactive Peptides** LAINE STEWART, Gilson, Inc., Luke Roenneburg, Karen Kleman N/A |
| (470-2 P) | **Synthesis of Nanosized Poly B-aminoester Holding Chlorambucil Drug as Slow Release Drug System for Antitumer** FAHIMA MOSAAD HELALY, National Research Centre (NRC) |
| (470-3 P) | **Synthesis, Characterization and Antibacterial Studies of Cobalt Complexes of Isomeric Aminophenol Schiff Bases** TOLULOPE M FASINA, University of Lagos, Felicia N Ejiah, Oluwole B Familoni, Neerish Revaprasadu |
| (470-4 P) | **Mass Spectral and Chromatographic Studies on Substituted Cathinones: Bath Salt-type Aminoketone Designer Drugs** YOUNIS ABIEDALLA, Auburn University, Randall Clark, Jack DeRuiter, Karim Abdel-Hay |
| (470-5 P) | **An In Vitro Microfluidic Platform to Unravel Mechanisms of Action of Drug Therapies used in Multiple Sclerosis** TIFFANY BELL, Michigan State University, Dana Spence |
| (470-6 P) | **Streamlining Compound Isolation Automatically with UPLC to Prep Chromatography Using Mass-Directed Auto Purification** JO-ANN M JABLONSKI, Waters Corporation, Andrew J Aubin, Wendy Harrop, Thomas E Wheat |
| (470-7 P) | **Phytochemical Screening and Antimicrobial Activity of *Boerhavia Verticillata Poir.* and *Fagonia Schweinfurthii Hadidi*** YAMINI A JOSHI, M G Science Institute N/A |
| (470-8 P) | **Aluminum-Based MOF Composite as Polymer Monoliths for Microextraction of Sulfonamides** YUNG-HAN SHIH, Chung Yuan Christian University, Kuen-Yun Wang, Hsi-Ya Huang N/A |
| (470-9 P) | **Preparation and Study of Tramadol Imprinted Micro-and Nanoparticles by Precipitation Polymerization: Microwave Irradiation and Conventional Heating Method** MARYAM HASSANPOUR MOGHADAM, Pharmaceutical Research Center, School of Pharmacy N/A |
| (470-10 P) | **Spectral Characterization of Cytochrome P450cam Active Site Using NMR Methods Including $^{13}$C-Doubled Filtered $^{1}$H-$^{1}$H Noesy Experiments for Mapping Distances** REMIGIO USAI, Marquette University, James R Kincaid, Daniel S Sem, Daniel Kaluka |

# TECHNICAL PROGRAM

(470-11 P) **Synthesis, Anti-TB and Crystallography of Benzothiazole Analogues** KATHARIGATTA NARAYANASWAMY VENUGOPALA, King Faisal University, Al-Dhubiab Bander N/A

(470-12 P) **Inhibition of Human Cytochrome P450 Enzymes by Rottlerin, A Naturally Occurring Constituent of Mallotus Philippensis Using an In-Vitro Cocktail Approach and Liquid Chromatography-Tandem Mass Spectrometry** ATUL S RATHORE, Bharati Vidyapeeth Deemed University, L Sathiyanarayanan, Kakasaheb R Mahadik N/A

(470-13 P) **Photostability of Pharmaceutical Drug Substance as Free Acid and Salt** JENNY WANG, Genentech Inc., Geoffrey Yeh, Lulu Dai, Christine Gu, Kelly Zhang

## POSTER SESSION — Session 480

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Food Safety*

**Monday Morning, Exposition Floor, 400 Aisle**

(480-1 P) **Analysis of Local Brews in Jua, Kiambu County, Kenya, for Methanol and Ethanol by Gas Chromatography** ONDITI O ANAM, Jomo Kenyatta University of Agriculture and Technology, Momanyi M Moraa N/A

(480-2 P) **Cannabinoids and Residual Solvents by Headspace GC** TIM ANDERSON, Phenomenex, Kristen Parnell, Ramkumar Dhandapani

(480-3 P) **Melamine in Pet Food** TIM ANDERSON, Phenomenex, Kristen Parnell, Ramkumar Dhandapani

(480-4 P) **Impact of HPLC Stationary Phase Selection on Matrix Effects During LC-MS/MS Analysis of Multiple Mycotoxins in Corn** EMILY R BARREY, Supelco/Sigma-Aldrich, Lynne Perez-Blanco, Olga I Shimelis, Michael Ye, Jennifer Claus

(480-5 P) **UHPLC/MS/MS Analysis of Lipophilic Marine Toxins from Homogenized Shellfish** EMILY R BARREY, Supelco/Sigma-Aldrich, Olga I Shimelis, Michael Ye, Jennifer Claus

(480-6 P) **Utilizing Mass Spectrometry for Gluten Detection for Use in Gluten-Free Foods** SOPHIE BROMILOW, University of Manchester, Lee Gethings, Peter Shewry, Michael Buckley, Michael Bromley, Phil Johnson, Clare Mills

(480-7 P) **Easy Development of an MRM Method for Analysis of Environmental Contaminants in Milk Using SPME and GC-MS/MS** NICOLE M LOCK, Shimadzu Scientific Instruments, Di Wang, Laura Chambers, Brahm Prakash, Robert Clifford, Shilpi Chopra N/A

(480-8 P) **Analysis of Target Pesticides in Essential Oils Using a Novel GC/MS/MS System** THOMAS DILLON, PerkinElmer, Samuel Tolley, Adam J Patkin, Sharanya Reddy

(480-9 P) **A Raman Spectroscopic Method for Determination of Erucic Acid in Canola Oils** ELIF ERCIOGLU, Hacettepe University, Ismail H Boyaci, Tumay H Temiz, Serap Durakli Velioglu, Murat H Velioglu

(480-10 P) **Multiple Foodborne Pathogen Analysis Using a 96-Well Assay in Less than 5 Hours** STUART FARQUHARSON, Real-Time Analyzers, Inc, Chetan Shende, Kathryn Dana

(480-11 P) **Stand-Off Raman Detection of Adulteration in Honey** KENNETH GARCIA, Alabama A&M University, Carlton Farley, Aschalew Kassu, Anup Sharma

(480-12 P) **Evaluating the Extraction Efficiency of Food Borne Pathogens on Automated Homogenizer Platforms** SHARI GARRETT, Omni International, James Atwood, Brandon Easparro

(480-13 P) **Nitrogen/Protein Determination in Infant Food by Dumas Combustion Method in Alternative to Kjeldahl Method** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(480-14 P) **Non-Targeted Screening of Nutritional Supplements with GC, GC×GC, TOFMS, and HR-TOFMS** ELIZABETH M HUMSTON-FULMER, Leco Corporation, David E Alonso, Jonathan D Byer, Joseph E Binkley, Lorne E Fell

(480-15 P) **Synthesis, Physico-Chemical Characterization and Potential Biological Activity of Newly Synthetised Cu(II) and Ni(II) Complexes of N-(Benzyloxycarbonyl)-1H-pyrazOle-1-Carboxamidine (HL) ligand** ZELJKO JACIMOVIC, Faculty of Metallurgy and Technology, Milica Kosovic, Goran Bogdanovic, Sladjana Novakovic, Nedeljko Latinovic, Gerald Giester N/A

(480-16 P) **Combining SERS with Liquid-Liquid Extraction Method for Simple, Rapid Detection of Rhodamine B in Raw Food** HUAIZHI KANG, Xiamen University

(480-17 P) **Concurrent High Sensitivity Conductometric Detection of Sulfide and Cyanide in a Suppressed Anion Chromatography System** HONGZHU LIAO, University of Texas at Arlington, Purnendu Dasgupta, Akinde Kadjo

(480-18 P) **A Computational Study Assisted Nano-Aptasensor for Detection of Tetracycline in Honey with a DNA Aptamer** SAI WANG, Beijing Univerisity of Chemical Technology

(480-19 P) **Simple, Rapid Extraction of Chlorinated Pesticides in Poultry Fat by Solid Phase Extraction and GC/ECD** ALLEN MISA, Phenomenex, Ramkumar Dhandapani, Tim Anderson

(480-20 P) **Approaches to Measuring both Trace and Nutritional Elements in Food in a Single Analysis by ICP-MS** KENNETH NEUBAUER, PerkinElmer, Stan Smith

(480-21 P) **Comparative Evaluation of the Antibacterial Activities of the Essential Oils of Rosmarinus Officinalis L. Obtained by Hydrodistillation and Solvent Free Microwave Extraction Methods** OMOBOLA OLURANTI OKOH, University of Fort Hare N/A

(480-22 P) **Impact of Thermal Processing on the Solubility and Detection of Peanut Allergens Using LC-MS/MS based Targeted Proteomics with Multiple-Reaction Monitoring (MRM)** REBEKAH L SAYERS, University of Manchester, Phil E Johnson, Justin T Marsh, Clare Mills, Helen Brown

(480-23 P) **Measurement of Arsenic in Wine by Hydride Generation – Flame Atomic Absorption** NICK SPIVEY, PerkinElmer Inc., Kenneth Neubauer, Stan Smith

(480-24 P) **Determination of Organic Tin Pesticides in Fruits and Vegetables by Gas Chromatography Coupled to Tandem Mass Spectrometry** XIAOBO LIU, Shimadzu

(480-25 P) **Determination of 198 Pesticide Residues in Eggplant Using Gas Chromatography Tandem Mass Spectrometry/Mass Spectrometry (GCMS/MS)** WANG YAN, Shimadzu

(480-26 P) **A Direct Ultra-Performance Liquid Chromatography-Mass Spectrometry Method for the Simultaneous Quantitation of Fatty Acids in Olive Oils of Different Origins** ZEID ABDULLAH ALOTHMAN, King Saud University N/A

(480-27 P) **Development of On-Line SFE-SFC System and Its Application for Food Contaminant Analysis** SHIN-ICHI KAWANO, Shimadzu (China) Co., Ltd., Xiaohua Liu, Lingling Shen, Yan Wang, Taohong Huang, Naoki Hamada, Yuki Hashi

(480-28 P) **High Resolution Accurate Mass (HRAM) Collision Energy Profile of Residues of Concern for Food Safety** DANIEL BIGGERSTAFF, o2si Smart Solutions, Huichen Stavros, Min Cai

(480-29 P) **Quantification of Pesticide Residues in Fruits and Vegetables by Gas Chromatography - Mass Spectrometry** KAELYB SUCHEVITS, California University of PA

(480-30 P) **Study of Sugar and Humectant Profiles in Smokeless Tobacco Products Using an LC-ESI-MS/MS Method** LIQUN WANG, Battelle, Roberto Bravo, Stephen Stanfill, Liza Valentin, Clifford Waston

(480-31 P) **High-Throughput Screening of Domoic Acid in Shellfish by Laser Ablation Electrospray Ionization (LAESI)-MS** PEARSE MCCARRON, National Research Council, Kelley Reeves, Callee M Walsh, Pamela Cantrell, Wade A Rourke, Sinead O'Brien, Daniel Beach

(480-32 P) **Development and Implementation of a Fast, Reliable and Sensitive Analytical Test for Determining Methylmercury in Fish** ANA MARIA MUÑOZ, Lasallian University , Claudio Jiménez, Daniel E León

(480-33 P) **Characterization of Adulterated Argan Oil Using a Portable Gas Chromatography Mass Spectrometer** PRESHIOUS REARDEN, 1st Detect Corporation, Parminder Kaur N/A

(480-34 P) **A New Insight Into Fish Meat Freshness: ZnO /PPy Modified Biosensor** BUKET SAHYAR (YALCIN), Indesit Company, Merve Kaplan, Ahmet Yavas, Mehmet Ozsoz, Erdal Celik, Semih Otles, Ömer Mindivanli, Metin Ozgul

## POSTER SESSION — Session 490

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Microfluidics/Lab-on-a-Chip*

**Monday Morning, Exposition Floor, 400 Aisle**

(490-1 P) **A Simple and Sensitive Paper-Based Device Coupling Electrochemical Sample Pretreatment and Colorimetric Detection** WILLIAM REIS DE ARAUJO, USP, Thalita G Silva, Thiago Paixao

(490-2 P) **Mixing Reaction on Paper-Based Analytical Devices** CHING MAN CHOY, California State Polytechnic University, Pomona, Yan Liu

(490-3 P) **Combining Vibrational Spectroscopy with Microfluidics** KATHLEEN E BERG, Colorado State University, Scott D Noblitt, Monpichar Srisa-Art, Amber T Krummel, Charles Henry

(490-4 P) **Prostate Cancer Biomarker Detection Using a 16-Sensor Electrochemical Microfluidic Immunoarray** ABBY JONES, University of Connecticut, Brunah A Otieno, Colleen Krause, Mohammed Sherafeldin, Amit Joshi, James F Rusling

(490-5 P) **Real-Time Profiling of Pancreatic Hormone Secretion Dynamics Using an in Flow Fluorescence Polarization Immunoassay** NIKITA MUKHITOV, Florida State University, Adrian M Schrell, Michael G Roper

(490-6 P) **Alternating Current Driven Electroosmotic Pumping through Conical Pore Membrane** XIAOJIAN WU, University of Florida, Charles R Martin

(490-7 P) **Two-Fold Control of Pressure and Flow-Rate for Flow Control and Quality Management in Fluidic Processes** ANNE LE NEL, Fluigent, Thibaut Thupnot, Benjamin Rouffet, Nicolas Petit

(490-8 P) **A 3D-printed Device for High-Throughput Membrane-Based Cellular Analysis** RUIPENG MU, Michigan State University, Dana Spence

(490-9 P) **3D-Printed Tools to Enhance Targeted Drug Therapy** CODY WAYNE PINGER, Michigan State University, Dana Spence

(490-10 P) **Fluorescence-Based Quantification of Oxygen in Paper-Based Cultures of Mammalian Cells** MATTHEW W BOYCE, University of North Carolina at Chapel Hill, Andrew S Truong, Rachael M Kenney, Matthew R Lockett

(490-11 P) **Methods for Quantifying Hypoxia and the Hypoxic Responses of Cells in Paper-Based Invasion Assays** ANDREW S TRUONG, University of North Carolina at Chapel Hill, Rachael M Kenney, Matthew W Boyce, Christian A Lochbaum, C Chad Lloyd, Matthew R Lockett

(490-12 P) **A Microfluidic Copper Detection System Incorporating a Ratiometric Fluorescent Quantum Dot Pair** SUMATE PENGPUMKIAT, Oregon State University, Yuanyuan Wu, Anukul Boonloed, Chandima Bandara, Vincent T Remcho

(490-13 P) **Ultra-Thin Layer Chromatography with Integrated Silver Colloid-based SERS Detection** RYAN A WALLACE, University of Tennessee, Knoxville, Nickolay V Lavrik, Michael J Sepaniak

(490-14 P) **Affinity Cell Separation Based on Surface Antigen Expression Difference in a Sequential Concentration Microfluidic Chip** YE ZHANG, Texas Tech University, Dimitri Pappas

(490-15 P) **Microscale Size-Based Sorting with Capillary Electrophoresis and Phospholipid Additives** CASSANDRA CRIHFIELD, West Virginia University, Lisa A Holland

(490-16 P) **Kinetic Characterization of Neurotransmitters Release from Neurons Cells Using MicroChip Electrophoresis–ESI/Mass Spectrometry** XIANGTANG LI, Jackson State University, Shulin Zhao, Yiming Liu N/A

(490-17 P) **High-Throughput Microfluidic Isolation and Analysis of Exosomes** KRISTINA M HERRERA, University of North Carolina at Chapel Hill, Steven A Soper

(490-18 P) **Quick Production of Microfluidic Devices by Laser Engraving of Wax-Coated Glass Slides** MAURO SERGIO FERREIRA SANTOS, Clemson University, Eric T da Costa, Hong Jiao, Claudimir L do Lago, Ivano G R Gutz, Carlos D Garcia

(490-19 P) **Microfluidic Platform for Mass Spectrometry-Based Monitoring of Protein-ligand Binding Dynamics** YONGZHENG CONG, Pacific Northwest National Laboratory, Cameron Trader, Ryan T Kelly, Daniel Orton, Erin S Baker, Tao Geng

(490-20 P) **Low-Cost Microfluidic Devices for the Determination of Renal Health** CHRISTOPHER A HEIST, Oregon State University, Vincent T Remcho, Joel C Pommerenck

## POSTER SESSION — Session 500

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Process Analytical Techniques*

**Monday Morning, Exposition Floor, 400 Aisle**

(500-1 P) **Characterization and Monitoring of Cavitation Through Its Acoustic Emission** NOEMIE CAILLOL, IDEEL, Franck Baco-Antoniali, Sebastien Leinardi, Sylvain Charquet, Serge Henrot, Pascal Pitiot, Davide Zonca, Christine Villard

(500-2 P) **Monitoring of Tablet Coating Using Raman Spectroscopy** HOEIL CHUNG, Hanyang University, Jaejin Kim, Young Ah Woo

(500-3 P) **Simple and Rapid Determination of Polyanion-Polycation Binding Ratio Using Pulsed Chronopotentiometry with Polyion-Selective Electrodes** EMMA GORDON, Northern Kentucky University, Kebede L Gemene

(500-4 P) **How Can Your Process Benefit From External Flow Cells and Optimized Pump Heads?** KATHRYN E MONKS, Knauer, Ingo Piotrowski

(500-5 P) **Applications of a New Wear Resistant, Chemically Inert Coating that Improves Reliability, Lifetime and Accuracy of Process, Analytical and Sampling Systems** LUKE PATTERSON, SilcoTek Corporation, Min Yuan, David Smith

(500-6 P) **Withdrawn**

(500-7 P) **Online Analysis Using LIBS for Industrial Process** RONALD BERGER-LEFÉBURE, IVEA

(500-8 P) **Non-Porous, No Glass, Leak-Free Reference Electrode** ZIAD H TAHA, Innovative Instruments, Inc.

(500-9 P) **Suggested QC Practices for On-line Analyzers** WILLIAM LIPPS, Shimadzu Scientific Instruments

(500-10 P) **A Novel Approach to Cleaning Validation for Pharmaceutical Manufacturing by Online SFE-SFC** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., William Hedgepeth, Daisuke Nakayama, Hidetoshi Terada, Minori Nakashima, Tadayuki Yamaguchi

(500-11 P) **Advances in Raman Analyzers for In Situ Studies of Small Volume Liquid-phase Reactors** LISA GANSTER, Kaiser Optical, Ian Lewis

(500-12 P) **Establishing Raman Spectroscopy for the Process Environment** LISA GANSTER, Kaiser Optical, Karen Esmonde-White, Harry Owen, Ian Lewis

(500-13 P) **In situ Raman Measurements of Pharmaceutical Solids During Process Unit Operations** LISA GANSTER, Kaiser Optical, Karen Esmonde-White, Carsyen Uerpmann, Sean Gilliam, Ian Lewis

(500-14 P) **Recovery of Challenging Compounds in Cleaning Validation Using Total Organic Carbon (TOC) Analysis** JENNY G WATSON, GE Analytical Instruments, David Wayne

## POSTER SESSION — Session 510

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Safety*

**Monday Morning, Exposition Floor, 400 Aisle**

(510-1 P) **A Cheap and Simple Approach to Monitor Sun Exposure based on Photocatalytic Properties of Titanium Dioxide** PARISA SOWTI, University of New South Wales

(510-2 P) **A Wide Selection of New Psychoactive Substances Investigated with Proton Transfer Reaction – Mass Spectrometry within the Marie Curie Training Network Proton Ionization Molecular Mass Spectrometry (PIMMS)** MATTEO LANZA, IONICON Analytik, W Joe Acton, Philipp Sulzer, Kostiantyn Breiev, Simone Jürschik, Alfons Jordan, Eugen Hartungen, Gernot Hanel, Jens Herbig, Lukas Märk, Christian Lindinger, Chris A Mayhew, Tilmann D Maerk

## POSTER SESSION — Session 520

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Sampling and Sample Preparation - Pharmaceutical, Clinical/Toxicology, Food Safety, and Others*

**Monday Morning, Exposition Floor, 400 Aisle**

(520-1 P) **Preserving the Free-radical Scavenger Activity of Key Bioactives During Extraction and Purification Processes** VALERIE DESYROY, SiliCycle, Vincent Bedard, Genevieve Gingras, Denis Boudriau, Aurelie Meng

(520-2 P) **Determination of Quinolones in Bovine Kidney Using Hollow-Fiber Supported Liquid Membrane (HF-SLM) and LC-ESI+MS/MS** SIMISO DUBE, University of South Africa N/A

(520-3 P) **Working with Challenging Samples, Sampling Systems** YVES GAMACHE, Analytical Flow Products

(520-4 P) **Analytical Method Development for Cleaning Verification of Manufacturing Equipment - Exploring the Effect of the Cleanliness of Stainless Steel Coupons on Sample Recovery** IMAD A HAIDAR AHMAD, Novartis, James Tam, Xue Li, Thomas Tarara, Andrei Blasko

(520-5 P) **Evaluation of Antibacterial and Wound Healing Properties of Hydro-ethanolic Extracts of Gossypium Barbadense Leaves** NWAMAKA H IGBOKWE, University of Lagos, Eugene E Ikobi, Cecilia I Igwilo

(520-6 P) **Evaluating the Potential for Cross Contamination when Performing 96-Well Sample Preparation Prior to LC-MS/MS Analysis** HELEN LODDER, Biotage GB Limited, Lee Williams, Victor Vandell N/A

(520-7 P) **Acrylamide from Coffee Using a Simplified Liquid** ALLEN MISA, Phenomenex, Matthew Brusius, Zeshan Aqeel

(520-8 P) **Analysis of Food Grains Using Automated Block Digestion** MICHAEL A RUTZKE, Cornell University, Suhas Narkhede, Nick McLeod

(520-9 P) **Does Weather Effect Pipetting?** GEORGE W RODRIGUES, Artel, Emily Avis, Alf Price, Verena Gerbe

# TECHNICAL PROGRAM

# MONDAY, MARCH 7, 2016
# AFTERNOON



**AWARDS** **Session 530**

*LCGC Lifetime Achievement and Emerging Leader in Chromatography Award*
arranged by Laura Bush, LCGC & Spectroscopy

**Monday Afternoon, Room B314**
Laura Bush, LCGC & Spectroscopy, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Laura Bush** |
| 1:35 | | **Presentation of the LCGC 2016 Lifetime Achievement in Chromatography Award to Milton L Lee, Brigham Young University, by Laura Bush, LCGC & Spectroscopy** |
| 1:40 | (530-1) | **Columns in Small-Scale Chromatography** MILTON L LEE, Brigham Young University |
| 2:15 | (530-2) | **Recent Chromatographic and Mass Spectrometric Developments Applied to the Characterization of Recombinant Proteins, Monoclonal Antibodies and Antibody-Drug Conjugates** PAT SANDRA, RIC, Koen Sandra |
| 2:50 | (530-3) | **Analytical Glycoscience: Quo Vadis?** MILOS V NOVOTNY, Indiana University |
| 3:25 | | **Recess** |
| 3:40 | | **Presentation of the LCGC Emerging Leader in Chromatography Award to Debby Mangelings, Vrije Universiteit Brussel, by Laura Bush, LCGC** |
| 3:45 | (530-4) | **Generic Chiral Separation Strategies for Pharmaceutical Compounds Using Chromatographic and Electrophoretic Techniques** DEBBY MANGELINGS, Vrije Universiteit Brussel, Yvan Vander Heyden |
| 4:20 | (530-5) | **Recent Trends in High-Performance Liquid Chromatographic Separation of Enantiomers** BEZHAN CHANKVETADZE, Tbilisi State University N/A |

**AWARDS** **Session 540**

*SEAC - Charles N Reilley and Royce W Murray Award*
arranged by Richard M Crooks, University of Texas at Austin

**Monday Afternoon, Room B312**
Shelley Minteer, University of Utah, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Shelley Minteer** |
| 1:35 | | **Presentation of the 2016 SEAC - Charles N Reilley Award to Reginald M Penner, University of California, Irvine by Shelley Minteer, SEAC President** |
| 1:40 | (540-1) | **Electrodeposited Nanowires for Faster and More Sensitive Hydrogen Gas Detection** REGINALD M PENNER, University of California, Irvine |
| 2:15 | (540-2) | **A Membrane-Based AC Electroosmotic Pump** CHARLES R MARTIN, University of Florida, Pradeep Ramiah Rajasekaran, Xiaojian Wu |
| 2:50 | (540-3) | **Electrocatalytic Amplification of Single Nanoparticle Collisions Using DNA-Modified Surfaces** RICHARD M CROOKS, University of Texas at Austin, Timothy M Alligrant, Radhika Dasari, Keith J Stevenson |
| 3:25 | | **Recess** |
| 3:40 | | **Presentation of the 2016 SEAC - Royce W Murray Award to Ryan J White, University of Maryland Baltimore County, by Shelley Minteer, SEAC President** |
| 3:45 | (540-4) | **Imaging Molecular Flux Using Protein Channel Based Scanned Probe Microscopy** RYAN J WHITE, University of Maryland Baltimore County, Florika Caling Macazo |
| 4:20 | (540-5) | **Imaging with Nanopipettes** LANE A BAKER, Indiana University |

**SYMPOSIUM** **Session 550**

*Emerging Platforms for Lab-on-a-Chip Analyses*
arranged by Ryan T Kelly, Pacific Northwest National Laboratory

**Monday Afternoon, Room B301**
Ryan T Kelly, Pacific Northwest National Laboratory, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Ryan T Kelly** |
| 1:35 | (550-1) | **Rapid Screening for Infectious Diseases Using Paper-Analytic Devices** CHARLES HENRY, Colorado State University |
| 2:10 | (550-2) | **High-Throughput Microfluidic Experimentation One Drop at a Time** ANDREW J DEMELLO, ETH Zürich |
| 2:45 | (550-3) | **Simple, Microfluidic Flow Distance-Based Determination of Biomolecule Concentrations** ADAM T WOOLLEY, Brigham Young University, Chatterjee Debolina, Sahore Vishal |
| 3:20 | | **Recess** |
| 3:35 | (550-4) | **Automated Droplet Manipulation, Analysis and Screening Based on Sequential Operation Droplet Array Technique** QUN FANG, Zhejiang University, Zhu Ying |
| 4:10 | (550-5) | **Microfluidic Platforms with Integrated Microvalves for Novel Biochemical Analyses** RYAN T KELLY, Pacific Northwest National Laboratory, Yongzheng Cong, Tao Geng, Sachin Jambovane, Katipamula Shanta, Spencer Prost, Michael Russcher N/A |

**SYMPOSIUM** **Session 560**

*Innovative Applications of Surface-Enhanced Raman Spectroscopy*
arranged by Bhavya Sharma, University of Tennessee, Knoxville

**Monday Afternoon, Room B303**
Bhavya Sharma, University of Tennessee, Knoxville, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Bhavya Sharma** |
| 1:35 | (560-1) | **Ultrafast Surface-Enhanced Raman Spectroscopy** RENEE R FRONTIERA, University of Minnesota, Nathaniel C Brandt, Emily L Keller, Alyssa A Cassabaum, James L Brooks |
| 2:10 | (560-2) | **Detecting Small Molecules Using Probe-Mediated SERS Schemes** JON CAMDEN, University of Notre Dame |
| 2:45 | (560-3) | **Utilization of SERS Nanoparticles as Contrast Agents for Molecular Imaging in Cancer** CRISTINA ZAVALETA, Stanford University |
| 3:20 | | **Recess** |
| 3:35 | (560-4) | **Gels, Inkjet, and Laser Ablation: A New Toolkit for Surface-Enhanced Raman Spectroscopy** MARCO LEONA, The Metropolitan Museum of Art N/A |
| 4:10 | (560-5) | **Development of Surface Enhanced Spatially Offset Raman Spectroscopy (SESORS) for Neuroscience** BHAVYA SHARMA, University of Tennessee |

**SYMPOSIUM** **Session 570**

*Miniature Mass Spectrometers*
arranged by R Graham Cooks and Zheng Ouyang, Purdue University

**Monday Afternoon, Room B304**
R Graham Cooks, Purdue University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - R Graham Cooks and Zheng Ouyang** |
| 1:35 | (570-1) | **Introduction of a Multi-Optic Coaxial Ring Ion Trap (MoCRIT) for External Ionization in Portable Mass Spectrometry** GUIDO F VERBECK, University of North Texas |
| 2:10 | (570-2) | **From 2G to 3G - Quantitative Analysis and Biomarker Profiling Using Miniature Mass Spectrometry System** ZHENG OUYANG, Purdue University, Ren Yue, Ran Zou, Yuan Su, Graham Cooks, Yu Xia |
| 2:45 | (570-3) | **Describing and Optimizing Toroidal Trapping Fields for the Development of Miniature Mass Spectrometers** STEPHEN A LAMMERT, PerkinElmer, Edgar D Lee, Daniel E Austin, Karl R Warnick |
| 3:20 | | **Recess** |
| 3:35 | (570-4) | **Practical Applications of Outside-the-Lab Mass Spectrometry** MITCH WELLS, FLIR Detection, Inc. |
| 4:10 | (570-5) | **The Development and Performance Enhancement of A Mini-Mass Spectrometer with Continuous Atmospheric Pressure Interface** WEI XU, Beijing Institute of Technology, YanBing Zhai, Muyi He |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

**SYMPOSIUM** **Session 580**

***Nanomedicine, From Diagnostics to Large Animal Therapy***
arranged by Raoul Kopelman, University of Michigan

**Monday Afternoon, Room B305**
Raoul Kopelman, University of Michigan, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Raoul Kopelman** |
| 1:35 | (580-1) | **The Plasmonic Photo-Thermal Death of Cancer in Cells(1) and in Animals(2,3) Using Gold Nano-rod** MOSTAFA A EL-SAYED, Georgia Institute of Technology |
| 2:10 | (580-2) | **Platinum(II) and Gold(III) Compounds for Cancer Diagnosis and Therapy** CHI-MING CHE, The University of Hong Kong N/A |
| 2:45 | (580-3) | **Nanophotonics-Based Diagnostics and Therapy: From Deep In-Vivo Photo-Acoustic Chemical Imaging of Tumors to Photodynamic Treatment of Heart Disease** RAOUL KOPELMAN, University of Michigan |
| 3:20 | | **Recess** |
| 3:35 | (580-4) | **Interfacial Assembly of Functional Mesoporous Nanospheres with Multi-Level Architectures for Bioapplications** DONGYUAN ZHAO, Fudan University |
| 4:10 | (580-5) | **Stickyflares: Tracking the Amount and Location of RNA in Single Cells** CHAD A MIRKIN, Northwestern University |

**SYMPOSIUM** **Session 590**

***Non-Traditional Human Biometrics for Threat Assessment: Using Chemical Forensics for National Security and Intelligence Applications***
arranged by Joachim Dieter Pleil, US EPA and Kevin O'Connell, InQTel

**Monday Afternoon, Room B308**
Joachim Dieter Pleil, US EPA, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Joachim Dieter Pleil and Kevin O' Connell** |
| 1:35 | (590-1) | **Human Biomonitoring and In Vitro Toxicity Testing Applications for Covert Threat Analysis and Security Applications** JOACHIM DIETER PLEIL, US EPA, William E Funk |
| 2:10 | (590-2) | **Noninvasive Infectious Disease Monitoring for Health Applications** MICHAEL SCHIVO, University of California, Davis, Cristina E Davis |
| 2:45 | (590-3) | **Comprehensive Analysis of the Chemicals Within: The Human Exposome and Applications for Threat Assessment** GARY W MILLER, Emory University |
| 3:20 | | **Recess** |
| 3:35 | (590-4) | **The US Army Edgewood Chemical Biological Center's Chemical Threat Analysis Within the Framework of the Organization for the Prohibition of Chemical Weapons** STANLEY A OSTAZESKI, US Army ECBC, Ethan A Jestel N/A |
| 4:10 | (590-5) | **Feasibility of Using Breath to Predict Exposure to Ionizing Radiation** TERENCE H RISBY, Johns Hopkins University |

**SYMPOSIUM** **Session 600**

***Novel Mass Spectrometric Approaches and Applications to Polymer Analysis***
arranged by Charles L Wilkins, University of Arkansas

**Monday Afternoon, Room B309**
Charles L Wilkins, University of Arkansas, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Charles L Wilkins** |
| 1:35 | (600-1) | **Characterization of Synthetic Polymers Using as Little as a Small Molecule Matrix and the Vacuum of the Mass Spectrometer for Ionization** SARAH TRIMPIN, Wayne State University, Casey D Foley, Joshua Fischer, Zachary Devereaux, Sashiprabha M Vithanarachchi, Matthew J Allen, Barbara S Larsen |
| 2:10 | (600-2) | **Model Polymer Systems: Studies by Mass Spectrometry, Ion Mobility, and Computational Strategies** DAVID M HERCULES, Vanderbilt University, Sarah M Stow, Tiffany M Onifer, John A McLean |
| 2:45 | (600-3) | **Shape Selective Studies of Macromolecular Systems** JAMES HOWARD SCRIVENS, Teesside University |
| 3:20 | | **Recess** |
| 3:35 | (600-4) | **Shape Sensitive Multidimensional Mass Spectrometry of Synthetic Polymers and Hybrid Materials** CHRYS WESDEMIOTIS, The University of Akron |
| 4:10 | (600-5) | **MALDI-TOF and MALDI-FTICR of Challenging Polymer Analysis Problems** CHARLES L WILKINS, University of Arkansas, Evegenia Tisdale |

**SYMPOSIUM** **Session 610**

***The Twenty-Seventh James L Waters Symposium on Super-Resolution Microscopy***
arranged by W Richard Howe, University of Pittsburgh

**Monday Afternoon, Room B405**
W Richard Howe, University of Pittsburgh, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - W Richard Howe** |
| 1:35 | (610-1) | **Imaging Life at High Spatiotemporal Resolution** ERIC BETZIG, Janelia Research Campus |
| 2:10 | (610-2) | **Accessing the Emerging Imaging Technologies at HHMI Janelia** TENG-LEONG CHEW, Janelia Research Campus |
| 2:45 | (610-3) | **Closing the Gap Between First Implementation and Product – Update on Lattice Light Sheet Commercialization Effort** ALEX SOELL, Carl Zeiss Microscopy, LLC |
| 3:20 | | **Recess** |
| 3:35 | (610-4) | **Life Inside the Cell: STORM, CRISPR and Imagenomics** BO HUANG, University of California, San Francisco |
| 4:10 | (610-5) | **Structured Scanned Plane Bessel Microscopy for Super-Resolution Neuroanatomy** TIMOTHY HARRIS, HHMI Janelia Research Campus |

**SYMPOSIUM** **Session 620**

***Trials and Tribulations of Dietary Supplement Analysis: Authentication, Adulteration and Contaminant Testing***
arranged by Lowri DeJager, U.S. Food and Drug Administration

**Monday Afternoon, Room B311**
Lowri DeJager, U.S. Food and Drug Administration, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Lowri DeJager** |
| 1:35 | (620-1) | **Protecting Consumers One Analysis at a Time: Identifying Harmful Adulterants in Dietary Supplements** TRAVIS M FALCONER, U.S. Food & Drug Administration |
| 2:10 | (620-2) | **Authentication of Foods and Botanical Supplements Using Chemometric Methods** JAMES HARNLY, USDA |
| 2:45 | (620-3) | **DNA Authentication and Adulterant Detection: Dispelling the Myths and Facing the Facts** DANICA HARBAUGH REYNAUD, Authen Technologies N/A |
| 3:20 | | **Recess** |
| 3:35 | (620-4) | **Authenticity of Herbal Dietary Supplements: Comparison of Chemical and DNA Barcoding Methods** RAHUL PAWAR, CFSAN/FDA, Sara M Handy, Erich Grundel, Raymond Cheng, Nicole Shyong |
| 4:10 | (620-5) | **Spectroscopic Detection of Adulteration in Botanical Dietary Supplements: What is Licorice?** CHARLOTTE SIMMLER, University of Chicago, Guido Pauli, Shao-Nong Chen |

# TECHNICAL PROGRAM



## ORGANIZED CONTRIBUTED SESSIONS — Session 630

*Cell Phone Spectroscopy - Handheld Spectroscopy for the Citizen*
arranged by Mark Druy, Druy Consulting and Richard Crocombe, PerkinElmer

**Monday Afternoon, Room B402**
Mark Druy, Druy Consulting, Presiding

| | | |
|---|---|---|
| 1:30 | (630-1) | **Ready When You Are: Cell Phone Spectrometry When Cellcams Yield RAW Data** ALEXANDER SCHEELINE, SpectroClick |
| 1:50 | (630-2) | **Biomedical Applications of Cellphone Spectroscopy** ANSHUMAN DAS, MIT Media Lab |
| 2:10 | (630-3) | **Optical Smartphone Biosensing Techniques** BRIAN T CUNNINGHAM, University of Illinois at Urbana-Champaign, Kenneth Long |
| 2:30 | (630-4) | **Withdrawn** |
| 2:50 | | **Recess** |
| 3:05 | (630-5) | **Quantum Dots and Smartphone Fluorescence Imaging: A Perfect Marriage for Bioassays** RUSS ALGAR, University of British Columbia, Eleonora Petryayeva |
| 3:25 | (630-6) | **Point-of-Care Colorimetric Detection with a Cell Phone** IAN PAPAUTSKY, University of Cincinnati |
| 3:45 | (630-7) | **Mobile Technologies for Personalized Diagnostics and Global Health** DAVID ERICKSON, Cornell University |
| 4:05 | (630-8) | **A Handheld Optoelectronic Nose** KENNETH S SUSLICK, University of Illinois at Urbana-Champaign, Zheng Li, Maria K LaGasse, Jon R Askim |

## ORGANIZED CONTRIBUTED SESSIONS — Session 640

*Isolation and Characterization of Impurities/Degradation Product: Understanding Your Impurity Profile Throughout the Development Process*
arranged by Andy Miles and Paul Wrezel, Regis Technologies

**Monday Afternoon, Room B313**
Andy Miles, Regis Technologies, Presiding

| | | |
|---|---|---|
| 1:30 | (640-1) | **Risk Analysis of Impurities in Drug Substances** DAN WEISSMUELLER, Regis Technologies |
| 1:50 | (640-2) | **Low level Impurity Isolations for Impurity Profiling and Structure Elucidation** TONY (QI) YAN, Pfizer |
| 2:10 | (640-3) | **Case Studies Involving Method Development for Trace-Level Impurities** PAUL WREZEL, Regis Technologies |
| 2:30 | (640-4) | **Impurity Identification for API Process Development** ZHAO YANQUN, AbbVie, Inc., Wayne Pritts |
| 2:50 | | **Recess** |
| 3:05 | (640-5) | **Emerging Techniques for the Identification of Impurities and Degradation Products in Agricultural Research** JEFFRIE A GODBEY, Dow AgroSciences, Jesse L Balcer, Jeffrey R Gilbert, Yelena A Adelfinskaya, Mary D Evenson |
| 3:25 | (640-6) | **The Development of SFC Stationary Phases for the Optimized Separation of Chemical Mixtures Containing a Wide Range of Polarities** MATTHEW PRZYBYCIEL, ES Industries |
| 3:45 | (640-7) | **Isolation and Characterization of Impurities in the Synthesis of Drug Substance to Support Drug Development** QIFENG XUE, Theravance Biopharma US, Inc., Kanaka Hettiarachchi, Ken Ngim, Zhengtian (Titan) Gu |
| 4:05 | (640-8) | **Open Discussion** |

## ORAL SESSIONS — Session 650

*Biomedical: Advances in Detection and Therapeutics of Cancer*

**Monday Afternoon, Room B302**
Rabih E Jabbour, US Army Edgewood Chemical Biological Center, Presiding

| | | |
|---|---|---|
| 1:30 | (650-1) | **KS-Detect: A Portable, Solar-Thermal, Polymerase Chain Reaction System for the Point-of-Care Diagnosis of Kaposi's Sarcoma** RYAN SNODGRASS, Cornell University, Andrea Gardner, Li Jiang, Ethel Cesarman, David Erickson |
| 1:50 | (650-2) | **Nano-Plasmonic Exosome Platform (nPLEX) for Label-Free Detection and Molecular Profiling of Exosomes** HYUNGSOON IM, Massachusetts General Hospital, Huilin Shao, Park Yongil, Vanessa Peterson, Cesar M Castro, Ralph Weissleder, Hakho Lee |
| 2:10 | (650-3) | **Generate DNA Aptamers Against Glypican 3 with Expanded Genetic Systems** LIQIN ZHANG, University of Florida |
| 2:30 | (650-4) | **Systematic and Quantitative Analysis of Surface N-Sialoglycoproteins in Cancer Cells with Distinct Invasiveness** RONGHU WU, Georgia Institute of Technology |
| 2:50 | | **Recess** |
| 3:05 | (650-5) | **DNA "AND" Logic Platform Integrated on Nanoparticle for Programmed Recognition and Therapy of Cancer** ZHENBAO LIU, University of Florida, Weihong Tan N/A |
| 3:25 | (650-6) | **A Core/Shell Structure of Reduced Graphene Oxide/ Mesoporous Silica with Oligonucleotide Gates for Cancer Treatment** XIAO LIU, University of North Dakota, Xu Wu, Xuefei Zhang, Yuqian Xing, Julia Xiaojun Zhao |
| 3:45 | (650-7) | **Simultaneous Photothermo-/Chemotherapy Using Reduced Graphene Oxide Based Nanocomposites** YUQIAN XING, University of North Dakota, Xu Wu, Xiao Liu, Julia Xiaojun Zhao |
| 4:05 | (650-8) | **Imaging of Cancer Protein-Protein Interactions and Small Molecule Inhibitions by a Surface Plasmon Resonance Microarray** CHARUKSHA WALGAMA, Oklahoma State University, Zainab Hussain Al Mubarak, Bing Zhang, Mayowa Akinwale, Anuruddha Pathiranage, Junpeng Deng, Darrell K Berlin, Doris M Benbrook, Sadagopan Krishnan |

## ORAL SESSIONS — Session 660

*Environmental Applications of Elemental Analysis*

**Monday Afternoon, Room B315**
Eugene F Barry, University of Massachusetts Lowell, Presiding

| | | |
|---|---|---|
| 1:30 | (660-1) | **Analyzing Mercury from Contaminated Mining Sites Using a Direct Mercury Analyzer** SUMEDH PHATAK, Milestone Inc. |
| 1:50 | (660-2) | **ICP-MS for the Analysis of High Salinity Samples** ERICA CAHOON, PerkinElmer, Daniel H Jones |
| 2:10 | (660-3) | **Nanoparticle Removal During Alum and Ferric Coagulation Characterized by Single Particle ICP-MS** ARIEL DONOVAN, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma, Craig Adams, Chady Stephan, Todd Eichholz |
| 2:30 | (660-4) | **Applications of Single Particle ICP-MS to Environmental Matrices** CHADY STEPHAN, PerkinElmer, Kenneth Neubauer |
| 2:50 | | **Recess** |
| 3:05 | (660-5) | **Issues in Deep Ocean LIBS: Internal Calibration and the Effect of Suspended Particles** JOSEPH BONVALLET, University of South Carolina, S Michael Angel |
| 3:25 | (660-6) | **Selective Measurement of Metal Ions at Covalently Functionalized Carbon-Fiber Microelectrodes** YUANYUAN YANG, Wayne State University, Ahmad A Ibrahim, Jennifer L Stockdill, Parastoo Hashemi |
| 3:45 | (660-7) | **MWCNT/Bi Composite Film Modified PGE for Voltammetric Determination of Lead and Cadmium** YESIM TUGCE YAMAN, Hacettepe University, Serdar Abaci N/A |
| 4:05 | (660-8) | **Application of Mössbauer spectrometry in Environmental Studies of Fly Ashes and Road Dusts** TADEUSZ SZUMIATA, RADWAG Balances and Scales, Tadeusz Szumiata, Malgorzata Gzik-Szumiata, Katarzyna Brzozka, Bogumil Gorka, Michal Gawronski, Ryszard Swietlik, Marzena Trojanowska |

## ORAL SESSIONS — Session 670

*Environmental GC*

**Monday Afternoon, Room B406**
Walter B Wilson, National Institute of Standards and Technology, Presiding

| | | |
|---|---|---|
| 1:30 | (670-1) | **Multi-Dimensional Micro Gas Chromatography Device for the Rapid and Sensitive Analysis of Volatile Organic Compounds** JIWON LEE, University of Michigan, Menglian Zhou, Hongbo Zhu, Robert Nidetz, Katsuo Kurabayashi, Xudong Fan |
| 1:50 | (670-2) | **SPME On-Fiber Derivatization Using a Stable and Reusable Pentafluorophenyl Hydrazine Standard Gas Generating Vial** JUSTEN J POOLE, University of Waterloo, Jonathan J Grandy, German A Gomez-Rios, Emanuela Gionfriddo, Janusz Pawliszyn |
| 2:10 | (670-3) | **Gas Chromatography-Vacuum Ultraviolet Detection (GC-VUV) for Analysis of Polychlorinated Biphenyls (PCBs)** CHANGLING QIU, University of Texas at Arlington, Jonathan Smuts, Kevin A Schug |
| 2:30 | (670-4) | **Gas Chromatographic Retention Behavior on Select Groups of Isomeric Polycyclic Aromatic Compounds and Their Alkyl-Substituted Derivatives on Stationary Phases of Different Selectivity** WALTER B WILSON, National Institute of Standard and Technology, Federica Nalin, Lane C Sander, Leonard M Sidisky, Stephen A Wise |
| 2:50 | | **Recess** |
| 3:05 | (670-5) | **Optimization of Phthalate Analysis by Gas Chromatography-Mass Spectrometry Using Computer Modeling Software** DAN LI, Restek Corporation, Rebecca Stevens, Jack Cochran, Amanda Rigdon, Chris English |
| 3:25 | (670-6) | **Analysis of Greenhouse Gases Using the Dielectric Barrier Discharge Detector** MATTHEW MONAGLE, AIC LLC N/A |
| 3:45 | (670-7) | **Fast, Very Fast and Ultra-Fast Forensic and Homeland Security GC-MS** AVIV AMIRAV, Tel Aviv University, Uri Keshet, Alexander Fialkov, Tal Alon |
| 4:05 | (670-8) | **Passive Monitoring – A Guide to Sorbent Tube Sampling for EPA Method 325** CAROLINE WIDDOWSON, Markes International |

## ORAL SESSIONS — Session 680

*Food Product Quality and Component Characterization*

**Monday Afternoon, Room B316**
Ed Guthrie, Agilent Technologies, Presiding

| | | |
|---|---|---|
| 1:30 | (680-1) | **Analysis of Fat Crystallization Thanks to Microrheology** MAXIME BAZIN, Formulaction, Giovanni Brambilla, Roland Ramsch, Mathias Fleury, Gérard Meunier |
| 1:50 | (680-2) | **Atomic Absorption and Potentiometric Analysis of Electrolytes in Food Substances Used for Rapid Muscle Cramp Relief by Athletes** STEPHANIE HOOPER MAROSEK, Methodist University, Taylor Tipton |
| 2:10 | (680-3) | **Microrheological Analyses for Dairy Formulations** ROLAND RAMSCH, Formulaction, Giovanni Brambilla, Gérard Meunier |
| 2:30 | (680-4) | **Analysis of Aroma Compounds in Beer by TD–GC–TOF MS with Soft Electron Ionization** LAURA MCGREGOR, Markes International Ltd, Caroline Widdowson, Massimo Santoro, Chris Hall, Ken Umbarger |
| 2:50 | | **Recess** |
| 3:05 | (680-5) | **Food Analysis Using Laser Desorption GS-Ion Mobility Spectrometry – Olive Oil as an Example** WOLFGANG VAUTZ, ISAS, Sascha Liedtke, Joachim Franzke |
| 3:25 | (680-6) | **Monitoring of Protein Changes in Pasteurized Liquid Egg Using Capillary Electrophoresis** REYHAN S UYSAL, Hacettepe University, Ismail H Boyaci, Esra Acar, Nusret Ertas |
| 3:45 | (680-7) | **Exploiting Polymeric Ionic Liquids-Based SPME Sorbents Coupled to Gas-Chromatography/Mass Spectrometry for Food Quality and Safety Assessment** ERICA A SOUZA-SILVA, Universidade Federal do Rio Grande do Sul, Emanuela Gionfriddo, Nathaly Reyes-Garces, German A Gomez-Rios, Jared L Anderson, Janusz Pawliszyn |
| 4:05 | (680-8) | **Detection, Identification, and Pattern Recognition of Microbial Volatile Organic Compounds from Virulent and Hypo-Virulent Cryphonectria Parasitica Species by Headspace-SPME-GC-MS and Chemometrics** JINYAN SHE, Mississippi State University |

## ORAL SESSIONS — Session 690

*LC Method Development - Half Session*

**Monday Afternoon, Room B403**
William E Barber, Agilent Technologies, Presiding

| | | |
|---|---|---|
| 1:30 | (690-1) | **Method Transfer and Column Scalability with Superficially Porous Particles** WILLIAM LONG, Agilent Technologies, Anne Mack, Stephen Luke, Jason Link |
| 1:50 | (690-2) | **Isolation of Impurities in Biopharmaceutical Formulations** THOMAS E WHEAT, Waters Corporation, Amanda B Dlugasch, Patricia R McConville |
| 2:10 | (690-3) | **New Technological Solutions to Maximizing Uptime on an Ion Chromatography System** DAVID G MOORE, Thermo Fisher Scientific, Pranathi Perati, Sally Eastman |
| 2:30 | (690-4) | **Accurate Measurement of Analyte Dispersion through Connecting Tubes used in Fast Very High-Pressure Liquid Chromatography** FABRICE GRITTI, Waters Corporation, Martin Gilar, Thomas McDonald |

## ORAL SESSIONS — Session 700

*LC Optimization - Half Session*

**Monday Afternoon, Room B404**
Rachael Wilson, University of Pittsburgh, Presiding

| | | |
|---|---|---|
| 1:30 | (700-1) | **Dynamic Temperature Control in Capillary Liquid Chromatography: Increasing Analysis Sensitivity, Speed, and Peak Capacity** STEPHEN R GROSKREUTZ, University of Pittsburgh, Rachael Wilson, Stephen Weber |
| 1:50 | (700-2) | **Towards the Development of a Refractive Index-Based Optical Microcavity Mass Concentration Detector Compatible with Gradient Elution Liquid Chromatography** ZACHARY S WIERSMA, University of Illinois at Urbana-Champaign, Todd O Pangburn, Alexandria L Stanton, James H Wade, David Mark Meunier, Ryan C Bailey |
| 2:10 | (700-3) | **Increasing the Peak Capacity of Quantitative Liquid Chromatography Using Chemometric Curve Resolution** DANIEL W COOK, Virginia Commonwealth University, Sarah C Rutan, Dwight R Stoll |
| 2:30 | (700-4) | **Improving Sensitivity, Resolution, and Peak Capacity of Gradient Elution Capillary Liquid Chromatography with Temperature-Assisted On-Column Solute Focusing** RACHAEL WILSON, University of Pittsburgh, Stephen R Groskreutz, Stephen Weber |

## ORAL SESSIONS — Session 710

*Neurochemistry*

**Monday Afternoon, Room B401**
Chi Leng Leong, Imperial College London, Presiding

| | | |
|---|---|---|
| 1:30 | (710-1) | **Measurement of Phasic Dopamine Signals in the Rat Nucleus Accumbens Core and Shell in Response to Noxious Stimuli** CHRISTOPHER W ATCHERLEY, Mayo Clinic, Edita Navratilova, Yanhua Xie, Levi Lazarus, Michael L Heien, Frank Porreca N/A |
| 1:50 | (710-2) | **Oxygen Changes and Dopamine Release during Spreading Depression** CADDY N HOBBS, University of North Carolina at Chapel Hill, Justin A Johnson, R Mark Wightman |
| 2:10 | (710-3) | **Spontaneous, Transient Adenosine Release from Brain During Ischemia-Reperfusion Injury** MALLIKARJUNARAO GANESANA, University of Virginia, B Jill Venton |
| 2:30 | (710-4) | **Treatment on Carbon Nanotube Yarn Microelectrode for Sensitive and Rapid Dopamine Detection In Vivo** CHENG YANG, University of Virginia, B Jill Venton, Ilia N Ivanov, Michael D Nguyen, Christopher B Jacobs |
| 2:50 | | **Recess** |
| 3:05 | (710-5) | **Neurochemical Investigation of Epilepsy Using Microdialysis Sampling to Study Multiple Seizure Rat Models** AMANDA M FURNESS, University of Kansas |
| 3:25 | (710-6) | **PKC-b Inhibitors Attenuate Amphetamine and Cocaine Stimulated Dopamine Release** ALEXANDROS G ZESTOS, University of Michigan, Robert T Kennedy, Margaret E Gnegy |

# TECHNICAL PROGRAM

3:45 (710-7) **Clinical Measurements at the Bedside: Dynamic Neurochemical Changes in the Injured Human Brain Monitored Using an Online Microdialysis System** MICHELLE L ROGERS, Imperial College London, Chi Leng Leong, Sally A Gowers, Sharon Jewell, Shumaila Khan, Anthony J Strong, Martyn G Boutelle

4:05 (710-8) **Online Clinical Microdialysis: Detecting the Neurochemical Consequences of Spreading Depolarization** CHI LENG LEONG, Imperial College London, Michelle L Rogers, Sally A Gowers, Sharon Jewell, Anthony J Strong, Shumaila Khan, Martyn G Boutelle

## ORAL SESSIONS — Session 720

*Unique Developments in Spectroscopy - Half Session*

**Monday Afternoon, Room B403**

William E Barber, Agilent Technologies, Presiding

3:05 (720-1) **Simultaneous Measurement of $N_2O$ and CH4 Emissions from Agriculture Using Photoacoustic Detection and QCL Laser** ARTO BRANDERS, Gasera Ltd., Ismo Kauppinen, Jaakko Lehtinen

3:25 (720-2) **Infrared Spectroscopic Remote Sensing of Pulsed Signals from Nearby Stars** ROBERT A LODDER, University of Kentucky, Anne Brooks

3:45 (720-3) **High Resolution Coherent Multidimensional Spectroscopy** PETER CHEN, Spelman College

4:05 (720-4) **Biologics Starting Materials Identified through Opaque Containers by Spatially Offset Raman Spectroscopy (SORS)** MATTHEW BLOOMFIELD, Cobalt Light Systems, Darren Andrews, Pavel Matousek

## POSTER SESSION — Session 730

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Art and Archaeology*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(730-1 P) **Maximizing the Information Obtained from Small Archaeological Samples by Sequencing DART-MS and Plasma-Chemical Oxidation for AMS Radiocarbon Dating** RUTH ANN ARMITAGE, Eastern Michigan University, Kathryn Jakes, Suzanne Baker

(730-2 P) **The Dose Makes the Poison: Quantitation of Pollutant VOCs From Materials Used in A Museum Environment** MICHAEL J SAMIDE, Butler University, Gregory D Smith, Jericha Mill

(730-3 P) **Using Reflectance Spectroscopy to Determine the Rate of Formation of Prussian Blue Pigment** JACOB APPLEGARTH, Butler University, Michael J Samide

(730-4 P) **Elemental Profiling of Archaeometallurgical Artefacts by ICP Spectrometry** SANDA RONCEVIC, University of Zagreb, Ivan Nemet N/A

## POSTER SESSION — Session 740

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Chemical Methods*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(740-1 P) **Single Nanoparticle to 3D Supercage: Framing for an Artificial Enzyme System** REN CAI, University of Florida, Weihong Tan

(740-2 P) **Synthesis and Characterization of Superparamagnetic Manganese Ferrite Nanoparticles** SIMONAS RAMANAVICIUS, Vilnius University, Marija Kurtinaitiene, Kestutis Mazeika, Vidas Pakstas, Arunas Jagminas

(740-3 P) **Optimization of Ibuprofen Micronization by the Rapid Expansion of a Supercritical Solution (RESS)** ROLF SCHLAKE, Applied Separations, Al Kaziunas, Brian Day

(740-4 P) **DNA-Aligner-Controlled Nicking-Based Isothermal Exponential Amplification Reaction for High Sensitive Detection of Nucleic Acids** WU WANGHUA, Zhejiang University, Zhou Jianguang, Zhang Tao, Yu Dongdong

(740-5 P) **Electrochemical, Spectroscopic and Chromatographic Techniques for Monitoring the Active Pharmaceutical Ingredients Degradation Kinetics: Which Methodology Fulfills More Principles of the Green Analytical Chemistry?** MOHAMED K ABD EL-RAHMAN, Cairo University, Amr M Mahmoud

(740-6 P) **Investigation of Heterogeneous Reaction Mechanism Between Formaldehyde and $MnO_2/CeO_2$ at Room Temperature by Gas Analysis Approach** HAYASHI HIROKI, Tokai University, Sekine Yoshika

(740-7 P) **Automated, Low-Level Distillation of Phenolics for Use in Environmental and Manufacturing Applications** BRANT HOEKSTRA, OI Analytical, Jonathan Howerton N/A

(740-8 P) **Identification of 6-chlorotestosterone and Other Designer Anabolic Steroids in Dietary Supplements with Semi-Quantitative Content Determination Using Surrogate Compounds** SARAH ELIZABETH VOELKER, U.S. FDA, Forensic Chemistry Center, Lisa M Lorenz, Mary B Jones, Travis M Falconer, Rick A Flurer

## POSTER SESSION — Session 750

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Commercial Products Characterization*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(750-1 P) **Considerations in Sample Preparation and Method Development Using ICP-OES** KENNETH NEUBAUER, PerkinElmer, Nick Spivey, Stan Smith, Laura Thompson

(750-2 P) **Chemical Fingerprinting of Tobacco and Related Products by TD–GC–TOF MS** LAURA MCGREGOR, Markes International Ltd, Chris Hall, Caroline Widdowson, Nicola Watson, Ken Umbarger

(750-3 P) **Levels of Mercury and Methylmercury in Fish (Prochilodus Magdalenae) Ayapel Marsh (Colombia)** EDINELDO LANS CEBALLOS, University of Cordoba, Mauricio Lora Agamez, Amira Padilla Jimenez

(750-4 P) **Mercury Residual and Methylmercury in Canned Tuna Distributed in Monteria –Colombia** EDINELDO LANS CEBALLOS, University of Cordoba, Mauro Lombana Agamez, Basilio Diaz Pogutá

(750-5 P) **Automated SPME for the Analysis of Environmental Contaminants in Milk** NICOLE M LOCK, Shimadzu Scientific Instruments, Robert Clifford, Di Wang, Laura Chambers, Brahm Prakash, Shilpi Chopra

(750-6 P) **Estimation of Dietary Intake of Essential and Non-Essential Metals through the Consumption of Dietary Supplements Available on Nigerian Retail Market** IMAOBONG UDOUSORO, University of Uyo, Ikem Abua, Olujide T Akinbo

(750-7 P) **Analysis of Aflatoxins in Pet Food by UHPLC Using PDA and Fluorescence Detection** CATHARINE LAYTON, PerkinElmer, Jason Weisenseel, Wilhad M Reuter

(750-8 P) **Antioxidant Activity of Flavored Tea and Its Content of Phenol, Flavonoid and Tannins** ABD EL-MONEIM M AFIFY, Cairo University

(750-9 P) **High Sensitive LC/MS Analysis of Stevia Sweeteners Using Polymer-Based Amino Column** RONALD BENSON, Shodex/Showa Denko America, Inc., Junji Sasuga, Satoko Sakai, Tomokazu Umezawa

(750-10 P) **Assigning Unknown Fingernail Polish to Known Manufacturers by Raman Spectroscopy and Multivariate Statistics** GARY H NAISBITT, Utah Valley University, Kelsey Hartt N/A

(750-11 P) **Characterizing the Rheological Properties of Wax Emulsions used as Carriers for Biopesticides in Agricultural Pest Management** KRISTEN JORDAN, Western Carolina University, Cynthia Atterholt

(750-12 P) **Multivariate Quantification of API Release from Combination Tablets in the Presence of Matrix Effects Using Fiber Optic Dissolution** JOSEPH MEDENDORP, Vertex Pharmaceuticals, Taryn Ryan, Mahidhar Shapally, Ivelisse Colon

(750-13 P) **Simultaneous Analysis of Methylisothiazolinone, Salicylic Acid and Parabens in Antidandruff Hair Shampoos by Monolithic Silica High-performance Liquid Chromatographic Column** ABDULRAHMAN ALMAJED, King Saud Univesriy, College of Pharmacy

(750-14 P) **Simultaneous Analysis Red Wine Absorbance, CIE Lab Color Indices and Fluorescence Excitation-Emission Matrices** ADAM MATTHEW GILMORE, Horiba, Sakiko Akaji

(750-15 P) **Extractables and Leachables Analysis of IV Bag Systems Using Thermal Desorption and Stir Bar Sorptive Extraction with GC Single Quad and GC Time-of-Flight Mass Spectrometric Detection** ANDREAS HOFFMANN, Gerstel GmbH & Co.KG, Thomas Albinus, Kurt Thaxton, Elizabeth Almasi

## POSTER SESSION — Session 760

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Data Analysis and Manipulation*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(760-1 P) **Automatic, High-Throughput Motion Classification of Surface-Attached E. Coli Cells Using Bright Field Microscopy Data** SIMON SHEN, Arizona State University, Karan Syal, Nongjian Tao, Shaopeng Wang N/A

(760-2 P) **Ranking of Variables in the Dataset Using the Degree of Separation: Pure Statistical Method** WALEED MASWADEH, US Army, Jason A Guicheteau, A Peter Snyder

(760-3 P) **Procurement and Distribution Channels of Commonly Used Drugs in Nigeria: A Case Study of the Pharmaceutical Industry in Abia State** LILIAN I OGUGUO, National Malaria Elimination Programme FMoH, Chidiebere A Odike-Aduaka, Ifeoma Agwo

(760-4 P) **Effective Data Management in the Analytical Laboratory** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Kazuhito Wakabayashi, Masayuki Shibata, Keisuke Yoshizawa, Ryuji Nishimoto

(760-5 P) **Combining PLS Classification and Regression Analyses for Robust Monitoring of Nuclear Materials Reprocessing** ROBERT LASCOLA, Savannah River National Laboratory, Patrick O'Rourke

## POSTER SESSION — Session 770

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Education/Teaching*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(770-1 P) **Development of Interactive Learning Modules used in Teaching Instrumental Analysis** YI HE, John Jay College/CUNY, Sandra Swenson, Wong Tiffany, Colleen McNamara

(770-2 P) **Conservation Science Tutorial Website: Analysis of VOCs Emitted from Museum Construction Materials** JERICHA MILL, Butler University, Michael J Samide, Gregory D Smith

(770-3 P) **Analytical Chemistry Course Embedded STEM Projects with Trolox Equivalent Antioxidant Capacity Assay** XIAOPING LI, Georgia Gwinnett College, Rashad Simmons

(770-4 P) **Inexpensive Teaching Instruments for Atomic Emission and Molecular Spectroscopy** ABD AL-KARIM ALI, Miami University, Taryn L Winner, Neil D Danielson

(770-5 P) **The Antibacterial Effects of Nanoparticles** NEYDA BRIDGITTE CHACON, SUNO N/A

(770-6 P) **Strategies for Designing Calibration Curves that Extend over Three Decades of Concentration for Ultraviolet-Visible Absorption Spectroscopy** LAUREN GRABOWSKI, University of South Carolina, Scott Goode

(770-7 P) **Analytical Chemistry Experiments with a Forensic Flavor** ROBERT Q THOMPSON, Oberlin College

(770-8 P) **HPLC Refurbishment** CONNOR PUTNAM, St. John Fisher College

(770-9 P) **Analytical Chemistry 2.1: An Open-Access Digital Resource for Undergraduate Education in Analytical Chemistry** DAVID T HARVEY, DePauw University

(770-10 P) **Introducing Undergraduate Chemists to Chemometrics: Using Microsoft Excel to Illustrate the NIPALS Algorithm used in Principal Component Analysis and Partial Least Squares Regression** MARK T STAUFFER, University of Pittsburgh - Greensburg

(770-11 P) **Applying Analytical Chemistry to Solve Problems in the Developing World** RHONDA L GROSSE, Chemists Without Borders, Bego Gerber, Marya Lieberman, Steve Chambreau, Satinder Ahuja

(770-12 P) **Interdisciplinary Undergraduate Research in Chemometrics: The Faculty Perspective** HELEN M BOYLAN, Westminster College, Carolyn Cuff, Stephanie Homitz, Christopher Caroff, Keilah Ireland, Domenic DiSanti

(770-13 P) **Development of an Undergraduate Laboratory Experiment to Determine Arsenic in Sinus Wash and Tap Water by Inductively Coupled Plasma-Mass Spectrometry** ANNA M DONNELL, University of Cincinnati, Keaton Nahan, Dawone Holloway, Anne P Vonderheide

## POSTER SESSION — Session 780

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Electrochemistry*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(780-1 P) **Laser-based Heating for Nanopore DNA Duplex Analysis** CHRISTOPHER E ANGEVINE, Virginia Commonwealth University, Sarah Seashols-Williams, Joseph E Reiner

(780-2 P) **A Novel Sandwiched Electrochemiluminescence Immunosensor for Detection of Carcinoembryonic Antigen Based on Carbon Quantum Dots** WANG HUAI-SHENG, Liaocheng University N/A

(780-3 P) **Label-Free DNA Sensors for Detection of BRCA1 Mutation** BRUNO C JANEGITZ, Federal University of Sal Carlos, Lais Ribovski, Valtencir Zucolotto N/A

(780-4 P) **Conductivity as Sensor for Real-time Monitoring of the Solution Soluble Corrosion Products under Cell Culture Conditions During Corrosion of High Purity Magnesium** KOLADE O OJO, University of Cincinnati, Tracy Hopkins, Sarah Pixley, William R Heineman, Vesselin Shanov, Madhura Joshi, Pravahan Salunke, Keaton Nahan, Guangqi Zhang

(780-5 P) **Gold Nanoparticles Enzymatic Sensors for Determination of Glucose** ARUNAS RAMANAVICIUS, Vilnius University, Povilas Genys, German Natalija, Almira Ramanaviciene

(780-6 P) **RC Constant Based Label Free Biomarkers Detection** PRADEEP RAMIAH RAJASEKARAN, University of Florida, Charles R Martin, Jennifer Ottoy

(780-7 P) **Electrochemical Detection of Evoked Dopamine Release in Zebrafish** MIMI SHIN, University of Kansas, Thomas Field, Michael A Johnson, Mia Furgurson

(780-8 P) **Quantification of Ion Selectivity of Single Asymmetric Nanopore-Channels for Better Energy Harvesting from Salinity Gradients** WARREN D BROWN, Georgia State University, Yan Li, Dengchao Wang, Maksim Kvetny, Gangli Wang

(780-9 P) **Charge Transfer Mechanism of Organic Molecules Associated with Dendrimers at Polarized Liquid/Liquid Interfaces** HIROKI SAKAE, Kanazawa University, Hirohisa Nagatani, Hisanori Imura

(780-10 P) **Study of Electrochemical Hydrogen Evolution and Oxygen Evolution Reactions at Ir and Ru Oxide Alloys with Scanning Electrochemical Microscopy** YUN-BIN CHO, Ewha Womans University, Chongmok Lee, Youngmi Lee

(780-11 P) **Automated, Accurate pH and Conductivity Measurements Using a Discrete Photometric Analyzer with an ECM Module** MARI KIVILUOMA, Thermo Fisher Scientific, Annu Suoniemi-Kahara

(780-12 P) **Atmospheric Corrosion Study of Metals in an Industrial Environment of Ahmedabad** PAREKH P SUNILKUMAR PUNAMBHAI, CU Shah Science College N/A

(780-13 P) **Synthesis and Characterization of Silver Coated Electrospun Cobalt Nanotubes and Their Electrocatalytic Activity** AREUM YU, Ewha Womans University, Chongmok Lee, Myung Hwa Kim, Youngmi Lee

(780-14 P) **Single Microwire Electrodeposition by Electrochemical Liquid-Liquid-Solid Growth** TIM ZHANG, University of Michigan

(780-15 P) **Simultaneous Detection Heavy Metals by Anodic Stripping Voltammetry Using Carbon Nanotube Thread** DAOLI ZHAO, University of Cincinnati, David R Siebold, Tingting Wang, Noe R Alvarez, Vesselin Shanov, William R Heineman

(780-16 P) **Low Concentration Detection by Electrogenerated Chemiluminescence Using Bipolar Electrochemistry in a Thin Layer Manner** SONGYAN YU, Auburn University, Mark D Holtan, Sanjun Fan, Curtis Shannon

(780-17 P) **Atypical Induction of Membrane Potential in Ion Selective Membranes** DEMETRA M PANTELIS, University of Florida, Pradeep R Rajasekaran

(780-18 P) **Characterization and Spectroelectrochemical Sensing with a Boron Doped Diamond Optically Transparent Electrode Coated with a Charge Selective Polymer Film** CORY A RUSINEK, University of Cincinnati, William R Heineman, Michael Becker, Robert Rechenberg, Daoli Zhao, Necati Kaval

(780-19 P) **Simultaneous Sensing of α-Tocopherol and Retinol in Micellar Media by Using Poly(2,21-(1,4 phenylenedivinylene) bis-8-hydroxyquinaldine)/MWCNTs Modified Electrode** HAYATI FILIK, Istanbul University

(780-20 P) **Electrochemical Investigation of a Series of Uranyl Salen Complexes: Effect of Ligand Conjugation on the U(V)/U(VI) Redox Couple** EMILY E HARDY, Auburn University, Madeleine A Eddy, Anne E Gorden

(780-21 P) **Predictable Standard Potential of Solid-Contact Ion-Selective Electrodes by Using Prussian Blue Analogues as Solid Contacts** YU ISHIGE, Hitachi Ltd., Stefan Klink, Wolfgang Schuhmann

(780-22 P) **Electrochemical Behaviour of Highly- and Poorly-doped p-Si-AuNP Electrodes** MEHRAN KASHI, University of New South Wales, Yanfang Wu, Vinicius Goncales, Moinul Choudhury, Simone Ciampi, Justin J Gooding

# TECHNICAL PROGRAM

(780-23 P) **Withdrawn**

(780-24 P) **The Effect of Excited Fluorophore on Vesicle Fusion at the Surface of the Electrode** NEDA NAJAFINOBAR, Chalmers University of Technology, Jelena Lovric, Johan Dunevall, Hoda M Fathali, Andrew Ewing, Ann-Sofie Cans N/A

(780-25 P) **Novel Electrode PtCr/PAA (Polyamic Acid) for Efficient Ethanol Oxidation Reaction** JING ZHANG, Binghamton University

(780-26 P) **Voltammetric Serotonin Measurements in Mouse Models of Depression** RACHEL A SAYLOR, University of South Carolina, Aya Abdalla, Parastoo Hashemi

(780-27 P) **Kinetic Size-Spectra of Gas Molecules at Ionic Liquid (IL)-Metal Interface and Its Application for Highly Selective Gas Sensing** ZHE WANG, Xavier University

(780-28 P) **New Arginine-Acetaminophen Incorporation for Selective Determination in Serum with Graphene-based Biosensor** ZHE WANG, Xavier University

(780-29 P) **Core-shell Nanoparticles Supported on Carbon Nanotubes as Promising Catalyst for Methanol Electro-oxidation** MANZAR SOHAIL, Center Of Excellence In Nanotechnology, KFUPM N/A

## POSTER SESSION — Session 790

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Materials Science*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(790-1 P) **Non-Toxic Corrosion Inhibitor from Tagetes Patula L. for Aluminum in Acid Fluids used in Industrial Operations** OLUSEGUN KEHINDE ABIOLA, Federal University of Petroleum Resources, A O Aliyu, E E Elemike

(790-2 P) **Synthesis of Fluorine Substituted $LiFeBO_3$ Composite Material as a Cathode Material for a Lithium Secondary Battery and Characterization Using the Solid State NMR** YOUNGIL LEE, University of Ulsan, JaeMin Bak, Hansol Lee

(790-3 P) **Innovative Instrument Design for Highly Precise Determination of Sulfur and Carbon Concentration** MARKUS JUNG, Elementar Analysensysteme GmbH, David Nennstiel, Christian Schmidt N/A

(790-4 P) **Analytical Methods to Estimate Biodurability of Engineered Nanomaterials** MARY-LUYZA AVRAMESCU, Health Canada, Pat E Rasmussen, Marc Chénier, H David Gardner

(790-5 P) **Intensity Ratio of Resonant Raman Modes for Chirality Enriched Carbon Nanotubes** YANMEI PIAO, National Institute of Standards and Technology, Jeffrey Simpson, Jason Streit, Stephanie Lam, Geyou Ao, Jeffrey Fagan, Angela Hight Walker

(790-6 P) **Liquid-Phase Laser Ablation as a Controlled Method to Produce Graphene Quantum Dots** ROSEMARY LYNN EASTERDAY, University of Kentucky, Wenjin Cao, Yiyang Liu, Doo Young Kim, Dong-Sheng Yang

(790-7 P) **Physicochemical Characterization and Nanotoxicity of Polishing Slurries During CMP Process** EDUARD DUMITRESCU, Clarkson University, Dinusha Karunaratne, Kenneth Wallace, Silvana Andreescu

(790-8 P) **Polycapillary X-Ray Optics to Play a Key Role in NASA Mars 2020 Mission** NING GAO, XOS, Jared Sachs, George Allen, Genevieve DeMarco, George Allen, Larry Wade, Peng Lu, Igor Ponomarev, Jay Burdett, Robert Sharrow, Jaime Luna, Douglas Dawson

(790-9 P) **Preparation and Characterization of Bleached Ground Peanut Hulls** HOLLY TRULUCK, Western Carolina University, Melisa J Glatte, Carmen L Huffman

(790-10 P) **Real Time Measurement of Layer Thickness, Erosion Rates and Crater Depth in Glow Discharge Optical Emission Spectrometry** SOFIA GAIASCHI, Horiba Jobin Yvon, Simon Richard, Patrick Chapon, Kayvon Savadkouei, Philippe Hunault

(790-11 P) **HH-XRF and HH-LIBS for Alloy Analysis** JIYAN GU, Bruker

(790-12 P) **X-Ray Photoelectron Spectroscopy, Low Energy Ion Scattering, and Time-of-Flight Secondary Ion Mass Spectrometry, including Chemometrics Analysis, of Display Glass Surfaces** MATTHEW R LINFORD, Brigham Young University, Cody V Cushman, Barry M Lunt, Philipp Brüner, Julia Zakel, Thomas Grehl, Nicholas J Smith

(790-13 P) **The Particle Size Paradox** JACK G SAAD, Micromeritics, Paul A Webb

(790-14 P) **Gas Chromatography-Vacuum Ultraviolet Absorbance Spectroscopy for Quantitation of Trace and Bulk Water in Organic Solvents: An Emerging Alternative to Karl Fischer Titration** LINDSEY NICHOLE SHEAR, VUV Analytics, Leonard M Sidisky, Dale Harrison

(790-15 P) **Complete Size Characterization of Diatomaceous Earth** JACK G SAAD, Micromeritics

## POSTER SESSION — Session 800

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Physical Measurements*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(800-1 P) **Structural Studies of Co-Spinel Ferrite Synthesized by an Auto Combustion Method** DIPAL P CHAUDHARY, Mehsana Urban Institute of Sciences

(800-2 P) **Fabrication of A Novel Fiber-Optic based Single-Cell Temperature Sensor** QINGBO YANG, Missouri University of Science and Technology, Ke Li, Hai Xiao, Honglan Shi, Yinfa Ma

(800-3 P) **Withdrawn**

## POSTER SESSION — Session 810

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Polymer Characterization and Analysis*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(810-1 P) **Analyzing the Vibration-Rotation Spectrum of Hydrochloric Acid Generated with a Thermogravimetric Analyzer Coupled to a Fourier Transform Infrared Spectrophotometer** ANTHONY J LANG, PerkinElmer, Jack Botting

(810-2 P) **Analysis of PLGA Molecular Weight and Structure by the Latest Advanced Multi-Detector GPC Systems** MARK RICHARD POTHECARY, Malvern Instruments, Carrie Schindler, Ulf Nobbmann

(810-3 P) **Molecular Level Understanding of Etching Chemistry at Polymer Interfaces** JOHN MYERS, University of Michigan

(810-4 P) **Dissolution Dynamic Nuclear Polarization Study of Living Anionic Polymerization Reaction** YOUNGBOK LEE, Hanyang University

(810-5 P) **Extractables Analysis of SPE Frits** KIRSTEN KINNEBERG, Porex Corporation, Gary Li

(810-6 P) **Automated Microwave Sample Preparation of Difficult Petroleum and Polymer Matrices** ROBERT LOCKERMAN, CEM Corporation, Dan Iversen, Tina Restivo, Ian Goldstein, Austin Thornton

(810-7 P) **Spectroelectrochemical and Electrochemical Impedance Spectroscopy Analysis of Coronene and Perylene Dimide Copolymers** SAMIR C PAUL, Auburn University, Vince Cammarata N/A

(810-8 P) **Microwave, r0 Structural Parameters, Conformational Stability and Vibrational Assignment of (Chloromethyl)fluorosilane** DATTATRAY K SAWANT, University of Missouri Kansas City, James R Durig

(810-9 P) **Micro/Nano-Structured Flexible Foils for Anti-Counterfeiting Purposes** NASTASIA OKULOVA, Danapak Flexibles A/S and Technical University of Denmak, Rafael Taboryski, Lars Christensen

(810-10 P) **Self-Cleaning Properties of Nanostructured Polypropylene Foils Fabricated by Roll-to-Roll Extrusion Coating** AGNIESZKA TELECKA, Danish Technical University, Rafael Taboryski, Ling Sun

(810-11 P) **Synthesis and Characterization of Poly(p-methylstyrene) Spiropyran Conjugates** MATTHEW J PRICE, California University of PA, Zachary Sullenberger

(810-12 P) **Advantages of Ion Mobility Mass Spectrometry for Extractables Testing** BAIBA CABOVSKA, Waters Corporation, Eleanor Riches

(810-13 P) **A Novel Device for DART-MS System** MICHAEL J CHURCHILL, BioChromato, Chikako Takei

(810-14 P) **Characterization of Inorganic Fillers in Complex Polymer Matrices Using Mid-IR and Far-IR Spectroscopy** WILLIAM WIHLBORG, Thermo Fisher Scientific, Ronald Rubinovitz

## POSTER SESSION — Session 820

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Portable Instruments*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(820-1 P) **Portable Optical Detection System for Determining Physical and Chemical Changes on Bioimplant Surfaces** DONALD BENZA, Clemson University, Fenglin Wang, Jeffrey N Anker

(820-2 P) **Field-Portable LED Array Based Multi-Wavelength Photothermal Lens Spectrometer** MICAH W ELLER, Tennessee Technological University, Andrew Callender

(820-3 P) **Translating Molecular Recognition into Pressure Signal for Rapid, Sensitive, and Portable Biomedical Analysis** ZHI ZHU, Xiamen University, Yang Chaoyong N/A

(820-4 P) **Development of Optical "Clamp-meter" Using Silicone Optical Technology for In-Situ Absorption Spectroscopy** HIROAKI NOMADA, Kyushu University, Hirokazu Higuchi, Hiroaki Yoshioka, Morita Kinichi, Yuji Oki

(820-5 P) **Development of a Portable Optical Cavity to Enhance 1-GHz Mode-Locked Laser Pulses for Broadband Absorption Spectroscopy** YUTARO ITO, Kyushu University, Zaitsu Shin-ichi, Imasaka Totaro

(820-6 P) **Characterization of a Miniaturized Benchtop Fast Gas Chromatograph Mass Spectrometer** COREY STEDWELL, 1st Detect Corporation, Daniel DeBord N/A

(820-7 P) **Enzymes and Photometers** ELLEN RUTH CAMPBELL, NECi Superior Enzymes, Bill Campbell, Justin Walbeck, David A Squires

(820-8 P) **Personal Monitoring of Ozone Exposure: A Fully Portable Device for Under $150 USD Cost** TINGTING CAO, Texas Tech University, Jonathan E Thompson

(820-9 P) **Producing a Miniaturized High-Performance Liquid Chromatography System for Exploration-Based Research** KYLE B LYNCH, University of Oklahoma

## POSTER SESSION — Session 830

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Quality/QA/QC*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(830-1 P) **A Novel Approach to Specialty Gas Certifications by Means of GC/FTIR Analysis** PETER P BEHNKE, Prism Analytical Technologies, Inc., Martin L Spartz, Charles Mark Phillips, Anthony S Bonanno, Kelly R McPartland

(830-2 P) **Evaluation of the Flavor of Strawberry Preparation Using Gas Chromatography Electronic Nose** ANDREW COWELL, Alpha MOS, Jean-Christophe Mifsud, Herve Lechat, Valérie Vabre, Fatma Ayouni, Marion Bonnefille

(830-3 P) **Developments in the Automatism for CHNS and Oxygen Determination Using an Elemental Analyzer for Chemical Characterization** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone, Walter Galotta

(830-4 P) **Running Legacy HPLC and Optimized UPLC Methods on a Single UPLC Platform, Comparative Studies and Steps Towards Implementation in a QC Environment** CHRISTOPHER HENRY, Waters Corporation, Mark Wrona, Richard Ladd, Andy Boughey

(830-5 P) **Quantitative Analysis of Calcite in Desulfurization Gypsum Using Raman Spectroscopy** YOUNG TAEK MA, Hanyang University

(830-6 P) **The Use of a Triple Detection System, (UV, ELSD, MS) for Pharmaceutical Degradation Studies** AARON D PHOEBE, Waters Corporation, Paula Hong, Patricia R McConville

(830-7 P) **Fast Analysis of Short Chain Fatty Acids in Feeds By SFC/MS** JINCHUAN YANG, Waters Corporation, Carrie Snyder, BJ Bench, Jessica Lance, Jayant Shringarpure

(830-8 P) **Application of FTIR Spectroscopy to Study the Effect of Processing on the Secondary Structure of Lentil Proteins** ALBERTA ARYEE, Agriculture & Agri-Food Canada, Joyce I Boye N/A

(830-9 P) **Accelerated Oxidation Tests on Olive Oil Stored in Plastic Packaging and Submitted to Autoclaving** STEFANO CASIRAGHI, VELP Scientifica, Stefania Corti, Claudia Mancinelli

(830-10 P) **Fast Analytical Method for Essential Oil Flavor Characterization Using a Polar Stationary Phase for Optimized Selectivity** RAMKUMAR DHANDAPANI, Phenomenex, Tim Anderson, Kristen Parnell

(830-11 P) **Steep Time and Temperature Effects on Flavor and Flavonoid Extraction of Black Tea** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor, Justin Murphy

(830-12 P) **A Novel Approach to the Analysis of Multivitamin in Foodstuff by Online Supercritical Fluid Sample Extraction/Supercritical Fluid Chromatography** QIANG LI, Shimadzu (China) Co., LTD

(830-13 P) **Simultaneous Measurement of L-Lactate and Ethanol in Tomato-Based Products** WILLIAM MILLER, YSI, Inc, June Klingensmith

(830-14 P) **Iron Translocation in Adzuki Beans Sprouts: Enrichment Effects** ALINE P OLIVEIRA, Federal University of São Paulo, Juliana Naozuka, Alexandrina C Carvalho, Cassiana S Nomura

(830-15 P) **The Qualitative and Quantitative Analysis of α-Acids in Hops and Beers by UHPLC with UV Detection** WILHAD M REUTER, PerkinElmer, Jason Weisenseel

(830-16 P) **SFC Analytical Method Development for Vitamin D3 and Related Compounds** TAKASHI SATO, YMC Co., Ltd., Roland Spaegele, Junko Kawabata, Saoko Nozawa, Toshikazu Adachi, Noritaka Kuroda

(830-17 P) **Fast and Cost-effective Sugar Analysis Using HPAE-PAD** HUA YANG, Thermo Fisher Scientific, Linda Lopez, David G Moore

(830-18 P) **Improving Analytical Performance with Enhanced Matrix Removal - Lipid** DERICK LUCAS, Agilent Technologies, Limian Zhao, Bruce Richter, Megan Juck, Joan Stevens

(830-19 P) **Food Inspection Using NIR Reflectance and Transmittance Imaging** SATORU TSUCHIKAWA, Nagoya University, Hikaru Kobori, Te Ma, Norihisa Katayama N/A

(830-20 P) **A Fast Method for Predicting the Phenolic Content of Whisky Malts** ANDREW COWELL, Alpha MOS, Jean-Christophe Mifsud, Herve Lechat, Valérie Vabre, Fatma Ayouni, Marion Bonnefille

(830-21 P) **Combining FTIR and Mass Spectrometric Detection in the Gas Chromatographic Analysis of Fragrances** TRACY PHILLPOTT, DANI Instruments, Roberta Lariccia, Matthew S Klee, Daniele Recenti

(830-22 P) **The Effect of Food Additives on Hippocampus NMDA Receptor Subunits and Oxidative Stress** ZAFER YONDEN, Mustafa Kemal University ZAFER YONDEN, Mustafa Kemal University, Oguzhan Ozcan, Yeşim Göçmen, Namık Delibaş N/A

(830-23 P) **Holographic Characterization of Multicomponent Colloidal Suspensions** JAROSLAW M BLUSEWICZ, Spheryx, Inc., David B Ruffner, Laura Philips

(830-24 P) **Mitigating Electrostatic Effects Improves Measurement Accuracy** GREG GUMKOWSKI, NRD LLC, Arnold Steinman

(830-25 P) **Safe Approach to Gas Purification** BRIAN WARRICK, ARM, Inc, Daniel Spohn

(830-26 P) **Advanced UHPLC Instrument to Instrument Method Transfer** GREGORY HUNLEN, Agilent Technologies, Michael Woodman

## POSTER SESSION — Session 840

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Sensors*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(840-1 P) **An Ultrasensitive Impedance Biosensor based on Immunomagnetic Separation and Urease Catalysis for Rapid Detection of Foodborne Pathogens Using an Immobilization-Free Interdigitated Microelectrode** LIN JIANHAN, China Agricultural University N/A

(840-2 P) **Enabling Tools to Combat Antibiotic Resistant Bacteria** ANDREW HELLER, Michigan State University, Dana Spence

(840-3 P) **Optimizing the Scintillation Cascade in Nano-Scintillation Proximity Assay (nanoSPA) for Multiplexed Detection of Small Biomolecules** ZEINAB MOKHTARI, University of Arizona, Isen Andrew C Calderon, Colleen Janczak, Craig A Aspinwall

(840-4 P) **Dendritic Gold Structures for Glucose Biosensor Design** ALMIRA RAMANAVICIENE, Vilnius University, Laura Sakalauskiene, Anton Popov, Natalija German, Asta Kausaite-Minkstimiene, Arunas Ramanavicius

(840-5 P) **High-Throughput Thiamine Quantification in Environmental Matrices Using Periplasmic-Binding Protein Biorecognition** KATIE A EDWARDS, Cornell University, Seth Feder, Antje J Baeumner, Cliff Kraft

(840-6 P) **Multi-Purpose Individual Air Monitor – Conception to Proof of Concept Laboratory Prototype** NICHOLAS FITZGERALD, Defence Science and Technology Group, Karl Pavey

(840-7 P) **Characterization of Self-Oscillating Reaction Catalyzed by Metal Porphyrin Complexes** TAKASHI ARIMURA, AIST Interdisciplinary Research Center, Masaru Mukai, Jung Hee Do, Kenichi Tominaga

(840-8 P) **Simultaneous Detection of Dopamine Release and Neural Activity** KATE L PARENT, University of Arizona, Daniel F Hill, Jean-Paul Wiegand, Michael A Miller, Christopher W Atcherley, Stephen Cowen, Michael L Heien

(840-9 P) **Development of a Novel Position-Sensitive MCP Detector** BLAKE WIGGINS, Indiana University, Davinder Siwal, Romualdo T deSouza

(840-10 P) **Real Time Monitoring Magnesium Alloys Corrosion by Electrochemical H2 Sensor In Vivo** DAOLI ZHAO, University of Cincinnati, Tingting Wang, Zhongyun Dong, William R Heineman, Vesselin Shanov

(840-11 P) **A Cellulose Acetate Membrane-Based Colorimetric Device to Discriminate Bacteria** LIGIA BUENO, Instituto de Química - Universidade de Sao Paulo, Subrayal M Reddy, Alison Cottel, Thiago Paixao

(840-12 P) **A Smart Wearable and Autonomous Negative Pressure Device for Wound Monitoring** FABIO DI FRANCESCO, Università di Pisa, Bernardo Melai, Pietro Salvo, Andrea Pucci, Vincenzo Mollica, Anna Maria Raspolli, Valentina Dini, Marco Romanelli, Beatrice Lazzerini, Aldo Paolicchi, Valter Castelvetro, Roger Fuoco N/A

(840-13 P) **A Smart Polymer Hydrogel as a Chemical Sensor on Biomedical Implant** MOHAMMED ARIFUZZAMAN, Clemson University, Caleb Behrend, Jeffrey N Anker

(840-14 P) **Oxygen Sensitive Probes** PETER GENNARO, Clemson University

(840-15 P) **Graphene Oxide as an Efficient Antibacterial Agent in Macrophages and in Mice** XU WU, University of North Dakota, Xiao Liu, Yuqian Xing, Julia Xiaojun Zhao, Min Wu

(840-16 P) **pH Indicator to Enhance Surface Plasmon Resonance Imaging Detection of Small Organic Molecules** ZAINAB HUSSAIN AL MUBARAK, Oklahoma State University, Gayan Premaratne, Cassandra Rodenbaugh, Lucy Lehoczky, Sadagopan Krishnan

(840-17 P) **Membrane Based Electrodes for Electrochemical Applications in Biology** TANYA BAKMAND, DTU Nanotech, Dorota Kwasny, Fatima Al-Zahraa Al Atraktchi, Helle Waagepetersen, Winnie E Svendsen, Maria Dimaki

(840-18 P) **Paper-Based Colorimetric Glucose Determination Using Smartphone** HAKAN CIFTCI, Kirikkale University, Nazlı Ayyıldız, Ugur Tamer

## POSTER SESSION — Session 850

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Thermal Analysis*

**Monday Afternoon, Exposition Floor, 400 Aisle**

(850-1 P) **New TGA-FT-IR Library for Polymers** EKKEHARD POST, NETZSCH Geraetebau GmbH, Carolin Fischer, Bob Fidler

(850-2 P) **Beyond Classical Dynamic Mechanical Analysis - Using A New High-Force, High-Temperature DMA to Characterize Advanced Materials** BOB FIDLER, NETZSCH Instruments NA LLC, Horst Deckmann, Juergen Blumm, Ekkehard Post, Tobias Pflock

(850-3 P) **Exploring the Properties of Textiles with Thermal Analysis, Infrared and UV/Vis Spectroscopy** ANTHONY J LANG, PerkinElmer, Aaron H Adams, Jack Botting

# TUESDAY, MARCH 8, 2016
# MORNING

## AWARDS — Session 860

### *Pittsburgh Analytical Chemistry Award*

arranged by Joanne Smith, The Pittsburgh Conference

**Tuesday Morning, Room B312**

Joanne Smith, The Pittsburgh Conference, Presiding

8:30 **Introductory Remarks - Joanne Smith**

8:35 **Presentation of the 2016 Pittsburgh Analytical Chemistry Award to Sanford A Asher, University of Pittsburgh, by Elias S Absey, Chair, Society for Analytical Chemists of Pittsburgh**

8:40 (860-1) **Photonic Crystal Hydrogel and Organogel Sensors for Chemical and Biological Analytes** SANFORD A ASHER, University of Pittsburgh, Natasha L Smith, Zhongyu Cai, Andrew E Coukouma

9:15 (860-2) **Structural Characterization of Methylenedianiline Regioisomers by Ion Mobility-Mass Spectrometry, Tandem Mass Spectrometry, and Computational Strategies - MALDI Spectra** DAVID M HERCULES, Vanderbilt University, Sarah M Stow, Tiffany M Onifer, John A McLean

9:50 (860-3) **Liposomal Spherical Nucleic Acids: A New Approach to Immunomodulatory Therapy** CHAD A MIRKIN, Northwestern University

10:25 **Recess**

10:40 (860-4) **Measuring DNA Hybridization Kinetics by Single-Molecule Fluorescence Imaging** JOEL M HARRIS, University of Utah, Eric M Peterson, Michael Manhart, Frances Morris

11:15 (860-5) **SERS-Based Metabolic Profiling for Diagnostics and Forensics** LAWRENCE ZIEGLER, Boston University

## AWARDS — Session 870

### *The Coblentz Society/ABB - Bomem-Michelson Award*

arranged by Brooks Pate, University of Virginia

**Tuesday Morning, Room B314**

Brooks Pate, University of Virginia, Presiding

8:30 **Introductory Remarks - Brooks Pate**

8:35 **Presentation of the 2016 Coblentz Society/ABB- Bomem-Michelson Award to Shaul Mukamel, University of California Irvine, by Henry L. Buijs, ABB**

8:40 (870-1) **Coherent Ultrafast Multidimensional Spectroscopy of Molecules with Optical, X-Ray, and Quantum Light** SHAUL MUKAMEL, University of California, Irvine

9:15 (870-2) **Photosynthetic Light Harvesting from Individual Complexes to the Grana Membrane** GRAHAM RICHARD FLEMING, University of California at Berkeley N/A

9:50 (870-3) **A Few Lessons from Non-Adiabatic Excited State Dynamics Simulations of Large Molecules** SERGEI TRETIAK, Los Alamos National Laboratory

10:25 **Recess**

10:40 (870-4) **Photosynthetic Light Harvesting and Ultrafast Energy Transfer** GREG D SCHOLES, Princeton University

11:15 (870-5) **Elucidation of Chemical Reactions by Two-Dimensional Resonance Raman Spectroscopy** ANDREW MORAN, University of North Carolina

**SYMPOSIUM** **Session 880**

***ACS-ANLY - Chemometrics: A New Dimension in Chromatography***
arranged by Amber M Hupp, College of the Holy Cross

**Tuesday Morning, Room B308**
Amber M Hupp, College of the Holy Cross, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Amber M Hupp** |
| 8:35 | (880-1) | **Applying the Hotelling Trace Criterion to Optimize Chromatogram Alignment of Biodiesel Diesel Blended Fuels** AMBER M HUPP, College of the Holy Cross, Gopal Yalla, John O'Connor, Kevin Walsh, Edward Soares |
| 9:10 | (880-2) | **Forensic Signatures for the Source Attribution of Chemical Threat Agents Using Chemical Profiling, Stable Isotope Ratios and Chemometrics** CARLOS FRAGA, Pacific Northwest National Laboratory |
| 9:45 | (880-3) | **Chemometrics: An Old Dimension in Chromatography – Application to New Dimensions** SARAH C RUTAN, Virginia Commonwealth University, Daniel W Cook, Melanie M Sinanian |
| 10:20 | | **Recess** |
| 10:35 | (880-4) | **Data Reduction and Processing Tools for GCxGC-TOFMS** JAMES J HARYNUK, University of Alberta, Lawrence A Adutwum, A Paulina de la Mata |
| 11:10 | (880-5) | **Chemometric Approaches to Maximize Interpretation of GCxGC - TOFMS Data for Discovery-Based Analyses** ROB SYNOVEC, University of Washington |

**SYMPOSIUM** **Session 890**

***Advances in Analytical Methodologies for the Detection of Food Allergens and Gluten***
arranged by Lowri DeJager and Christine Parker, U.S. Food and Drug Administration

**Tuesday Morning, Room B302**
Christine Parker, U.S. Food and Drug Administration, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Lowri DeJager and Christine Parker** |
| 8:35 | (890-1) | **Approaches to Multianalyte Allergen Analysis in Food** CLARE MILLS, The University of Manchester, Karine Adel-Patient, Sabine Baumgartner |
| 9:10 | (890-2) | **Effects of Cross-Reactivity in Food Allergy Detection and Diagnosis** SOHEILA J MALEKI, USDA-Agricultural Research Service |
| 9:45 | (890-3) | **Novel Approaches to Identifying Amadori Products in Peanut Extract** GEOFFREY MUELLER, National Institute of Environmental Health Sciences, Jason Williams, Katina Johnson |
| 10:20 | | **Recess** |
| 10:35 | (890-4) | **Overview of Analytical Methods for Food Allergen and Gluten Analysis: Challenges and Trends from a Regulatory Perspective** TERRY KOERNER, Health Canada |
| 11:10 | (890-5) | **Effects of a Proline Endopeptidase on the Detection and Quantification of Gluten During the Fermentation of Beer** RAKHI PANDA, Food and Drug Administration, Katherine L Fiedler, Chung Y Cho, Eric A Garber |

**SYMPOSIUM** **Session 900**

***Advances in Two-Dimensional Liquid Chromatography Separations of Biopharmaceuticals***
arranged by Dwight R Stoll, Gustavus Adolphus College

**Tuesday Morning, Room B303**
Dwight R Stoll, Gustavus Adolphus College, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Dwight R Stoll** |
| 8:35 | (900-1) | **Column Technology for the Chromatographic Characterization of Biopharmaceuticals** DAVY GUILLARME, University of Geneva, Jean-Luc Veuthey, Szabolcs Fekete |
| 9:10 | (900-2) | **Optimization of Two-Dimensional Liquid Chromatography Separations of Therapeutic Monoclonal Antibodies Involving Ion-Exchange and Reversed-Phase Separation Modes** DWIGHT R STOLL, Gustavus Adolphus College, David C Harmes, Jacob Bush, Matthew Sorensen, Gregory Staples, Szabolcs Fekete, Davy Guillarme, Alain Beck |
| 9:45 | (900-3) | **Application of a Multi-Dimensional Approach for Quantification of Free Drug in Antibody Drug Conjugates** BROOKE M KOSHEL, Waters Corporation, Robert Birdsall, Alain Beck, Sean M McCarthy |
| 10:20 | | **Recess** |
| 10:35 | (900-4) | **2-Dimensional Liquid Chromatography for Rapid Parallel Separation of Biopharmaceuticals** YAN HE, Pfizer, Ian Hartzel, Michael T Jones |
| 11:10 | (900-5) | **Antibody-Drug-Conjugates (ADC) Drug Product Profiling by Multi-dimensional HPLC** KELLY ZHANG, Genentech |

**SYMPOSIUM** **Session 910**

***Graphene Nanomaterials for Bio/Sensing Applications***
arranged by Ashok Mulchandani, University of California, Riverside and Chenzhong Li, Florida International University

**Tuesday Morning, Room B304**
Ashok Mulchandani, University of California, Riverside, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Ashok Mulchandani and Chenzhong Li** |
| 8:35 | (910-1) | **New Concepts in Biosensing Using Single Walled Carbon Nanotubes and Graphene** MICHAEL S STRANO, Massachusetts Institute of Technology |
| 9:10 | (910-2) | **Graphene Electrodes for Bio/chemical Sensors** ASHOK MULCHANDANI, University of California, Riverside |
| 9:45 | (910-3) | **A Novel Wireless Biosensing Platform Enabled by Graphene Varactors** STEVEN J KOESTER, University of Minnesota |
| 10:20 | | **Recess** |
| 10:35 | (910-4) | **Graphene-Enabled Nano/Bio Hybrids for Chemical Detection and Medical Diagnostics** A T CHARLIE JOHNSON, University of Pennsylvania |
| 11:10 | (910-5) | **Impedance Sensing of Nanotoxicity of Graphene at the Cellular and Tissue Level** CHENZHONG LI, Florida International University |

**SYMPOSIUM** **Session 920**

***JAIMA - The State-of-the-Art Technologies from Japan: Analytical Instruments with/for Nano-Chemistry Technology and Advanced Diagnosis (I)***
arranged by Koichiro Matsuda, JAIMA

**Tuesday Morning, Room B305**
Koichiro Matsuda, JAIMA, Presiding
Takeshi Kawamoto, JAIMA, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Gon-emon Kurihara, President of JAIMA** |
| 8:35 | (920-1) | **Creation of Bio/Chemical Sensing Probes** KOJI SUZUKI, Keio University, Daniel Citterio |
| 9:10 | (920-2) | **Ab Initio Powder Structure Determination Opening Up New Research Fields** MASAKI KAWANO, Pohang University of Science and Technology |
| 9:45 | (920-3) | **Nanodroplet Formation and Chemical Analysis in Microfluidic Devices** AKIHIDE HIBARA, Tokyo Institute of Technology |
| 10:20 | | **Recess** |
| 10:35 | (920-4) | **Development of Mass Microscope and Applications in Drug and Oncometabolite Visualization** SHUICHI SHIMMA, Osaka University |
| 11:10 | (920-5) | **Plasma Phospholipids and Prevalence of Mild Cognitive Impairment/ Dementia** DANNI LI, University of Minnesota |

# TECHNICAL PROGRAM



## SYMPOSIUM — Session 930

***Ultrahigh-Resolution Mass Spectrometry: A New Frontier***
arranged by Alan G Marshall, Florida State University

**Tuesday Morning, Room B301**
Alan G Marshall, Florida State University, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Alan G Marshall** |
| 8:35 | (930-1) | **High-Resolution TOFMS via a Folded Flight Path: You Can Have Your Cake and Eat It Too** VIATCHESLAV ARTAEV, Leco Corporation, Michael Mason, Peter Willis, Anatoly Verenchikov |
| 9:10 | (930-2) | **21 Tesla FT-ICR Mass Spectrometer for Top-Down Protein Identification and Characterization** CHRISTOPHER L HENDRICKSON, National High Magnetic Field Laboratory, Lissa C Anderson, John P Quinn, Nathan K Kaiser, Donald F Smith, Greg T Blakney, Alan G Marshall |
| 9:45 | (930-3) | **Exploring the Microbiome via Advanced Mass Spectrometry** LJILJANA PASA-TOLIC, EMSL, PNNL, Jared B Shaw, Malak Tfaily, Nikola Tolic, Errol Robinson, David W Koppenaal, Nancy J Hess |
| 10:20 | | **Recess** |
| 10:35 | (930-4) | **Complex Mixture Analysis by Ultra-High Resolution Mass Spectrometry** RYAN P RODGERS, Florida State University, Amy C Clingenpeel, Steven M Rowland, Vladislav V Lobodin, David C Podgorski, Yuri E Corilo, Priscila M Lalli, Jonathan C Putman, Winston K Robbins |
| 11:10 | (930-5) | **Orbitrap Mass Analyzers: The Teenage Years** MICHAEL W SENKO, Thermo Fisher Scientific, Jesse D Canterbury, Eduard Denisov, Alexander Makarov |

## ORGANIZED CONTRIBUTED SESSIONS — Session 940

***High Performance SFC for the Analysis of Pharmaceuticals, Nutraceuticals, Natural Products and Metabolomics***
arranged by David Kohler, ES Industries and Patrick G Fromal, Shimadzu Scientific Instruments Inc

**Tuesday Morning, Room B309**
David Kohler, ES Industries, Presiding

| | | |
|---|---|---|
| 8:30 | (940-1) | **Analysis of Mycotoxins in Various Food Matrices via SFE/SFC/MS** TODD ANDERSON, Shimadzu Scientific |
| 8:50 | (940-2) | **Evaluation of a Liquid Carbon Dioxide Based Flash Chromatography System** RAY MCCLAIN, Merck |
| 9:10 | (940-3) | **Fluoro-Methylphenylcarbamates of Cellulose as Chiral Stationary Phases for Supercritical Fluid Chromatography** WILLIAM FARRELL, Pfizer, Inc., Matthew Przybyciel |
| 9:30 | (940-4) | **Potential of Supercritical Fluid Extraction and Separation Technologies in Metabolomics** BAMBA TAKESHI, Kyushu University |
| 9:50 | | **Recess** |
| 10:05 | (940-5) | **SFC – An Essential "Green" Separation Technique for the Chromatographic Analysis of a Nutraceuticals** MATTHEW PRZYBYCIEL, ES Industries |
| 10:25 | (940-6) | **SFC, A Walk on the Wild Side** BRENT MURPHY, Genentech, Mengling Wong, Joseph H Pease, Michael Hayes, Amber Guillen, Christopher Hamman |
| 10:45 | (940-7) | **Understanding the Value of Preparative Chiral Separations in Advancing Pharmaceutical R&D Projects** MICKEY REGO, Averica Discovery Services, Jeffrey Kiplinger, Paul Lefebvre, Keith Galyan, Emily Showell-Rouse |
| 11:05 | (940-8) | **Open Discussion** |

## ORGANIZED CONTRIBUTED SESSIONS — Session 950

***Molecular Modelling and Quantum Mechanical Calculations: From Small Molecules to Large Multimeric Protein Complexes***
arranged by Iain Campuzano and Michael D Bartberger, Amgen

**Tuesday Morning, Room B310**
Iain Campuzano, Amgen, Presiding

| | | |
|---|---|---|
| 8:30 | (950-1) | **Vibrational Optical Activity of Helical Peptides** JAMES R CHEESEMAN, Gaussian, Inc. |
| 8:50 | (950-2) | **Interplay of Theory and Experiment: Small Molecule Ion Mobility and Spectroscopic Characterization of Metabolites** MICHAEL D BARTBERGER, Amgen |
| 9:10 | (950-3) | **Efficient Photostitching of Peptide Ion Complexes in the Gas Phase with the Photo-Leucine Zipper** FRANTISEK TURECEK, University of Washington, Christopher J Shaffer, Akis P Andrikopoulos, Lubomir Rulisek |
| 9:30 | (950-4) | **Chiroptical Spectroscopy for Molecular Structure Determination** PRASAD L POLAVARAPU, Vanderbilt University |
| 9:50 | | **Recess** |
| 10:05 | (950-5) | **The Use of Molecular Modelling for Ion Mobility Drift Time and Fragment Ion Prediction in Ion Mobility and Mass Spectrometry** CRIS LAPTHORN, University of Greenwich, Frank S Pullen, Babur Chowdhry, Patricia Wright, George Perkins, Yanira Heredia, Trevor Dines |
| 10:25 | (950-6) | **Dynamical Networks of Protein Residue-Residue Contacts Provide Insights into Enzyme Function** DONALD HAMELBERG, Georgia State University |
| 10:45 | (950-7) | **A Molecular Dynamics and Ion Mobility Study of Protein Structure Collapse in the Gas-phase** IAIN CAMPUZANO, Amgen, Morgan Lawrenz, Carlos Larriba-Andaluz |
| 11:05 | (950-8) | **Hell Bent on Opening: Structural Basis for Estrogen Modulation of Potassium Recycling During Epithelial Secretion** BRETT KRONCKE, Vanderbilt University |

## ORGANIZED CONTRIBUTED SESSIONS — Session 960

***SEAC Young Investigator Session***
arranged by Hitomi Mukaibo, University of Rochester

**Tuesday Morning, Room B311**
Hitomi Mukaibo, University of Rochester, Presiding

| | | |
|---|---|---|
| 8:30 | (960-1) | **Fluorescence-Enabled Electrochemistry** BO ZHANG, University of Washington |
| 8:50 | (960-2) | **Designing Functional Nanostructured Gels for Electrochemical Energy Storage and Biosensors** GUIHUA YU, University of Texas at Austin |
| 9:10 | (960-3) | **Inhibiting Electrochemical Processes in Li-ion Batteries at High Temperatures Using Responsive Polymers** MARK E ROBERTS, Clemson University, Jesse C Kelly, Nick L DeGrood |
| 9:30 | (960-4) | **Revealing the Mechanism of Electron Uptake in Methanogenic Biofilm Community Using a Solid-Phase Electron Donor** SOFIA BABANOVA, JCVI, Kayla Carpenter, Sujal Phadke, Tony Phan, Shunichi Ishii, Shino Suzuki, Michael Salvacion, Michael Flynn, John Hogan, Orianna Bretschger |
| 9:50 | | **Recess** |
| 10:05 | (960-5) | **Reagentless and Reusable Electrochemical Metal Ion Sensors** REBECCA Y LAI, University of Nebraska-Lincoln |
| 10:25 | (960-6) | **Electrochemical Imaging of Ionic Reactivity at Operating Ion Batteries** JOAQUIN RODRIGUEZ LOPEZ, University of Illinois |
| 10:45 | (960-7) | **In Vivo Serotonin Chemistry and Local Cytoarchitecture: A Combined Voltammetric, Mathematical and Microscopy Study** PARASTOO HASHEMI, University of South Carolina, Aya Abdalla |
| 11:05 | (960-8) | **Ec-LLS at the Micro- and Macroscale: Electrodeposition of Semiconductor Films and Nanocrystals** STEPHEN MALDONADO, University of Michigan |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 970**

***Supercritical $CO_2$ – SFE/SFC: Advances in Extraction and Purification for Pharmaceutical and Natural Products***

arranged by Andy Miles, Regis Technologies and Gregory K. Webster, AbbVie

**Tuesday Morning, Room B313**

Andy Miles, Regis Technologies, Presiding

| | | |
|---|---|---|
| 8:30 | (970-1) | **Supercritical Fluid Chromatography in Support of Pharmaceutical – A Study of Scale-Up from Analytical to Preparative Scale with Isocratic Conditions** MIRLINDA BIBA, Merck, Jinchu Liu, Lindsey Jacobs, Judy Morris, Ingrid Mergelsberg |
| 8:50 | (970-2) | **Strategies for Increasing Throughput of Chiral Separations by Supercritical Fluid Chromatography** ERIN JORDAN, AbbVie, Philip A Searle |
| 9:10 | (970-3) | **Withdrawn** |
| 9:30 | (970-4) | **SFC-MS as the Technique of Choice for Small Molecules Purification** GERARD ROSSE, Dart Neuroscience |
| 9:50 | | **Recess** |
| 10:05 | (970-5) | **Practical Approaches to SFE and SFC in Drug Discovery** JOSEPH H PEASE, Genentech, Brent Murphy, Mengling Wong, Michael Hayes, Amber Guillen |
| 10:25 | (970-6) | **One Phase, Three Techniques: Utilizing One SFC Stationary Phase Across Three Chromatographic Techniques** CHRISTINE AURIGEMMA, Pfizer, Inc., Perrine Hoerter, William Farrell |
| 10:45 | (970-7) | **Online SFE-SFC Purification Method Development Using SFC Solubility Determination** WES BARNHART, Amgen, Kyung Gahm |
| 11:05 | (970-8) | **Utilizing SFE and SFC for Extraction and Isolation of Cannabinoids** CHRISTOPHER HUDALLA, ProVerde Laboratories |

**ORAL SESSIONS** **Session 980**

***Biomedical: Advances in Glucose Monitoring and Therapeutics of Diabetes - Half Session***

**Tuesday Morning, Room B408**

Barbara Manner, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (980-1) | **Skin Interface and Spectrometer Development for Noninvasive Glucose Measurements in People over Combination Near-Infrared Wavelengths** ARIEL BOHMAN, University of Iowa, Mark A Arnold, Gary W Small, Michael J Miller |
| 8:50 | (980-2) | **Advances in Development of Glucose Biosensors** ARUNAS RAMANAVICIUS, Vilnius University, Natalija German, Asta Kausaite-Minkstimiene, Inga Vilkonciene, Povilas Genys, Jaroslav Voronovic, Jurate Petroniene, Almira Ramanaviciene |
| 9:10 | (980-3) | **A Microfluidic Cell Culture Device for Automated Sample Preparation and Improved Biomimetic Modeling in Diabetes Metabolomics** LAURA FILLA, Saint Louis University, James L Edwards |
| 9:30 | (980-4) | **Analysis of Drug-Protein Interactions During Diabetes by High-Performance Affinity Chromatography** ZHAO LI, University of Nebraska-Lincoln, Ryan Matsuda, David Hage |

**ORAL SESSIONS** **Session 990**

***Capillary Electrophoresis***

**Tuesday Morning, Room B315**

Elizabeth Harris, Mannkind Corporation, Presiding

| | | |
|---|---|---|
| 8:30 | (990-1) | **Monitoring Neurotransmitter Secretion from Islets of Langerhans** KIMBERLY EVANS, Florida State University, Xue Wang, Michael G Roper |
| 8:50 | (990-2) | **Observing Peptide Folding Intermediates Using Capillary Electrophoresis** ALISON E HOLLIDAY, Moravian College, John D Barr, Liuqing Shi, David E Clemmer |
| 9:10 | (990-3) | **PDMS Micro-cross Junction for Online Nanoliter Heart-cut for Two Dimensional CE Separation** VITALY AVILOV, University of Illinois at Chicago, Scott A Shippy |
| 9:30 | (990-4) | **Real Time Monitoring of Amino Acid Secretions from Islets of Langerhans Using a Microfluidic Device** XUE WANG, Florida State University, Michael G Roper, Lian Yi |
| 9:50 | | **Recess** |
| 10:05 | (990-5) | **Single-Cell Chemical Cytometry of Akt Activity within Primary Rheumatoid Arthritis Synovial Fibroblasts Illustrates Heterogeneity in Patient Responses to TNF$\alpha$** EMILIE R MAINZ, University of North Carolina at Chapel Hill, Stephen Serafin, David Lawrence, Teresa Tarrant, Christopher Sims, Nancy Allbritton |
| 10:25 | (990-6) | **The Determination of Oxidative Stress Biomarkers of Lipid Peroxidation Using a Novel Capillary Electrophoresis-Mass spectrometry Sheathless Interface Design** RYAN T JOHNSON, University of Kansas, Craig E Lunte, Nhan To, John Stobaugh |
| 10:45 | (990-7) | **Analysis of Metabolite Biomarkers in Prostrate Cancer Tissues by Capillary Electrochromatography Mass Spectrometry** YANG LU, Georgia State University, Shahab S Shamsi, Dean Troyer |
| 11:05 | (990-8) | **Rapid Determination of Cyanide in Human Urine by Capillary Electrophoresis Coupled with Laser-Induced Fluorescence Detection** QIYANG ZHANG, Wichita State University, Naveen Maddukuri, Maojun Gong |

**ORAL SESSIONS** **Session 1000**

***Electrochemistry - New Approaches and Techniques***

**Tuesday Morning, Room B316**

Lawrence A Bottomley, Georgia Institute of Technology, Presiding

| | | |
|---|---|---|
| 8:30 | (1000-1) | **Stochastic Electrochemistry of $TiO_2$ Nanoparticles and Their Agglomerates** MARIO ALPUCHE-AVILES, University of Nevada, Reno, Pushpa Chhetri, Krishna K Barakoti, Ganesh Rana, Andrew Recinos |
| 8:50 | (1000-2) | **The Development of an Automated NanoElectrode Array Sensor to Detect Evaporation and Changes in Cellular Bioenergetics in a Submicroliter Chamber from an Organ-on-a-Chip System** ANNA N DAVIS, Vanderbilt University, John Wikswo, David Cliffel |
| 9:10 | (1000-3) | **Scanning Electrochemical Microscopy (SECM): A New Tool to Study Microbial Metabolism** DIPANKAR KOLEY, Oregon State University, Vrushali Joshi |
| 9:30 | (1000-4) | **Drug Metabolism Assays and Metabolite Synthesis Using Microsomes Based Bioreactor** RAJASEKHARA NERIMETLA, Oklahoma State University, Sadagopan Krishnan |
| 9:50 | | **Recess** |
| 10:05 | (1000-5) | **High-Density Microelectrode Arrays as Electrochemical Imaging Platforms** RACHEL M FEENY, Colorado State University, John Wydallis, Lang Yang, Stacy Willett, Tom Chen, Stuart A Tobet, Charles Henry |
| 10:25 | (1000-6) | **Imaging of Immobilized Enzymes and Yeast Cells by Scanning Electrochemical Microscopy** ARUNAS RAMANAVICIUS, Vilnius University, Inga Vilkonciene, Rita Sareikaite, Aura Kisieliute, Povilas Genys, Jurate Petroniene, Almira Ramanaviciene |
| 10:45 | (1000-7) | **Rapid Temperature Control of Electrochemical and Biochemical Systems Using Microfabricated Heaters** NICHOLAS M CONTENTO, Biomolecular Measurement Division, Sarah M Robinson, Kurt D Benkstein, Herman O Sintim, Steve Semancik |
| 11:05 | (1000-8) | **A Simple, High Yield Method to Microfabricate Planar Microelectrode Arrays** MOHAMED M MAREI, University of Louisville, Mark Crain, Richard P Baldwin, Robert S Keynton |

**ORAL SESSIONS** **Session 1010**

***Enhancements in Pharmaceutical and Environmental Separations***

**Tuesday Morning, Room B402**

Richard Henry, Consultant, Presiding

| | | |
|---|---|---|
| 8:30 | (1010-1) | **Sub-ppm Level Formaldehyde Measurement in Complex Sample Matrices Using a Variety of Analytical Methods – Method Comparison and Practical Considerations** PEILIN YANG, The Dow Chemical Company, Francois Huby, James N Alexander IV |
| 8:50 | (1010-2) | **Optimization of a Single-Stage, Consumable Free Thermal Modulator for GC x GC** HALEIGH BOSWELL, University of Waterloo, Tadeusz Gorecki |
| 9:10 | (1010-3) | **Thermo Tuning of Redox Potential on Nanostructured Adsorbent for a Reagent-less Recovery of Pollutant Oxoanions** MANUEL VALIENTE, Universitat Autonoma de Barcelona, He Liu, Liu Tong, Gustavo Perez |
| 9:30 | (1010-4) | **Super/subcritical Fluid Chromatographic Chiral Separations with High Efficiency Chiral Stationary Phases** ZACHARY BREITBACH, The University of Texas at Arlington, Chandan L Barhate, M Farooq Wahab, Daniel W Armstrong |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

| | | |
|---|---|---|
| 9:50 | | **Recess** |
| 10:05 | (1010-5) | **Novel Solid-Phase Microextraction and Capillary Electrochromatographic Column Techniques for Pharmaceutical Analysis** ZILIN CHEN, Wuhan University |
| 10:25 | (1010-6) | **Retention in Porous Layer Pillar Array Planar Separation Platforms** DANIELLE R LINCOLN, University of Tennessee, Knoxville, Nickolay V Lavrik, Michael J Sepaniak |
| 10:45 | (1010-7) | **Carbon Nanofibers Decorated with Magnetic Nanoparticles as a New Sorbent for the Magnetic Solid Phase Extraction of Selected Polycyclic Aromatic Hydrocarbons from Water Samples** ALI SARAFRAZ YAZDI, Ferdowsi University of Mashhad N/A |
| 11:05 | (1010-8) | **Analytical Method Development: Are We Solving the Right Problem? A Systematic Approach to Select an Appropriate RPLC Column and to Optimize Separation** IMAD A HAIDAR AHMAD, Novartis, James Tam, Xue Li, Thomas Tarara, Andrei Blasko |

## ORAL SESSIONS — Session 1020

*Environmental Air Quality and Analysis*

**Tuesday Morning, Room B403**
John Kokosa, Research Consultant, Presiding

| | | |
|---|---|---|
| 8:30 | (1020-1) | **On-site Determination of Formaldehyde Using SPME and a Portable GC-TMS** JUSTEN J POOLE, University of Waterloo, Jonathan J Grandy, German A Gomez-Rios, Janusz Pawliszyn |
| 8:50 | (1020-2) | **Fast, Accurate, and Precise: How to Comply with EPA Method 325b (Fence Line Monitoring for Benzene)** LEE MAROTTA, PerkinElmer, Roberta Provost, Amy Jacobson, Mariah Peronto |
| 9:10 | (1020-3) | **Investigation and Modelling of the Sampling Process in a PDMS-Based Permeation Passive Sampler** FATEN SALIM, University of Waterloo, Marios Ioannidis, Tadeusz Gorecki |
| 9:30 | (1020-4) | **QCL-Based Perfluorocarbon Emission Monitoring** LUIS H ESPINOZA-NAVA, Alcoa Inc |
| 9:50 | | **Recess** |
| 10:05 | (1020-5) | **Laser Derivitization for Soot Source Identification** RANDY VANDER WAL, Penn State University, Chethan K Gaddam |
| 10:25 | (1020-6) | **Analysis of Damaged Floor Coverings Emissions in Indoor Air Quality with Cantilever-Enhanced Photoacoustic Spectroscopy** JUSSI RAITTILA, Gasera Ltd., Ismo Kauppinen, Sauli Sinisalo, Jaakko Lehtinen |
| 10:45 | (1020-7) | **Ship Emissions Monitoring with Laser-Based Cantilever-Enhanced Photoacoustic Detection** JAAKKO LEHTINEN, Gasera Ltd., Ismo Kauppinen, Jussi Raittila |
| 11:05 | (1020-8) | **Hand Held Detector Based on an Ion Mobility Spectrometer and an Additional Detector (Electrochemical Cell or Alternatively a Photo Ionization Detector) for the Detection of Toxic Gases in Chemical Industries** ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer |

## ORAL SESSIONS — Session 1030

*Magnetic Resonance - Half Session*

**Tuesday Morning, Room B408**
Barbara Manner, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 10:05 | (1030-1) | **Quantitative Determination of Short-Chain Branching and Co-Monomer Content in High Density Polyethylene by NMR Spectroscopy** RAVINDRA KUMAR, Indian Oil Corporation Ltd, Veena Bansal, Sujit Mondal, GS Kapur, V Kagdiyal, Deepak Saxena N/A |
| 10:25 | (1030-2) | **GPC-NMR Analysis of Polymeric Mixtures** NIKKI H LAFEMINA, Arkema N/A |
| 10:45 | (1030-3) | **Quantitative Analysis of Phosphorous Containing Drug Molecules Encapsulated in pH-Sensitive Nanoparticle Formulations to Establish Drug Loading and Drug Releasing Profile by Utilizing 31P Solid State and Solution State NMR Spectroscopy** SUDHAUNSHU S PUROHIT, University of Missouri Kansas City, Jianing Meng, Vivek Agrahari, Bi Botti Celestin Youan, Nathan Oyler |
| 11:05 | (1030-4) | **Nanoparticle-Assisted Removal of Proteins in Human Serum for Metabolomics Studies** BO ZHANG, The Ohio State University, Mouzhe Xie, Lei Bruschweiler-Li, Rafael Brüschweiler |

## ORAL SESSIONS — Session 1040

*Mass Spectrometry - Bioanalytical*

**Tuesday Morning, Room B404**
Daniel E Austin, Brigham Young University, Presiding

| | | |
|---|---|---|
| 8:30 | (1040-1) | **Electrospray Ionization-High Pressure Mass Spectrometry for Peptide and Protein Analysis** RUSSELL E BORNSCHEIN, University of North Carolina at Chapel Hill, William M Gilliland, J Michael Ramsey |
| 8:50 | (1040-2) | **Current Analytical Techniques for Glycoprotein Characterization by Mass Spectrometry** PARASTOO AZADI, Complex Carbohydrate Research Center |
| 9:10 | (1040-3) | **Nanopatterning Ligands to Enable Cell-Based Assays Using SAMDI-Mass Spectrometry** MARIA D CABEZAS, Northwestern University, Milan Mrksich, Chad A Mirkin |
| 9:30 | (1040-4) | **Shotgun Lipidomic Analysis of Human Meibum by MS/MS$^{all}$ with Successive Switching between Positive and Negative Detection Modes** JIANZHONG CHEN, University of Alabama at Birmingham, Kelly Nichols |
| 9:50 | | **Recess** |
| 10:05 | (1040-5) | **Development, Characterization, and Application of Coated Blade Spray Ionization** GERMAN A GOMEZ-RIOS, University of Waterloo, Nathaly Reyes-Garces, Ezel Boyaci, Janusz Pawliszyn |
| 10:25 | (1040-6) | **Discrimination of Carbohydrate Isomers as Transition Metal Adducts Using Ion Mobility Spectrometry and Tandem Mass Spectrometry** YUTING HUANG, University of Nebraska-Lincoln, Eric D Dodds, Lauren M Petrosh |
| 10:45 | (1040-7) | **Scan-by-Scan Analysis of Orbitrap Fine Isotope Structures for Unique Elemental Composition Determination** YONGDONG WANG, Cerno Bioscience, Ming Gu |
| 11:05 | (1040-8) | **Mass Spectra of Analytical Derivatives of Amino Acids and Small Peptides** NINO G TODUA, NIST, Stephen E Stein, Anzor I Mikaia |

## ORAL SESSIONS — Session 1050

*Materials Characterization and Engineering*

**Tuesday Morning, Room B405**
Cecil Dybowski, University of Delaware, Presiding

| | | |
|---|---|---|
| 8:30 | (1050-1) | **Chemical Analysis Applications and Optical Properties of 3D Printed <100 µm Dimension Microfluidic Channels** MICHAEL BEAUCHAMP, Brigham Young University, Hua Gong, Steven Perry, Greg Nordin, Adam T Woolley |
| 8:50 | (1050-2) | **Crack-Free Three-Dimensionally Ordered Macroporous (3DOM) Structure in Microfluidic Reactor** XIAORAN ZHANG, Michigan State University, Gary Blanchard |
| 9:10 | (1050-3) | **Interfacial Structure-Function Correlation of Perovskite Solar Cell** MINYU XIAO, University of Michigan |
| 9:30 | (1050-4) | **Optical Spectroscopy Analyses of Perovskite Nanomaterials** DANIEL J FREPPON, Iowa State University, Long Men, Ujjal Bhattacharjee, Feng Zhu, Jacob W Petrich, Emily A Smith, Javier Vela |
| 9:50 | | **Recess** |
| 10:05 | (1050-5) | **Utilizing Thermal Analysis Methods to Develop and Optimized Porous Structural Ceramics** JOHN P SANDERS, Clemson University, Nathaniel Huygen N/A |
| 10:25 | (1050-6) | **Carbazole-Dye Conjugate - Derived Group of Uniform Materials Based on Organic Salts (GUMBOS) for Optoelectronic Applications** DEEPTHIKA DE SILVA, Louisiana State University, Noureen Siraj, Isiah M Warner |
| 10:45 | (1050-7) | **Molecular-Scale IR Thermometer Reveals Sub-Molecular Photo-Plasticization in Azomaterials** CHRISTIAN PELLERIN, University of Montreal, Audrey Laventure, Jaana Vapaavuori, Geraldine Bazuin, Olivier Lebel |
| 11:05 | (1050-8) | **Complete Characterization of the UV-Visible Properties of Optical Materials Using a Total Absolute Measurement System (TAMS)** IAN ROBERTSON, PerkinElmer Limited, Steve Upstone, Christopher Lynch |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

## ORAL SESSIONS — Session 1060

*Pharmaceutical-MS, UV-VIS and Others*

**Tuesday Morning, Room B406**
Jason N Payne, Western Kentucky University, Presiding

| | | |
|---|---|---|
| 8:30 | (1060-1) | **Speciation of Elemental Impurities for Compliance with USP <232>** JON L SIMS, Perkin Elmer, Helmut Ernstberger, Kenneth Neubauer |
| 8:50 | (1060-2) | **Oxidative Degradation in Pharmaceuticals: Mechanism and Stabilization of Spray Dried Amorphous Drug - A Case Study** ARCHANA KUMAR, Genentech, Raghendhar Kotha |
| 9:10 | (1060-3) | **Evaluation of Antimicrobial and Neutraceutical Properties of Plukenetia Conophora (Walnut) Leaves** CHUKWUEMEKA PAUL AZUBUIKE, University of Lagos, Cecilia I Igwilo, Karamot O Suara |
| 9:30 | (1060-4) | **Novel Self-Patented Gold Nanoparticles for Antineoplastic Activity** JASON N PAYNE, Western Kentucky University, Rajalingam Dakshinamurthy |
| 9:50 | | **Recess** |
| 10:05 | (1060-5) | **Expanding the Analytical Toolbox for Material Verification: Spectroscopic Screening of Raw Ingredients Using Portable Spectrometers** JASON D RODRIGUEZ, FDA Division of Pharmaceutical Analysis, Hirsch Srivastava, Fabiola Semidei Ortiz |
| 10:25 | (1060-6) | **Image Directed Identification of Sub-visible Particles in Protein Based Therapeutics, Classification According USP<787> of Intrinsic, Inherent and Extrinsic Particulate Matter on the Sub-visible Level** OLGA LASKINA, rap.ID, Kathryn A Lee, Markus Lankers, Oliver Valet |
| 10:45 | (1060-7) | **Coupling Chemical Analysis to High Resolution Dark Field Microscopy for Enhanced Physicochemical Characterization of Complex Drug Formulations** KATHERINE TYNER, Food and Drug Administration, Sheetal D'Mello, Sau (Larry) Lee |
| 11:05 | (1060-8) | **Therapeutic Potential of Polyamine-Tethered Low Generation PAMAM Dendrimer Derivatives for Nucleic Acid Delivery** RUBY BANSAL, CSIR-Institute of Genomics and Integrative Biology N/A |

## ORAL SESSIONS — Session 1070

*Sensors - Biomedical*

**Tuesday Morning, Room B407**
Emil Ciurczak, Doramaxx Consulting, Presiding

| | | |
|---|---|---|
| 8:30 | (1070-1) | **Disposable Sensors for the Remote Monitoring of Chronic Wounds** FABIO DI FRANCESCO, Università di Pisa, Nicola Calisi, Bernardo Melai, Pietro Salvo, Clara Paoletti, Letizia Moni, Consuelo Politino, Alessio Ceccarini |
| 8:50 | (1070-2) | **Real-Time Monitoring Urinary Encrustation Using Quartz Crystal Microbalance Sensor** PEGAH N ABADIAN, Northeastern University, Jun Li, Edgar D Goluch, John Victor, Jonathan Zhang |
| 9:10 | (1070-3) | **A Fiber Optic Biosensor for Noninvasive Transdermal Glucose Sensing Based on the Glucose Binding Protein** CRISTINA E TIANGCO, University of Maryland Baltimore County, Dieudonne Fon, Yordan Kostov, Govind Rao, Leah Tolosa, Fortunato Sevilla, Dayanand Bagdure |
| 9:30 | (1070-4) | **Direct Measurement of Total Concentration of Major Physiological Anions, Chloride and Bicarbonate, Using Pulsed Chronopotentiometry with Ion-Selective Electrodes (Pulstrode)** KEBEDE L GEMENE, Northern Kentucky University, Adaeze Stella Iloegbunam, Sara Keshtvarz, Simon Segal |
| 9:50 | | **Recess** |
| 10:05 | (1070-5) | **Non-Invasively Interrogating Chemical and Mechanical Sensors on Implanted Medical Devices** JEFFREY N ANKER, Clemson University, Jeremy Tzeng, Fenglin Wang, Donald Benza, Peter Gennaro, Yash Raval, Mohammed Arifuzzaman |
| 10:25 | (1070-6) | **Detection of MicroRNA Presence or Absence with Dual Functioning Signal-On/Off Fluorescent Biosensors** NICHOLAS E LARKEY, Oregon State University, Lulu Zhang, Sean M Burrows |
| 10:45 | (1070-7) | **Single Nanoparticle Plasmonic Spectroscopy and Biosensors for Imaging of Efflux Functions of Single Live Cells** X NANCY XU, Old Dominion University, Kerry J Lee, Tao Huang, Prakash d Nallathamby, Feng Ding |
| 11:05 | (1070-8) | **Detection of Chemotherapeutic-Induced Damage in Genomic DNA Using Integrated Thermoplastic Nanofluidic Sensor Devices** KUMUDITHA MADUSHANKA WEERAKOON-RATNAYAKE, University of North Carolina at Chapel Hill, Franklin I Uba, Robert Schotzinger, Steven A Soper |

## POSTER SESSION — Session 1080

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Environmental Air Quality and Analysis*

**Tuesday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (1080-1 P) | **Tea Polyphenols Reduces Toxicity of PM2.5 in Human Alveolar Epithelial A549 Cells** YING ZHANG, Shijiazhuang CDC, Jie Jiang, Yan He, Yanzhong Chang |
| (1080-2 P) | **Testing of Gas Purifiers for VOC Removal Down to the PMOL/MOL Level** ANNARITA BALDAN, VSL, Janneke van Wijk, Jianrong Li, Rina Wortman, Jennifer Englert, Christian Plass-Duelmer, Stefan Persijn, Guido Sassi, Alessia Demichelis, Mariapaola Sassi |
| (1080-3 P) | **An Analytical Method for the Measurement of Reduced Sulfur Gases** JÜRGEN MICHAEL LOBERT, Entegris, Inc., Charles M Miller, Emily C Zaloga N/A |
| (1080-4 P) | **Developing and Field Tests of an Automatic Impinger System for Continuous Sampling of Volatile Amines in the Environment** CHIA-JUNG LU, National Taiwan Normal University, Wang Chih-Chia, Rih-Sheng Jian, Sung Lung-Yu |
| (1080-5 P) | **SIFT-MS: A One-Stop Analytical Tool for Detection of Fumigation Chemicals** DANIEL MILLIGAN, Syft Technologies Ltd, Vaughan Langford, Barry Prince, Thomas McKellar, David Hera, Murray McEwan |
| (1080-6 P) | **SIFT-MS: A Complete Solution for Analysis of Ambient Air** DANIEL MILLIGAN, Syft Technologies Ltd, Vaughan Langford, Thomas McKellar, David Hera, Barry Prince, Murray McEwan |
| (1080-7 P) | **Real Time Detection and Identification of Chemical Releases via GCMS** PARMINDER KAUR, 1st Detect Corporation, Corey Stedwell, Daniel DeBord |
| (1080-8 P) | **Continuous Fenceline Monitoring Using a Miniature Mass Spectrometer** PRESHIOUS REARDEN, 1st Detect Corporation, Madonna Marie Mamerow, Parminder Kaur |
| (1080-9 P) | **Changes in Tobacco-Specific Nitrosamine Cigarette Smoke Deliveries in Unburned, Recycled Portions of Roll-Your-Own Cigarettes** BENJAMIN WADE ALVERSON, Centers for Disease Control and Prevention, Jose J Perez, Morgan E Larango, Roberto Bravo, Liqin Zhang, Patrick Chen, Shirley Ding, Mary Halstead, R Steven Pappas, Clifford Watson, Liza Valentin-Blasini |
| (1080-10 P) | **A Method of Performing In-Trap Photoionization in a Miniature Ion Trap Mass Spectrometer** COREY STEDWELL, 1st Detect Corporation, Daniel DeBord, Michael Spencer, David Rafferty |

## POSTER SESSION — Session 1090

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Environmental and Geochemical Analysis: Soils, Minerals, and Agriculture*

**Tuesday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (1090-1 P) | **Automated Analysis of Explosives in Soil Samples** WILLIAM HEDGEPETH, Shimadzu Scientific Instruments, Kenichiro Tanaka |
| (1090-2 P) | **Mechanisms for Controlling Soil Organic Matter Decompositions: An Application of Pyrolysis –Cryogenic –GC/MS to Molecular Characterizations of Organic Matter in Grass and Forestry Soils** XIANZHI (AMANDA) SONG, Young Harris College |
| (1090-3 P) | **A New Analytical Technique for the Determination of Carbonate in Soil Samples** TACETTIN OZTURK, Lita Analytical, Onur Iscan N/A |
| (1090-4 P) | **Ion Selective Electrodes – A Cheaper, Simpler and more Robust Analytical Method for Monitoring of Nitrate and Ammonium in Water and Soil** TOLULOPE A FAYOSE, Keele University |
| (1090-5 P) | **Multiple Surface-Science Techniques to Elucidate the Reactive Nature of a Metal Phosphide Mineral** DANNA QASIM, Kennesaw State University, Aaron Pital, Thomas Beckman, Heather Abbott-Lyon |
| (1090-6 P) | **A Systems Chemistry Investigation into Nucleoside Phosphorylation Mechanisms by Prebiotic Meteoritic Materials** MIKE A MOJICA, Georgia Institute of Technology, Maheen Gull, Matthew Pasek, Charles Liotta, Thomas Orlando, Aaron McKee, Facundo M Fernandez N/A |
| (1090-7 P) | **Current Advances in Instrumentation of Soil Elemental Analyzers** DOMINIK MARGRAF, Elementar Analysensysteme GmbH, Christian Schmidt, Tony Szuppa, Sabine Kraus, Lutz Lange, Hans-Peter Sieper N/A |
| (1090-8 P) | **Analysis of PAHs in Soil by Online SFE-SFC** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., William Hedgepeth N/A |
| (1090-9 P) | **Determination of PAHs in Durban City Road Dusts** ABDULMUMEEN ABDULKADIR, University of Kwazulu-Natal N/A |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

(1090-10 P) **Speciation of Metal-Binding Proteins in Marine Environment** PILAR BERMEJO-BARRERA, University of Santiago de Compostela, Spain, Maria del Carmen Barciela-Alonso, Natalia García-Otero, Olga Cristina Vázquez-Padín, Antonio Moreda-Piñeiro, Raquel Domínguez-Gonzalez, Elena Pena-Vazquez N/A

(1090-11 P) **A New Advancement in the Automated Preparation of Pressed Pellets for XRF Analysis** DAVID COLER, FLSmidth, Lukas Bruzenak, Ian Campbell

(1090-12 P) **Multifunctional Ligand Platform for Detection, Capturing and Removal of Cerium Oxide Nanoparticles** ALI OTHMAN, Clarkson University, Silvana Andreescu

## POSTER SESSION — Session 1100

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental Applications of Elemental Analysis and Speciation*

**Tuesday Morning, Exposition Floor, 400 Aisle**

(1100-1 P) **Rare Earth Elements – How to Accurately Determine Contamination Levels and Remove Spectral Interferences Created by Them** EWA M PRUSZKOWSKI, PerkinElmer, Inc., Cynthia Bosnak

(1100-2 P) **Determination of Heavy Metals In and Around Lake Ontario** SIMRAN SANDHU, St. John Fisher College, Kimberly Chichester

(1100-3 P) **The Analysis of Flue Gas Desulfurization Fluids by ICP-MS Using Universal Cell and FastFIAS Technology** MICHELLE M COKER, SCE&G, Daniel H Jones, George W Eargle

(1100-4 P) **Determination of Cadmium in Environmental Water Samples Collected in Superfund Sites in New York City** YI HE, John Jay College/CUNY, Kathleen Lopez, Sandra Swenson, Kate Good

(1100-5 P) **Withdrawn**

(1100-6 P) **Evaluation of Chromium Stability on Filters** TAMUTSIWA M MUTUTUVARI, High Purity Standards, Svetlana Uzunova, Kim-Phuong Tran

(1100-7 P) **Withdrawn**

(1100-8 P) **Online Analysis and Speciation of Antimony in Various Wastewater Streams Using Hydride Generation-AFS** BIN CHEN, P S Analytical, Warren T Corns, Peter B Stockwell

(1100-9 P) **An Efficient Recovery of Rare Metal Ions with Calix[4]arene Derivatives from Acidic Media Using Droplet-Based Microreactor System** MASAYA MIYAZAKI, National Institute of Advanced Industrial Science and Technology, Keisuke Ohto, Masatoshi Maeki, Ramachandra Rao Sathuluri

(1100-10 P) **Breakthrough Development for Quantitative Analysis of Total Metals in Soil by Portable High Definition X-ray Fluorescence** ZEWU CHEN, XOS, Shenghua Song, Danhong Li, Kyle Kuwitzky

(1100-11 P) **Chromogenic and Fluorogenic Chemosensors for the Selective Detection of Nd(III) Ion and Their Electrochemical Properties** ASHOK K SINGH, IIT Roorkee, Neha Gupta N/A

(1100-12 P) **Collaborative Certification of a New Low-Level Hexavalent Chromium Standard Reference Material in a Soil Matrix** JAMES E HENDERSON, Duquesne University, Patrick Benecewicz, Anil Srinivas Chaitanya Vishnuvajjhala, Weier Hao, Logan T Miller, Matt Pamuku, Jennifer Crawford, Teresa Switzer, Vasile Furdui, Pam Wee, Francine Walker, Bob O'Brien, Skip Kingston

(1100-13 P) **Impact of Coexistent Elements and Its Concentration in the Quantification of Strontium-90 Using ICP-MS with Cascade Separation System** YOSHITAKA TAKAGAI, Fukushima University, Takahiro Suzuki, Aya Yokoyama, Makoto Furukawa, Yutaka Kameo, Katz Suzuki

## POSTER SESSION — Session 1110

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental Organic Analysis: VOCs, Pesticides, and Others*

**Tuesday Morning, Exposition Floor, 400 Aisle**

(1110-1 P) **Determination of VOCs by US EPA Method 8260 with Extended Dynamic Range Using Fast, Sensitive Capillary GC/MS** BRAHM PRAKASH, Shimadzu Scientific Instruments, Inc, William Lipps, Di Wang, Nicole M Lock, Shilpi Chopra, Laura Chambers

(1110-2 P) **Determination of Organochlorine Pesticides and Polychlorinated Biphenyls Using GC-MS/MS Operated in the MRM Mode** BRAHM PRAKASH, Shimadzu Scientific Instruments, Inc., William Lipps, Di Wang, Nicole M Lock, Shilpi Chopra, Laura Chambers

(1110-3 P) **Analysis of Terpenes Using Gas Chromatography with Vacuum Ultraviolet Detection** CHANGLING QIU, University of Texas at Arlington, Jonathan Smuts, Phillip Walsh, Kevin A Schug

(1110-4 P) **Use of a Boron Doped Diamond Electrode Sensor for Carbamate Pesticide Classification Using a Chemometric Approach** THIAGO SELVA, University of Sao Paulo, Thiago Paixao

(1110-5 P) **PCBs and DDTs in Bluefin Tuna From the Adriatic Sea** DARIJA KLIN I , Institute for Med Research and Occupational Health, Snjažana Herceg Romanić, Zorana Kljakovi -Gašpi , Vjekoslav Tičina

(1110-6 P) **From Freon to PAHs - A New Generation of Multipurpose Thermal Desorption Tubes** PAOLO BENEDETTI, IIA - CNR, Carlo Crescenzi, Ettore Guerriero

(1110-7 P) **Search for Organic Substance Sources in the 1B Mine Pool of Sydney Coalfield Abandoned Mines** ALLEN BRITTEN, Cape Breton University, Ceilidh MacDonald, Judy MacInnis, Martin Mkandawire N/A

(1110-8 P) **Analysis of Volatile Organic Compounds in Wastewater by Purge and Trap GC/TOF-MS According to EPA Method 624** MOIRA ZANABONI, DANI Instruments, Roberta Lariccia, Matthew S Klee

(1110-9 P) **Degradation of Environmental Contaminants Using Chlorine Dioxide** SUSHMA APPALA, Middle Tennessee State University, Samanwi Munagala, Megan Z Chong, Ooi G Beng, Ngee Sing Chong

(1110-10 P) **Automating Solid Phase Extraction and Florisil Clean-Up for Organichlorine Pesticides and PCB Aroclors** PHILIP BASSIGNANI, Fluid Management Systems, Rudolf Addink

(1110-11 P) **Evaluation of a Novel Hand-Held and Easy-to-Use GC-PID Prototype for Fast and Selective On-site Analysis of Benzene and VOC** MATTHIAS SCHMITTMANN, Bentekk GmbH

(1110-12 P) **Direct Determination of Glyphosate, Glufosinate, and AMPA in Egg by Liquid Chromatography/Tandem Mass Spectrometry** NARONG CHAMKASEM, FDA, Cynthia Morris, Krystle L Hargrove

(1110-13 P) **Direct Coupling of Active and Passive Samplings of Organics with Microwave Assisted Thermal Desorption as an Innovative Solvent-Free Method** WILLIAMS ESTEVE, INRS

(1110-14 P) **Deuterated Monitoring Compounds for Better Accuracy and Precision Measurement of GC/MS Environmental Data** CHARLES G APPLEBY, U.S. Environmental Protection Agency

(1110-15 P) **Withdrawn**

(1110-16 P) **Wastewater Monitoring by Fluorescence Excitation and Emission Matrix with Parallel Factor Analysis** SAM LI, NUS, Baisheng Chen

(1110-17 P) **New Plastic In-Syringe Based Ultrasound Assisted Salt-induced Liquid-liquid Microextraction Technique for the Rapid Analysis of Triclosan in Aqueous Samples** VINOTH KUMAR PONNUSAMY, National Chung Hsing University, Jen Fon Jen

**POSTER SESSION** **Session 1120**

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental Water Quality and Analysis*

**Tuesday Morning, Exposition Floor, 400 Aisle**

(1120-1 P) **Electrochemical Determination of the Levels of Some Potentially Toxic Metals in Groundwater and Leachate Samples from Solous II and III Landfill, Lagos Nigeria** WESLEY OHIFEME OKIEI, University of Lagos, Modupe M Ogunlesi, Jeffery Undiandeye N/A

(1120-2 P) **Determination of N-Nitrosamines by USEPA Method 521 Using Triple Quadrupole Mass Spectrometry** BRAHM PRAKASH, Shimadzu Scientific Instruments, Inc, William Lipps, Di Wang, Nicole M Lock, Shilpi Chopra, Laura Chambers

(1120-3 P) **Optimizing Treatment of Reclaimed Water at a Drinking Water Plant by Online Monitoring of Organic Carbon Levels** MARK MULLET, GE Analytical Instruments, Dondra Biller

(1120-4 P) **Development of an Arduino Shield for Water Quality Analysis Probes** MICHAEL CHIA, Northern Kentucky University, Kelley Weigman, Grant Foreman, Richard Durtsche, Celeste A Morris

(1120-5 P) **Analysis of Peanut Hulls as an Alternative to Ion Exchange Resins** CARMEN L HUFFMAN, Western Carolina University, Kanika O Davis, Melisa J Glatte, Holly Truluck, Tyler S Cook

(1120-6 P) **Analytical Strategies for Monitoring Ionic Liquids Breakdown by Electro-Fenton Process** ELISA GONZÁLEZ-ROMERO, University of Vigo, Elvira Bocos, Jessica Meijide, Aida Díez, Marta Pazos, María Ángeles Sanromán

(1120-7 P) **A Study of Quality of Water and Effect of Various Coagulants on Water of Lodra Lake of Gandhinagar District** JAIMIN K DESAI, Gujarat University, Parekh P Paresh N/A

(1120-8 P) **Determination of the Toxins Found in Lake Ontario** MARTA LABECKI, St. John Fisher College, Kimberly Chichester

(1120-9 P) **EPA Method 557 Quantitation of Haloacetic Acids, Bromate and Dalapon in Drinking Water Using Ion Chromatography and Tandem Mass Spectrometry** JONATHAN BECK, Thermo Fisher Scientific, Terri T Christison, Charles Yang, Hans Schweingruber

(1120-10 P) **Assessment of Water Quality Parameters from the Lowber Abandoned Mine Drainage Treatment Facility, Part 2: Further Studies and Results** MARK T STAUFFER, University of Pittsburgh - Greensburg, Tell M Lovelace, Aaron K Hirshka, Luke J Metzler

(1120-11 P) **Breaking the Biofouling Code: Towards Reliable In-Pipe Water Quality Sensors** ROBERT E WILSON, Imperial College London, Ivan Stoianov, Danny O'Hare

(1120-12 P) **Analysis of the Residual Oil in Water with Excitation Emission Matrix and Parallel Factor Analysis** KAWAGUCHI YOSHIHIKO, HORIBA Advanced Techno, Co.,Ltd., Kojima Reiji

(1120-13 P) **Sensitive Determination of Arsenate and Phosphate by Molybdenum Blue Method with Membrane Filter Extraction Using a Portable 8-Channel LED-Based Reflective Photometer** YASUTADA SUZUKI, University of Yamanashi, Susumu Kawakubo

(1120-14 P) **Assessment of Physico-Chemical Analysis of Drinking Water of Kheda District Gujarat (INDIA) and its Impact on Human Health** MAHESHKUMAR B CHAUHAN, J & J College of Science, Dipakkumar K Bhoi, Rameshbhai P Dabhi N/A

(1120-15 P) **Nano-Sensing Approach for the Determination of Phosphate Ions** MADELEINE JOHNSON, University of Central Florida N/A

(1120-16 P) **Study of Enhancement Effects of Functionalized Gold Nanorods in Quantitative Analysis of 1-H Benzotriazole by Surface Enhanced Raman Spectroscopy (SERS)** UTTAM SHARMA PHUYAL, Tennessee Technological University, Andrew Callender

(1120-17 P) **Seasonal Variations in Water Quality Parameters at Thol Bird Sanctuary, Gujarat India** AMRUTLAL B PARMAR, J & J College of Science, Rameshkumar V Parmar, Arunkumar H Dholakia N/A

(1120-18 P) **A Study of Water Quality Index (W.Q.I) of Pariyej Lake District: Kheda - Gujarat** BUNTY R PATEL, J & J College of Science, Alpesh M Patel, Fulaji J Thakor N/A

(1120-19 P) **Colorimetric and Electrochemical Sensor for Monohydrogen Phosphate Ion Based on 1,3-bis(2-formylphenoxy) Propane Bis(2,4-dinitrophenyl hydrazine)** DIVYA SINGHAL, IIT Roorkee, Ashok K Singh N/A

(1120-20 P) **The Effect of Slaughter House Waste on the Water Quality of Okpu River Aba** CHIDIEBERE A ODIKE-ADUAKA, Abia State Teaching Hospital Aba, Lilian I Oguguo

(1120-21 P) **Biosensor for Toxic Compounds in Wastewater Based on Microbial Electrochemistry** SAM LI, NUS

(1120-22 P) **Rapid Determination of Endocrine Disrupting Bisphenol A (BPA) in Drinking Water by Solid Phase Nano-Extraction and Room-Temperature Fluorescence Spectroscopy** MAHA AL-TAMEEMI, University of Central Florida, Bassam Alfarhani, Andres Campiglia, Jung Jong Seok

(1120-23 P) **GC/MS Screening of Water Samples for Organic Pollutants by Stir Bar Sorptive Extraction (SBSE)** OLIVER LERCH, Gerstel GmbH & Co. KG, Jasmin Zboron, Andreas Hoffmann, Chris Sandy

**POSTER SESSION** **Session 1130**

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental, Food and Elemental Analyses - Atomic Spectroscopy*

**Tuesday Morning, Exposition Floor, 400 Aisle**

(1130-1 P) **Analysis of Radium-226 in Shale-Gas Wastewater Using Inductively Coupled Plasma Mass Spectrometry** YUQIANG BI, University of Michigan, Wenjia Fan, Thomas P Yavaraski, Brian R Ellis, Kim F Hayes

(1130-2 P) **Speciation of Organic Mercury in Water Samples by Alkylation, Organic Solvent Extraction and GC-AFS Detection – A Comparison of Ethylation, Propylation and Phenylation** CORNELIUS BROMBACH, P S Analytical, Bin Chen, Warren T Corns, Jun Yoshinaga

(1130-3 P) **Models for Predicting Atmospheric Mercury Concentrations Using Meteorological Data and Mercury Concentrations in *Salix* (Willow) Leaves** DAVID LEHMPUHL, Colorado State University Pueblo, Lauren Bartolo

(1130-4 P) **Assessment of Titanium Dioxide Nanoparticles in Aquatic Tanks** SARA MELOW, Elmira College, Marriah Ellington, Lisa A Holland

(1130-5 P) **Feasibility Use of Ceramics as Solid Support for Cr(III) Measurement in Water by LIBS** CASSIANA S NOMURA, Institute of Chemistry - University of Sao Paulo, Alexandrina C Carvalho, Daniel M Silvestre, Flávio O Leme, Danielle P Intima, Juliana Naozuka

(1130-6 P) **Lead Determination in Soil from a Recreational Shooting Range Built on a Reclaimed Strip Mine: Effects of Oxidant Flow Rate on PB Measurements Obtained by FAAS, and Other Considerations** MARK T STAUFFER, University of Pittsburgh - Greensburg, Luke J Metzler

(1130-7 P) **Determination of Metals in Three Types of Loose-Leaf Tea: Can Metal Content Indicate the Type of Tea?** MARK T STAUFFER, University of Pittsburgh - Greensburg, Aaron K Hirshka

(1130-8 P) **Determination of Selected Metals and Nonmetals in Pre-Workout Supplements: Results from Initial and Ongoing Investigations** MARK T STAUFFER, University of Pittsburgh - Greensburg, Kelly M Boyles, Nicholas E Glotfelty N/A

(1130-9 P) **Speciation of Mercury in Rice with a New Online Pre-Concentration HPLC-CV-AFS Method** CORNELIUS BROMBACH, P S Analytical, Piumi K Dona, Bin Chen, Warren T Corns, Eva Krupp, Joerg Feldman

(1130-10 P) **Optimizing a Total Protein Combustion Instrument for Maximum Sample Throughput and Lowest Cost-Per-Analysis** JEFFERY GAST, LECO Corporation, Mason Marsh

(1130-11 P) **Laser Induced Breakdown Spectroscopy (LIBS) of Food Samples: Case Study of Tortillas** CHARLES GHANY, Mississippi State University, Herve Sanghapi, Chet R Bhatt, Bader Alfarraj, Fang Y Yueh, Jagdish P Singh

(1130-12 P) **Development of a Method For the Determination of Titanium Dioxide Nanoparticles in Food Products Using SP-ICPMS** ANTONIO MOREDA-PINEIRO, University of Santiago de Compostela, Maria del Carmen Barciela-Alonso, Olga Cristina Vázquez-Padín, Francisco Javier Vilariño-Páxaro, Manuel Aboal-Somoza, Pilar Bermejo-Barrera, Elena Pena-Vazquez

(1130-13 P) **Evaluation of Optical Depths of Ca Emission Lines in Laser Induced Breakdown Spectroscopy (LIBS)** BADER ALFARRAJ, Mississippi State University, Herve Sanghapi, Chet R Bhatt, Charles Ghany, Fang Y Yueh, Jagdish P Singh

(1130-14 P) **Standard Dilution Analysis for the Determination of Calcium by Flame Atomic Emission Spectrophotometry** CLIFTON P CALLOWAY, Winthrop University, Katja A Hall, Emily A Watson

(1130-15 P) **Cyanide Detection in Blood Using Indirect Atomic Absorption Spectroscopy** JEFFREY ROSENTRETER, Idaho State University, Matt Kirkham, Jeff Kuhlmeier

(1130-16 P) **Advanced Application of Speciation Analysis Using ICP-MS detection** DANIEL KUTSCHER, Thermo Fisher Scientific, Monika Verma, Shona McSheehy Ducos

(1130-17 P) **Multi-trophic Analysis of Lead Using a Flame Atomic Absorption Spectrometer** MICHAEL DECAROLIS, St. John Fisher College, Christopher Collins, Kimberly Chichester

(1130-18 P) **Atomic and Molecular Laser Induced Breakdown Spectroscopy for Detection of Chlorine in Concrete** WILL B JONES, University of Florida, Ebo Ewusi-Annan, Tobias Guenther, Ben Smith, Nico Omenetto

(1130-19 P) **A Modern Multi-Excitation Concept for Total Reflection X-Ray Spectrometry** ARMIN GROSS, Bruker Nano GmbH, Ulrich Waldschlaeger N/A

(1130-20 P) **Determination of Lead in Keratin Tissues: Method Development and Candidate Reference Material Production Using Caprine Horns** MINA TEHRANI, Wadsworth Center/ SUNY Albany, Patrick J Parsons N/A

(1130-21 P) **Lead Concentrations in Lagos Groundwater** AMALACHUKWU OLIVE ANADI, Hydrochrom Resources Ltd, Chimezie A Anyakora N/A

(1130-22 P) **Fast Monitoring Processed Manure Using WD-XRF Spectroscopy for Nutrients and Metals** ALEXANDER SEYFARTH, Rock River Axs LLC, Aicado Roa-Espinosa

(1130-23 P) **Onsite Monitoring of Manure Using XRF for Nutrients and Metals** ALEXANDER SEYFARTH, Bruker Nano Analytics, Aicado Roa-Espinosa



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

**POSTER SESSION** **Session 1140**

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

***Sampling and Sample Preparation - Environmental***

**Tuesday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (1140-1 P) | **The Measurement of Formaldehyde in Drinking Water Using Automated SPE and HPLC** ALICIA CANNON, Horizon Technology, Chris Shevlin, Michael Ebitson |
| (1140-2 P) | **Analysis of Extract Drying Criteria for Oil and Grease Method 1664A/B** MICHAEL EBITSON, Horizon Technology, David Gallagher, William Jones |
| (1140-3 P) | **Fundamentals and Comparisons for Organic Sample Extract Evaporation** ZOE GROSSER, Horizon Technology, Robert Johnson |
| (1140-4 P) | **Determination of 2-Methylisoborneol and Geosmin in Water Using Solid Phase Micro Extraction** ANNE JUREK, EST Analytical |
| (1140-5 P) | **The Advantages of Automated Sample Preparation** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor, Justin Murphy |
| (1140-6 P) | **Highly Robust Polymeric Ionic Liquid Coatings for Solid Phase Microextraction: Multiclass Determinations with Application of Direct-Immersion-Headspace Mode Using Gas Chromatography-Mass Spectrometry** JOSIAS MERIB, Iowa State University, Honglian Yu, Carasek Eduardo, Jared L Anderson |
| (1140-7 P) | **Development of Dispersive Liquid-Liquid Microextraction for the Determination of Six Steroidal Hormones in Wastewater Using High Pressure Liquid Chromatography-Charged Aerosol Detector** MATHEW MUZI NINDI, Unisa, Cecilia O Osunmakinde, Simiso Dube |
| (1140-8 P) | **Extraction of Analytes of Forensic Toxicological Interest from Plasma with Enhanced Matrix Removal-Lipid Material** JOAN STEVENS, Agilent Technologies, Derick Lucas, Limian Zhao, Megan Juck, William Long |
| (1140-9 P) | **Modified Sample Clean-up for Combined POPs Using Automated Multi-Column Fractionation and Analytical Optimization** PHILIP BASSIGNANI, Fluid Management Systems, Rudolf Addink |
| (1140-10 P) | **Ice Concentration Linked with Extractive Stir Bar** NUJUD O MASLAMANI, South Dakota State University |
| (1140-11 P) | **The Best Sample Preparation for High Throughput Quantitative X-Ray Diffraction of Mineral Mixtures** ROGER MEIER, FLSmidth A/S, Ian Campbell, Lukas Bruzenak, Detlev Götz |
| (1140-12 P) | **Nanoporous Solid Phase Microextraction (SPME) Fibers by Sputtering Silicon** MASSOUD KAYKHAII, Brigham Young University, Anubhav Diwan, Bhupinder Singh, Matthew R Linford |

Tuesday Morning

Tuesday Afternoon

# TUESDAY, MARCH 8, 2016 AFTERNOON

**AWARDS** **Session 1150**

***Pittsburgh Spectroscopy Award***

arranged by Joseph Grabowski, University of Pittsburgh

**Tuesday Afternoon, Room B312**

Fu-Tyan Lin, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Fu-Tyan Lin** |
| 1:35 | | **Presentation of the 2016 Pittsburgh Spectroscopy Award to Jürgen Popp, Friedrich-Schiller University Jena, by Joseph Grabowski, Chair, Spectroscopy Society of Pittsburgh** |
| 1:40 | (1150-1) | **Overcoming Unmet Medical Needs: Advances in Raman Spectroscopy** JÜERGEN POPP, Friedrich-Schiller University Jena |
| 2:15 | (1150-2) | **Developing Deep UV Raman Standoff Spectrometers for Trace Explosives** SANFORD A ASHER, University of Pittsburgh, Sergei V Bykov, Katie L Gares, Kyle T Hufziger |
| 2:50 | (1150-3) | **Enhanced Vibrational Circular Dichroism: Moving Beyond Established Applications of Vibrational Circular Dichorism (VCD)** LAURENCE A NAFIE, Syracuse University |
| 3:25 | | **Recess** |
| 3:40 | (1150-4) | **Raman Big Data Analysis for Automatic and Objective Living Cell Discrimination/Diagnosis** HIROO HAMAGUCHI, National Chiao Tung University, Masahiro Ando |
| 4:15 | (1150-5) | **Raman Scattering from Single, Laser-Trapped Microparticles: A Review** WOLFGANG KIEFER, University of Würzburg |

**AWARDS** **Session 1160**

***RSC - JAAS Emerging Investigator Lectureship Award***

arranged by Philippa Ross, Royal Society of Chemistry

**Tuesday Afternoon, Room B314**

Philippa Ross, Royal Society of Chemistry, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Philippa Ross** |
| 1:35 | | **Presentation of the 2016 RSC - JAAS Emerging Investigator Lectureship Award to Gerardo Gamez, Texas Tech University, by Philippa Ross, Royal Society of Chemistry** |
| 1:40 | (1160-1) | **Revealing Surface Elemental Landscapes with Ultra-High Throughput via GDOES** GERARDO GAMEZ, Texas Tech University |
| 2:15 | (1160-2) | **Laser Ablation-Based Chemical Analysis Techniques: A Short Review** JHANIS JOSE GONZALEZ, Lawrence Berkeley National Laboratory |
| 2:50 | (1160-3) | **Direct Determination of Trace Antimony and Arsenic in Natural Waters by Photochemical Vapor Generation ICPMS** LU YANG, National Research Council Canada |
| 3:25 | | **Recess** |
| 3:40 | | **Presentation of the 2016 RSC - JAAS Emerging Investigator Lectureship Award to Lara Lobo Revilla, University of Oviedo, by Philippa Ross, Royal Society of Chemistry** |
| 3:45 | (1160-4) | **Pulsed Glow Discharge Time-of-Flight Mass Spectrometry (Positive and Negative Ionization Modes) for Elemental Depth Profiling of Innovative Materials and Polymer Fingerprinting** LARA LOBO REVILLA, University of Oviedo, R Muniz, B Fernandez, R Pereiro, A Sanz-Medel |
| 4:20 | (1160-5) | **What is XRF Doing in a Mass Spectrometry Award Symposium?** GEORGE HAVRILLA, Los Alamos National Laboratory |

**SYMPOSIUM** **Session 1170**

***ACS-ANYL - New Approaches to Nuclear Safeguards and Forensics Analysis***
arranged by Douglas Duckworth, Pacific Northwest National Laboratory

**Tuesday Afternoon, Room B308**
Douglas Duckworth, Pacific Northwest National Laboratory, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Douglas Duckworth** |
| 1:35 | (1170-1) | **Advances in Online Spectroscopic Monitoring for Process Control and Safeguarding of Radiochemical Streams** SAM A BRYAN, Pacific Northwest National Laboratory, Amanda J Casella, Amanda M Lines, Gilbert L Nelson, Job M Bello |
| 2:10 | (1170-2) | **New XRF Applications to Nuclear Safeguards and Nuclear Forensics** GEORGE HAVRILLA, Los Alamos National Laboratory |
| 2:45 | (1170-3) | **Fieldable Mass Spectrometry: Sample Preparation and Rapid Field Analysis for Nuclear Safeguards** PETER STARK, Los Alamos National Laboratory, Elizabeth Judge, Keri Campbell, Lisa Meyers, Chris Leibman, Ning Xu, Thomas Yoshida, Matthew R Dirmyer |
| 3:20 | | **Recess** |
| 3:35 | (1170-4) | **New Analytical Methods for Trace Elemental and Isotopic Analysis of Nuclear Fuel Cycle Materials** GREGORY C EIDEN, Pacific Northwest National Laboratory, Andrew M Duffin, Michael P Dion, April J Carman, Orville T Farmer, Jesse D Ward, Carmen S Menoni, Martin Liezers |
| 4:10 | (1170-5) | **Contribution and Impact of Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) and Laser Induced Breakdown Spectroscopy (LIBS) to Forensic Analysis** JHANIS JOSE GONZALEZ, Lawrence Berkeley National Laboratory |

**SYMPOSIUM** **Session 1180**

***Emerging Mass Spectrometry-Based Techniques for Biomolecular Analysis***
arranged by Ronghu Wu, Georgia Institute of Technology

**Tuesday Afternoon, Room B302**
Ronghu Wu, Georgia Institute of Technology, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Ronghu Wu** |
| 1:35 | (1180-1) | **Searching for Biomarkers Using Ambient Ionization Mass Spectrometry** GRAHAM COOKS, Purdue University |
| 2:10 | (1180-2) | **An Inside-Outside Strategy to Study Cell Communication** CATHERINE FENSELAU, University of Maryland, Sitara Chauhan, Lucia Geis-Asteggiante, Avantika Dhabaria, Nathan Edwards, Suzanne Ostrand-Rosenberg |
| 2:45 | (1180-3) | **Developing Cross-linking Mass Spectrometry to Define Protein-Protein Interactions** LAN HUANG, University of California, Irvine |
| 3:20 | | **Recess** |
| 3:35 | (1180-4) | **Innovative Instrumentation and Methods for the Identification of Intact Proteins in Mixtures and for Sequence Analysis of Antibodies and Posttranslationally-Modified, Intact Proteins on a Chromatographic Time-Scale** DONALD F HUNT, University of Virginia |
| 4:10 | (1180-5) | **Charge Detection Mass Spectrometry for Single Ions** EVAN WILLIAMS, University of California, Berkeley, Andrew Elliot, Zijie Xia |

**SYMPOSIUM** **Session 1190**

***Emerging Pollutants in the Environment – from Sources to Effects***
arranged by Rudolf J Schneider, BAM Federal Institute for Materials Research and Testing

**Tuesday Afternoon, Room B303**
Rudolf J Schneider, BAM Federal Institute for Materials Research and Testing, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Rudolf J Schneider** |
| 1:35 | (1190-1) | **Using High Resolution Mass Spectrometry to Uncover New, Emerging Iodinated and Nitrogen-Containing Disinfection Byproducts** SUSAN D RICHARDSON, University of South Carolina, Cristina Postigo, Christina M Joseph, Hannah K Liberatore, Jessie Kadlec, Amy Cuthbertson, Friedrich Wendel, Christian Luetke-Eversloh, Thomas A Ternes, Edward Machek, Stephen Duirk, Elizabeth Wagner, Michael J Plewa |
| 2:10 | (1190-2) | **Measuring Plant Uptake and Effects of Pharmaceuticals Using Liquid Chromatography/Mass Spectrometry** DIANA S AGA, University at Buffalo, Rachel Mullen |
| 2:45 | (1190-3) | **Analysis of Hydraulic Fracturing Additives by LC/Q-TOF-MS** IMMA FERRER, University of Colorado, Michael Thurman |
| 3:20 | | **Recess** |
| 3:35 | (1190-4) | **Uptake and Disposition of Pharmaceuticals by Bluegill Exposed at Constant Concentrations in a Flow-Through Aquatic Exposure System** EDWARD FURLONG, U.S. Geological Survey, Jian-Liang Zhao, Heiko L Schoenfuss, Dana W Kolpin, Kyle L Bird, David J Feifarek, Eric A Schwab, Guang-Guo Ying |
| 4:10 | (1190-5) | **Pharmaceuticals in Surface Waters - Analysis and Effects** RUDOLF J SCHNEIDER, BAM |

**SYMPOSIUM** **Session 1200**

***Emerging Technologies for Disease Biomarker Detection***
arranged by Xiujun James Li, University of Texas at El Paso

**Tuesday Afternoon, Room B304**
Xiujun James Li, University of Texas at El Paso, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Xiujun James Li** |
| 1:35 | (1200-1) | **Phase Separated Droplets Enable Multiplexing of Difficult ELISA Panels** SHUICHI TAKAYAMA, University of Michigan |
| 2:10 | (1200-2) | **Looking for Rare Cells via High-throughput Single Cell Mass Spectrometry Profiling** JONATHAN V SWEEDLER, University of Illinois |
| 2:45 | (1200-3) | **Biomarker Detection Using Paper/PDMS Hybrid Microfluidic Platforms for Low-cost Disease Diagnosis** XIUJUN JAMES LI, University of Texas at El Paso, Maowei Dou, Sharma T Sanjay |
| 3:20 | | **Recess** |
| 3:35 | (1200-4) | **'Cytology-on-a-Chip' Based Sensors for Monitoring of Potentially Malignant Oral Lesions** JOHN T MCDEVITT, New York University |
| 4:10 | (1200-5) | **Biomarker Discovery Using DNA Aptamers** WEIHONG TAN, University of Florida |

**SYMPOSIUM** **Session 1210**

***JAIMA - The State-of-the-Art Technologies from Japan: Analytical Instruments with/for Nano-Chemistry Technology and Advanced Diagnosis (II)***
arranged by Koichiro Matsuda, JAIMA

**Tuesday Afternoon, Room B305**
Koichiro Matsuda, JAIMA, Presiding
Koji Suzuki, Keio University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Koji Suzuki, President of JSAC** |
| 1:35 | (1210-1) | **Electrochemical Application of Boron-Doped Diamond Electrodes** YASUAKI EINAGA, Keio University |
| 2:10 | (1210-2) | **Plasmonic Nanomaterials** TETSU TATSUMA, University of Tokyo |
| 2:45 | (1210-3) | **The Unique Combination of Nanotechnology with Raman and SPRi Platforms Offers Innovative and Ultrasensitive Solutions for Diagnostics** MARINELLA SANDROS, HORIBA Scientific |
| 3:20 | | **Recess** |
| 3:35 | (1210-4) | **Medicinal Cannabinomics and Mass Spectrometry Applications to Cannabis Testing Laboratories** SCOTT KUZDZAL, Shimadzu Scientific Instruments, Di Wang, Jonathan Edwardsen, William Lipps, Jeff H Dahl |
| 4:10 | (1210-5) | **Application of Laser/desorption Ionization Mass Spectrometry as a Novel Surface Analytical Tool** TAKAYA SATOH, JEOL Ltd. |

# TECHNICAL PROGRAM



**SYMPOSIUM** **Session 1220**

***New Advances in Analytical Mass Spectrometry***
arranged by Gary Martin Hieftje, Indiana University

**Tuesday Afternoon, Room B309**
Gary Martin Hieftje, Indiana University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Gary Martin Hieftje** |
| 1:35 | (1220-1) | **21 Tesla Fourier Transform Ion Cyclotron Resonance Mass Spectrometry: New Capabilities for Ultrahigh-Resolution Mass Analysis** ALAN G MARSHALL, Florida State University, John P Quinn, Nathan K Kaiser, Donald F Smith, Greg T Blakney, Tong Chen, Steven C Beu, Christopher L Hendrickson |
| 2:10 | (1220-2) | **The Unique Analytical Capabilities of Distance-of-Flight Mass Spectrometry** STEVEN J RAY, SUNY-Buffalo, Elise Dennis, David W Koppenaal, Christie G Enke, Gary Martin Hieftje |
| 2:45 | (1220-3) | **Plasma Mass Spectrometry: A Tool for and a Source of Chemical Reactions** JACOB T SHELLEY, Kent State University, Sunil P Badal, Yi You, Kelsey Williams, Garett MacLean |
| 3:20 | | **Recess** |
| 3:35 | (1220-4) | **New Paths for Mass Spectrometry based upon Structures for Lossless Ion Manipulations (SLIM)** RICHARD D SMITH, Pacific Northwest National Laboratory |
| 4:10 | (1220-5) | **Improvements in Velocity-Based Mass Analysis by Use of Constant-Momentum Acceleration** GARY MARTIN HIEFTJE, Indiana University, Elise Dennis, Steven J Ray, Christie G Enke, Alexander W Gundlach-Graham |

**SYMPOSIUM** **Session 1230**

***SEAC - New Trends in Electrochemical Neurochemistry***
arranged by Adrian C Michael, University of Pittsburgh

**Tuesday Afternoon, Room B310**
Ann-Sofie Cans, Chalmers University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Ann-Sofie Cans** |
| 1:35 | (1230-1) | **Fast-scan Cyclic Voltammetry Reveals Dopamine Spikes to Food Reward that are Tuned by Physiological State and Its Proxies** MITCHELL ROITMAN, University of Illinois at Chicago |
| 2:10 | (1230-2) | **Electroenzymatic Detection of Basolateral Amygdala Glutamate Release During Reward Seeking** KATE M WASSUM, University of California Los Angeles, Melissa Malvaez, Venuz Y Greenfield, Allison M Yorita, Lili Feng, Harold G Monbouquette |
| 2:45 | (1230-3) | **Improving Temporal Resolution of Enzyme Based Electrochemical Sensors for Detection of Non-Electroactive Analytes Important in Brain Chemistry** ANN-SOFIE CANS, Chalmers University of Technology, Yuanmo Wang, Jenny Bergman, Joakim Wigström |
| 3:20 | | **Recess** |
| 3:35 | (1230-4) | **Building a 'Well-tempered' Biosensor for Real-Time Neurochemical Monitoring in the Intensive Care Unit** MARTYN G BOUTELLE, Imperial College London, Isabelle C Samper, Chu Wang, Thomas Watts, Michelle L Rogers, Chi Leng Leong, Sally A Gowers |
| 4:10 | (1230-5) | **Optogenetic-Control of Glutamate Release in the Rat Hippocampus and Frontal Cortex Measured Using Enzyme-Coated Ceramic Based Microelectrode Arrays** GREG A GERHARDT, University of Kentucky Medical Center |

**SYMPOSIUM** **Session 1240**

***The Challenge of Detection for Drugged Driving***
arranged by Herbert H Hill, Washington State University

**Tuesday Afternoon, Room B311**
Herbert H Hill, Washington State University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Herbert H Hill** |
| 1:35 | (1240-1) | **Police Officer Difficulties with Drug-Impaired Driver Arrests** NICHOLAS PETER LOVRICH, Washington State University |
| 2:10 | (1240-2) | **Human Cannabinoid Metabolism and Disposition in Biological Matrices after Controlled Cannabis Administration** MARILYN ANN HUESTIS, NIDA |
| 2:45 | (1240-3) | **Analytical Methods for the Detection of Marijuana in Biological Fluids in a Forensic Toxicology Laboratory** BRIANNA PETERSON, Washington State Patrol |
| 3:20 | | **Recess** |
| 3:35 | (1240-4) | **Detection of Drug Consumption in Europe** WOLFGANG VAUTZ, ISAS |
| 4:10 | (1240-5) | **Detection of Marijuana from Human Breath by Breathalyzer-IMS** HERBERT H HILL, Washington State University, Jessica A Tufariello |

**WORKSHOPS** **Session 1250**

***Core-Shell versus Fully Porous HPLC Particles – The Current State of the Art in HPLC Columns***
arranged by Jason Anspach and Lawrence Loo, Phenomenex

**Tuesday Afternoon, Room B313**
Jason Anspach, Phenomenex, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Jason Anspach and Lawrence Loo** |
| 1:35 | (1250-1) | **Perspectives on the Development and Future of Monodisperse Fully-Porous Silica Supports** DAVID S BELL, Supelco/Sigma-Aldrich |
| 2:05 | (1250-2) | **Fully-Porous vs. Core-shell Particles — The Past, the Present and the Future** LAWRENCE LOO, Phenomenex, Jason Anspach, Tivadar Farkas, Mike Chitty, Thuylinh Tran |
| 2:35 | (1250-3) | **Advantages and Limitations of Superficially Porous Particles** KEN BROECKHOVEN, Vrije Universiteit Brussel, Gert Desmet |
| 3:05 | | **Recess** |
| 3:20 | (1250-4) | **Next Generation Superficially Porous Particle Technology: Highly Ordered Pore Structures Formed by Pseudomorphic Transformation** WILLIAM E BARBER, Agilent Technologies, Ta-Chen Wei, Wu Chen, Anne Mack, Jia Liu, Monika Dittmann, Xiaoli Wang |
| 3:50 | (1250-5) | **Clarifying the Difference Between Columns Packed with Solid Core and Fully Porous Particles** JACOB FAIRCHILD, Waters Corporation, Jonathan Turner, Bonnie Alden, Kevin Wyndham, Babajide Okandeji |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1260**

***LIMS Live @ Pittcon: Best Practices and Lessons Learned From The Laboratory***
arranged by Ken Ochi and Devender Gandhi, Accelerated Technology Laboratories

**Tuesday Afternoon, Room B315**
Ken Ochi, Accelerated Technology Laboratories, Presiding

| | | |
|---|---|---|
| 1:30 | (1260-1) | **Where Do We Start? A Roadmap to LIMS Success** CHRISTINE PASZKO, Accelerated Technology Laboratories |
| 1:50 | (1260-2) | **The LIMS Needs Assessment: Your Secret Weapon to a Successful Deployment** ALAN SERRERO, Gwinnett County Department of Public Utilities |
| 2:10 | (1260-3) | **Finding the Perfect LIMS: Keys to a Successful RFP** ASTER TEKLE, Alexandria Renew Enterprises |
| 2:30 | (1260-4) | **Preparing for a LIMS – The Importance of Proper Planning** KEITH KEESEE, Oklahoma Department of Agriculture, Cassandra Kontas |
| 2:50 | | **Recess** |
| 3:05 | (1260-5) | **Implementing a LIMS is a Project – Treat It Like One** ROY D JONES, Duke Energy |
| 3:25 | (1260-6) | **Life with a LIMS: What It's Meant for the City of Clearwater** MARIA DE LA CANTERA, City of Clearwater (FL) |
| 3:45 | (1260-7) | **Leveraging LIMS for Streamlining Next Generation Sequencing Data** JENNIFER WELLER, University of North Carolina - Charlotte |
| 4:05 | (1260-8) | **What Have We Learned? Final Thoughts On the Road to LIMS Success (Getting the Most From Your LIMS)** DEVENDER GANDHI, Accelerated Technology Laboratories |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1270**

***Quantifying the Tumor Microenvironment***
arranged by Matthew R Lockett, University of North Carolina at Chapel Hill

**Tuesday Afternoon, Room B316**
Matthew R Lockett, University of North Carolina at Chapel Hill, Presiding

| | | |
|---|---|---|
| 1:30 | (1270-1) | **Phosphoproteomics in Prostate Extracellular Vesicles** W ANDY TAO, Purdue University |
| 1:50 | (1270-2) | **Exploring the Permissive Stromal Microenvironment** AMANDA B HUMMON, University of Notre Dame, Pinar Zorlutuna, Eric M Weaver |
| 2:10 | (1270-3) | **Modulating Drug Resistance in Hypoxia Tumors** DIMITRI PAPPAS, Texas Tech University |
| 2:30 | (1270-4) | **Paper-Based Assays for the Study of Cancer Cell Biology, Invasion, and Metastasis** MATTHEW R LOCKETT, University of North Carolina at Chapel Hill |
| 2:50 | | **Recess** |
| 3:05 | (1270-5) | **Examining Small Molecule Cellular Signaling in Complex Environments with Microscale Systems** ASHLEIGH B THEBERGE, University of Washington |
| 3:25 | (1270-6) | **Microengineered Physiological Biomimicry: Human Organ-on-Chips** D DAN HUH, University of Pennsylvania |
| 3:45 | (1270-7) | **Direct Optical Microscopy of Biological Interfaces** CHARLES R MACE, Tufts University, Jenna A Walz, Irene Lui, Daniel J Wilson |
| 4:05 | (1270-8) | **Deconvolving Glycans in Metastasis** LARA K MAHAL, New York University |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1280**

***SEAC - The Student Session in Electroanalysis***
arranged by Stephen Maldonado, University of Michigan

**Tuesday Afternoon, Room B401**
Stephen Maldonado, University of Michigan , Presiding

| | | |
|---|---|---|
| 1:30 | (1280-1) | **Developing an Innovative Bio-Inspired Scanning Probe Microscopy (Bio-SPM) Approach to Map Specific Molecular Flux** FLORIKA CALING MACAZO, University of Maryland Baltimore County, Ryan J White |
| 1:50 | (1280-2) | **Electrodeposition of Semiconductor Thin Films Using Electrochemical Liquid-Liquid-Solid (ec-LLS) Deposition** JOSHUA DEMUTH, University of Michigan |
| 2:10 | (1280-3) | **Alternating Current Potentiometric Scanning Ion Conductance Microscopy (AC-PSICM)** LUSHAN ZHOU, Indiana University Bloomington, Yi Zhou, Wenqing Shi, Lane A Baker |
| 2:30 | (1280-4) | **Toward the Electrochemical Detection of Single Atoms and Ions** JEFFREY E DICK, The University of Texas at Austin |
| 2:50 | | **Recess** |
| 3:05 | (1280-5) | **Miniaturized Potentiometric Ion-Sensing Systems: From Bulk Electrodes to Paper-Based Ion-Sensing Devices** JINBO HU, University of Minnesota, Andreas Stein, Philippe Buhlmann |
| 3:25 | (1280-6) | **Spontaneous Photoelectrochemical Growth of Nanopatterned Semiconductor Films Driven by Anisotropic Interfacial Light Collection** AZHAR I CARIM, California Institute of Technology, Nicolas A Batara, Anjali Premkumar, Harry A Atwater, Nathan S Lewis |
| 3:45 | (1280-7) | **New Enzymes for the Hybrid Enzymatic and Organic Electrocatalytic Cascade for the Complete Oxidation of Glycerol** SOFIENE ABDELLAOUI, University of Utah, Shelley D Minteer |
| 4:05 | (1280-8) | **The Unique Electrochemical Reactivity of Small Metal Nanoparticles** RAFAEL MASITAS, University of Louisville, Francis Zamborini |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1290**

***Specialty Gas Analysis***
arranged by Tracey Jacksier, Air Liquide

**Tuesday Afternoon, Room B402**
Tracey Jacksier, Air Liquide, Presiding

| | | |
|---|---|---|
| 1:30 | (1290-1) | **Real-Time, Selective Analysis of Air and Specialty Gases** DANIEL MILLIGAN, Syft Technologies Ltd, Vaughan Langford, Barry Prince, Murray McEwan |
| 1:50 | (1290-2) | **Cavity Ring-Down Spectroscopy Analyzer for Trace Moisture Detection in Ultra-Pure Ammonia** HELEN WAECHTER, Tiger Optics, Florian Adler, Marten Beels, Brian Siller, Bill West, Yu Chen |
| 2:10 | (1290-3) | **Novel FTIR/GC Detector for Analyzing Impurities in Gas Standards** MARTIN L SPARTZ, Prism Analytical Technologies, Inc., Charles Mark Phillips, Anthony S Bonanno, Peter P Behnke, Kelly R McPartland |
| 2:30 | (1290-4) | **Optimization of a Cavity Ring-Down Spectrometer for the Measurement of Trace Ammonia Contamination in Semicondutor Cleanroom Environments** GRAHAM A LEGGETT, Picarro, Mark Camenzind |
| 2:50 | | **Recess** |
| 3:05 | (1290-5) | **Analytical Challenges of Measuring Impurities in Biogas** JANNEKE VAN WIJK, VSL, Annarita Baldan, Adriaan van der Veen, Stefan Persijn, Jeanrong Li |
| 3:25 | (1290-6) | **Analysis and Stability of Low Concentration HCl Standards** NATHALIE LUU , Air Liquide, Steve Hagen, Anthony Schleisman |
| 3:45 | (1290-7) | **Analytical QA/QC Measures to Validate Your Analysis Method Using FTIR** SYLVIE BOSCH-CHARPENAY, MKS Instruments |
| 4:05 | (1290-8) | **Open Discussion** |

**ORAL SESSIONS** **Session 1300**

***Biomedical: Nanotechnology - Half Session***

**Tuesday Afternoon, Room B301**
Jagdish Singh, Mississippi State University, Presiding

| | | |
|---|---|---|
| 1:30 | (1300-1) | **Green Synthesis, Characterization of Saccharide Coated Gold Nanoparticles for Catalytic Applications** HARSH MOOLANI, Western Kentucky University, Jason N Payne, Rajalingam Dakshinamurthy |
| 1:50 | (1300-2) | **NanoCluster Beacons for Detection of a Single N6-Methyladenine Epigenetic Modification** TIM YEH, University of Texas at Austin |
| 2:10 | (1300-3) | **Self-assembly Approach to Integrated Nanozymes: Rational Design and Biomedical Applications** HUI WEI, Nanjing University |
| 2:30 | (1300-4) | **High Resolution Separation of Oligonucleotides and DNA Fragments Using a New Polymer-Based Reversed Phase Column** JULIA BAEK, Thermo Fisher Scientific, Shanhua Lin, Xiaodong Liu, Jessica Wang |

**ORAL SESSIONS** **Session 1310**

***Consumer Products Characterization - Half Session***

**Tuesday Afternoon, Room B408**
William R LaCourse, University of Maryland Baltimore County, Presiding

| | | |
|---|---|---|
| 1:30 | (1310-1) | **Characterization of Metallic Nanoparticles in Tattoo Ink Using Asymmetrical Flow Field-Flow Fractionation Coupled with ICP-MS** SOHEYL TADJIKI, Postnova Analytics Inc., Evelin Moldenhauer, Tony Pfaffe, Trevor Havard, Thorsten Klein |
| 1:50 | (1310-2) | **Developing a Color Matching Database in Supercritical $CO_2$ for Waterless Textile Dyeing** ROLF SCHLAKE, Applied Separations, Susan Crowe, Madhu Anand, Rob Dorrycott |
| 2:10 | (1310-3) | **Detection and Quantification of Allergens in Personal Care Products by GC and GC×GC Paired with TOFMS** ELIZABETH M HUMSTON-FULMER, Leco Corporation, David E Alonso, Jonathan D Byer, Joseph E Binkley, Lorne E Fell |
| 2:30 | (1310-4) | **Carbohydrate-Rich Microalgae Characterization Using High-Performance Anion-Exchange Chromatography** PARUL ANGRISH, Thermo Fisher Scientific N/A |

# TECHNICAL PROGRAM

**ORAL SESSIONS** **Session 1320**

*Detection of Illicit Drugs - Half Session*

**Tuesday Afternoon, Room B407**
Nathaniel R Gomer, ChemImage Sensor Systems, Presiding

| | | |
|---|---|---|
| 1:30 | (1320-1) | **The Detection of Illicit Drugs and Cutting Agents Using Shortwave Infrared Hyperspectral Imaging** NATHANIEL R GOMER, ChemImage Sensor Systems, Jeffrey Beckstead, Oksana Olkhovyk, Matthew P Nelson |
| 1:50 | (1320-2) | **Characterization of Synthetic Phenethylamines Using High-Resolution GC-TOFMS and Mass Defect Filters** RUTH SMITH, Michigan State University, Alexandria Anstett, Fanny Chu, David E Alonso |
| 2:10 | (1320-3) | **The Development of a Novel Color Test for Improved Detection of Synthetic Cathinones** TSUNGHSUEH WU, University of Wisconsin-Platteville, Charles Cornett, Brook Tashner, Nicole Kloepfer |
| 2:30 | (1320-4) | **Potentiometric Sensor for Forensic Analysis: The Detection of the 'Undetectable Poison' Succinylcholine and Study of Its Enzymatic Degradation Kinetics** MOHAMED K ABD EL-RAHMAN, Cairo University, Amr M Mahmoud |

**ORAL SESSIONS** **Session 1330**

*Environmental and Instrumentation Application of LC/MS - Half Session*

**Tuesday Afternoon, Room B408**
William R LaCourse, University of Maryland Baltimore County, Presiding

| | | |
|---|---|---|
| 3:05 | (1330-1) | **A New Type of Electron Ionization LC-MS and Its Applications** AVIV AMIRAV, Tel Aviv University, Boaz Seemann, Svetlana Tsizin, Alexander Fialkov, Tal Alon |
| 3:25 | (1330-2) | **Assessing the Occurrence and Fate of UV Filters in Seawater Swimming Pools by UPLC-Q-ToF-MS** TAREK MANASFI, Aix-Marseille University, Ravier Sylvain, Bruno Coulomb, Jean-Luc Boudenne |
| 3:45 | (1330-3) | **Expanded Analysis of Human Hormones in Drinking Water Using Solid Phase Extraction and Liquid Chromatography Tandem Mass Spectrometry** CARL FISHER, Thermo Fisher Scientific, Claudia Martins, Pranathi Perati |
| 4:05 | (1330-4) | **Multiclass Determination of New Psychoactive Substances in Municipal Wastewater** IVAN SENTA, Rudjer Boskovic Institute, Ivona Krizman, Marijan Ahel, Senka Terzic |

**ORAL SESSIONS** **Session 1340**

*Environmental Applications of Electrochemistry and Sensors - Half Session*

**Tuesday Afternoon, Room B409**
Susan S Marine, Miami University Middletown, Presiding

| | | |
|---|---|---|
| 1:30 | (1340-1) | **Pretreatment and Spectroelectrochemical Sensing of Re(I)-Carbonyl Complexes** SHIRMIR D BRANCH, University of Cincinnati, Amanda D French, Amanda M Lines, Brian M Rapko, Sam A Bryan, William R Heineman |
| 1:50 | (1340-2) | **Wearable Gas Sensors: Shrinking Electrochemical Cells** JOHN R SAFFELL, Alphasense Ltd., Joseph R Stetter |
| 2:10 | (1340-3) | **Cloud Point Extraction for Electroanalysis: Anodic Stripping Voltammetry of Lead** CORY A RUSINEK, University of Cincinnati, William R Heineman, Adam Bange, Ian Papautsky, Mercedes Warren |
| 2:30 | (1340-4) | **Development of an Electrochemical Sensor for Detection of Dissolved Polycyclic Aromatic Hydrocarbons in Water** ABRA PENEZIC, Rudjer Boskovic Institute, Blazenka Gasparovic, Andrew Nelson, Drazenka Stipanicev |

**ORAL SESSIONS** **Session 1350**

*Food Product Quality and Component Characterization II*

**Tuesday Afternoon, Room B403**
Alexander J Krynitsky, US FDA, Presiding

| | | |
|---|---|---|
| 1:30 | (1350-1) | **A Green Sample Preparation Device for Complex Biological, Environmental, Food, Pharmaceutical and Toxicological Samples** ABUZAR KABIR, Florida International University, Rodolfo Mesa, Rayma Blanko, Kenneth G Furton |
| 1:50 | (1350-2) | **Cannabinoids and Terpenes in Food** TIM ANDERSON, Phenomenex, Kristen Parnell, Ramkumar Dhandapani |
| 2:10 | (1350-3) | **Determination of Whey Adulteration in Milk Powder by Using Laser Induced Breakdown Spectroscopy** GONCA BILGE, Hacettepe University, Banu Sezer, Kemal E Eseller, Halil Berbero lu, Ali Topcu, Ismail H Boyaci |
| 2:30 | (1350-4) | **Bioactive Compounds and Antioxidant Activity of Guava Processed Byproducts and Wastes** NEELA EMANUEL, NIFTEM, Sao Khushbu, Aman Kaushik |
| 2:50 | | **Recess** |
| 3:05 | (1350-5) | **Analysis of Non Volatile Congeners in Spirits by Creation of an Ion Fragmentation Database for Use with Time of Flight LC MS** RITA STEED, Agilent Technologies, Joni Stevens, Tarun Anumol, Gregory Hunlen, Luke Adam, Sue Dantonio |
| 3:25 | (1350-6) | **A Simple Field Test Kit for the Detection of Iodine in Food Grade (Table) Salt** RUFUS SHA'ATO, University of Agriculture, Nasiru L Usman |
| 3:45 | (1350-7) | **Chromatography Advancements in Nutraceuticals and Dietary Supplements Testing** ALLEN MISA, Phenomenex, Zeshan Aqeel |
| 4:05 | (1350-8) | **Raman Microspectroscopy and Chemometrics: A Combined Approach to Perform A Rapid Untargeted Screening of Bacteria Present in Food Samples** ALI ASSAF, University of Nantes, Emilie Grangé, Christophe Cordella, Douglas Rutledge, Michele Lees, Gerald Thouand N/A |

**ORAL SESSIONS** **Session 1360**

*Forensic Trace Analysis - Half Session*

**Tuesday Afternoon, Room B407**
Nathaniel R Gomer, ChemImage Sensor Systems, Presiding

| | | |
|---|---|---|
| 3:05 | (1360-1) | **Analysis and Comparison of Fatty Acid Compositions in Latent and Smudged Fingermarks via Gas Chromatography-Mass Spectrometry (GC-MS) and Comprehensive Two-Dimensional Gas Chromatography-Time-of-Flight Mass Spectrometry (GCxGC-MS)** CAITLIN COBERN, Penn State, Frank Dorman, Seth Michalski |
| 3:25 | (1360-2) | **Mathematical Model to Predict Evaporation of Ignitable Liquids for Forensic Applications** VICTORIA L MCGUFFIN, Michigan State University, Rebecca Brehe, John W McIlroy, Ruth Smith |
| 3:45 | (1360-3) | **Analysis of Smoke Residues from Illicit Drugs as a Potential Source of Forensic Evidence** JULIE BITTER, National Institute of Standards and Technology, Matthew Staymates |
| 4:05 | (1360-4) | **LIBS Instrumentation for Fast Quantitative Analysis of Soil and Forensic Investigation of Nuclear Materials** ALAIN BLOUIN, National Research Council Canada, Paul Bouchard, Josette El Haddad, Aissa Harhira, Mohamad Sabsabi |

**ORAL SESSIONS** **Session 1370**

***Laser Induced Breakdown Spectroscopy (LIBS) and Glow Discharge in Atomic Spectroscopy - Half Session***

**Tuesday Afternoon, Room B301**
Jagdish Singh, Mississippi State University, Presiding

| | | |
|---|---|---|
| 3:05 | (1370-1) | **Standoff LIBS Using a Spatial Heterodyne Spectrometer with Sub-Microsteradian Collection Optics** PATRICK D BARNETT, University of South Carolina, Nirmal Lamsal, S Michael Angel |
| 3:25 | (1370-2) | **Study of Matrix Effects for Reproducible LIBS Analysis of Powders** MATTHIEU BAUDELET, University of Central Florida, Sudeep Jung Pandey, Richard Locke, Brandon Seesahai, Romain Gaume, Martin Richardson |
| 3:45 | (1370-3) | **Particulate Identification Using Image Directed Laser Induced Breakdown Spectroscopy (LIBS) with Enhanced Spectral and Spatial Resolution for Pharmaceutical and Industrial Applications** MARK SULLIVAN, rap.ID Inc, Oliver Valet |
| 4:05 | (1370-4) | **Spectroscopy and Imaging Studies of a Solution-Cathode Glow Discharge** MICHAEL R WEBB, University of North Carolina Wilmington, Christian G Decker, Denise E Moon |

**ORAL SESSIONS** **Session 1380**

***LC/MS Biological Applications***

**Tuesday Afternoon, Room B404**
Mary Ellen McNally, E.I. DuPont de Nemours and Company, Presiding

| | | |
|---|---|---|
| 1:30 | (1380-1) | **Distinguishing Isomeric Acylsugar Metabolites: Strategies for Labeling Using $^{13}$C-amino Acid Precursors and LC-MS/MS** XIAOXIAO LIU, Michigan State University, Banibrata Ghosh, A Daniel Jones |
| 1:50 | (1380-2) | **Oxidative Techniques for Pteridine Bioanalysis and Implications for ESI-MS Applications** CASEY BURTON, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma |
| 2:10 | (1380-3) | **Intact Histones Separation by Using Submicron Particles with RPLC-MS** XIMO ZHANG, Purdue University, Mary J Wirth |
| 2:30 | (1380-4) | **High Throughput Analysis of TCA Metabolites Using Column Switching and IC-HRAM Mass Spectroscopy** TERRI T CHRISTISON, Thermo Fisher Scientific, Junhua Wang, John E Madden, Monika Verma |
| 2:50 | | **Recess** |
| 3:05 | (1380-5) | **Unified Drug Testing by Online SPE-LC/MS/MS with Focus on Productivity Achieved Through Ease of Use by Lab Technicians: One Totally Automated Method Measures ALL the Drugs in Urine and/or Oral Fluids** MARK HAYWARD, ITSP Solutions, Rick Youngblood, Kim Gamble, Martin Johnson, Matthew Hardison |
| 3:25 | (1380-6) | **High-Throughput Mass Spectrometric Analysis of Covalent Protein-Inhibitor Adducts for the Discovery of Irreversible Inhibitors: A Complete Workflow** IAIN CAMPUZANO, Amgen, Tisha San Miguel, Todd Rowe, Daniel Onea, Victor Cee, Tara Arvedson, John McCarter |
| 3:45 | (1380-7) | **Efficient Use of pH Control in Developing LC/UV/MS Methods** THOMAS E WHEAT, Waters Corporation, Amanda B Dlugasch, Patricia R McConville |
| 4:05 | (1380-8) | **Selectivity and Column Choices in HPLC Method Development** WILLIAM LONG, Agilent Technologies, Anne Mack, Stephen Luke, Jason Link |

**ORAL SESSIONS** **Session 1390**

***Polymer Characterization and Applications***

**Tuesday Afternoon, Room B405**
Christopher Henry, Waters Corporation, Presiding

| | | |
|---|---|---|
| 1:30 | (1390-1) | **Transferring a GPC Method to A More Efficient SEC Method for Zoladex Co-Polymer Using an Advanced Polymer Chromatography Based U(H)PLC System Coupled with RI Detection** CHRISTOPHER HENRY, Waters Corporation, Jeanette Bowden, Mark Wrona, Richard Ladd, Andy Boughey |
| 1:50 | (1390-2) | **Characterization of Polyacrylamide at Different Ionic Strength and pH Conditions Using Asymmetrical Flow FFF and Multi-Angle Light Scattering Detector** SOHEYL TADJIKI, Postnova Analytics Inc., Trevor Havard, Japan Trivedi, Thorsten Klein |
| 2:10 | (1390-3) | **Patterning of Polycaprolactone-Impregnated Glass Microfiber Membranes: A Novel Approach to Fabrication of Microfluidic Devices** GAYAN C BANDARA, Oregon State University, Vincent T Remcho |
| 2:30 | (1390-4) | **Advanced Polymer Chromatography - Method Development Tools for SEC Analysis of PEG** MICHAEL OLEARY, Waters Corporation, Damian Morrison |
| 2:50 | | **Recess** |
| 3:05 | (1390-5) | **Determination of Minor Component Differences and Additives in Polyethylene Using Thermal Desorption, Heart-Cutting EGA, Reactive Pyrolysis and GC/MS Techniques** TERRY RAMUS, Diablo Analytical, Dave Randle, Itsuko Iwai, Robert R Freeman |
| 3:25 | (1390-6) | **Applying Automatic Polymer Identification Capability to DSC Thermograms** BOB FIDLER, NETZSCH Instruments NA LLC, Ekkehard Post, Tobias Pflock, Stefan Schmoelzer, Gabriele Kaiser, Alexander Schindler |
| 3:45 | (1390-7) | **Characterization and Determination of Irganox 1076 and 1010 in Polyethylene Using Thermal Desorption and Reactive Pyrolysis – GC/MS** DAVE RANDLE, Frontier Lab USA, Itsuko Iwai, Terry Ramus, Robert R Freeman, Aki Hosaka, Ichi Watanabe |
| 4:05 | (1390-8) | **Simple Analysis Method of Degradation for The Molded Articles Polymer by FTIR and SEM** YOKO KATO, Advantest N/A |

**ORAL SESSIONS** **Session 1400**

***Sampling and Sample Preparation-Environmental and Food (ID, Safety and Contaminants)***

**Tuesday Afternoon, Room B406**
Garry Lynch, Bechtel Marine Propulsion Corporation, Presiding

| | | |
|---|---|---|
| 1:30 | (1400-1) | **Sampling Condensed Hookah Smoke with C-18 SPME Fibers** AMBERLIE A CLUTTERBUCK, University of Cincinnati, Joseph Caruso, William Wetzel, Julio Landero N/A |
| 1:50 | (1400-2) | **Bacterial DNA Analysis Using Solid-Phase Microextraction by Different Polymeric Ionic Liquid-Based Sorbent Coatings** OMPRAKASH NACHAM, Iowa State University, Kevin D Clark, Matthew P Bommarito, Andrea E Tsatalis, Jared L Anderson |
| 2:10 | (1400-3) | **ICE Concentration Linked with Extractive Stir Bar (ICECLES): A Novel Sample Preparation Technique for Ultratrace Analysis** BRIAN LOGUE, South Dakota State University |
| 2:30 | (1400-4) | **Analysis of Pesticides in Foods by Direct Immersion SPME Using an Overcoated Fiber** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Katherine Stenerson, Robert Shirey, Yong Chen, Tyler Young |
| 2:50 | | **Recess** |
| 3:05 | (1400-5) | **Recent Advances in Sample Preparation for Extraction and SPE** SM RAHMAT ULLAH, Thermo Fisher Scientific, Kannan Srinivasan, Mike McAdams, Glenn Kuse, Aaron Kettle |
| 3:25 | (1400-6) | **Development of a Carbon Mesh Supported Thin Film Microextraction Membrane as a Means to Lower the Detection Limits of Bench-top and Portable GC-MS Instrumentation** JONATHAN J GRANDY, University of Waterloo, Janusz Pawliszyn |
| 3:45 | (1400-7) | **Investigation of Polymeric Ionic Liquid Sorbent Coatings in Solid-Phase Microextraction Coupled to High-Performance Liquid Chromatography for the Analysis of Polar Compounds** HONGLIAN YU, Iowa State University, Josias Merib, Jared L Anderson |
| 4:05 | (1400-8) | **Justification of Kinetic Calibration in Pre-Equilibrium Solid Phase Microextraction with a Mathematical Model and Computational Simulation** MD NAZMUL ALAM, University of Waterloo, Fardin Ahmadi, Luis Ricardez-Sandoval, Janusz Pawliszyn |



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM



## POSTER SESSION — Session 1410

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Advances in Biomedical Applications*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1410-1 P) **Strategies for Glycomics, Glycoproteomics, and Glycosaminoglycan Research at the Complex Carbohydrate Research Center** STEPHANIE A ARCHER-HARTMANN, Complex Carbohydrate Research Center, Roberto Sonon, Parastoo Azadi, Christian Heiss, Mayumi Ishihara

(1410-2 P) **Down Regulation of Smad-2 and VEGF Transcription and TGF-B1 Signaling in Nano Sized Titanium Dioxide-Induced Liver Injury in Mice by Potent Antioxidants** SAMY A ABDEL AZIM, Cairo University, Abd El-Moneim M Afify

(1410-3 P) **One Hydrothermal Processing of 1D Hydroxyapatite for Biomedical Application** ZORAN S STOJANOVIC, Institute of Technical Sciences of SASA, Nenad L Ignjatovic, Vuk D Uskokovic, Miroslav M Miljkovic, Vojka Zunic

(1410-4 P) **DNA Micelle Flares: Thermodynamic Stability and Cellular Internalization** YANYUE WANG, University of Florida, Weihong Tan

(1410-5 P) **Study of Various Cationic CPEs' Interaction with Mammalian Cells** SHANSHAN WANG, University of Florida, Zhiliang Li, Yun Huang, Kirk S Schanze

(1410-6 P) **Generation of T-cell Specific Aptamers Using a Novel Cell-Selex Method: Antibody Guided Cell-SELEX Technology** HASAN E ZUMRUT, City University of New York, The Graduate Center, Mallikaratchy Prabodhika, Shomi Chakrabarti, Mst Naznin Ara, George Maio

(1410-7 P) **Adeno-Associated Virus** YUAN WU, University of Florida

(1410-8 P) **Continuous Electroporation Through a Mesoporous Gold Membrane** JULIETTE EXPERTON, University of Florida, Aaron Wilson, Charles R Martin

(1410-9 P) **Analyzing the Effect of Beverages and Fluoride on Tooth Enamel with a FAAS and Dissolution** ANDREA GERCHMAN, St. John Fisher College, Kimberly Chichester

(1410-10 P) **Profiling Volatile Organic Compounds in Exhaled Breath by TD–GC–TOF MS** LAURA MCGREGOR, Markes International Ltd, Caroline Widdowson, Nicola Watson, Chris Hall, Ken Umbarger

(1410-11 P) **Purification of Pharmaceutical Proteins Including Antibody and Peptides Using Ion-Exchange Bulk Media Designed for High-Throughput Purification** TAKASHI SATO, YMC CO., Ltd., Munehiro Shoda, Chiaki Iwata, Noriko Shoji, Takatomo Takai

(1410-12 P) **An Analysis of the Protective Effects of Selenium on Porcine Jejunal Epithelial Cells Following Cadmium-induced Oxidative DNA Damage** SARAH JOANNE LYNCH, Dublin City University, Blánaid White, Dermot Walls, Karina Horgan

(1410-13 P) **Imaging Mass Spectrometry Reveals the Chemistry in Chemically Fixed Adrenal Cells Prepared for Transmission Electron Microscopy Analysis** JELENA LOVRIC, Chalmers University of Technology, Per Malmberg, Bengt R Johansson, John S Fletcher, Andrew Ewing

(1410-14 P) **Measurement of the Correlation Between Type of Mutation and Conditions that Alter Aging in Yeast** ANDREEA P MUSTEATA, Rensselaer Polytechnic Institute, Patrick Maxwell

(1410-15 P) **Self-Assembly Aptamer–Graphene Oxide Nanosheets as an Anticoagulant** PEI-XIN LAI, National Taiwan Ocean University

(1410-16 P) **Synthesis of Protein-Capped Gold Nanoparticles with Specific Protein Orientation as a DNA Transfection Vehicle** JU-YI MAO, National Taiwan Ocean University

(1410-17 P) **Recovering the Electrocatalytic Activity of Pt Nanoparticle-DNA Collisions via Nuclease Digestion for Sensing Applications** ALMA CASTANEDA, University of Texas at Austin, Donald Robinson, Richard M Crooks, Keith Stevenson

(1410-18 P) **Study of Stressed Monoclonal Antibody (mAb) Pharmaceuticals by Using Deep-UV Resonance Raman (DUVRR) Spectroscopy** CHEN QIU, US Food and Drug Administration, Sergey Arzhanstev, John Kauffman

(1410-19 P) **Paper Membrane Based SERS Platform for Rapid Bacteria Enumeration** UGUR TAMER, Gazi University, Aysen Gumustas, Bozkurt Akif, Merve Eryilmaz, Esra Acar, Demet Cetin, Zekiye Suludere, Ismail H Boyaci

(1410-20 P) **Microfluidics for the Detection of Minimal Residual Disease in Acute Myeloid Leukemia Patients Using Circulating Leukemic Cells Selected from Blood** JAMES TAYLOR, University of North Carolina at Chapel Hill, Joshua Jackson, Malgorzata Witek, Paul Armistead, Steven A Soper

## POSTER SESSION — Session 1420

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Advances in Metabolomics, Proteomics, Lipidomics*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1420-1 P) **Universal Derivatization of Metabolites for Improved Sensitivity in Electrospray Ionization Mass Spectrometry** TIANJIAO HUANG, Saint Louis University, Maria Toro, James L Edwards

(1420-2 P) **Identification of a Biological Fear Cue in Blue Crab Urine Via 1H NMR-Based Metabolomics** REMINGTON X POULIN, Georgia Institute of Technology, Marc Weissburg, Julia Kubanek

(1420-3 P) **Analysis of Urine SRMs Using Solid Phase Micro Extraction, Dynamic Headspace and Liquid Injection with Comprehensive Two-Dimensional Gas Chromatography (GC×GC)-High Resolution Time-of-Flight Mass Spectrometry** DAVID E ALONSO, Leco Corporation, Joseph E Binkley, Elizabeth M Humston-Fulmer, Lorne E Fell, Jonathan D Byer

(1420-4 P) **Feasibility of Early Detection of Acute Pulmonary Exacerbations by Exhaled Breath Condensate Metabolomics** XIAOLING ZANG, Georgia Institute of Technology, Maria E Monge, Nael A McCarty, Arlene Stecenko, Facundo M Fernandez

(1420-5 P) **Prebiotic Peptidomics: An Ultra-Performance Liquid Chromatography-Ion Mobility-Tandem Mass Spectrometry (UPLC-IM-MS/MS) Workflow Applied to Origins-of-Life Chemistry** JAY G FORSYTHE, Georgia Institute of Technology, Sheng-Sheng Yu, Ramanarayanan Krishnamurthy, Martha A Grover, Nicholas V Hud, Facundo M Fernandez

(1420-6 P) **Development of a High Throughput Organelle Extraction Procedure from Rat Tissues** BRANDON EASPARRO, Omni International, Shari Garrett, James Atwood

(1420-7 P) **Serum Lipidomics Identifies Biomarkers of Acute Traumatic Brain Injury** SCOTT HOGAN, Georgia Institute of Technology, David A Gaul, Melissa A Velez, Michelle C LaPlaca, Facundo M Fernandez

(1420-8 P) **An Accelerated Protein Sample Preparation Method for LC-MS-Based Proteomics** SUJATHA CHILAKALA, Cleveland State University, Yan Xu

(1420-9 P) **High-Throughput Proteomics Analysis by LC-MS with AJS-CESI Technology** SUJATHA CHILAKALA, Cleveland State University, Yan Xu

(1420-10 P) **Response of NEIL1 to Oxidatively Damaged G-Quadruplexes via Affinity Purification-Mass Spectrometry** JONATHAN ASHBY, University of California, Davis, Brittany Anderson, Sheila David N/A

(1420-11 P) **Expression and Spectroscopic Characterization of Allene Oxide Synthase: A Cytochrome P450 for the Rearrangement of Small Molecule Hydroperoxides** JULIE C MCINTOSH, University of North Carolina at Chapel Hill, Nathan A Whitman, Matthew R Lockett

(1420-12 P) **Practical Considerations for Quantifying Protein Therapeutics in Biological Matrices by LC-MS/MS** ERIN E CHAMBERS, Waters Corporation, Mary Lame, Paula Orens, Hua Yang N/A

## POSTER SESSION — Session 1430

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Bioanalytical and Neurochemistry*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1430-1 P) **Using Effective Conductivity to Study Brain Tissue Morphology** JENNA DEVIVO, University of Pittsburgh, Yangguang Ou, Erika Varner, Adrian C Michael, Stephen Weber

(1430-2 P) **Serotonin and Histamine Coregulation in the Mouse Premammilary Nucleus** RHIANNON ROBKE, University of South Carolina, Srimal A Samaranayake, Aya Abdalla, H Frederick Nijhout, Michael C Reed, Janet Best, Parastoo Hashemi

(1430-3 P) **Development of a Nanoscale Calcium-Selective Electrode** THERESA M RUWE, Northern Kentucky University, Edward A Dobrzykowski, Teri Rae Armstrong, Celeste A Morris

(1430-4 P) **Optimized Determination of L-Dopa at a Glassy Carbon Electrode Modified with Electrodeposited Films of Caffeic Acid** AHMAD ROHANI FAR, The University of Toledo, Amila M Devasurendra, Joshua A Young, Jon R Kirchhoff

(1430-5 P) **Mass Spectrometry Imaging for Targeted Metabolomics of Medulloblastoma** MARTIN R PAINE, Georgia Institute of Technology, Jingbo Liu, Danning Huang, Tobey MacDonald, Facundo M Fernandez

(1430-6 P) **Ultra-High Performance Liquid Chromatography Mass Spectrometry Metabolic Fingerprinting of a Medulloblastoma Mouse Model** DANNING HUANG, Georgia Institute of Technology, Martin R Paine, Jingbo Liu, Tobey MacDonald, Facundo M Fernandez

(1430-7 P) **Biophysical Evaluation of Surfactant Effects on Nanoparticle Toxicity a Lipid Model of the Blood-Brain Barrier** ADAM L HOFFMANN, Northern Kentucky University, Darcy Poor, Rolf Fowee, Marcus Jones, Andrew Hall, Kristi L Haik, Celeste A Morris

(1430-8 P) **Novel Graphene-Modified Graphite Pencil Electrode for the Trace Quantification of L-Tyrosine in Human Urine** ABDEL-NASSER KAWDE, King Fahd University of Petroleum and Minerals

(1430-9 P) **Online Liquid Chromatography - Surface Enhanced Raman Detection for Metabolic Profiling** ANH H NGUYEN, University of Notre Dame, Zachary D Schultz

(1430-10 P) **Combining Microchip Electrophoresis, Mass Spectrometry, and Standard Addition to Identify N-glycan Structures in Serum** XIAOMEI ZHOU, Indiana University, Christa Snyder, Margit I Campos, Milos V Novotny, Stephen C Jacobson

(1430-11 P) **Multichannel Impedance-Based Biosensing Using Virus-Polyethylenimine Films for Bladder Cancer Detection** ALANA OGATA, University of California Irvine, Reginald M Penner, Crystin Eggers N/A

(1430-12 P) **Development of a Wearable Device for Neurochemical Monitoring of Energy Availability in the Injured Brain Using On-Line Microdialysis** ISABELLE C SAMPER, Imperial College London, Sally A Gowers, Chu Wang, Martyn G Boutelle

(1430-13 P) **Label-Free Profiling of O-Linked Glycans by HPLC with Charged Aerosol Detection** IAN N ACWORTH, Thermo Fisher Scientific, David Thomas, Rainer Bauder, William Kopaciewicz

(1430-14 P) **Amperometric Quantitative Measurements of Individual Vesicular Transmitters in Single Adrenal Chromaffin Cells with Nano-Tip Conical Carbon Fiber Microelectrodes** SOODABEH MAJDI, Chalmers University of Technology N/A

(1430-15 P) **In Vitro Electrochemical Investigation of ATP: Catecholamine Interactions** ZAHRA TALEAT, Chalmers University, Johan Dunevall, Ricardo Borges, Judith Estevez, Andrew Ewing

(1430-16 P) **Quantifying the Progression of Amyotrophic Lateral Sclerosis** AIDAN P WICKHAM, Imperial College London, Christopher E Shaw, Kerry R Mills, James Bashford, Emmanuel M Drakakis, Martyn G Boutelle

## POSTER SESSION — Session 1440

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Bioanalytical: Miscellaneous Analytical Techniques*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1440-1 P) **An Analytic Approach to the Laser-Assisted Microscopy of Erythrocyte Deformability** FARAMARZ RAHNAMA, University of Calcutta, Azamat Vaseghi N/A

(1440-2 P) **Fabrication of Passive Microfluidic Diodes with Tunable Breakthrough Junctions** MARK D HOLTAN, Auburn University, Christopher J Easley

(1440-3 P) **Microfluidic Thermofluorimetric Analysis (μTFA) for Protein Quantification in Nanoliter and Picoliter Volumes** JUAN HU, Auburn University, Joonyul Kim, Mark D Holtan, Christopher J Easley

(1440-4 P) **Analysis of Fluorinated Lidocaine Derivatives Under Varying Conditions and Its Application in the Body** CYANN CICCONI, Seton Hill University

(1440-5 P) **Non-Enzymatic Modification of Human Serum Albumin: A Study Focusing On Advanced Glycation End Products by D-Galactose and D-Glucose** MENASHI A COHENFORD, Marshall University

(1440-6 P) **Study Interactions Between 21 Proteins and Nanoparticles** YAOKAI DUAN, University of California Riverside, Wenwan Zhong

(1440-7 P) **Development of Conductive Polymeric Ionic Liquid-Based Electrodes** AMILA M DEVASURENDRA, The University of Toledo, Joshua A Young, Ahmad Rohani Far, LM Viranga Tillekeratne, Jon R Kirchhoff

(1440-8 P) **Plasmonic Applications in the Mid-IR: Spectroscopic Surface Plasmon Resonance (SPR) Detection of $N_2O$ Gas and Hexadecanethiol Self-Assembled Monolayer on a Low Loss, Plasmonic Tunable Novel Material Dy:CdO** HNIANG KHAMH, North Carolina State University

(1440-9 P) **Orientation of Membrane-Bound Cytochrome P450's in Nanodiscs** IVAN LENOV, University of Illinois, Stephen Sligar

(1440-10 P) **A Comparison of Binding Constants for FITC-Labeled Single Stranded DNA with Anti-FITC Antibody** QIAN LIU, Wake Forest University, Keith Bonin, Jason Gagliano, Kathryn Riley

(1440-11 P) **A Micro Pathogenic Microorganism Detector Applied for Mobile Phone Devices** LIANG SIJIA, Zhejiang University, Yu Dongdong, Zhou Jianguang

(1440-12 P) **The Preservation of DNA Using Magnetic Ionic Liquids** MATTHEW SORENSEN, Gustavus Adolphus College, Kevin D Clark, Omprakash Nacham, Jared L Anderson

(1440-13 P) **Automatic Data Analysis for Nanopore Detection** ZHEN GU, East China University of Science and Technology, Chan Cao, Yi-Lun Ying, Yi-Tao Long N/A

(1440-14 P) **Experiments and Modeling of Sequential Enzyme Activity in Biphasic Reaction Media** BRADLEY W DAVIS, Waynesburg University, William M Aumiller, Negar Hashemian, Antonios Armaou, Christine D Keating

(1440-15 P) **Fast Multipoint Immobilized MOF Bioreactor** HSI-YA HUANG, Chung Yuan Christian University, Wan-Ling Liu, Stephen Lirio, Chia-Her Lin

(1440-16 P) **HPLC Determination of the Rosmarinic Acid Content of Common Household Herbs** BRANDT A WOOD, California University of Pennsylvania N/A

(1440-17 P) **Molecular Modeling of Binding of Coumarins to DNA Gyrase** SARA MARIYAM ABDULLA, College of Chemical Sciences N/A

(1440-18 P) **Monitoring Cluster Ions Derived from Aptamer-Modified Gold Nanofilms under Laser Desorption/Ionization for the Detection of Circulating Tumor Cells** WEI-JANE CHIU, National Taiwan Ocean University, Chih-Ching Huang N/A

(1440-19 P) **Same Nucleotide Composition and High Sequence Similarity of MicroRNAs - An Analytical Challenge to RNA Studies?** JOSEPH N MWANGI, University of North Carolina at Greensboro, Norman Chiu

(1440-20 P) **Travelling Wave Ion Mobility Mass Spectrometry of Isomeric MicroRNA Biomarkers** NORMAN CHIU, University of North Carolina at Greensboro, Joseph Mwangi N/A

(1440-21 P) **Ultrafast Spectroscopic Studies of Molecular Interactions and Vibrational Energy Relaxation Dynamics in Binary Solvents** CHEN QIU, Michigan State University, Gary Blanchard N/A

(1440-22 P) **Surface-enhanced Raman Spectroscopy Based Total Protein Assay** MERVE ERYILMAZ, Gazi University, Adem Zengin, Ugur Tamer

(1440-23 P) **Ionic Liquid Crosslinkers for Chiral Imprinted NanoGUMBOS** SUZANA HAMDAN, Louisiana State University, Leonard Moore, Jason LeJeune, Farhana Hasan, Trevor K Carlisle, Jason E Bara, Douglas Gin, Andrew L LaFrate, Richard D Noble, David Spivak, Isiah M Warner

(1440-24 P) **Fabricated Multi-functional DNA Nanogel to Delivery Drug to Target Cells** XIGAO CHEN, University of Florida N/A

(1440-25 P) **Withdrawn**

(1440-26 P) **A Novel Bioassay Platform Using Silica Core-Stabilized Liposome Shell Microparticles for Ligand Discovery** KENDALL E SANDY, University of Arizona, Jinyan Wang, Mark T Agasid, Craig A Aspinwall

(1440-27 P) **Detection of Disease Associated MicroRNA Combinations with a Smart AND Sensor** LULU ZHANG, Oregon State University, Sean M Burrows

(1440-28 P) **Withdrawn**

(1440-29 P) **E-spun Collagen-CNT/Silk-CNT Composite Fibers to Transmit Electrical Signals for Cell Stimulation** NAIWEI CHI, Illinois Institute of Technology

(1440-30 P) **Sensitive Quantification of Protease Activity in Biological Samples by Using MCE-LIF** LI PAN, Jackson State University, Yiming Liu, Shulin Zhao N/A

# TECHNICAL PROGRAM

## POSTER SESSION — Session 1450

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Bioanalytical: Separation Techniques*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1450-1 P) **Surface Modified Nylon Capillary-Channeled Polymer (C-CP) Fibers for Protein Ion-Exchange Separations** LIUWEI JIANG, Clemson University, R Kenneth Marcus

(1450-2 P) **SEC Analysis of a Monoclonal Antibodies Using a Hybrid Silica Based Stationary Phase** JEFFREY KAKALEY, YMC America Inc., Ernest Sobkow N/A

(1450-3 P) **HPLC Method Transfer for Biopharmaceutical Analysis** BROOKE M KOSHEL, Waters Corporation, Sean M McCarthy

(1450-4 P) **Ratio of Different Fatty Acids Determined by GC-MS in Exosomes Purified Through Size Exclusion Chromatography** RUI XU, Jackson State University, Yiming Liu, Joseph Fernandes, Radhika Pochampally

(1450-5 P) **Analysis of Chromium Species in Dietary Supplements Using ICP-MS and Speciated Isotope Dilution Mass Spectrometry (SIDMS)** KAITLIN MILLER, Duquesne University, Logan T Miller, Jennifer Crawford, Stuart Procter, Matt Pamuku, Skip Kingston

(1450-6 P) **Metabolomic Signatures from Early Stage Ovarian Cancer Patients** DAVID A GAUL, Georgia Institute of Technology, Christina M Jones, Long Q Tran, John F McDonald, Facundo M Fernandez

(1450-7 P) **Reducing Adhesion of Proteins on Stainless Steel Components by the Application of a Carboxysilane Coating** LUKE PATTERSON, SilcoTek Corporation, Alfredo Narvaez, David Daghfal, Vaidya Shyam, Min Yuan, David Smith

(1450-8 P) **Optimizations of Proteomic Sample Preparation Method for *Xenopus Laevis* Embryonic Proteomics** ELIZABETH H PEUCHEN, University of Notre Dame, Liangliang Sun, Norman J Dovichi

(1450-9 P) **Determination of the Constituent Compounds in the Essential Oil from the Stem Bark of Ficus Capensis, A Multipurpose Phytomedicine, by GCMS and their Relevance to the Bioactivity of the Plant** MODUPE M OGUNLESI, University of Lagos, Christianah T Aleshinloye

(1450-10 P) **GC-MS Analysis of the Essential Oil from the Stem Bark of Tetrapleura Tetrapetra, a Multipurpose Medicinal Plant, and Bioactivities of some Constituent Compounds** MODUPE M OGUNLESI, University of Lagos, Christianah T Aleshinloye

(1450-11 P) **Quantification of Trehalose and Other Sugars in Submergence Resistant Rice** ELIZABETH N MARTINEZ, California State Polytechnic University, Pomona, Rejbana Alam, Julia Bailey-Serres, Endang M Septiningsih, Gregory A Barding

(1450-12 P) **Exploring SFC for the Separation of Peptides and Small Proteins** CECILIA MAZZA, AkzoNobel PPC AB, Joakim Högblom, Peter Gidlund

(1450-13 P) **Automated Solid Phase Extraction Method for the Assessment of Human Exposure to Polycyclic Aromatic Hydrocarbons Using the Biomarker Metabolite 1-Hydroxypyrene in Urine** MICHAEL JOE TANNER, J2 Scientific, Jeff Wiseman

(1450-14 P) **High Speed SDS–PAGE of Proteins** PARUL MODI, Thermo Fisher Scientific, Stephen Roemer

(1450-15 P) **Withdrawn**

(1450-16 P) **Optimized Wide Pore Superficially Porous Particles by One-Step Coating Process for Fast and Efficient Separation of Large Biomolecules** WU CHEN, Agilent Technologies, Anne Mack, Xiaoli Wang

(1450-17 P) **Fast Quantification of Immunoglobulin G Using A New Protein A Analytical HPLC Column** KOSUKE ARAKI, Tosoh, Satoshi Fujii, Shigeru Nakatani, Atis Chakrabarti

(1450-18 P) **Charging YOYO-1 on Capillary Wall for Online DNA Intercalation and Integrating This Approach with Multiplex PCR and Bare Narrow Capillary–Hydrodynamic Chromatography for Online DNA Analysis** HUANG CHEN, University of Oklahoma, Zaifang Zhu, Joann Lu, Shaorong Liu

(1450-19 P) **From Peptide Fractions to Pure, Dry Powders: Development of a Novel Automated Chromatographic Purification Process Supported by Solid-Phase Trapping** YAMAZAKI TOMOYUKI, Shimadzu Corporation, Okoba Tsutomu, Matsuo Eiichi, Masuda Junichi, Iwata Yosuke, Robert E Buco, Nishimura Masayuki

(1450-20 P) **Coupling Ion Exchange Chromatography with Reverse Phase Liquid Chromatography for High-Throughput Analysis of Intact Proteins** ZAIFANG ZHU, University of Oklahoma, Joann Lu, Huang Chen, Shaorong Liu

## POSTER SESSION — Session 1460

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *High-Throughput Chemical Analysis*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1460-1 P) **Withdrawn**

(1460-2 P) **Characterization and Use of a Microspectrophotometer for Quantitative Bio-Applications** THOMAS M SPUDICH, Maryville University, Bradley Postier, Ronald Mills

(1460-3 P) **California Chlor-Alkali Production Facility Monitors Organic Carbon for Increased Reliability and Equipment Protection** MARK MULLET, GE Analytical Instruments, Gary Erickson

(1460-4 P) **New Analysis Technology of Ultra-Trace Yellow Components in a Transparent Film** HOKO SUTO, Hitachi Chemical Co., Ltd., Kosuke Iwamoto, Akihiro Unnno

(1460-5 P) **Leaning out Stage 1 Conductivity** JENNY G WATSON, GE Analytical Instruments

(1460-6 P) **Theoretical Simulation of a Helium DC Glow Discharge Used as an Ambient Desorption/Ionization Source for Mass Spectrometry** WADE C ELLIS, Brigham Young University, Paul B Farnsworth, Ross L Spencer

(1460-7 P) **Mathematical Modeling and Computational Simulation of Matrix Effect on Uptake Kinetics in Solid Phase Microextraction** MD NAZMUL AALM, University of Waterloo, Luis Ricardez-Sandoval, Janusz Pawliszyn

(1460-8 P) **Simple Imager for Multi-Well Plates** THAYUMANASAMY SOMASUNDARAM, Florida State University, Michael Zawrotny

## POSTER SESSION — Session 1470

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Surface and Microscopic Characterization of Nanostructures and Biological Materials*

**Tuesday Afternoon, Exposition Floor, 400 Aisle**

(1470-1 P) **Characterizing Nanoparticle Size and Particle-Surface Interactions Using Nanophotonic Force Microscopy** DAKOTA O'DELL, Cornell University, Perry Schein, Summer Saraf, David Erickson

(1470-2 P) **Tuning Localized Surface Plasmon Resonance Wavelengths of Nanoparticles by Mechanical Deformation** FATHIMA S AMEER, Clemson University, Shilpa Varahagiri, Fenglin Wang, Hannah Mack, Marian Kennedy, Jeffrey N Anker

(1470-3 P) **Comparison of Color Pigment Removal between Graphitized Carbon Black and Zirconia-Based Adsorbents for QuEChERS Process** PATRICK MYERS, Supelco/Sigma-Aldrich, Katherine Stenerson, Tyler Young, Jennifer Claus, Michael Ye

(1470-4 P) **Potential-Dependent Adsorption of Water-Soluble Porphyrins at Liquid/Liquid Interfaces Studied by Polarization-Modulation Total Internal Reflection Fluorescence Spectroscopy** SHO YAMAMOTO, Kanazawa University, Hirohisa Nagatani, Hisanori Imura, Kotaro Morita

(1470-5 P) **The Concept of Lipobeads in the Context of Encapsulated Drug Delivery: Technological Challenges vs. Potential Advantages** SERGEY V KAZAKOV, Pace University

(1470-6 P) **Combination of Surface Plasmon Resonance - Surface Enhanced Raman Scattering Spectroscopy in the Kretschmann Configuration** JU-YOUNG KIM, University of Notre Dame, Zachary D Schultz

(1470-7 P) **Preparation and Characterization of Photo-Patterned Amorphous Carbon Films with Thiol-Click Reactions** CATHERINE G MCKENAS, University of North Carolina at Chapel Hill, Matthew R Lockett

(1470-8 P) **Electrophoretic Separation of Carbon Dots** KARINA M TIRADO-GONZÁLEZ, University at Buffalo, SUNY, Zuqin Xue, Luis A Colón

(1470-9 P) **Preparation and Separation of Highly Fluorescent Carbon Dots** ZUQIN XUE, University at Buffalo, SUNY, Luis A Colón, Karina M Tirado-González

(1470-10 P) **Microscopy in Analysis of Erythrocyte Shape Changes** VALIEV HAMMAT, Institute Applied Mechanics RAS, Karnet Yulia, Yumashev Oleg, Snegireva Nataliya N/A

(1470-11 P) **High Temperature In-Situ Reaction Monitoring of CdS Quantum Dots Using Spectrophotometers with Peltier Cell Holders** KYUNBAE LEE, Scinco R&D Center, In-Sung Kang, Kyung-Won Ro

(1470-12 P) **Determination of Airborne Concentration of Single-Wall Carbon Nanotubes and Metals by Wet Electrostatic Precipitation and Inductively Coupled Plasma Mass Spectroscopy** PETER ANDERSEN, Elemental Scientific, John Aumen, Matt Anderson, Grant Josh

(1470-13 P) **Impacts of Mesoporous Silica Shells on Reactivity of Metal-Semiconductor Hybrid Nanocatalysts** FEI ZHAO, Georgia State University, Bin Dong

(1470-14 P) **Investigating Chemical Reactivity of Nanoparticles Using Nano-Impact Electrochemistry** ANAHITA KARIMI, Clarkson University

(1470-15 P) **Advanced Analysis of LIB and Related Materials** KEIJI SUMIYA, Hitachi Chemical Co., Ltd., Hiroki Hirano

(1470-16 P) **Evaluation of Apples Browning Using a Camera-Imaging Visual Analyzer** ANDREW COWELL, Alpha MOS, Jean-Christophe Mifsud, Herve Lechat, Marion Bonnefille

(1470-17 P) **Ligand-Coated Zinc Oxide Nanoparticle Adsorption to Cellulose** STEPHEN R PRINTZ, Western Carolina University, Carmen L Huffman N/A

(1470-18 P) **Gemcitabine Conjugated Cysteine Modified Gold Nanoparticles: Improved Potency and Targeted Nanocarriers for Cancer Treatment** NIKUNJKUMAR NARAYANBHAI VALAND, Gujarat University, Manish B Patel, Kalpesh B Solanki, Shobhana K Menon N/A

(1470-19 P) **Investigation of Nitrogen-Doped Graphene Quantum Dots: Temperature Dependent Nitrogen Incorporations and their Effect on Optical Properties** TIMOTHY PILLAR-LITTLE, University of Kentucky, Doo Young Kim

(1470-20 P) **Industrial Characterization of Nano-scale Roughness on Polished Surfaces** NIKOLAJ A FEIDENHANS'L, Danish Fundamental Metrology, Poul-Erik Hansen, Lukas Pilny, Morten H Madsen, Giuliano Bissacco, Jan C Petersen, Rafael Taboryski

(1470-21 P) **High Throughput Fabrication of Nano and Micro Structured Polymer Foils by Roll-to-Roll-Extrusion Coating** SWATHI MURTHY, Danish Tchnical University/ Inmold, Maria Matschuk, Henrik Pranov, Henrik Pedersen, Guggi Kofod, Rafael Taboryski N/A

(1470-22 P) **Holographic Characterization of Particles in Complex Suspensions** DAVID B RUFFNER, Spheryx, Inc., Jaroslaw M Blusewicz, Priya Kasimbeg, David G Grier, Laura Philips

(1470-23 P) **Withdrawn**

(1470-24 P) **Impacts of Mesoporous Silica Shells on Reactivity of Metal-Semiconductor Hybrid Nanocatalysts** FEI ZHAO, Georgia State University, Bin Dong N/A

(1470-25 P) **Characterization of Carbon Nanomaterial Dispersions for Printed Electronics** QIHUA WU, Brewer Science, Carissa Jones, Kay Mangelson, Christopher Landorf, Stephen Gibbons

(1470-26 P) **Quantum Dots Embedded Silica Nanoparticles Functionalized for Interface Partitioning** SAFYAN AKRAM KHAN, King Fahd University of Petroleum and Minerals, Zain H Yamani, Mohammed H Aljabri N/A

# WEDNESDAY, MARCH 9, 2016 MORNING

## AWARDS — Session 1480

*Satinder Ahuja Award for Young Investigators in Separation Sciences*
arranged by Neil D Danielson, Miami University of Ohio

**Wednesday Morning, Room B312**
Neil D Danielson, Miami University of Ohio, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Neil D Danielson** |
| 8:35 | | **Presentation of the 2016 ACS Division of Analytical Chemistry Award for Young Investigators in Separation Sciences to Matthew D Miller, The Dow Chemical Company, by Neil D Danielson, Miami University of Ohio** |
| 8:40 | (1480-1) | **Fully Unlocking Polyolefin Chemical Composition Distributions: Breakthrough Separations Using Graphitic Carbon** MATTHEW D MILLER, The Dow Chemical Company, Rongjuan Cong, Willem deGroot, Chanda Klinker, Dean Lee, John W Lyons, David Mark Meunier, Abhishek Roy, Freddy Van Damme, Bill Winniford, Zhe Zhou |
| 9:15 | (1480-2) | **Demystifying Flow Modulated Comprehensive Two Dimensional Gas Chromatography (GC x GC) as a Practical Problem Solving Tool** BILL WINNIFORD, Dow Chemical, James Griffith, Anna Sandlin, Jim Luong, Chris Siegler, Kefu Sun |
| 9:50 | (1480-3) | **Separation of Building Blocks from Block Copolymers by High Performance Liquid Chromatography with Preloaded Adsorption Barriers** DAVID MARK MEUNIER, Dow Chemical Company, Yongfu Li, Tirtha Chatterjee, Todd O Pangburn, Eric Pearce, Mark Rickard, John W Lyons |
| 10:25 | | **Recess** |
| 10:40 | (1480-4) | **Macromolecule and Nanoparticle Analyses: Beyond Molecular Weight and Size Measurements** S KIM R WILLIAMS, Colorado School of Mines |
| 11:15 | (1480-5) | **Uncertainties in Analyte Measurements in Dried Blood Spots** PURNENDU DASGUPTA, University of Texas at Arlington, Brian Stamos, Jordan Berg |

## SYMPOSIUM — Session 1490

*ACS-ANYL - Supported Bilayers in Bio/Chemical Analysis*
arranged by Craig A Aspinwall, University of Arizona

**Wednesday Morning, Room B308**
Craig A Aspinwall, University of Arizona, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Craig A Aspinwall** |
| 8:35 | (1490-1) | **Spectroscopic Studies of the Formation, Structure, and Applications of Hybrid Supported Phospholipid Bilayers** JOEL M HARRIS, University of Utah, Jay P Kitt |
| 9:10 | (1490-2) | **Surface-Sensitive Imaging of Supported Membranes and Single Lipid Vesicles for Medical Applications** FREDRIK HÖÖK, Chalmers University of Technology |
| 9:45 | (1490-3) | **Mobile, Oriented Proteinaceous Supported Bilayers Made Directly from Cell Plasma Membranes for Bioanalytical Assays** SUSAN DANIEL, Cornell University |
| 10:20 | | **Recess** |
| 10:35 | (1490-4) | **Stabilized Lipid Bilayers as a Platform for Fabrication of Ion Channel Functionalized Sensors** CRAIG A ASPINWALL, University of Arizona, S Scott Saavedra, Leonard K Bright, Mark T Agasid |
| 11:10 | (1490-5) | **Supported Lipid Bilayers and Scanning Ion Conductance Microscopy** LANE A BAKER, Indiana University |

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 1500**

***Analytical Applications of Terahertz Time Domain Spectroscopy (THz-TDS)***
arranged by Mark A Arnold, University of Iowa

**Wednesday Morning, Room B302**
Mark A Arnold, University of Iowa, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Mark A Arnold** |
| 8:35 | (1500-1) | **Exploration of Interlayer Chemistry in Clay Minerals by Terahertz Spectroscopy** INGRID WILKE, Rensselaer Polytechnic Institute |
| 9:10 | (1500-2) | **Analytical Applications of Terahertz Spectroscopy in Nanotechnology and Biotechnology** ANIS RAHMAN, Applied Research & Photonics |
| 9:45 | (1500-3) | **PAT Measurements to Enhance Small-Molecule Drug Development and Manufacturing** HUIQUAN WU, Food and Drug Administration |
| 10:20 | | **Recess** |
| 10:35 | (1500-4) | **Understanding Bonding in Cocrystals and Identifying Polymorphs in Small-Molecule Drugs** TIMOTHY MICHAEL KORTER, Syracuse University |
| 11:10 | (1500-5) | **Analytical Measurements and Dielectric Properties of Organic Cocrystals by Time-Domain Terahertz Spectroscopy** MARK A ARNOLD, University of Iowa |

**SYMPOSIUM** **Session 1510**

***Frontiers of Plasmonics***
arranged by Zachary D Schultz, University of Notre Dame and Jean-Francois Masson, Université de Montréal

**Wednesday Morning, Room B303**
Zachary D Schultz, University of Notre Dame, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Zachary D Schultz and Jean-Francois Masson** |
| 8:35 | (1510-1) | **Real-Time Tunable Emission from Plasmonic Nanolasers** TERI W ODOM, Northwestern University |
| 9:10 | (1510-2) | **Nanoplasmonic Sensors for Rapid Concentration and Sensitive Detection of Biomolecules** SANG-HYUN OH, University of Minnesota |
| 9:45 | (1510-3) | **Plasmonic Rectification** ZACHARY D SCHULTZ, University of Notre Dame |
| 10:20 | | **Recess** |
| 10:35 | (1510-4) | **Trends and Challenges of Nanoplasmonic Biosensors for Clinical Use in Diagnostics** LAURA M LECHUGA, ICN2. CSIC & CIBER-BBN |
| 11:10 | (1510-5) | **Plasmonic Nanobiosensors: From Therapeutic Drug Monitoring to the Detection of Molecules Secreted by Cells** JEAN-FRANCOIS MASSON, Universite de Montreal |

**SYMPOSIUM** **Session 1520**

***IAEAC: International Association of Environmental Analytical Chemistry - Upconverting Nanocrystals: Near Infrared Excitable Probes for Background-Free Luminescent Sensing***
arranged by Antje J Baeumner, University of Regensburg

**Wednesday Morning, Room B304**
Antje J Baeumner, University of Regensburg, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Antje J Baeumner** |
| 8:35 | (1520-1) | **Optical Nanotransformers for In-Situ Upconversion: From Design to Functional Imaging and Sensing** PARAS N PRASAD, SUNY Buffalo, Guanying Chen, Tymish Y Ohulchanskyy |
| 9:10 | (1520-2) | **Photodynamic Therapy, Drug Delivery, Persistent and Photo-Stimulated Emission Using Low Excitation Photons** JOHN A CAPOBIANCO, Concordia University |
| 9:45 | (1520-3) | **Printing Enhanced Upconverting Nanocrystals on Solid Supports** STANLEY MAY, University of South Dakota, Aravind Baride, Jeevan Meruga, Mary Berry, Jon Kellar, William Cross, Grant Crawford |
| 10:20 | | **Recess** |
| 10:35 | (1520-4) | **Surface Modifications of Upconverting Nanoparticles and Their (Bio)analytical Applications** THOMAS HIRSCH, University of Regensburg |
| 11:10 | (1520-5) | **Upconversion Nanoparticles as Active Elements in Optical Sensing for Development of Protein and Oligonucleotide Bioassays** ULRICH J KRULL, University of Toronto Mississauga, Samer Doughan, Anna Shahmuradyan, Feng Zhou, Yi Han |

**SYMPOSIUM** **Session 1530**

***Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis***
arranged by Richard Alan Yost, University of Florida

**Wednesday Morning, Room B305**
Richard Alan Yost, University of Florida, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Richard Alan Yost** |
| 8:35 | (1530-1) | **Structural Mass Spectrometry for Systems, Synthetic, and Chemical Biology** JOHN A MCLEAN, Vanderbilt University |
| 9:10 | (1530-2) | **Enhancing Ion Mobility-Mass Spectrometry Metabolomic Analyses with High Throughput Front End Separations** ERIN S BAKER, Pacific Northwest National Laboratory, Xing Zhang, Kristin E Burnum-Johnson, Jennifer E Kyle, Cameron P Casy, Young-Mo Kim, Erika M Zink, Dennis Mehinagic, Matthew E Monroe, Yehia M Ibrahim, Daniel Orton, Justin G Teeguarden, Thomas O Metz, Richard D Smith |
| 9:45 | (1530-3) | **Ion Mobility and Metabolomics, Two New Tools for Current Drug Discovery and Drug Development** ROB J VREEKEN, Janssen Pharmaceutica |
| 10:20 | | **Recess** |
| 10:35 | (1530-4) | **Cystic Fibrosis Breathomics by Transmission-Mode Direct Analysis in Real Time-Traveling Wave Ion Mobility-Mass Spectrometry** FACUNDO M FERNANDEZ Georgia Institute of Technology, Facundo M Fernandez, Christina M Jones, Maria E Monge, Nael A McCarty, Arlene Stecenko, Jose J Perez |
| 11:10 | (1530-5) | **Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis: Progress and Prospects** RICHARD ALAN YOST, University of Florida, Christopher D Chouinard, Christopher R Beekman, Michael T Costanzo, Jared J Boock, Robin Kemperman, Wei S Michael, Timothy J Garrett, Christopher A Beecher |

**SYMPOSIUM** **Session 1540**

***Precision Bioanalytical Measurements***
arranged by Steven A Soper, St. Louis University and Susan M Lunte, University of Kansas

**Wednesday Morning, Room B309**
Steven A Soper, St. Louis University, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Steven A Soper and Susan M Lunte** |
| 8:35 | (1540-1) | **Microdialysis Sampling and Separations: A Tribute** SUSAN M LUNTE, University of Kansas |
| 9:10 | (1540-2) | **Expanding the Application Space of In Vivo Microdialysis Sampling in the Areas of Drug Metabolism, Free Radical Chemistry, Neurochemistry, and Tissue Engineering** JULIE STENKEN, University of Arkansas |
| 9:45 | (1540-3) | **The Development of New Tools Based on Whispering Gallery Mode Sensing** ROBERT C DUNN, University of Kansas, Sarah Wildgen, Daniel Kim, Judith Flores |
| 10:20 | | **Recess** |
| 10:35 | (1540-4) | **Utilizing Oxidative DNA Damage to Explore the Mode of Action of Oxidative Events and Antioxidative Responses** BLÁNAID WHITE, Dublin City University, Dermot Walls, Sarah Joanne Lynch, Karina Horgan, Sinead Loughran, Roya Hakimjavadi |
| 11:10 | (1540-5) | **Precision Medicine: Enabled by Single Cell Analysis** STEVEN A SOPER, University of North Carolina |



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

**SYMPOSIUM** **Session 1550**

***Standoff Detection Methods for Security Applications***
arranged by Sanford A Asher, University of Pittsburgh
and Michael Shepard, Dept. Homeland Security, S&T Directorate

**Wednesday Morning, Room B310**
Michael Shepard, Dept. Homeland Security, S&T Directorate, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Michael Shepard** |
| 8:35 | (1550-1) | **Novel Approaches to Standoff Hyperspectral Imaging Based Detection of Explosives and Other Threats** CHARLES W GARDNER, ChemImage Sensor Systems, Matthew P Nelson, Nathaniel R Gomer, Oksana P Klueva |
| 9:10 | (1550-2) | **Standoff Detection of Explosives Residues Using Integrated Quantum Cascade Laser Arrays** MARK F WITINSKI, Pendar Technologies, Romain Blanchard, Daryoosh Vakhshoori |
| 9:45 | (1550-3) | **Standards for Optical Based Standoff Detection Fabricated Using Inkjet Printing** GREG GILLEN, NIST |
| 10:20 | | **Recess** |
| 10:35 | (1550-4) | **Recent Advances in Standoff Chemical Threat Detection Using Deep-Ultraviolet Raman Spectroscopy** ADAM J HOPKINS, Alakai Defense Systems, Kenneth R Pohl, Rob Waterbury, Edwin Dottery |
| 11:10 | (1550-5) | **Deep UV Standoff Raman Detection of Explosives: Fundamentals and Methodologies** SERGEI V BYKOV, University of Pittsburgh, Katie L Gares, Kyle T Hufziger, Sanford A Asher |

**SYMPOSIUM** **Session 1560**

***Sum Frequency Generation (SFG) Vibrational Spectroscopic Studies on Proteins and Peptides at Interfaces***
arranged by Zhan Chen, University of Michigan

**Wednesday Morning, Room B311**
Zhan Chen, University of Michigan, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Zhan Chen** |
| 8:35 | (1560-1) | **Determining the Structure of Surface Bound Proteins** DAVID G CASTNER, University of Washington |
| 9:10 | (1560-2) | **The Interactions of Ions with Peptides and Lipid Bilayers** PAUL CREMER, Penn State University |
| 9:45 | (1560-3) | **Proteins at Interfaces: Structure and Platform for Novel Biomaterials** MISCHA BONN, Max Planck Institute for Polymer Research, Tobias Weidner |
| 10:20 | | **Recess** |
| 10:35 | (1560-4) | **Proteins at Interfaces Probed by Chiral Sum Frequency Generation** ELSA CY YAN, Yale University |
| 11:10 | (1560-5) | **Structure-Function Relationships of Surface Immobilized Peptides and Enzymes** ZHAN CHEN, University of Michigan |

**WORKSHOPS** **Session 1570**

***Analytical Information Markup Language (AnIML) Data Standards***
arranged by Burkhard Schaefer, BSSN Software GmbH

**Wednesday Morning, Room B313**
Burkhard Schaefer, BSSN Software GmbH, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Burkhard Schaefer** |
| 8:35 | (1570-1) | **Generating AnIML Technique Definitions** MARK FAULKNER BEAN, GSK |
| 9:05 | (1570-2) | **Filling the Automation and Enterprise Gap with Data and Device Standardization** CARMEN CONDRAU, SiLA Consortium, Devon Johnston |
| 9:35 | (1570-3) | **Instant JChem and AnIML: Curation, Searching, and Visualization of MS Library and Empirical Data** MICHAEL BRADEN, ChemAxon N/A |
| 10:05 | | **Recess** |
| 10:20 | (1570-4) | **Use of AnIML and Other Methods for Software Visualization and Automation** DAVID M COX, SCIEX, John Gibbons |
| 10:50 | (1570-5) | **Cloud-Based Analytical Data Management Using the AnIML Standard** BURKHARD SCHAEFER, BSSN Software GmbH |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1580**

***Food Contaminant Methods***
arranged by Wendy Young, Food and Drug Administration

**Wednesday Morning, Room B315**
Wendy Young, Food and Drug Administration, Presiding

| | | |
|---|---|---|
| 8:30 | (1580-1) | **Quantitative HPLC-MS/MS Analysis of Metabolites of Hypoglycin A and Methylenecyclopropylglycine (MCPG) in Human Urine** SAMANTHA L ISENBERG, Centers for Disease Control and Prevention, Melissa D Carter, Leigh A Graham, Thomas P Mathews, Darryl Johnson, Jerry D Thomas, James Pirkle, Rudolph C Johnson |
| 8:50 | (1580-2) | **LC-MS/MS Detection of Tetrodotoxin in Fresh/Frozen and Salt-Dried Fish Products** SARA C MCGRATH, FDA/CFSAN, Jonathan R Deeds |
| 9:10 | (1580-3) | **Fast Liquid Chromatography - Tandem Mass Spectrometry Analysis of >150 Drug Residues including Aminoglycosides in Food Animal Tissues** STEVEN J LEHOTAY, USDA Agricultural Research Service, Alan R Lightfield |
| 9:30 | (1580-4) | **Determination of Diglycolic Acid in Foods Containing Carboxymethyl Cellulose** WENDY YOUNG, Food and Drug Administration, Lowri DeJager |
| 9:50 | | **Recess** |
| 10:05 | (1580-5) | **Sulfite Determination in Food by Liquid Chromatography-Mass Spectrometry** KATHERINE S ROBBINS, US FDA, Shaun MacMahon, Lowri de Jager |
| 10:25 | (1580-6) | **Pesticide Screen Method Development Using Micro Flow LC and High Resolving Power Mass Spectrometry** MARK CROSSWHITE, Florida Department of Agriculture, Walter Hammack, Gerard Ghislain, Fadi Aldeek, Matthew Standland, Daniel Canzani N/A |
| 10:45 | (1580-7) | **Application of Raman Imaging for the Analysis of Food Packaging Stability** RIC GONZALEZ, ConAgra Foods, Inc., Indarpal Singh |
| 11:05 | (1580-8) | **Open Discussion** |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1590**

***On-Site Detection of THC and Related Drugs***
arranged by Maggie Tam, Canada Border Services Agency and Charles S Harden, US Army ECBC

**Wednesday Morning, Room B316**
Maggie Tam, Canada Border Services Agency, Presiding

| | | |
|---|---|---|
| 8:30 | (1590-1) | **Challenges of Drug Detection in the Field from the Enforcement Perspective** MAGGIE TAM, Canada Border Services Agency |
| 8:50 | (1590-2) | **Forensic Screening Using High-Performance Ion Mobility Spectrometry** CHING WU, Excellims Corporation, Mark Osgood, Anthony Midey |
| 9:10 | (1590-3) | **Handheld Differential Mobility Spectrometry for Drug Interdiction** PAUL J RAUCH, Chemring Detection Systems, Eric Lynch |
| 9:30 | (1590-4) | **Detection of Tetrahydrocannabinol and Related Compounds in Human Breath Using High-Field Asymmetric Waveform Ion Mobility Spectrometry** JARED J BOOCK, University of Florida, Michael T Costanzo, Richard Alan Yost |
| 9:50 | | **Recess** |
| 10:05 | (1590-5) | **Detection of Illicit Drugs of Abuse Using Existing Military Chemical Detection Equipment** CHARLES S HARDEN, US Army ECBC |
| 10:25 | (1590-6) | **Innovative and Rapid Detection of Marihuana Consumption from Direct Breath Analysis** CHANDRASEKHARA HARIHARAN, ION-GAS GmbH, Oliver Kayser |
| 10:45 | (1590-7) | **Understanding Canine Detection of Explosives and Narcotics Using a 3D Printed Artificial Dog Nose** MATTHEW STAYMATES, NIST, William MacCrehan, Jessica Staymates, Greg Gillen, Brent Craven |
| 11:05 | (1590-8) | **Open Discussion** |

# TECHNICAL PROGRAM

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1600**

*PAI-NET - Characterization of Micro/Nano Liquid Phases*
arranged by Akihide Hibara, Tokyo Institute of Technology and Kenji Kojima, PAI-NET

**Wednesday Morning, Room B301**
Akihide Hibara, Tokyo Institute of Technology, Presiding

| | | |
|---|---|---|
| 8:30 | (1600-1) | **Development of Microfluidic Lattices for High-Performance Cell/Particle Separations** MASUMI YAMADA, Chiba University, Minoru Seki |
| 8:50 | (1600-2) | **Microfluidic-Based Approach for Producing Diffraction Quality Protein Crystals** MAEKI MASATOSHI, Hokkaido University, Pawate Ashtamurthy, Sugishima Masakazu, Watanabe Keiichi, Tokeshi Manabu, Kenis J Paul, Miyazaki Masaya |
| 9:10 | (1600-3) | **Sample Pretreatments for Droplet-Based Microanalytical System by Using Nanodroplet Formation** MAO FUKUYAMA, Kyoto Institute of Technology, Akihide Hibara, Yumi Yoshida, Kohji Maeda |
| 9:30 | (1600-4) | **Development of DNA and/or RNA Extraction Method from Single Cell** YUKIHIRO OKAMOTO, Osaka University |
| 9:50 | | **Recess** |
| 10:05 | (1600-5) | **In Vivo Detection and Quantification of Circulating Cells and Nanoparticles in Whole Blood Using Photoacoustic-Fluorescence Flow Cytometry** DMITRY A NEDOSEKIN, University of Arkansas for Medical Sciences, Vladimir P Zharov |
| 10:25 | (1600-6) | **Microfluidic Construction of Artificial Cell-Like Reactors** MASAHIRO TAKINOUE, Tokyo Technology |
| 10:45 | (1600-7) | **Parallel Lipid Bilayer Formation by Microfabrication and Its Applications** RYUJI KAWANO, Tokyo University of Agriculture and Technology |
| 11:05 | (1600-8) | **Unique Liquid Properties by Surface Silanol Groups in Extended-Nano Spaces** YUTAKA KAZOE, The University of Tokyo, Keisuke Ikeda, Kazuma Mawatari, Takehiko Kitamori |

**ORAL SESSIONS** **Session 1610**

*Biomedical: New Technologies for Breath Analysis (Half Session)*

**Wednesday Morning, Room B409**

| | | |
|---|---|---|
| 8:30 | (1610-1) | **Heart-Cutting Multidimensional Micro Gas Chromatography (μGC) System for Breath Analysis** MENGLIAN ZHOU , University of Michigan, Jiwon Lee, Hongbo Zhu, Robert Nidetz, Kevin Ward, Xudong Fan, Katsuo Kurabayashi |
| 8:50 | (1610-2) | **Real-time PTR-TOF-MS Measurements Reveal Effects of Respiratory Maneuvers onto Exhaled Breath Biomarker Profiles** PRITAM SUKUL, University Medicine of Rostock, Peter Oertel, Phillip Trefz, Khushman Taunk, Jochen K Schubert, Wolfram Miekisch, Svend Kamysek |
| 9:10 | (1610-3) | **High Altitude Respiratory Research Using Quadrupole Mass Spectrometry** CHARLES W DE CARLO, Extrel CMS, James R Brenner, Zbigniew Krieger, Frank DeThomas |
| 9:30 | (1610-4) | **VOC Detection in Animal Models for Medical Research** WOLFGANG VAUTZ, ISAS, Liedtke Sascha, Nils Kunze, Thorsten Perl, Ursula Telgheder |

**ORAL SESSIONS** **Session 1620**

*Clinical/Toxicology*

**Wednesday Morning, Room B402**
Tyler Davis, West Virginia University, Presiding

| | | |
|---|---|---|
| 8:30 | (1620-1) | **Determination of Manganese Using Cathodic Stripping Voltammetry on a Platinum Electrode** WENJING KANG, University of Cincinnati, Cory A Rusinek, Adam Bange, Erin Haynes, William R Heineman, Ian Papautsky |
| 8:50 | (1620-2) | **Impact of Amphiphilic Poly(amido)amine Dendrimers on the Biophysical and Biorecognition Properties of Bilayer Membranes** SAMUEL S HINMAN, University of California, Riverside, Charles J Ruiz, Ling Peng, Quan Cheng |
| 9:10 | (1620-3) | **Analysis of Drugs in Saliva During Treatment of Post-Traumatic Stress Disorder Patients** KATHRYN DANA, Real-Time Analyzers, Inc, Chetan Shende, Stuart Farquharson, Albert J Arias |
| 9:30 | (1620-4) | **G-Quadruplex: A Biocompatible Additive for Enhancing the Antibacterial Activity of $H_2O_2$** YUQIAN XING, University of North Dakota, Xiao Liu, Minh H Duong, Julia Xiaojun Zhao |
| 9:50 | | **Recess** |
| 10:05 | (1620-5) | **Capillary Electrophoresis Investigation of Multiwalled Carbon Nanotube-Biomolecule Binding** TYLER DAVIS, West Virginia University, Lisa A Holland, Julia Ann Mouch |
| 10:25 | (1620-6) | **Determining Variability in Potency of Marijuana for Potential Medical Application** REBECCA PLESSEL, Pennsylvania State University, Frank Dorman, Amanda Rigdon |
| 10:45 | (1620-7) | **Design and Development of a Portable Aptasensor for Toxicity Monitoring of Field Samples** GONCA BULBUL, Clarkson University, Akhtar Hayat, Silvana Andreescu |
| 11:05 | (1620-8) | **Quantitative Assessment of Nanoparticles Exposure Potential Effects in Embryonic Zebrafish** XIAOBO LIU, Clarkson University, Eduard Dumitrescu, Kenneth Wallace, Silvana Andreescu |

**ORAL SESSIONS** **Session 1630**

*Electrochemistry - Biological Applications*

**Wednesday Morning, Room B403**
Yinfa Ma, Missouri University of Science and Technology, Presiding

| | | |
|---|---|---|
| 8:30 | (1630-1) | **Development of an Optrode for In Vivo Neurochemical Studies** THOMAS FIELD, University of Kansas, Meng Sun, Peter M Ruggles, Michael A Johnson |
| 8:50 | (1630-2) | **Adenosine Transiently Modulates Vasodilation in Caudate-Putamen** YING WANG, University of Virginia, B Jill Venton |
| 9:10 | (1630-3) | **Amperometric and Voltammetric Measurements in the Cell Cytosol Using Conical Carbon Nanoelectrodes** EDWIN MITCHELL, North Carolina State University, James Roberts, Leslie A Sombers |
| 9:30 | (1630-4) | **Tunable Electroosmotic Push-Pull Perfusion Shows Higher Aminopeptidase N Activity in CA1 than CA3 of the Rat Hippocampus** YANGGUANG OU, University of Pittsburgh, Bocheng Yin, Jenna DeVivo, German Barrionuevo, Stephen Weber |
| 9:50 | | **Recess** |
| 10:05 | (1630-5) | **Optogenetic Control of Octopamine Release in Drosophila Melanogaster Larval Ventral Nerve Cord and Detection with Fast Scan Cyclic Voltammetry (FSCV)** POOJAN PYAKUREL, University of Virginia, B Jill Venton |
| 10:25 | (1630-6) | **Clarifying the Complex Chemical Mechanisms that Underlie the Voltammetric Detection of Hydrogen Peroxide** LESLIE A SOMBERS, North Carolina State University, Samantha K Smith, Leyda Z Lugo-Morales, James Roberts, Maxim A Voinov, Tatyana I Smirnova |
| 10:45 | (1630-7) | **FSCV Measurements of Neurotransmitters in Daphnia** MATT N JACKSON, Wayne State University, Srimal A Samaranayake, David Pitts, Shawn McElmurry, Annette R Tremonti, Parastoo Hashemi |
| 11:05 | (1630-8) | **Glutamate Receptor Influence on Localized Oxygen Metabolism** LINDSAY WALTON, University of North Carolina at Chapel Hill, Nick Boustead, Susan Carroll, R Mark Wightman |

## ORAL SESSIONS — Session 1640

*Environmental, Pharm and Nano Methods Development in Atomic Spectroscopy*

**Wednesday Morning, Room B404**
David Clarke, Teledyne CETAC Technologies, Presiding

| | | |
|---|---|---|
| 8:30 | (1640-1) | **Novel Automation Streamlining Microwave Digestion to Detection for Elemental Analysis** DAVID CLARKE, Teledyne CETAC Technologies, Matthew Nigro, James Block |
| 8:50 | (1640-2) | **Use of Atomic Fluorescence Spectrometry (AFS) for Element Specific Hg Detection Combined with Combustion** WARREN T CORNS, P S Analytical |
| 9:10 | (1640-3) | **Development of Online Method for Simultaneous Preconcentration of Cd, Cu, Ni and Zn in Environmental Samples Using Modified Alumina** ZAHEER A KHAN, SBBU, SBA |
| 9:30 | (1640-4) | **Dual Analyte Analysis of Bimetallic and Monometallic Nanoparticle Mixtures Using Field Flow Fractionation Separation Coupled to spICP-MS** CHADY STEPHAN, PerkinElmer, Ruth Merrifield |
| 9:50 | | **Recess** |
| 10:05 | (1640-5) | **Analysis of Trace Metals in Pharmaceutical Formulations - Issues with USP 232 and Q3D Regulations** PHILIP RIBY, Liverpool John Moores University, Samar Thiab, Philip Salmon, Matt Roberts, Philip Riby N/A |
| 10:25 | (1640-6) | **Development and Validation of a New Method to Measure Activity of the Na+, K+ ATPase Using ICP-MS QQQ** CORY A STINER, University of Cincinnati, Julio Landero, Judith Heiny |
| 10:45 | (1640-7) | **Arsenic Speciation in Water Samples – Development of a New ISO/CEN Method** CORNELIUS BROMBACH, P S Analytical, Bin Chen, Warren T Corns, K C Thompson |
| 11:05 | (1640-8) | **Exploiting the Limits of Single Particle ICP-MS – From Particle Size to Particle Number** CHADY STEPHAN, PerkinElmer |

## ORAL SESSIONS — Session 1650

*Food Contaminants*

**Wednesday Morning, Room B314**
Joan M Stevens, Agilent Technologies, Inc., Presiding

| | | |
|---|---|---|
| 8:30 | (1650-1) | **The Analysis of Chlorinated Dioxins and Difurans in Pet Food** PHILIP BASSIGNANI, Fluid Management Systems, Rudolf Addink |
| 8:50 | (1650-2) | **Selective Lipid Removal from Complex Samples for Multi-Residue Analysis** DERICK LUCAS, Agilent Technologies, Limian Zhao, Bruce Richter, Joan Stevens, Megan Juck |
| 9:10 | (1650-3) | **Arsenic Contamination and the Emergence of Speciation in the Food Chain** HELMUT ERNSTBERGER, Perkin Elmer, Kenneth Neubauer |
| 9:30 | (1650-4) | **Elemental Profile of Tobacco used in Counterfeit Cigarettes** YI HE, John Jay College/CUNY, Carrie Green, Rufus Chaney, Fidelis Tan, Ye Hua, Victoria Mei, Marin Kurti, Klaus von Lampe |
| 9:50 | | **Recess** |
| 10:05 | (1650-5) | **Determination of Antimony in Food Samples by Slurry Sampling Hydride Generation Atomic Absorption Spectrometry** JERZY MIERZWA, Tennessee State University |
| 10:25 | (1650-6) | **The Analysis of Chlorinated Dioxins, Difurans and Polychlorinated Biphenyls in Edible Oils** PHILIP BASSIGNANI, Fluid Management Systems, Rudolf Addink |
| 10:45 | (1650-7) | **Application of Mid-Infrared Portable Spectrometry in Determination of Trans-fatty Acid Content in Bakery Products** MEI SHOTTS, The Ohio State University, Luis Rodriguez-Saona |
| 11:05 | (1650-8) | **Rapid Detection of Processed Uranium in Food** ABDUR-RAFAY SHAREEF, FDA, Lin Zhichao, Emanuele Kathryn, Stephanie Healey, Patrick Regan, William Cunningham, Brian Baker |

## ORAL SESSIONS — Session 1660

*LIMS – No One Size Fits All*

**Wednesday Morning, Room B405**
Hubert MacDonald, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (1660-1) | **Quantum Time Savings with LIMS Deployment** DEVENDER GANDHI, Accelerated Technology Laboratories |
| 8:50 | (1660-2) | **Informatics for Externalization** GRAHAM A MCGIBBON, ACD/Labs, Pranas Japertas, Ryan Sasaki |
| 9:10 | (1660-3) | **Going Mobile with LIMS for Field Data Collection** KEN OCHI, Accelerated Technology Laboratories |
| 9:30 | (1660-4) | **Pay Now or Later: Creating Solid System Application User Requirements** KATHERINE TEMPLE, CSOLS, Inc., Daniel Freel |
| 9:50 | | **Recess** |
| 10:05 | (1660-5) | **Key Factors to Consider in Transitioning to a New LIMS** SONJA STUTSMAN, Accelerated Technology Laboratories |
| 10:25 | (1660-6) | **LIMS Implementation: "Big Bang" or "Phased" Approach** HOWARD J ROSENBERG, CSols, Inc. |
| 10:45 | (1660-7) | **Migrating from a Legacy LIMS to a Modern Platform** LAURA LEE WILLIFORD, Accelerated Technology Laboratories, Devender Gandhi |
| 11:05 | (1660-8) | **Integrated Informatics: Single Vendor vs. "Best of Breed"** HOWARD J ROSENBERG, CSols, Inc. |

## ORAL SESSIONS — Session 1670

*Mass Spectrometry-Environmental, ICP-MS and Others*

**Wednesday Morning, Room B406**
Yongbo Dan, Missouri University of Science and Technology, Presiding

| | | |
|---|---|---|
| 8:30 | (1670-1) | **Ultra-Trace Analysis of Mercury Species in Drinking Water Using Ion Chromatography and Speciated Isotope Dilution Mass Spectrometry (IC-SIDMS)** PATRICK BENECEWICZ, Duquesne University, Skip Kingston, Matt Pamuku, Stuart Procter, Christopher Loran |
| 8:50 | (1670-2) | **Ion Mobility-Mass Spectrometry Screening Reveals Small Molecules Capable of Chemical and Structural Modulation of Amyloidogenic Protein** RICHARD A KERR, University of Michigan, Jeffrey Derrick, Michael Beck, Hyuck Jin Lee, Mi Hee Lim, Brandon T Ruotolo |
| 9:10 | (1670-3) | **Transformation Kinetics of Metallic Nanoparticles in Environmental and Cell Culture Exposure Media as Measured by spICP-MS** CHADY STEPHAN, PerkinElmer, Ruth Merrifield |
| 9:30 | (1670-4) | **Reading Information Digitally-Encoded in Synthetic Polymers: A Sequencing Approach by Tandem Mass Spectrometry** LAURENCE CHARLES, Aix-Marseille University, Jean-François Lutz |
| 9:50 | | **Recess** |
| 10:05 | (1670-5) | **Enzymatic Digestion-Single Particle ICP-MS Method to Characterize Nanoparticle Uptake by Plants** DAN YONGBO, Missouri University of Science and Technology, Weilan Zhang, Runmiao Xue, Ma Xingmao, Chady Stephan, Honglan Shi |
| 10:25 | (1670-6) | **Study of the Transmission of Megadalton-Sized Ions from Atmospheric Pressure to Vacuum in a Q-TOF Charge Detection Mass Spectrometer** STACI N ANTHONY, Indiana University, Benjamin E Draper, Martin F Jarrold |
| 10:45 | (1670-7) | **Characterization of $TiO_2$-Nanoparticles Using Asymmetrical Flow- and Centrifugal Field-Flow-Fractionation Coupled with MALS, DLS and ICP-MS Detection** SOHEYL TADJIKI, Postnova Analytics Inc., Florian Meier, Evelin Moldenhauer, Trevor Havard, Thorsten Klein |
| 11:05 | (1670-8) | **Enhanced Real-Time Gas Analysis with SIFT-MS Using Negative Reagent Ions** DANIEL MILLIGAN, Syft Technologies Ltd, Vaughan Langford, Thomas McKellar, Barry Prince, Murray McEwan |

# TECHNICAL PROGRAM

**ORAL SESSIONS** **Session 1680**

*Pharmaceutical Applications of Liquid Chromatography*

**Wednesday Morning, Room B401**
Paulina Piotrowski, The Pennsylvania State University, Presiding

| | | |
|---|---|---|
| 8:30 | (1680-1) | **Method Development Strategies and Applications of 2D LC for Pharmaceutical Analysis** PANKAJ AGGARWAL, Pfizer Inc., David T Fortin, Angel R Diaz N/A |
| 8:50 | (1680-2) | **Coupling Mass Detection with UV to Improve Method Sensitivity for Esters of Benzenesulfonic and p-Toluenesulfonic Acids in Analysis of Genotoxic Impurities** MARGARET MAZIARZ, Waters Corporation, Christopher Henry, Mark Wrona |
| 9:10 | (1680-3) | **Method Development for Non-Chromophoric Pharmaceutical Analytes Using Alternative Chromatographic and Detection Techniques** ZONGYUN HUANG, Bristol-Myers Squibb, William Fish |
| 9:30 | (1680-4) | **The Impact of LC Instrument Characteristics on HPLC and UPLC Method Migration and Method Transfer** PAULA HONG, Waters Corporation, Patricia R McConville |
| 9:50 | | **Recess** |
| 10:05 | (1680-5) | **Development and Validation of A Novel Stability-Indicating Reversed-Phase High-Performance Liquid Chromatography Method for Assay of Thiabendazole and Estimation of its Related Compounds** JIANGTAO HE, Merial, A Sanofi Company, Huang Junmin, Abu Rustum |
| 10:25 | (1680-6) | **Fast Centrifugal Partitioning Chromatography** ROB DRISCOLL, Robatel Inc. |
| 10:45 | (1680-7) | **Development and Validation of a Reversed Phase Chiral HPLC Method for Verification of Afoxolaner as a Racemic Mixture** NILUSHA PADIVITAGE, Merial, A Sanofi Company, Satish Kumar, Abu Rustum |
| 11:05 | (1680-8) | **Development for a Sensitive Method for the Determination of Diphenylphosphoryl Azide and Hydrogen Azide in Active Pharmaceutical Compounds** XUEJUN XU, Bristol-Myers Squibb, Martin Nunez, Yun K Ye, Thomas V Raglione |

**ORAL SESSIONS** **Session 1690**

*Portable Instruments - Half Session*

**Wednesday Morning, Room B409**
Robert W Baudoux, Sr., RWB Convention Mgt, Presiding

| | | |
|---|---|---|
| 10:05 | (1690-1) | **Development of Portable Instrumentation Using the Arduino Microcontroller Platform for Field-Ready Electrochemical Experimentation** DREW C FARRELL, University of Arizona, Michael L Heien |
| 10:25 | (1690-2) | **A Novel Instrument for Microscale IR Thermography in High Temperature Applied to Solar Salts** JUNKO MORIKAWA, Tokyo Institute of Technology, Massimiliano Zamengo, Yukitaka Kato |
| 10:45 | (1690-3) | **A New GC/FTIR Detection Method as Applied to Inline Monitoring of Siloxanes in Biogas** CHARLES MARK PHILLIPS, Prism Analytical Technologies, Inc., Martin L Spartz, Anthony S Bonanno, Peter P Behnke |
| 11:05 | (1690-4) | **Next-Generation Handheld XRF Analyzer – Smarter, Smaller and Faster** ESA NUMMI, Thermo Fisher Scientific |

**ORAL SESSIONS** **Session 1700**

*Sensors - Bioanalytical and Homeland Security/Forensics*

**Wednesday Morning, Room B407**
Katie Edwards, Cornell University, Presiding

| | | |
|---|---|---|
| 8:30 | (1700-1) | **Photonic Crystal Protein Hydrogel Sensor for Candida Albicans** ZHONGYU CAI, University of Pittsburgh, Daniel H Kwak, David Punihaole, Zhenmin Hong, Sachin S Velankar, Xinyu Liu, Sanford A Asher |
| 8:50 | (1700-2) | **Development of a Wireless Microfluidic Biosensor System for Real-Time Monitoring of Human Transplant Organs in Transit** SALLY A GOWERS, Imperial College London, Isabelle C Samper, Chu Wang, Thomas Watts, Bynvant Sandhu, Vassilios Papalois, Martyn G Boutelle |
| 9:10 | (1700-3) | **Ion-Selective Electrodes with PEDOT(PSS) as Solid Contact: Influence of the PEDOT(PSS) Thickness on the Equilibration Time** MARCIN GUZINSKI, The University of Memphis, Jennifer M Jarvis, Erno Lindner, Bradford D Pendley |
| 9:30 | (1700-4) | **Evaluating Real Time Binding Interactions in Insulin Immunoassay for Diagnosis of Type of Diabetes by Surface Plasmon Resonance** VINI SINGH, Oklahoma State University, Sadagopan Krishnan |
| 9:50 | | **Recess** |
| 10:05 | (1700-5) | **Extended Nanopore Residence Times via Metallic Clusters** JOSEPH E REINER, Virginia Commonwealth University, Amy E Chavis, Kyle T Brady, Nuwan Kothalawala |
| 10:25 | (1700-6) | **Kinetics Quantification of MicroRNAs as Disease Biomarkers on Microelectrode Point-of-Care Sensors at Attomoles within Minutes** TANYU WANG, Georgia State University, Gangli Wang |
| 10:45 | (1700-7) | **Hyphenated Inverted Mesa E-QCM Sensors for Explosives Detection** ABDUL REHMAN, King Fahd University of Petroleum and Minerals N/A |
| 11:05 | (1700-8) | **A New Miniaturized Sensor for Real-Time Suit Penetration Assessment in the Man-In-Simulant-Test (MIST) Protocol** NICHOLAS FITZGERALD, Defence Science and Technology Group, Karl Pavey |

**ORAL SESSIONS** **Session 1710**

*Thermal Analysis*

**Wednesday Morning, Room B408**
Fu-mei Lin, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (1710-1) | **Using Isothermal Titration Calorimetry to Measure Thermodynamic Parameters of Adsorption on Chromatographic Media** ANTHONY R HORNER, University of Pittsburgh, Stephen R Groskreutz, Stephen Weber |
| 8:50 | (1710-2) | **Thermal Conductivity Measurement of Solar Salt in High Temperature Using the Temperature Wave Method** JUNKO MORIKAWA, Tokyo Institute of Technology, Yukitaka Kato, Massimiliano Zamengo |
| 9:10 | (1710-3) | **TGA-GC-MS Analysis of Different Tobacco Types** EKKEHARD POST, NETZSCH Geraetebau GmbH, Bob Fidler, Jan Hanss |
| 9:30 | (1710-4) | **Pyrolysis Gases of Polycarbonate Identified by TGA-FT-IR and TGA-GC-MS** EKKEHARD POST, NETZSCH Geraetebau GmbH, Bob Fidler |
| 9:50 | | **Recess** |
| 10:05 | (1710-5) | **Understanding Auto-Catalysis Using Scanning, Isothermal and Adiabatic Calorimetry** PETER RALBOVSKY, Netzsch Instruments, Bob Fidler |
| 10:25 | (1710-6) | **Developing Databases and Optimized Spectral Searching from TGA-IR Hyphenation Experiments** IAN ROBERTSON, PerkinElmer Limited, Justin Lang, Jack Botting |
| 10:45 | (1710-7) | **Thermal Excitation, Optical Response: A Novel Approach to Thermal Analysis by TMOR** SARAH SCHWARZ G HENRIQUES, Anton Paar OptoTec GmbH, Tobias Husemann, Jens Kruse, Nils Bertram |
| 11:05 | (1710-8) | **Characterization of Nanomaterials with Thermal Analysis and Hyphenated Techniques** CHADY STEPHAN, PerkinElmer, Jun Wang |

**POSTER SESSION** **Session 1720**

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Applications of LC/MS*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1720-1 P) **Determination of Fentanyl in Canine Plasma Using HPLC-MS Detection** JOAN B BAILEY, University of Tennessee, Sherry K Cox, Molly White, Kristen Gordon, Reza Seddighi

(1720-2 P) **Targeted Metabonomic Study of Plasma from Rats with Acute Colitis Using LCMS-IT-TOF Based Metabonomics** LINGLING SHEN, Shimadzu Global COE, Shimadzu Co., Ltd, Jingting Yao, Taohong Huang, Xiaojun Zhang, Qisheng Zhong

(1720-3 P) **Optimization of On-column Trypsin Digestion Coupled with LC-MS/MS for Analysis of Apolipoproteins in Serum** CHRISTOPHER TOTH, Centers for Disease Control and Prevention, Zsuzsanna Kuklenyik, Jeffrey Jones, Bryan A Parks, Michael S Gardner, Jon Rees, Yulanda Williamson, David Schieltz, Lisa McWilliams, James Pirkle, John R Barr

(1720-4 P) **A Simple and Sensitive LC-MS/MS Method for the Determination of Free 8-Hydroxy-2'-deoxyguanosine in Human Urine** ZUWEI WANG, JES Tech, Scott M Smith

(1720-5 P) **Evaluation of Streamlined SPE Processing Using Novel Column based Components prior to LC-MS/MS** LEE WILLIAMS, Biotage GB Limited, Helen Lodder, Victor Vandell

(1720-6 P) **Multi-Class Screening of Drug Abuse in Hair by Matrix Solid Phase Dispersion – Ultrasound Extraction and HPLC-MS/MS Detection** ANTONIO MOREDA-PIÑEIRO, University of Santiago de Compostela, Mercedes Saavedra-Suarez, Juan Sanchez-Gonzalez, Pilar Bermejo-Barrera, Maria del Carmen Barciela-Alonso, Elena Pena-Vazquez, Raquel Dominguez-Gonzalez

(1720-7 P) **Optimization of QuEChERS Sample Preparation Method for the Determination of Bisphenol A in Carrots** OLUJIDE T AKINBO, Butler University, Hugh Kestufskie

(1720-8 P) **Quantification of Iodine-Containing Hormones Present in Dietary Supplements by Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)** ENRIQUE G YANES, U.S. Food and Drug Administration (FDA), Robert A Wilson, James A Turner, Ryan Saadawi

(1720-9 P) **Ultra High Performance Liquid Chromatography Tandem Mass Spectrometry Method for Simultaneous Determination of Multiple Bioactive Constituents in Fruit Extracts of Myristica Fragrans and its Marketed Poly Herbal Formulations Using a Polarity Switch Technique** RENU PANDEY, Sophisticated Analytical Instrument Facility, CSIR, Brijesh Kumar N/A

(1720-10 P) **A Targeted Multidimensional Approach with MS Detection (SPE-RPLC/MS) for the Assessment of Trace Free Drug Species in Unadulterated Antibody-Drug Conjugate (ADC) Samples with Improved Specificity and Sensitivity** ROBERT BIRDSALL, Waters Corporation, Sean M McCarthy, Scott Berger, Weibin Chen, Alain Beck

(1720-11 P) **Method Development and Optimization for the Combined Analysis of Synthetic Cannabinoids and Designer Cathinones in Urine** HOLLY CASTELLANO, Duquesne University, Stephanie Wetzel N/A

(1720-12 P) **Separation and Identification of Lentil (Lens Culinaris) Proteins by Mass Spectrometry** ALBERTA ARYEE, Agriculture & Agri-Food Canada, Joyce I Boye N/A

(1720-13 P) **Withdrawn**

(1720-14 P) **Quantitation of Proto-Peptide Building Blocks in Complex Model Prebiotic Mixtures via Liquid Chromatography-Tandem Mass Spectrometry** ERIC T PARKER, Georgia Institute of Technology, Jeffrey L Bada, Facundo M Fernandez

**POSTER SESSION** **Session 1730**

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Capillary Electrophoresis*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1730-1 P) **Capillary Electrophoresis Method to Detect Circulating Steroids in Individual Zebrafish Plasma** PAIGE A REED, West Virginia University, Vincent T Nyakubaya, William J Feeney, Lisa A Holland, Jennifer Ripley-Stueckle

(1730-2 P) **Fluorogenic Derivatization of Amino Acids for Laser-Induced Fluorescence Detection in Capillary Electrophoresis** NAVEEN MADDUKURI, Wichita State University, Qiyang Zhang, Maojun Gong

(1730-3 P) **Investigating Electrospray Behavior in Capillary Electrophoresis Coupled Mass Spectrometry** JARED A LAMP, University of Notre Dame

(1730-4 P) **Validated Capillary Zone Electrophoretic Method for Simultaneous Determination of Some Antihypertensive Drugs in Their Single-pill Combination Therapy** FAWZY A EL-YAZBI, Alexandria University, Hytham M Ahmed, Tarek S Belal, Rasha A Shaalan, Sohaila M Elonsy

(1730-5 P) **Single Enzyme Molecule Studies with CE-LIF and CE-MS** EMILY A AMENSON, University of Notre Dame, Norman J Dovichi

(1730-6 P) **Xenopus Laevis Metabolomic Profiling via CZE-ESI-MS/MS and MALDI-TOFMS** JENNIFER ARCEO, University of Notre Dame, Nicole Schiavone, Danielle Boley, Elizabeth H Peuchen, Norman J Dovichi

(1730-7 P) **Insights into Chiral Recognition Mechanisms for Acryloyl Terminated Polymeric Surfactants: Application of Linear Solvation Energy Relationship in Micellar Electrokinetic Chromatography and Capillary Electrochromatography** YANG LU, Georgia State University, Shahab S Shamsi

(1730-8 P) **Study of Electrooxidation Products of Primary Alcohols by EC-CE-C4D: Assessment of the Conversion Efficiency of Alcohols into Their Carboxylates on Gold and Platinum Electrodes in Different Media** MAURO SERGIO FERREIRA SANTOS, USP, Fernando S Lopes, Ivano G R Gutz

(1730-9 P) **Microscale Quantification of Nanoparticle-Biomolecule Interactions with Capillary Electrophoresis** JULIA ANN MOUCH, Bethany College, Tyler Davis, Lisa A Holland

(1730-10 P) **Comparative Validation of Sofosbuvir Determination in Pharmaceuticals by Several Chromatographic, Electrophoretic and Spectrophotometric Methods** AMIRA F EL-YAZBI, Alexandria University

(1730-11 P) **Quantification of Amino Acids in Cordyceps by MEKC** XIN WEI, Wuhan University Zhongnan Hospital, Hankun Hu, Yiming Liu, Yue Xu

(1730-12) Isolation of Intact Cell Populations by Preparative Capilary Zone Electrophoresis Sarh N. Lum, Bonnie Huge, Matthew Champion, Norman J. Dovichi

**POSTER SESSION** **Session 1740**

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Forensics and Homeland Security*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1740-1 P) **Fingerprinting of Falsified Artemisinin Combination Therapies (ACTs) via DART Ionization Coupled to a Compact Single Quadrupole Mass Spectrometer** MATTHEW C BERNIER, Georgia Institute of Technology, Joseph LaPointe, Brian Musselman, Facundo M Fernandez

(1740-2 P) **Lead-Free Gunshot Residues as Forensic Evidence** CHRISTOPHER R DOCKERY, Kennesaw State University, Lashaundra Fambro, Ethan Miller, Deidre VanDenbos, Wassim Abdul Khalek

(1740-3 P) **Forensic Analysis of Textile Fibers Exposed to Cigarette Smoke Using Non-Destructive Room Temperature Excitation-Emission Fluorescence Microscopy** HUGH HAYES, University of Central Florida, Andres Campiglia, Arsenio Munoz de la Pena, Hector C Goicoechea N/A

(1740-4 P) **Forensic Analysis Of Textile Fibers Exposed To Laundry Detergents Using Fluorescence Excitation-Emission Spectroscopy** NIRVANI MUJUMDAR, University of Central Florida

(1740-5 P) **Eye-safe, Wide-Area Hyperspectral Raman Imaging Using a Spatial Heterodyne Raman Spectrometer** NATHANIEL R GOMER, ChemImage Sensor Systems, Matthew P Nelson

(1740-6 P) **Development and Optimization of Solid Phase Extraction (SPE) Method for Determination of Benzodiazepines in Wastewater and Surface Water by High-Performance Liquid Chromatography (HPLC)** HONGXIA GUAN, Georgia Gwinnett College, Qingsong Cai

(1740-7 P) **Determination and Measurement of Wildland Fire Markers in Residential Structures Using TD-GCMS** MARY C MARTIN, Prism Analytical and Central Michigan University, Alice Delia, Dale LeCaptain

(1740-8 P) **Differentiate Delta-9-tetrahydrocannabinol (Δ9-THC) and Delta-8-tetrahydrocannabinol (Δ8-THC)** KEN TSENG, Nacalai USA, Toshi Ono, Tsunehisa Hirose, Kazuhiro Kimata

(1740-9 P) **Identification and Quantification of Explosives and Their Residues in Water Using a Novel Surfactant in MEKC** CHRISTINE COPPER, U.S. Naval Academy, Marlene Perez, Alexis Clark, Karen Brensinger, Christopher Rollman, Jacqueline Rine, Ashton Genzman, Ira Lurie, Mehdi Moini

(1740-10 P) **Novel Concept of Biomarker Analysis in Forensic Analysis** JAN HALAMEK, SUNY Albany N/A

(1740-11 P) **Evaluation of GC-IRD Methods for Sensitivity and Selectivity in Forensic Drug Identification** RANDALL CLARK, Auburn University, Younis Abiedalla, Jack DeRuiter N/A

(1740-12 P) **Screening of Drugs of Abuse Using DART-MS and Real Time Reverse Library Search** FREDERICK LI, IonSense, Inc., Brian Musselman, Joe Tice, Stephen Shrader

(1740-13 P) **Sol-gel Sorbent Beds for All-in-One Sampling, Preconcentration, and Separation of Trace Explosive Vapors** MICHELLE CERRETA, U.S. Naval Research Laboratory, Braden Giordano, Kevin Johnson

(1740-14 P) **Techniques for Analyzing Volatile Organic Compounds Emitted During Aerobic Decomposition of Pig Carcasses and Swine Tissues** MASOUMEH DALILIAN, Middle Tennessee State University, Ngee Sing Chong, Samantha Keene, Lydia Rickman

(1740-15 P) **High Frequency, High Pressure Tandem Mass Spectrometry** ANDREW HAMPTON, University of North Carolina at Chapel Hill, J Michael Ramsey

(1740-16 P) **Gun Residue Analysis Using Paper Microfluidics** CHASTITY PAREDES-RODRIGUEZ, Penn State Berks, James Karlinsey



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

## POSTER SESSION — Session 1750

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Liquid Chromatography*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1750-1 P) **Determination of Pyrethrins in Pyrethrum Oil Extracts** IAN N ACWORTH, Thermo Fisher Scientific, David Thomas, Alan Wong, Jan Glinski

(1750-2 P) **Pesticide Residue Analysis of Cereal Grains Treated with Traditional Fungicides or a Tannic Acid Biopesticide** BROOKE M BIEN, Western Carolina University, Cynthia Atterholt

(1750-3 P) **Microwave-Assisted Extraction of Triketone and Pyrazole Corn Herbicides from Agricultural Soil** SANJA STIPIČEVI , Institute for Medical Research and Occupational Health, Milena Milaković, Marija Dvoršćak, Sanja Fingler, Gordana Mendaš

(1750-4 P) **Development and Validation of a Method for the Simultaneous Extraction and Separated Measurement of Diflubenzuron and Azamethiphos from the Soft Tissue of Mussel M. Chilensis** LUIS NORAMBUENA, Instituto de Fomento Pesquero, Sergio Contreras-Lynch

(1750-5 P) **Determination of Anions and Cations in Water Matrices Using Non-suppressed Ion Chromatography** JOSEPH PAUL ROMANO, Waters Corporation, Mark E Benvenuti, Kenneth Rosnack

(1750-6 P) **Application of Factorial Design for the Determination of Ammonium in Saline Waters by Ion Chromatography Using an Ultrasound-assisted Purge-and-Trap System** MANUEL C CARNEIRO, CETEM, Fernanda N Ferreira, Fernanda Veronesi M Pontes, Julio C Afonso, Arnaldo A Neto, Maria Ines Couto Monteiro N/A

(1750-7 P) **Determination of Nitrogen Compounds in Saline Waters by Matrix Interference-Free Ion Chromatography** MARIA INES COUTO MONTEIRO, CETEM, Fernanda N Ferreira, Fernanda Veronesi M Pontes, Julio C Afonso, Manuel C Carneiro, Arnaldo A Neto N/A

(1750-8 P) **Micellar and Sub-Micellar UHPLC of Aromatic Acid Geometric Isomers** JENNIFER M FASCIANO, Miami University, Neil D Danielson

(1750-9 P) **Hydrophilic Interaction Liquid Chromatography of Aromatic Acid Isomers on a Plain Silica Stationary Phase Using a Ternary Mobile Phase** ASHLEY E RICHARDSON, Miami University, Neil D Danielson

(1750-10 P) **Understanding the Importance of Instrument Design To Take Full Advantage of 1.0mm Internal Diameter (ID) Columns when Running UPLC** JENNIFER SIMEONE, Waters Corporation, Paula Hong, Patricia R McConville

(1750-11 P) **Investigation of Reverse-Phase - HILIC Continuous Analysis Using a One Column** RONALD BENSON, Shodex/Showa Denko America, Inc., Junji Sasuga, Tomokazu Umezawa, Hideyuki Kondo

(1750-12 P) **One Diode Array Detector for Analytical, Semi-Preparative, Preparative and Biocompatible HPLC** KATHRYN E MONKS, Knauer

(1750-13 P) **A Novel Diphenyl Stationary Phase for Metabolite Profiling** MARK WOODRUFF, Fortis Technologies, Ken Butchart

(1750-14 P) **Silica Hybrid Monoliths with a Carbonaceous Surface for Liquid Chromatography** AMARIS C BORGES-MUNOZ, University at Buffalo SUNY, Luis A Colón

(1750-15 P) **Evaluation of the Performance of Ultra-high Pressure Chromatography (UPLC) Systems** IMAD A HAIDAR AHMAD, Novartis, Frank Hrovat, Adrian Clarke, James Tam, Xue Li, Thomas Tarara, Andrei Blasko

(1750-16 P) **Optimizing Reagent Free Ion Chromatography; Electrolytic Water Purification** JOHN M RIVIELLO, Trovion Company, Archava Siriraks, Daniel Khor

(1750-17 P) **Functionalized Carbon Nanotubes as Pseudo-Stationary Phases in Capillary Electrokinetic Chromatography - Evaluation of Retention Energetics and Analysis of a Wide Range of Neutral and Charged Species** SARAH ALHARTHI, Oklahoma State University, Ziad El Rassi

(1750-18 P) **Determination of Hydroperoxides Using High Performance Liquid Chromatography with Reductive Electrochemical Detection** JUN CHENG, Thermo Fisher Scientific, Yan Liu, Khalil Divan

(1750-19 P) **Label-Free Analysis by HPLC with Charged Aerosol Detection of N-linked Glycans Separated by Charge** IAN N ACWORTH, Thermo Fisher Scientific, David Thomas, William Kopaciewicz

(1750-20 P) **Multi-Modal Analyte Detection of Cyclodextrin and Ketoprofen Inclusion Complex Using UV and CAD on an Integrated UHPLC System** BRUCE BAILEY, Thermo Fisher Scientific, Marc Plante, Ian N Acworth, Evert-Jan Sneekes, Frank Steiner

(1750-21 P) **RP-HPLC Method Development and Validation for the Analysis of Pharmaceutical Drugs-Linezolid** RAJESHKUMAR H CHAUDHARI, B/H Saikrishna Hospital, Vadilal G Patel N/A

(1750-22 P) **Purification of Chlorogenic Acid from Green Coffee Using Core-shell Technology in Axia Preparative Format** MARC JEAN JACOB, Phenomenex

(1750-23 P) **HILIC HPLC Separation of Oxymorphone for Assay and Purity** BRADLEY KUMAGAI, Theravance Biopharma

(1750-24 P) **Transfer of the Method for Related Substances Analysis of Metoclopramide HCl Between Different LC Systems** MARGARET MAZIARZ, Waters Corporation, Christopher Henry, Mark Wrona

(1750-25 P) **RP-HPLC Method Development and Validation for the Analysis of Pharmaceutical Drugs-60% Sodium Lactate** VADILAL G PATEL, B/H Rajpath Hotel, Rajeshkumar H Chaudhari N/A

(1750-26 P) **Polar Stationary Phases for Capillary Liquid Chromatography based on Metallic Oxides** CARLA GRAZIELI AZEVEDO DA SILVA, Unicamp, Carol H Collins, Carla B Bottoli

(1750-27 P) **Selection of Chromatographic Columns by Supercritical Fluid Chromatography** CARLA GRAZIELI AZEVEDO DA SILVA, IQ/UNICAMP, Carol H Collins, Isabel Cristina S Jardim

(1750-28 P) **Stability Evaluation of Core Shell C18 with Encapsulated Type End-Capping** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tsukamoto

(1750-29 P) **Development of an Interactive Counter Current Extraction Simulation** SEAN A REED, Westminster College, Erin Wilson, James Anthony

## POSTER SESSION — Session 1760

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Pharmaceutical-IC, LC, and SFC*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1760-1 P) **Determination of Aluminum in OTC Products** MANALI AGGRAWAL, Thermo Fisher Scientific, Jeffrey Rohrer

(1760-2 P) **Analysis of Antibiotics Sold in Pharmaceutical Market in Idumota, Lagos Using HPLC** SIXTUS I AMADI, Hydrochrom Resources Ltd

(1760-3 P) **A Sensitive Method for Direct Analysis of Impurities in Apramycin and Other Aminoglycoside-Antibiotics Using Hydrophilic Interaction Liquid Chromatography and Charged Aerosol Detection** ZHEN LONG, Thermo Fisher Scientific, Qi Zhang, Lina Liang, Yan Jin, Ian N Acworth, Evert-Jan Sneekes, Frank Steiner

(1760-4 P) **Chemically Stable Reversed Phase Chromatography Material Scalable from UHPLC to Semi Prep and Production** CECILIA MAZZA, AkzoNobel PPC AB, Fredrik Lime

(1760-5 P) **Characterization and Lot-to-Lot Variability of Complex Surfactants by High Performance Liquid Chromatography and Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Ian N Acworth, Bruce Bailey, Evert-Jan Sneekes, Frank Steiner

(1760-6 P) **Direct-Determination of Underivatized Carbohydrates in Biopharmaceutical Formulations Using Heart-Cut, 2D HPLC-HILIC and Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian N Acworth, Evert-Jan Sneekes, Frank Steiner

(1760-7 P) **Fast Method Screening for Chromatographic Separation of Enantiomers Utilizing Polysaccharides Type Chiral Stationary Phases** TAKASHI SATO, YMC CO., Ltd., Noritaka Kuroda, Saoko Nozawa, Keiko Kihara, Noriko Shoji, Takatomo Takai

(1760-8 P) **Label-Free Measurement of Sialic Acids Released From Glycoproteins, by High Performance Liquid Chromatography and Charged Aerosol Detection** QI ZHANG, Thermo Fisher Scientific, Ian N Acworth, Bruce Bailey, Evert-Jan Sneekes, Frank Steiner

(1760-9 P) **Challenges in Developing Analytical Methods for Cleaning Validations in a GMP Regulated Environment** XIAOHUI YANG, Baxter Healthcare, Robert Garber, Walter Wasylenko, Lakshmy Nair, Jane Werling, George Monen, Beena Uchil

(1760-10 P) **SFC Analysis of Nutraceuticals and Pharmaceuticals Using SFC Optimized Stationary Phases** MATTHEW PRZYBYCIEL, ES Industries

(1760-11 P) **Analysis of Metoprolol and Select Impurities Using a Hydrophilic Interaction Chromatography Method with Combined UV and Charged Aerosol Detection** BRUCE BAILEY, Thermo Fisher Scientific, Ian N Acworth, Evert-Jan Sneekes, Frank Steiner

(1760-12 P) **Benefits of Using Mass Detection for Assessing Quality and Purity of Cetrimonium Bromide Pharmaceutical Raw Material** MARGARET MAZIARZ, Waters Corporation, Christopher Henry, Mark Wrona, Dominic Moore, Chengxia O'Shea

(1760-13 P) **Characterization of a Biologic Therapeutic: Reversed Phase/HILIC Analysis of Protein and Excipients** BRUCE BAILEY, Thermo Fisher Scientific, Marc Plante, Ian N Acworth, Evert-Jan Sneekes, Frank Steiner

(1760-14 P) **Efficient, Effective and Proven Approach to Chiral Method Development for Purification Scale Up** SEAN ORLOWICZ, Phenomenex, Michael McCoy

(1760-15 P) **Guidelines for Method Transfer and Optimization of the Newest Charged Aerosol Detector** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian N Acworth, Paul Gamache, Evert-Jan Sneekes, Frank Steiner

(1760-16 P) **Chiral Separation Using SFC and HPLC** HIDETOSHI TERADA, Shimadzu, Takato Uchikata, Funada Yasuhiro, Tanaka Kenichiro, Arao Yohei

(1760-17 P) **Determination of Ascorbic Acid in Citrus Fruits and Pharmaceutical Formulations by Hydrophilic Interaction Chromatography (HILIC)** YUEGANG ZUO, University of Massachusetts Dartmouth, Ruiting Zuo, Si Zhou, Yiwei Deng

(1760-18 P) **HPLC Method Development and Validation for the Assay and Organic Impurities of Naproxen in Naproxen API, Naproxen Delayed-Release Tablets and Naproxen Oral Suspension** JENNIFER FEDOROWSKI, United States Pharmacopeial Convention, Joshua Bhattacharya, Arindam Ganguly, Natalia Kouznetsova, Jennifer Belsky

(1760-19 P) **Sample Analysis of Compounds with Multiple Chiral Centers by Two-Dimensional HPLC** CHI TSANG, Genentech, Kelly Zhang

(1760-20 P) **Mobile Phase Effects in Reversed-Phase Chromatography of Monoclonal Antibodies at High Temperature** HILLEL K BRANDES, Sigma-Aldrich/Supelco

(1760-21 P) **Separation of Aminoglycoside Antibiotics by Using Hydrophilic Interaction Liquid Chromatography** YU LONG, Dalian Institute of Chemical Physics, Wei Jie, Shen Aijin, Guo Zhimou, Liang Xinmiao N/A

(1760-22 P) **Utilization of HPTLC and Diffuse Reflectance Spectroscopy to Quickly Evaluate Product Quality of Cotrimoxazole Tablets from Tanzania** DAVID WAYNE JENKINS, FHI 360, Eliangiringa Kaale, Samuel Hope, Thomas Layloff

(1760-23 P) **Amino Acid Analysis for Qualitative and Quantitative Composition of Pharmaceutical Products** NATALIA BELIKOVA, SGS Life Science Services

(1760-24 P) **Separation and Detection of Small Molecules by Low-Flow Liquid Chromatography Mass Spectrometry for Pharmacokinetic Studies** JAMES N MARR, Merck & Co., Rena Zhang, Gary Adamson

## POSTER SESSION — Session 1770

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Pharmaceutical-MS, LC/MS and Others*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1770-1 P) **A New Approach to the Automated Identification of Metabolites in Multi-Vendor Datasets** RICHARD LEE, ACD/Labs, Vitaly Lashin, Andrey Paramonov, Alexandr Sakharov, Rytis Kubilius

(1770-2 P) **Analysis of Atropine Sulfate by HPLC Using Mass Spec HPLC Mobile Phase** JEFFREY KAKALEY, YMC America Inc., Ernest Sobkow

(1770-3 P) **Alternative Oxidation Technique for Pharmaceutical Forced Degradations** KEN NGIM, Theravance Biopharma US, Inc., Claudine Ooi, Bradley Kumagai

(1770-4 P) **Investigating Transdermal Diffusion of Vitamin D and 25-Hydroxyvitamin D** MARCEL MUSTEATA, Albany College of Pharmacy, Isaac Mall

(1770-5 P) **Calibration Free, Semi-Quantitative Analysis of Defined Drug Formulations Using FTIR Pre-computed Mixture Spectra** WILLIAM COSTA, Fiveash Data Management, Inc., Bill McCarthy, Todd Strother

(1770-6 P) **Novel Self-Patented Gold Nanoparticle Synthesis, Characterization and Antibacterial Susceptibility Testing** WILLIAM HAMILTON, Western Kentucky University, Jason N Payne, Fenil Chavda, Rajalingam Dakshinamurthy

(1770-7 P) **Unattended, Representative Sampling of a Wide Range of Chemical Reactions** VASO VLACHOOS, Mettler Toledo, Jane Riley N/A

(1770-8 P) **Square Wave Adsorptive Stripping Voltammetric Determination of Ketoconazole Drug in the Saudi Market** ABDEL-NASSER KAWDE, King Fahd University of Petroleum and Minerals, Mohamed A Morsy

(1770-9 P) **Capillary Electrophoresis: MEKC Assay Method for Simultaneous Determination of Olmesartan Medoxomil, Amlodipine Besylate and Hydrochlorothiazide in Tablets** MAHESH V ATTIMARAD, College of Clinical Pharmacy, Sree N Harsha, Bander E Al Dubaib, Anroop B Nair N/A

(1770-10 P) **A Comparison of Complete Dissolution Versus Leach of the Target Analytes by Using and Omitting HF** DAN IVERSEN, CEM, Tyler Edwards

(1770-11 P) **Standardization of Experimental Conditions of USP Melting Point Reference Standards in DSC Applications** OSOMWONKEN IGBINOSUN, United States Pharmacopeial Convention, Guillermo A Casay, Antonio Hernandez-Cardoso, Steven T Rau, Kanda K Balasubramanian

(1770-12 P) **Identification of Persistent Pd-containing Impurities Using LC-MS/MS and LC-ICP-MS** RENEE K DERMENJIAN, Merck N/A

(1770-13 P) **A Co-Crystal of Febuxostat and Isonicotinamide: Synthesis and Characterization** YANLEI KANG, Zhejiang University, Xiurong Hu, Jianming Gu, Dongdong Yu, Jianguang Zhou

(1770-14 P) **Real Time Stability of NSAIDs in Aqueous Solutions by Infrared Spectroscopy** ANUMEHA P MUTHAL, Seton Hall University, Vrushali Bhawtankar, Nicholas Snow

(1770-15 P) **Headspace Sampling of Residual Solvents Per USP 467 Using a Gas Tight Syringe** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor, Justin Murphy

(1770-16 P) **Comparative Evaluation of Physicochemical Properties of Some Commercially Available Brands of Metformin Hydrochloride Tablets in Lagos, Nigeria** ADERONKE A ADEPOJU-BELLO, University of Lagos, Olawale S Bisiriyu N/A

(1770-17 P) **A Simple and Rapid LC-MS/MS Method for the Determination of BMCL26, a Novel Anti-Parasitic Agent, in Rat Plasma** RAMAKRISHNA REDDY VOGGU, Cleveland State University, Xiang Zhou, Bin Su, Baochuan Guo

(1770-18 P) **Derivative and Chemometric Spectrophotometric Methods for the Determination of Aripiprazole in Presence of its Related Impurities** SALLY TAREK, Cairo University N/A

(1770-19 P) **Drug-Herb Interaction: A Crossover Study of the Effect of a Polyherbal Formulation on Metroinidazole Pharmacokinetic Profile** GRACE EIGBIBHALU UKPO, University of Lagos, Teddy S Ehianeta, Steve O Ogbonnia, Idris O Balogun

(1770-20 P) **Supersaturation of Spray-Dried-Dispersion (SDDs) - Development and Evaluation of a Characterization Method** BENJAMIN H WU, Bristol-Myers Squibb

(1770-21 P) **Headspace Grade Solvents for Trace Level Analyte Detection** SUBHRA BHATTACHARYA, Thermo Fisher Scientific, Eric Oliver, Stephen Roemer

(1770-22 P) **Analytical Strategies in the Development of Generic Drug Products: Excipient Quantitation** ALEXANDER WILLIAM GARNER, Mayne Pharma

(1770-23 P) **Quantitative Laser Diffraction Method for the Assessment of Subvisible Protein Particles** ROBERT E BUCO, Shimadzu Corporation, Matthew Ferrarelli, Ariadna Martos, Andrea Hawe, Michael Wiggenhorn, Shinichiro Totoki, Haruo Shimaoka, Markus Ortlieb

(1770-24 P) **3D-Printed LTP Ionization Source for the Direct Analysis of Biomolecules** SANDRA MARTINEZ JARQUIN, Centro de Investigation Y de Estudios Avanzados Del IPN, Robert Winkler

(1770-25 P) **Demonstrating the Uptake Mechanism of Cisplatin in Cells by Single Cell ICP-MS** CHADY STEPHAN, PerkinElmer

(1770-26 P) **The Practice and Challenges of Ultrafast Chiral Separations in UHPLC and Super/Subcritical Fluid Chromatography (SFC)** CHANDAN L BARHATE, University of Texas at Arlington, M Farooq Wahab, Daniel W Armstrong

(1770-27 P) **Isolation of Pharmaceutical Impurities Utilizing MS-Directed Purification Platforms** ERIC STRECKFUSS, Merck N/A

(1770-28 P) **Determining Equivalency of Generic and Name Brand Oral Suspensions Using Zeta Potential** JACK G SAAD, Micromeritics, Myke Scoggins, Danielle Sowle

(1770-29 P) **Analysis of the Photodegradation Products of Nifedipine in Photoprotective Topical Formulations by HPLC and Mass Spectrometry** ELLEN K WASAN, University of Saskatchewan, Joshua Poteet, Ed Krol, Jacqueline Cawthray, Anas El-Aneed, Kevin Soulsbury, Munawar Mohammed N/A

# TECHNICAL PROGRAM

## POSTER SESSION — Session 1780

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Practical Chromatography in Today's Laboratory*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1780-1 P) **A Rapid Isocratic LC Separation of Soft Drink Additives Using an Environmentally Friendly Mobile Phase with UV Detection** MARK E BENVENUTI, Waters Corporation, Joseph Paul Romano

(1780-2 P) **High Efficiency Chiral Separations Using Sub-2 µm Monodisperse Chiral Stationary Phases** ZACHARY BREITBACH, The University of Texas at Arlington, Chandan L Barhate, M Farooq Wahab, David S Bell, Daniel W Armstrong

(1780-3 P) **Advances in Chiral HPLC Column Technology: Superficially Porous Particle Based Chiral Stationary Phases** ZACHARY BREITBACH, The University of Texas at Arlington, M Farooq Wahab, Daniel W Armstrong

(1780-4 P) **A New Standard in Analytical Workflow Design** WILLIAM HEDGEPETH, Shimadzu Scientific Instruments, Kenichiro Tanaka

(1780-5 P) **Conductivity and pH Monitoring as an Effective Tool for Multi-Step Biological Separations** LUKE ROENNEBURG, Gilson, Inc., Laine Stewart, Karen Kleman N/A

(1780-6 P) **Centrifugal Partition Chromatography: A Preparative Tool for Isolation and Purification of Xylindein from Chlorociboria Aeruginosa** ANUKUL BOONLOED, Oregon State University, Genevieve L Weber, Sumate Pengpumkiat, Vincent T Remcho

(1780-7 P) **Analysis of Petroleum Products Using Comprehensive Two-Dimensional Gas Chromatography (GC×GC) with Both Time of Flight MS and Flame Ionization Detectors** JOSEPH E BINKLEY, Leco Corporation, Christina N Kelly, Jonathan D Byer, David E Alonso, Lorne E Fell

(1780-8 P) **Evaluation of Polycyclic Aromatic Hydrocarbon Standard Reference Materials 869b and 1647f on Different Stationary Phases for Liquid Chromatography** WALTER B WILSON, National Institute of Standards and Technology, Jorge O Oña-Ruales, Lane C Sander, Stephen A Wise

(1780-9 P) **Liquid Chromatographic Retention Behavior of Polycyclic Aromatic Sulfur Heterocycles and Their Alkyl-Substituted Derivatives** WALTER B WILSON, National Institute of Standard and Technology, Lane C Sander, Stephen A Wise

(1780-10 P) **Evaluation of 25-Hydroxy Vitamin D Extraction Using Phospholipid Depletion Plate Technology and Method Comparison Using Automated Sample Preparation** KERRY CHALLENGER, Biotage GB Limited, Lee Williams, Helen Lodder, Victor Vandell

(1780-11 P) **Effects of Ultracentrifugation on HDL and LDL Size Distribution** JEFFREY JONES, Centers for Disease Control and Prevention, Zsuzsanna Kuklenyik, Christopher Toth, Bryan A Parks, Michael S Gardner, Jon Rees, Yulanda Williamson, David Schieltz, Lisa McWilliams, John R Barr, James Pirkle

(1780-12 P) **Biomolecular Separations through Tunable Nanoporous Gold Membranes** DANIEL A MCCURRY, University of Illinois at Urbana-Champaign, Ryan C Bailey

(1780-13 P) **Non-Contact Pd Separation based on Laser-Induced Particle Formation for Determination of $^{107}$Pd with ICP-MS** TAKUMI YOMOGIDA, Japan Atomic Energy Agency, Shiho Asai, Morihisa Saeki, Yukiko Hanzawa, Fumitaka Esaka, Hironori Ohba, Yoshihiro Kitatsuji

(1780-14 P) **Surfactant-Pluronic Gel Phases for Electrophoresis** ASHLEY E RICHARDSON, Miami University, Elise M Leonard, Neil D Danielson

(1780-15 P) **Insights into the Effect of the PDMS-layer on the Kinetics and Thermodynamics of Analytes Sorption onto the PDMS-overcoated Coating** ERICA A SOUZA-SILVA, Universidade Federal do Rio Grande do Sul, Emanuela Gionfriddo, Janusz Pawliszyn

(1780-16 P) **A New Anion Exchange Column for Fast Ion Chromatographic Separation of Monosaccharides and Disaccharides in Biofuel, Food, and Beverage Samples** YAN LIU, Thermo Fisher Scientific, Andy Woodruff, Charanjit Saini, Yury Agroskin, Christopher Pohl

(1780-17 P) **Column Robustness Challenges during HPLC Method Development** JUN WANG, Takeda Boston, Laila Kott, Elizabeth Hewitt, Scott Zugel

(1780-18 P) **There are Problems Associated with Gradient and Method Transfer in HPLC and UHPLC – Are There Explanations and Usable Workarounds? Part 1 of 2** MICHAEL WOODMAN, Agilent Technologies, Gregory Hunlen

(1780-19 P) **Understanding the Causes and Minimizing the Impact of LC Carryover in Most LC Systems** MICHAEL WOODMAN, Agilent Technologies, Gregory Hunlen

## SEAC POSTER SESSION — Session 1790

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *SEAC Poster Session*

**Wednesday Morning, Exposition Floor, 400 Aisle**

(1790-1 P) **New Portable Electrochemical Instrument for *In Situ* Analysis** PABLO FANJUL-BOLADO, DropSens S.L, David Hernández-Santos, Laura Fernández-Llano, Marta Neves, Pablo Bobes-Limenes, Alejandro Pérez-Junquera, Begoña González-García, Carla Navarro-Hernández

(1790-2 P) **Aqueous and Non-Aqueous Electrochemical Activities of Mercaptosuccinic Acid Stabilized Au11-13 Clusters** JONATHAN PADELFORD, Georgia State University, Gangli Wang

(1790-3 P) **Copolymerized Triazole Based Ionic Liquid as New Sensing Material in Ion-Selective Sensors** LUKASZ K MENDECKI, Keele University

(1790-4 P) **Investigation of Cloud-Point Extraction and UV-Vis for Determining Copper and Cadmium in Vegetables** ASADUZZAMAN NUR, Tennessee Technological University, Andrew Callender

(1790-5 P) **Potentiometric Ion-Selective Electrodes based on Metastable Photoacid for Cation Detection** PARTH K PATEL, University of Central Florida, Karin Y Chumbimuni-Torres

(1790-6 P) **Signal Amplification of a Highly Selective Universal MicroRNA Electrochemical Sensor for Single Nucleotide Polymorphism Detection** DAWN MILLS, University of Central Florida, Jeffer Pinzon, Percy Calvo-Marzal, Dmitry M Kolpashchikov, Karin Y Chumbimuni-Torres

(1790-7 P) **Self-Reference Single Strip Paper Based Sensors for Ion Detection** ANDREW J MANHAN, University of Central Florida, Stephanie Armas, Karin Y Chumbimuni-Torres

(1790-8 P) **Development and Characterization of an Ion Selective Microsensor for the Detection and Monitoring of Zinc Levels in Citrus Plants** COURTNEY HULCE, University of Central Florida, Jared Church, Swadeshmukul Santra, Woo Hyoung Lee, Karin Y Chumbimuni-Torres

(1790-9 P) **Poly(3-octylthiophene)-Based Solid Contact Ion-Selective Electrodes with Improved Potential Stability** JENNIFER M JARVIS, University of Memphis, Marcin Guzinski, Bradford D Pendley, Erno Lindner

(1790-10 P) **Urine Carbon Dioxide in Septic Shock** JAMES G ATHERTON, University of Memphis, Artur Jasinski, Erno Lindner, Bradford D Pendley, Marcin Guzinski, William King

(1790-11 P) **Disposable Paper-Based Electrochemical Ion-Sensing Platform** JINBO HU, University of Minnesota, Andreas Stein, Philippe Buhlmann

(1790-12 P) **Development of Calibration-Free Electrochemical Sensors Using Novel Redox Polymers** XUE ZHEN, University of Minnesota, Philippe Buhlmann

(1790-13 P) **Ultrasensitive Detection of Dopamine with Carbon Nanopipettes** KEKE HU, Queens College CUNY, Michael Mirkin, Yun Yu, Min Zhou

(1790-14 P) **Avoiding Errors in Electrochemical Measurements: Effect of Frit Material on the Performance of Reference Electrodes with Porous Frits** MARAL PS MOUSAVI, University of Minnesota, Stacey Saba, Evan Anderson, Marc A Hillmyer, Philippe Buhlmann

# WEDNESDAY, MARCH 9, 2016
# AFTERNOON

## AWARDS — Session 1800

***Ralph N Adams Award***
arranged by Norman J Dovichi, University of Notre Dame

**Wednesday Afternoon, Room B312**
Norman J Dovichi, University of Notre Dame, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - R Mark Wightman** |
| 1:35 | | **Presentation of the 2016 Ralph Adams Award to David R Walt, Tufts University, by Norman J Dovichi, University of Notre Dame** |
| 1:40 | (1800-1) | **Clinical Applications of Single Molecule Arrays (Simoa)** DAVID R WALT, Tufts University |
| 2:15 | (1800-2) | **Microengineered Devices for Biomedical Research** NANCY ALLBRITTON, University of North Carolina at Chapel Hill |
| 2:50 | (1800-3) | **Micro-and Nanofabricated Molecular Measurement Devices** J MICHAEL RAMSEY, University of North Carolina at Chapel Hill N/A |
| 3:25 | | **Recess** |
| 3:40 | (1800-4) | **Paper-Based Microfluidic Devices for Point-of-Need Bioanalysis** CHARLES R MACE, Tufts University, Syrena C Fernandes, Samuel Berry |
| 4:15 | (1800-5) | **Developmental Proteomics** NORMAN J DOVICHI, University of Notre Dame, Liangliang Sun, Matthew M Champion, Guijie Zhu, Paul Huber |

## AWARDS — Session 1810

***The Coblentz Society - Williams-Wright Award***
arranged by Nancy Jestel, Sabic Innovative Plastics

**Wednesday Afternoon, Room B314**
Nancy Jestel, Sabic Innovative Plastics, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Nancy Jestel** |
| 1:35 | | **Presentation of the 2016 Coblentz Society's Williams-Wright Award to D Warren Vidrine, Vidrine Consulting, by Nancy Jestel, Sabic Innovative Plastics** |
| 1:40 | (1810-1) | **Industrial Analysis Utilizing Vibrational Spectrometry** D WARREN VIDRINE, Vidrine Consulting |
| 2:15 | (1810-2) | **Biological Infrared Spectroscopy: An Overnight Success Story 64 Years in the Making** BOB MESSERSCHMIDT, Nueon Inc. |
| 2:50 | (1810-3) | **Reflections of a Chemometric Spectroscopist** DAVID M HAALAND, Spectral Resolutions, David A Melgaard, Howland D Jones |
| 3:25 | | **Recess** |
| 3:40 | (1810-4) | **The Laminated Card** STUART YANIGER, ITW Fluids North America N/A |
| 4:15 | (1810-5) | **Open Discussion** |

## SYMPOSIUM — Session 1820

***ACS-ANYL - Advances in Instrumentation for Ion Mobility Mass Spectrometry***
arranged by Matthew F Bush, University of Washington

**Wednesday Afternoon, Room B308**
Matthew F Bush, University of Washington, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Matthew F Bush** |
| 1:35 | (1820-1) | **Ultra-High Resolution Ion Mobility Separations based upon Long Path Length Structures for Lossless Ion Manipulations (SLIM)** RICHARD D SMITH, Pacific Northwest National Laboratory, Ahmed Hamid, Sandilya Garimella, Yehia M Ibrahim, Liulin Deng, Ian K Webb, Aleksey V Tolmachev, Erin S Baker |
| 2:10 | (1820-2) | **Ion Mobility Mass Spectrometers for Structural Biology and Biophysics** MATTHEW F BUSH, University of Washington |
| 2:45 | (1820-3) | **Toward Protein Ion Surface Characterization with IMS/HDX-MS/MS Techniques** STEPHEN J VALENTINE, West Virginia University, Mahdiar Khakinejad, Gregory Donohoe, Samaneh Ghassabi Kondalaji |
| 3:20 | | **Recess** |
| 3:35 | (1820-4) | **Maximizing Fragmentation Duty Cycle for Ion Mobility-Ion Trap Instrumentation Using the Fourier Transform and Photodissociation** BRIAN CLOWERS, Washington State University, Kelsey Morrison |
| 4:10 | (1820-5) | **A Multi-Pass Cyclic Ion Mobility Separator: Design and Performance** KEVIN GILES, Waters Corporation, Jason Wildgoose, Steve Pringle |

## SYMPOSIUM — Session 1830

***Advancing Strategies for Chronic In Vivo Sensing***
arranged by R Mark Wightman, University of North Carolina at Chapel Hill and Adrian C Michael, University of Pittsburgh

**Wednesday Afternoon, Room B302**
R Mark Wightman, University of North Carolina at Chapel Hill, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - R Mark Wightman and Adrian C Michael** |
| 1:35 | (1830-1) | **Modulating Blood-Brain Barrier Healing Around Intracortical Electrode Implants** RAVI BELLAMKONDA, Georgia Institute of Technology, Varun Yarabarla, Alexus Clark, Brianna Gresham, Robert Kretschmar, Shoba Paul, Jessica Falcone |
| 2:10 | (1830-2) | **Is Microdialysis Specifically Monitoring the Tonic Modality of Dopamine Transmission?** GAETANO DI CHIARA, University of Cagliari |
| 2:45 | (1830-3) | **Long-Term Monitoring of Dopamine** PAUL EM PHILLIPS, University of Washington |
| 3:20 | | **Recess** |
| 3:35 | (1830-4) | **Calibration of In Vivo Voltammetry** R MARK WIGHTMAN, University of North Carolina at Chapel Hill |
| 4:10 | (1830-5) | **Advancing the Possibilities for Chronic Brain Microdialysis** ADRIAN C MICHAEL, University of Pittsburgh, Erika Varner, Khanh Ngo, Andrea Jaquins-Gerstl, Stephen Weber |

## SYMPOSIUM — Session 1840

***Analytical Challenges Relating to the Discovery, Development, Manufacturing and Use of Cancer Immunotherapy Medicines***
arranged by Maribel Beaumont and Christopher Welch, Merck Research Laboratories

**Wednesday Afternoon, Room B303**
Maribel Beaumont, Merck Research Laboratories, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Maribel Beaumont** |
| 1:35 | (1840-1) | **Concepts of Cancer Immunotherapy** ROBERT KASTELEIN, Merck & Co. |
| 2:10 | (1840-2) | **Identifying and Profiling Tumor Specific T Cells Using Mass Cytometry and Highly Multiplexed Peptide-MHC Tetramer Staining** EVAN W NEWELL, Singapore Immunology Network |
| 2:45 | (1840-3) | **Analytical Challenges in the Discovery, Development and Commercialization of Keytruda** MARIBEL BEAUMONT, Merck Research Laboratories |
| 3:20 | | **Recess** |
| 3:35 | (1840-4) | **Development of Microtools for Immune Therapy Applications** CHRISTOPHER LOVE, Koch Institute for Integrative Cancer Research at MIT |
| 4:10 | (1840-5) | **Analytical Challenges During Development of Monoclonal Antibody Therapeutics** JOHN T STULTS, Genentech, Inc, David Michels |

***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 1850**

***Analytical Chemistry of Oil and Gas Prospecting in Brazil***
arranged by Maira Menezes, NurnbergMesse Brasil

**Wednesday Afternoon, Room B304**
Jailson de Andrade, Universidade Federal da Bahia-UFBA, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Jailson de Andrade** |
| 1:35 | (1850-1) | **Analytical Chemistry Challenges of Oil and Gas Prospection and Exploration** JAILSON B DE ANDRADE, UFBA N/A |
| 2:10 | (1850-2) | **Compound Specific δ13C Determination of Light Hydrocarbons (n-alkanes and Olefins from C1 to C5) at Low Concentration for Oil and Gas Prospection** ARTHUR DE LEMOS SCOFIELD, PUC-RIO, Angela R Wagener, Laura R Morales, Lilian F Almeida |
| 2:45 | (1850-3) | **Mass Spectrometry by FT-ICR and Orbitrap: Analysis of Crude Oil and Its Derivatives** EDUARDO MORGADO SCHMIDT, State University Campinas |

**SYMPOSIUM** **Session 1860**

***Big Data in Analytical Sciences - Challenges and Solutions***
arranged by Hang Lu, Georgia Tech and Andriana San Miguel, North Carolina State University

**Wednesday Afternoon, Room B305**
Hang Lu, Georgia Tech, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Hang Lu** |
| 1:35 | (1860-1) | **Data Analysis Challenges in Plant Biology** PHILIP BENFEY, Duke University |
| 2:10 | (1860-2) | **First Steps into Big Data Chemistry- Ultra-High-Throughput Screening** SPENCER D DREHER, Merck & Co., Inc. |
| 2:45 | (1860-3) | **Big, But Small, Data: Network Analysis in Small Sample Size Systems Biology** MARK P STYCZYNSKI, Georgia Institute of Technology |
| 3:20 | | **Recess** |
| 3:35 | (1860-4) | **Clustering and Differential Alignment Algorithm: Identification of Early Stage Regulators in the Arabidopsis Thaliana Iron Deficiency Response** CRANOS WILLIAMS, North Carolina State University, Terri A Long, Alexandr Koryachko, Anna Matthiadis, James Tuck, Durreshahwar Muhammad, Joel Ducoste, Siobhan Brady, Jessica Foret |
| 4:10 | (1860-5) | **Machine Learning for Big Nonlinear Problems in Science and Engineering** LE SONG, Georgia Institute of Technology |

**SYMPOSIUM** **Session 1870**

***Electrical and Electrochemical Sensing and Detection based on Nucleic Acid Recognition***
arranged by Rebecca Lai, University of Nebraska-Lincoln
and Ryan J White, University of Maryland Baltimore County (UMBC)

**Wednesday Afternoon, Room B309**
Rebecca Lai, University of Nebraska-Lincoln, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Rebecca Lai and Ryan J White** |
| 1:35 | (1870-1) | **A New Approach to POC Serology** KEVIN W PLAXCO, University of California Santa Barbara |
| 2:10 | (1870-2) | **Detection of Hepatitis B Virus DNA with a Paper Electrochemical Sensor** RICHARD M CROOKS, University of Texas at Austin, Xiang Li, Karen Scida |
| 2:45 | (1870-3) | **Using Widely Available Electrochemical Device for Sensing or Diagnostics** YI LU, University of Illinois at Urbana-Champaign, JingJing Zhang, Yu Xiang |
| 3:20 | | **Recess** |
| 3:35 | (1870-4) | **Electrochemical Analysis of Clinically-Relevant Biomolecular Analytes Using Nanostructured Microelectrodes** SHANA KELLEY, University of Toronto |
| 4:10 | (1870-5) | **Signal Amplification for Biosensing Based on Nucleic Acid Recognition** JU HUANGXIAN, Nanjing University |

**SYMPOSIUM** **Session 1880**

***Vibrational Spectroscopy of Biodegradable Plastics: Evolution, Revolution or Back to the Future***
arranged by John F Rabolt, University of Delaware

**Wednesday Afternoon, Room B310**
John F Rabolt, University of Delaware, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - John F Rabolt** |
| 1:35 | (1880-1) | **Spectroscopic Study of Structural Evolution Dynamics of Bio-Based and Biodegradable Poly(hydroxyalkanoate) Copolymers** ISAO NODA, University of Delaware, Brian Sobieski, Liang Gong, Bruce Chase, John F Rabolt |
| 2:10 | (1880-2) | **Degradation Mechanisms of Poly(lactic acid)-Nanoparticle Composite and Phthalate Plasticized Poly(vinyl chloride)** ZHAN CHEN, University of Michigan |
| 2:45 | (1880-3) | **Vibrational Spectroscopic Studies on Biodegradable Polymer Microstructures** SHAW L HSU, University of Massachusetts |
| 3:20 | | **Recess** |
| 3:35 | (1880-4) | **2D IR Correlation Study of Thin Films of Biodegradable PHA/PEG Blend** YOUNG MEE JUNG, Kangwon National University, Yeonju Park, Yujing Chen, Isao Noda |
| 4:10 | (1880-5) | **Characterization of Single Electrospun Biopolymer Nanofibers Using AFM-IR and Selected Area Electron Diffraction** JOHN F RABOLT, University of Delaware, Liang Gong, Isao Noda, Bruce Chase, Curtis Marcott, C J McBrin, David Martin, Jinglin Liu, Chao Ni |

**WORKSHOPS** **Session 1890**

***CACA - How to be Successful in Your Career***
arranged by Tao Jiang, Mallinckrodt Pharmaceuticals and Michael Ye, Supelco/Sigma-Aldrich

**Wednesday Afternoon, Room B311**
Tao Jiang, Mallinckrodt Pharmaceuticals, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Tao Jiang and Michael Ye** |
| 1:35 | (1890-1) | **Insights on Job Searching** MICHAEL W DONG, MWD Consulting |
| 2:05 | (1890-2) | **Recognizing and Managing Career Passover** ROBERT L STEVENSON, American Laboratory |
| 2:35 | (1890-3) | **Advancing Academic Career as a Faculty** YI HE, John Jay College/CUNY |
| 3:05 | | **Recess** |
| 3:20 | (1890-4) | **Career Development Workshop** NAIDONG WENG, JNJ |
| 3:50 | (1890-5) | **From a Bench Chemist to an Entrepreneur** BRUCE LIU, ACB Scitech, Inc. N/A |
| 4:20 | (1890-6) | **Go Wider and Higher** CHUPING LUO, Waters Corporation |

**WORKSHOPS** **Session 1900**

***Natural Health Products: Scientific Approaches to Securing Product Quality and Safety***
arranged by Rob O'Brien, ISURA and Bob Chapman, National Research Council of Canada

**Wednesday Afternoon, Room B313**
Rob O'Brien, ISURA, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Rob O'Brien and Bob Chapman** |
| 1:35 | (1900-1) | **Development of a Chemical Barcoding Methodology to Identify and Support the Quality and Safety of Functional Ingredients** BOB CHAPMAN, National Research Council of Canada, Fabrice Berrue, Junzeng Zhang, Ian Burton, Joseph Hui, Sabrena MacKenzie, Camilo Martinez-Farina, Aissa Harhira, El Haddad Josette, Mohamad Sabsabi, Alain Blouin, Yuan-Chun Ma, Rob O'Brien |
| 2:05 | (1900-2) | **Utility and Limitations of DNA Barcoding and Next Generation Sequencing for Herbal Product Authentication** JONATHAN VAN HAMME, Thompson Rivers University |
| 2:35 | (1900-3) | **Developing Metabolomics Approaches for Natural Product Authentication** LIANG LI, University of Alberta |
| 3:05 | | **Recess** |
| 3:20 | (1900-4) | **Natural Health Product Quality Control: Addressing the Current Issue of Adulterants** YUAN-CHUN MA, Canadian Phytopharmaceuticals Corporation |
| 3:50 | (1900-5) | **Practical Gas Chromatographic based Approaches to Confirm Identity of Powdered Herbal Products** ROB O'BRIEN, ISURA, Anderson Smith |
| 4:20:50 | (1900-6) | **TLC and HPLC Fingerprinting for Authentication of Natural Health Products** RUDOLF BAUER, University of Graz |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1910**

***High Throughput Analysis for Food Safety and Cosmetics: Challenges and Validation***

arranged by Perry G Wang, US FDA and Xiaogang Chu, China Academy of Inspection and Quarantine

**Wednesday Afternoon, Room B315**

Perry G Wang, US FDA, Presiding

| | | |
|---|---|---|
| 1:30 | (1910-1) | **Rapid Determination of Non-Allowed Active Pharmaceutical Ingredients for the Treatments of Hair Loss in Cosmetics Using UHPLC-HRMS** WANLONG ZHOU, US FDA, Perry G Wang, James B Wittenberg, Maria A Dionisio De Sousa, Alexander J Krynitsky |
| 1:50 | (1910-2) | **Advances in High-Throughput Analysis for Determination of Marine Biotoxins in Seafood** PEARSE MCCARRON, National Research Council, Daniel Beach |
| 2:10 | (1910-3) | **Determination of Prostaglandin Analogs in Eye Area Cosmetic Products by High Performance Liquid Chromatography with Tandem Mass Spectrometry** JAMES B WITTENBERG, Food and Drug Administration, Wanlong Zhou, Perry G Wang, Alexander J Krynitsky |
| 2:30 | (1910-4) | **Withdrawn** |
| 2:50 | | **Recess** |
| 3:05 | (1910-5) | **Analysis of Color Additives (Permitted and Non-Permitted) in Different Food Matrices by a HPLC Method** SNEH D BHANDARI, Merieux NutrSciences, Tiffany Gallegos-Peretz |
| 3:25 | (1910-6) | **A Comprehensive Approach on Food Safety Analysis, Screening and Quantitation by Using Data Independent Acquisition (DIA) and DDMS2 on HR/AM Q Exactive System** JAMES S CHANG, Thermo |
| 3:45 | (1910-7) | **Separation of Aminoglycoside Antibiotics by Using Hydrophilic Interaction Liquid Chromatography** YU LONG, Dalian Institute of Chemical Physics, Wei Jie, Shen Aijin, Guo Zhimou, Liang Xinmiao |
| 4:05 | (1910-8) | **Open Discussion** |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1920**

***Precision Bioanalytical Measurements***

arranged by Robert Dunn, University of Kansas

**Wednesday Afternoon, Room B316**

Robert Dunn, University of Kansas, Presiding

| | | |
|---|---|---|
| 1:30 | (1920-1) | **Analytical Precision in the Age of Metabolomics – Focus on the Fundamentals** HOWARD HENDRICKSON, University of Arkansas for Medical Sciences, Lin Song |
| 1:50 | (1920-2) | **Biocompatible Self-Tuning Nanomaterials Improve the Precision of Biomolecule Processing and Separation** LISA A HOLLAND, West Virginia University, Srikanth Gattu, Brandon C Durney, Cassandra Crihfield |
| 2:10 | (1920-3) | **Analytical Approaches for Environmental Metabolomics and Ecotoxicity Modeling** CYNTHIA K LARIVE, University of California - Riverside, Corey M Griffith, Melissa M Morgan |
| 2:30 | (1920-4) | **Extending the Free Drug Hypothesis: Physical Properties Driving Asymmetric Tissue Distribution** DENNIS O SCOTT, Pfizer |
| 2:50 | | **Recess** |
| 3:05 | (1920-5) | **Barbeques and Tornadoes: Analytical Strategies for Metal Ion Determinations Using Separations and Sensors** FIONA REGAN, Dublin City University |
| 3:25 | (1920-6) | **A Mass Spectrometry Based High Throughput Screening Approach with Exquisite Selectivity** HEATHER R DESAIRE, University of Kansas, Imaduwage Kasun |
| 3:45 | (1920-7) | **Microfluidic Devices with Integrated Electrodes for Monitoring Cellular Systems** R SCOTT MARTIN, Saint Louis University |
| 4:05 | (1920-8) | **Novel Applications of Microdialysis Sampling: Where No Probe has Gone Before!** SARA R THOMAS, Kansas University, Craig E Lunte, Susan M Lunte |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 1930**

***Technology Strategies for Explosives Sensing***

arranged by Michael Shepard, Dept. Homeland Security, S&T Directorate and Samar K Guharay, The MITRE Corporation

**Wednesday Afternoon, Room B401**

Samar K Guharay, The MITRE Corporation, Presiding

| | | |
|---|---|---|
| 1:30 | (1930-1) | **Overview of Operational Challenges to Domestic Security Screening** MICHAEL SHEPARD, US Dept. of Homeland Security |
| 1:50 | (1930-2) | **Generalized Systems Analysis Framework** SAMAR K GUHARAY, The Mitre Corporation |
| 2:10 | (1930-3) | **Statistical Methods for Constructing Chemometric Signatures in Noisy Environments** CHRISTOPHER P SAUNDERS, South Dakota State University |
| 2:30 | (1930-4) | **Operational Outlook for Remote Trace Explosives Detection** RODERICK KUNZ, MIT Lincoln Laboratory |
| 2:50 | | **Recess** |
| 3:05 | (1930-5) | **Pushing the Limits of Trace Detection Technology** STEFAN LUKOW, Morpho Detection |
| 3:25 | (1930-6) | **Optimized Sampling and Analysis Strategies for Trace Explosives Detection** GREG GILLEN, NIST |
| 3:45 | (1930-7) | **Chemical Attribution Signatures of Homemade Explosives** JOE CHIPUK, Signature Science N/A |
| 4:05 | (1930-8) | **Open Discussion** |

**ORAL SESSIONS** **Session 1940**

***Advances in Fuel and Petrochemical Analyses***

**Wednesday Afternoon, Room B402**

John Baltrus, US Department of Energy-NETL, Presiding

| | | |
|---|---|---|
| 1:30 | (1940-1) | **Chemical Fingerprinting of Crude Oils: Gaining an Extra Dimension from GCxGC–TOF MS** LAURA MCGREGOR, Markes International Ltd, Nicola Watson, Kevin Collins, Chris Hall, Ken Umbarger |
| 1:50 | (1940-2) | **Fast and Accurate Analysis of Extended Natural Gas Composition and Physical Properties Using a Temperature Programmable Gas Analyzer** DEBBIE ALCORN, INFICON |
| 2:10 | (1940-3) | **Application of Polymeric Ionic Liquids as Highly Robust and Selective Stationary Phases for Comprehensive Two-Dimensional Gas Chromatography** CHENG ZHANG, Iowa State University, Rodney A Park, Jared L Anderson |
| 2:30 | (1940-4) | **Solving Industrial Problems by Determining Compound Classes in Refinery Streams and Products** CHRIS GOSS, Alberta Innovates Technology Futures, Dan Wispinski, Lee Marotta |
| 2:50 | | **Recess** |
| 3:05 | (1940-5) | **Optical Sensors for the Detection of Nitrogen Compounds in Aviation Fuels** ROBERTO A FEDERICO-PEREZ, University of Tennessee, Ziling (Ben) Xue |
| 3:25 | (1940-6) | **Fast Profiling of Petrochemical Samples by Thermal Analysis- Soft Ionization Mass Spectrometry: From Source Rock and Kerogen via Crude Oil to Petrochemical Products** RALF ZIMMERMANN, University Rostock /HMGU, Thorsten Streibel, Mohammad Saraji, Michael Fischer , Sebastian Wohlfahrt, Andreas Walte, Thomas Denner |
| 3:45 | (1940-7) | **Micro-Hollow Discharge Analysis of Carbonaceous Materials** RANDY VANDER WAL, Penn State University, Chethan K Gaddam N/A |
| 4:05 | (1940-8) | **On-Site Fuel Analysis Using a Portable Near-Infrared Spectrometer** STUART FARQUHARSON, Real-Time Analyzers, Inc, Carl Brouillette, Wayne Smith, Chetan Shende |

# TECHNICAL PROGRAM

**ORAL SESSIONS** **Session 1950**

*Bioanalytical: Using Microfluidics/Lab-on-a-Chip Techniques*

**Wednesday Afternoon, Room B404**

Casey Burton, Missouri University of Science and Technology, Presiding

| | | |
|---|---|---|
| 1:30 | (1950-1) | **Pressure-Actuated Integrated Microfluidic Devices for Biomarker Analysis** VISHAL SAHORE, Brigham Young University, Suresh Kumar, Adam T Woolley |
| 1:50 | (1950-2) | **Real-Time Imaging of Cancer Cell Chemotaxis in Paper-Based Scaffolds** RACHAEL M KENNEY, University of North Carolina at Chapel Hill, Matthew W Boyce, Andrew S Truong, Matthew R Lockett |
| 2:10 | (1950-3) | **Observation of Rapid Changes in Drug Susceptibility of Tumor Cells in a Hypoxia Microfluidic Culture Device** TODD GERMAIN, Texas Tech University, Dimitri Pappas |
| 2:30 | (1950-4) | **Magnetic Microbead Based Capture and Labeling of DNA from Carbapenemase Resistance Genes** RILEY K MILLS, Brigham Young University, Radim Knob, Adam T Woolley N/A |
| 2:50 | | **Recess** |
| 3:05 | (1950-5) | **Screening Small Molecule Modulators of Cellular Chemotaxis in Paper-Based Invasion Assays** C CHAD LLOYD, University of North Carolina at Chapel Hill, Matthew R Lockett, Rachael M Kenney, Andrew S Truong, Matthew W Boyce, Christian A Lochbaum |
| 3:25 | (1950-6) | **Microchip Affinity Monoliths for Solid Phase Extraction of DNA for Bacteria Infection Detection** RADIM KNOB, Brigham Young University, Riley K Mills, Adam T Woolley |
| 3:45 | (1950-7) | **MALDI-IMS Evaluation of 3D Cell Cultures Treated with Combination Chemotherapeutics by a 3D Printed In-Vitro PK/PD Microfluidic Platform** GABRIEL J LABONIA, University of Notre Dame, Amanda B Hummon |
| 4:05 | (1950-8) | **Fully Automated Microfluidic Input/Output Multiplexer for Endocrine Tissue Culturing and Hormone Secretion Sampling** XIANGPENG LI, Auburn University, Jessica C Brooks, Katarena Ford, Christopher J Easley |

**ORAL SESSIONS** **Session 1960**

*Environmental Water Quality and Analysis*

**Wednesday Afternoon, Room B403**

John P Auses, University of Pittsburgh, Presiding

| | | |
|---|---|---|
| 1:30 | (1960-1) | **Targeted Discovery of Disinfection By-Products in Swimming Pools and Hot Tubs** SUSAN D RICHARDSON, University of South Carolina, Jonathan D Byer, Eric J Daiber, Sridevi A Ravuri, Joseph E Binkley, Christina M Joseph |
| 1:50 | (1960-2) | **Evaluation of Iodo-, Bromo-, and Chloro-Acetic Acids Formation by Peracetic Acid Disinfection Using a Newly Developed Rapid HPIC-MS/MS Method** RUNMIAO XUE, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma, John Yang, Bin Hua, Enos Inniss, Craig Adams, Todd Erichholz |
| 2:10 | (1960-3) | **Removal of Pharmaceutical Products from Wastewater Using Magnetic Bio-Char** AKILA G KARUNANAYAKE, Mississippi State University, Olivia A Todd, Todd E Mlsna |
| 2:30 | (1960-4) | **Determination of Priority Water Contaminants by Solid-Phase Extraction and UFLC-MS/MS Method** HAITING ZHANG, Missouri University of Science and Technology, Danielle West, Honglan Shi, Yinfa Ma, Craig Adams, Todd Erichholz |
| 2:50 | | **Recess** |
| 3:05 | (1960-5) | **Characterization of Oil-based Pollutants Using Webcam-based Spectrometer** YAGIZ SUTCU, InfoScope Research, Aysegul Ergin |
| 3:25 | (1960-6) | **Coupling of Thin Film Microextraction Techniques to Portable GC-TMS Instrumentation for the On-Site, Sub-ppb, Detection of Pesticides From Environmental Waters** JONATHAN J GRANDY, University of Waterloo, Janusz Pawliszyn |
| 3:45 | (1960-7) | **SPE in US EPA Method 625, A Step Closer to Reality after Good Performance in Two Round Robins** ZOE GROSSER, Horizon Technology, William Jones, David Gallagher, Michael Ebitson, Alicia Cannon |
| 4:05 | (1960-8) | **Adsorption of $Pb^{2+}$ from Aqueous Solution Using Low-Cost Chitosan-Modified Biochar, A Green Adsorbent** NARADA W BOMBUWALA DEWAGE, Mississippi State University, Todd E Mlsna |

**ORAL SESSIONS** **Session 1970**

*GC Fuels, Energy and Petrochemical*

**Wednesday Afternoon, Room B405**

Patricia Ranaivo, Indiana University Southeast, Presiding

| | | |
|---|---|---|
| 1:30 | (1970-1) | **Zeolite-Loaded Metal-Catalyzed Hydrotreatment of Lignin to Aromatic Monomers Using Subcritical Water** ERIC A BOAKYE, South Dakota State University, Douglas Raynie |
| 1:50 | (1970-2) | **Olefins in Refinery Streams by GC-VUV** DAN WISPINSKI, Alberta Innovates Technology Futures, Chris Goss, Phillip Walsh |
| 2:10 | (1970-3) | **GC-Ion Mobility Spectrometry for Determination of Ageing of Mineral Oil Impregnated Presspaper Isolation Systems** WOLFGANG VAUTZ, ISAS, Liedtke Sascha, Torben Muth, Frank Jenau |
| 2:30 | (1970-4) | **High Level Fixed Gas Analysis, Including Hydrogen, with one Detector and One Carrier** MATTHEW MONAGLE, AIC LLC N/A |
| 2:50 | | **Recess** |
| 3:05 | (1970-5) | **Analysis of Dissolved Hydrocarbon Gases in Water – Pitfalls and Improvements** MARK L BRUCE, TestAmerica |
| 3:25 | (1970-6) | **Performance Evaluation of Modern Stainless Steel Capillary GC Columns** REBECCA STEVENS, Restek Corporation, Corby Hilliard, Amanda Rigdon, Linx Waclaski, Jaap de zeeuw |
| 3:45 | (1970-7) | **Determination of Polycyclic Aromatic Sulfur Heterocycles and Their Alkyl-Substituted Derivatives in Standard Reference Material 1597a** WALTER B WILSON, National Institute of Standards and Technology, Stephen A Wise |
| 4:05 | (1970-8) | **Vehicle Interior Air Quality - (S)VOC Emission from Materials: Regulation, Standard Methods and Analytical Implementation** CAROLINE WIDDOWSON, Markes International |

**ORAL SESSIONS** **Session 1980**

*Mass Spectrometry - Bioanalytical and Omics*

**Wednesday Afternoon, Room B406**

Logan T Miller, Duquesne University, Presiding

| | | |
|---|---|---|
| 1:30 | (1980-1) | **Mass Spectrometry in Discovery of Lipid Markers for Alzheimer's Disease** SATYA GIRISH CHANDRA AVULA, Cleveland State University, Christine Reece, Jagan A Pillai, Yan Xu |
| 1:50 | (1980-2) | **Novel Cationization Strategies for Improved Separation of Metabolite Isomers with Ion Mobility – Mass Spectrometry** CHRISTOPHER D CHOUINARD, University of Florida, Robin Kemperman, Harrison King, Christopher R Beekman, Richard Alan Yost |
| 2:10 | (1980-3) | **Development of Dried Matrix Card Quantification by Speciated Isotope Dilution Mass Spectrometry Using Elution and Laser Desorption Techniques** LOGAN T MILLER, Duquesne University, Kaitlin Miller, Sarah Sheffield, Skip Kingston, Matt Pamuku, Scott Faber, Mark Little, Silverio Iacono |
| 2:30 | (1980-4) | **Protease-Containing Membranes for Rapid Antibody Digestion Prior to Mass Spectrometry Analysis** YONGLE PANG, Michigan State University, Wei-Han Wang, Gavin Reid, Donald F Hunt, Merlin Bruening |
| 2:50 | | **Recess** |
| 3:05 | (1980-5) | **Quantitative Environmental Human Health Assessment of Inorganic Elements in Dried Blood Spots Using Direct Isotope Dilution Laser Ablation and Elution Mass Spectrometry** SARAH SHEFFIELD, Duquesne University, Logan T Miller, Scott Faber, Matt Pamuku, Skip Kingston |
| 3:25 | (1980-6) | **Identification of the Cell Surface N-Glycoproteome by MS-based Proteomics** JOHANNA SMEEKENS, Georgia Institute of Technology, Weixuan Chen, Ronghu Wu |
| 3:45 | (1980-7) | **Probing the Cell-Surface N-Glycoproteome with Metabolic Chemical Reporters (MCRs)** HAOPENG XIAO, Georgia Tech |
| 4:05 | (1980-8) | **Quantitative Characterization of Protein Content from HDL and LDL Size Fractions** BRYAN A PARKS, Centers for Disease Control and Prevention, Zsuzsanna Kuklenyik, David Schieltz, Michael S Gardner, Jon Rees, Lisa McWilliams, Yulanda Williamson, John R Barr |

**ORAL SESSIONS** **Session 1990**

*Metabolomics, Proteomics, and Genomics*

**Wednesday Afternoon, Room B407**

Qingbo (Roger) Yang, Missouri University of Science and Technology, Presiding

| | | |
|---|---|---|
| 1:30 | (1990-1) | **A Combination of Multidimensional Chromatography and High Resolution Mass Spectrometry for Chemical Exposure Analysis** DAVID E ALONSO, Leco Corporation, Joseph E Binkley, Elizabeth M Humston-Fulmer, Jonathan D Byer, Lorne E Fell |
| 1:50 | (1990-2) | **Metabolomics of Nonalcoholic Fatty Liver Disease via LC-MS** RAINEY E PATTERSON, University of Florida, Richard Alan Yost, Timothy J Garrett, Nishanth E Sunny, Srilaxmi Kalavalapalli, Kenneth Cusi |
| 2:10 | (1990-3) | **Application of PDMS-Overcoated Matrix-Compatible Solid Phase Microextraction Fiber Coupled to Comprehensive Two-Dimensional Gas Chromatography–Time-of-Flight Mass Spectrometry for Improved Exploitation of Chromatographic Space in Global Chemical Profiling of Brazilian Cachaça** ERICA A SOUZA-SILVA, Universidade Federal do Rio Grande do Sul, Fernando C Fontanive, Claudia A Zini |
| 2:30 | (1990-4) | **Application of the Isotopic Ratio Outlier Analysis Phenotypic Protocol for Metabolomic Biomarker Discovery in Type 1 Diabetes Using T Cells** CANDICE Z ULMER, University of Florida, Richard Alan Yost, Timothy J Garrett, Christopher A Beecher, Jing Chen, Clayton Matthews |
| 2:50 | | **Recess** |
| 3:05 | (1990-5) | **Secretome of Murine Islets of Langerhans** ANDREW W SCHMUDLACH, University of Notre Dame, Jeremy Felton, Robert T Kennedy, Norman J Dovichi |
| 3:25 | (1990-6) | **Optimizing Sampling Protocols for the Identification and Quantitation of Neuropeptides from Brain Tissues** NING YANG, University of Illinois at Urbana-Champaign, Stanislav S Rubakhin, Jonathan V Sweedler, Krishna D Anapindi |
| 3:45 | (1990-7) | **A Study of Protein Degradation and the Effect of Proteasome Inhibition by Combining Biorthogonal Noncanonical Amino Acid Labeling with Click Chemistry** ZHENYU ZHOU, Georgia Institute of Technology N/A |
| 4:05 | (1990-8) | **Benchmarking of DNA-seq and RNA-seq Variant Detection Software** GANG FENG, Northwestern University, Zhujun Huang, Lei Huang, Riyue Bao, Hongmei Jiang, Yuchen Bai, Xiaoyong Sun N/A |

**ORAL SESSIONS** **Session 2000**

*Raman, SERS, UVRR Applications*

**Wednesday Afternoon, Room B408**

Matt Cerutti, Thermo Scientific, Presiding

| | | |
|---|---|---|
| 1:30 | (2000-1) | **UV Resonance Raman (UVRR) Structural Studies of Polyglutamine (polyQ) Side Chains and Fibrils** DAVID PUNIHAOLE, University of Pittsburgh, Zhenmin Hong, Ryan Jakubek, Elizabeth Dahlburg, Riley Workman, Jeffry Madura, Sanford A Asher |
| 1:50 | (2000-2) | **Sheath-Flow Microfluidic Approach for Combined Surface Enhanced Raman Scattering and Electrochemical Detection** MATTHEW R BAILEY, University of Notre Dame, Amber Pentecost, Asmira Selimovic, R Scott Martin, Zachary D Schultz |
| 2:10 | (2000-3) | **Raman Spectroscopy Monitors Glutamine and Asparagine Side Chain OCCC Dihedral Angles** RYAN JAKUBEK, University of Pittsburgh, David Punihaole, Zhenmin Hong, Elizabeth Dahlburg, Steven Geib, Sanford A Asher |
| 2:30 | (2000-4) | **Assessment of the Protein–Protein Interactions in a Highly Concentrated Antibody Solution by Using Raman Spectroscopy** CHIKASHI OTA, Horiba, Ltd., Shintaro Noguchi, Satoru Nagatoishi, Kouhei Tsumoto |
| 2:50 | | **Recess** |
| 3:05 | (2000-5) | **Raman Imaging of Samples with Complex Surface Topographies** TIM BATTEN, Renishaw plc, Tim Smith |
| 3:25 | (2000-6) | **Improving Raman and Surface Enhanced Raman Spectroscopy Through Effective Sampling** DONGMAO ZHANG, Mississippi State University N/A |
| 3:45 | (2000-7) | **Spatially Offset vs Conventional Raman for Through-Barrier Material Identification** ROBERT STOKES, Cobalt Light Systems, Paul Loeffen, Darren Andrews, Ken Mann, Oliver Presly, Pavel Matousek |
| 4:05 | (2000-8) | **Degradation Analysis of International Space Station Medications by Raman Spectroscopy** STUART FARQUHARSON, Real-Time Analyzers, Inc, Chetan Shende, Alexander May, Carl Brouillette, Joseph Cosgrove |

**ORAL SESSIONS** **Session 2010**

*Surface and Microscopic Characterization of Nanostructures and Biological Materials*

**Wednesday Afternoon, Room B409**

Brian R Strohmeier, United States Steel Corporation, Presiding

| | | |
|---|---|---|
| 1:30 | (2010-1) | **Fundamental Understanding of the Synergy Between Electroactive Poly (amic) Acid Membranes and Their Interaction with Nanoparticles** VICTOR KARIUKI, Binghamton University |
| 1:50 | (2010-2) | **Optical Property and Catalytic Activity of Gold Nanorods End-capped with a Second Metal** GUFENG WANG, North Carolina State University, Nathalia Ortiz, Vineet Kumar |
| 2:10 | (2010-3) | **Autocorrelation Function Analysis of Rotational Dynamics of Gold Nanorod** KUANGCAI CHEN, Iowa State University/Georgia State University, Ning Fang |
| 2:30 | (2010-4) | **Antibody-Like Biorecognition Sites for Proteins from Surface Imprinting on Nanoparticles** SNEHASIS BHAKTA, University of Connecticut, Saiful Seraji, James F Rusling, Steven L Suib |
| 2:50 | | **Recess** |
| 3:05 | (2010-5) | **Selective Raman Imaging of Integrin Receptors Through Coupled Plasmonic Nanostructures** LIFU XIAO, University of Notre Dame, Zachary D Schultz, Hao Wang |
| 3:25 | (2010-6) | **Deep and High-Resolution Three-Dimensional Tracking of Single Particles Using Nonlinear and Multiplexed Illumination** TIM YEH, University of Texas at Austin |
| 3:45 | (2010-7) | **Development of a Dual Microscope System for Integration of Intracellular Calcium Imaging with Monitoring Insulin Secretion from Islets of Langerhans** LIAN YI, Florida State University, Xue Wang, Michael G Roper |
| 4:05 | (2010-8) | **Establishing Statistical Criteria for Detecting Molecular Motion in Single-molecule Diffusional Trajectories** MOUSSA BARHOUM, University of Utah, Karl-Heinz Gericke, Joel M Harris N/A |

**ORAL SESSIONS** **Session 2020**

*Trace Explosives Detection - Half Session*

**Wednesday Afternoon, Room B301**

Maria K Ferguson, PA Department of Environmental Protection, Presiding

| | | |
|---|---|---|
| 1:30 | (2020-1) | **Analysis of the Decomposition of Hexamethylene Triperoxide Diamine (HMTD) as Determined by SPME-GC/MS and LC/MS** LAURYN DEGREEFF, Naval Research Laboratory, Christopher Katilie, Frank L Steinkamp |
| 1:50 | (2020-2) | **Separation of Inorganic Ions and Neutral Organic Nitroaromatic Compounds by Electrokinetic Chromatography** JULIE R MCGETTRICK, University of Montana, Christopher P Palmer |
| 2:10 | (2020-3) | **Comparison of Inter-Instrument Relative Response Factors with Thermal Desorption Internal Standards** H MITCHELL RUBENSTEIN, USAF, Maomian Fan, Claude C Grigsby, Kathy Fullerton, Brian Geier, Darrin Ott |
| 2:30 | (2020-4) | **Through-Barrier Explosives and Hazardous Material Detection Using a Handheld Spatially Offset Raman Spectrometer** PAUL LOEFFEN, Cobalt Light Systems, Robert Stokes, Ken Mann, Darren Andrews, Oliver Presly, Pavel Matousek |



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

## UNDERGRADUATE POSTER SESSION — Session 2030

**All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Undergraduate Poster Session*

**Wednesday Afternoon, Exposition Floor, 400 Aisle**

(2030-1 P) **Methods for Improving Cytokine in Vivo Calibration During Microdialysis Sampling** PATRICK M PYSZ, University of Arkansas, Tina M Poseno, Julie Stenken N/A

(2030-2 P) **Analysis of Nicotine Levels in Electronic Cigarettes** MARTIN ERIC MILLER, Austin Peay State University, Jacob Williams, Dillon Burrow

(2030-3 P) **Thermal Behavior of Barium and Strontium Carbonates** CHARLES MANSFIELD EARNEST, Berry College, Ethan Miller

(2030-4 P) **Improved Quantification of Gibbsite in Bauxite Ores** CHARLES MANSFIELD EARNEST, Berry College, Karla Gann, Britney Stong

(2030-5 P) **Signal Enhancement Compensation in ICP-MS Analysis for Arsenic in the Presence of Organics** ADAM KAGEL, University of California, Davis, Carla Kagel, Richard Kagel, Nels Worden

(2030-6 P) **Isotope Labeling in Astrobiology: Ethanol as a Carbon Source** NICOLE G PERKINS, California State Polytechnic University, Pomona, Gregory A Barding, Rakesh Mogul

(2030-7 P) **Sulfidation of Silver Nanoparticles** NATHANIEL D FLETCHER, College of Charleston, Katherine M Mullaugh

(2030-8 P) **Photodegradation and Ecotoxicity Studies of Sertraline, Fluoxetine, and their Photodegradants** SYLVIA C DAVILA, College of Charleston, Jessica R Hinson, Allison Welch, Wendy C Cory

(2030-9 P) **Photodegradation of Bupropion and Gabapentin** NEHA V MUPPALA, College of Charleston, Kristina K Tran, Wendy C Cory

(2030-10 P) **Accelerated Degradation of Diphenhydramine** JAMES L SOLOMON, College of Charleston, Michael T Blanton, Wendy C Cory N/A

(2030-11 P) **Preliminary Investigation of the Geographical Distribution of Synthetic UV Filters in Bahamian Surface Waters** AEJIN KIM, Elmira College, Christopher B Hall, Emily J Feldpausch, Betsy A Smith, Jared S Baker

(2030-12 P) **Surface Plasma Polaritons from Voltage Charged Gold Nanotubes** SAM KONCHAN, University of Florida, Pradeep Ramiah Rajasekaran, Charles R Martin, Alec Talin

(2030-13 P) **Electroporation Facilitation via Gold-Plated Membranes** AARON WILSON, University of Florida, Juliette Experton, Charles R Martin

(2030-14 P) **The Analysis of Electronic Cigarette Solutions by ICP-MS for USP Regulated Contaminates** CHLOE E FERNANDES, Georgia Gwinnett College, Daniel H Jones

(2030-15 P) **Comparison of Cellular Response to Atorvastatin Among Selected Cell Lines by MS-Based Proteomics** GEORGE TANG, Georgia Institute of Technology N/A

(2030-16 P) **Discovery Metabolomics of Early-Stage Ovarian Cancer in a Dicer-Pten Double Knockout Murine Model** LAURA C WINALSKI, Georgia Institute of Technology, Christina Jones, Maria E Monge, Jaeyeon Kim, Martin M Matzuk, Facundo M Fernandez

(2030-17 P) **Colorimetric Detection of Pyrocatechol as a Model for Urushiol Analysis in Poison Ivy** COLLIN J STEEN, Kalamazoo College, Kari Anderson

(2030-18 P) **Quantification of Salicylates in Stomach Relief Aids Using GC-MS and UV-Vis** MARINA CHRISTINA KOETHER, Kennesaw State University, Kimberly C Powers

(2030-19 P) **Correlation Between Different Extraction Methods and the Ratio of Neral to Geranial in the Essential Oils of Lemongrass by GC-MS** MARINA CHRISTINA KOETHER, Kennesaw State University, Skyler Mize

(2030-20 P) **Determining Dissolution Testing Time of Potassium in Potassium Gluconate Tablets by Conductivity with Confirmation by Flame Atomic Absorption Spectrometry** MARINA CHRISTINA KOETHER, Kennesaw State University, Minwoo Lee

(2030-21 P) **Study of the Implementation of the Systematic Method in General Chemistry II** VICTORIA Y REINDERS, Maryville University Saint Louis, Thomas M Spudich, Natalie Ulrich

(2030-22 P) **Characterization and Identification of Biosurfactants for Oil Remediation** KAYDREN B ORCUTT, Mercer University, Justis E Ward, Joseph W Kloepper, Garland L Crawford, Kathryn D Kloepper

(2030-23 P) **Green Diesel and Biodiesel Fuel Additives and Their Effects on VOC Emissions** CHRISTOPHER MOORE, Middle Tennessee State University, Joseph Close N/A

(2030-24 P) **Investigating Dopamine Fluctuations Associated with Impulsive Decision Making Using Fast Scan Cyclic Voltammetry** BRENNEN GUZIK, North Carolina State University, Xiaohu Xie, Leslie A Sombers

(2030-25 P) **Tracking Cellular Invasion and Death in Three Dimensional Paper-Based Cultures with Quantitative PCR** CHRISTIAN A LOCHBAUM, University of North Carolina at Chapel Hill, Andrew S Truong, Matthew R Lockett

(2030-26 P) **Real-Time Measurements of Oxidative Stress During Chronic L-DOPA Treatment for Parkinson's Disease** CATHERINE F MASON, North Carolina State University

(2030-27 P) **Pulsed Chronopotentiometry with Asymmetric Cellulose Triacetate Membrane-Based Ion-Selective Electrodes for Kinetic Discrimination of Lipophilic Ions During Measurement of Chloride** SIMON SEGAL, Northern Kentucky University, Jeremy Meyers, Kebede L Gemene

(2030-28 P) **Water Quality Analysis of the Chattahoochee River** KIZGEL DAVIS-DESOUZA, Oglethorpe University, Kelly Jacobson, Md H Kabir

(2030-29 P) **Physicochemical Characterization of Biodiesel from Different Vegetable Oils and Seeds** JOSEPH GOODWIN, Oglethorpe University, Michelle Huang, Grace Djokoto, Markus Germann, Md H Kabir N/A

(2030-30 P) **Colloidal CdSe Quantum Dots: Synthesis, Characterization, and Applications** KELLY JACOBSON, Oglethorpe University, Md H Kabir, Michael Rulison

(2030-31 P) **Nanoparticle Toxicity on the Development of Brine Shrimp and Zebrafish** CAITLIN MAY, Oglethorpe University, Gregory Gabriel, Michael Rulison, Md H Kabir

(2030-32 P) **Evaluation of Phthalate Wiping Protocols for Estimation of Dermal Exposure from Consumer Products** ALEXANDRIA VAN GROUW, University of Portland, Richard Kagel, Carla Kagel, Stephen McWeeney

(2030-33 P) **Gaseous Molecular Analysis by High Resolution Coherent Multidimensional Spectroscopy (HRCMDS)** ANGELAR KANINI MUTHIKE, Spelman College, Peter Chen, Jessica Robinson

(2030-34 P) **Spectral Imaging of Plasma Optical Emission Via Compressed Sensing** JOHN D USALA, Texas Tech University, Gerardo Gamez

(2030-35 P) **Analysis of Melamine in Solid Pet Food Samples Using Gold Nanoparticles and Reversed Phase Chromatography** AARON HUMMERT, Washburn University, Seid Adem

(2030-36 P) **Using a Solvent-Free Synthesis-Grafting Method to Attach Phenanthroline and Dimethoxybenzene Groups to Glassy Carbon Electrodes** SOPHIA L MELNYK, Wittenberg University, Kristin K Cline N/A

(2030-37 P) **Does Grinding Glassy Carbon Electrodes in Diazonium Salts Lead to Covalently Bonded Groups?** CHELSEA L HORVATH, Wittenberg University, Kristin K Cline

(2030-38 P) **Comparison of Grafted and Untreated Activated Carbon as Solid Phase Extraction Media for Preconcentrating Copper and Lead Ions** MARGARET COLE, Wittenberg University, Kristin K Cline

(2030-39 P) **Barium Leaching in Ceramic Glazes** JASON HALMO, Hampden-Sydney College, Joshua Chamberlin, Paul Mueller

(2030-40 P) **Spectroelectrochemical Urinalysis: A Kinetic Assay for Uric Acid** PAUL FLOWERS, University of North Carolina at Pembroke, Sean Downes, Sonvia Brown

(2030-41 P) **Determination of Formaldehyde Concentration in Electronic Cigarettes** ROLAND LANDERS, Cumberland University, Sarah Pierce

(2030-42 P) **Matrix Targeting Peptide Impact on Tertiary Folding of Cargo Proteins** TYLER J SMITH, Truman State University, Brian P Adams, Bethany P Manning

(2030-43 P) **Electrospray Mass Spectrometry and Density Functional Theory Studies of the Estrone Fragmentation Mechanisms** YASSIN JEILANI, Spelman College, Daphney Sihwa, Gabrielle Webb, Nasrin Aweis

(2030-44 P) **Metals in Mushrooms of Western Pennsylvania** KAELYN MARGARET GRESKO, California University of PA, Kimberly A Woznack N/A

(2030-45 P) **Method Development for the Analysis of Pesticide Degradates by GC-ECD** JESSICA REILLY, Saint Francis University, Samantha Radford

(2030-46 P) **Investigation of Iron Dissolution from Pyrite Electrodes Using Electrochemical and Atomic Absorption Methods** KATELYN NUSBAUM, Saint Francis University, Brandyn Pryce, Rose A Clark

(2030-47 P) **The Efficacy of Duckweed in Reducing the Concentration of Manganese in Abandoned Mine Drainage (AMD) through Phytoremediation** REBECCA ANNE BRADNAM, Westminster College, Helen M Boylan

(2030-48 P) **Analysis of Water Quality in Western Pennsylvania near Hydraulic Fracturing Sites** KELSEY ANN KILBANE, Westminster College, Helen M Boylan, Jamie Linderman, Christina Mauri

(2030-49 P) **Electrophoretic Character of Borate Buffers in Capillary and Microfluidic Channels** LAUNICK SAINT-FORT, Pennsylvania State University-Berks Campus, James Karlinsey

(2030-50 P) **Interdisciplinary Undergraduate Research in Chemometrics: The Students' Perspective** STEPHANIE HOMITZ, Westminster College, Helen M Boylan, Christopher Caroff, Keilah Ireland, Carolyn Cuff

(2030-51 P) **Analysis of the Toluene Efflux Pumps in Microorganisms Through Bioinformatics** MATHILDA WILLOUGHBY, Westminster College, Samantha Tower, Sarah Kennedy

(2030-52 P) **Analysis of Urine Organic Acids via GC/MS-based Metabolomics to Determine the Effect of Diet on Urine Composition** JESSICA MINNICK, Georgia College and State University, Catrena Lisse N/A

(2030-53 P) **A Cascade SERS Signal Amplification Approach for Telomerase Activity at Single-cell Level** MULING SHI, Hunan University

# THURSDAY, MARCH 10, 2016
# MORNING

**SYMPOSIUM** **Session 2040**

***ACS-ANLY - Advances in Electrokinetic Methods for Bioanalysis***
arranged by Alexandra Ros, Arizona State University

**Thursday Morning, Room B308**
Alexandra Ros, Arizona State University, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Alexandra Ros** |
| 8:35 | (2040-1) | **Nanofluidic Devices for Single-Particle Analysis of Virus Assembly** STEPHEN C JACOBSON, Indiana University, Zachary D Harms, Lisa Selzer, Adam Zlotnick |
| 9:10 | (2040-2) | **Amyloid Oligomers Analysis Using Microchannel Electrophoresis** CHRISTA HESTEKIN, University of Arkansas, Sadia Paracha, Melissa Moss |
| 9:45 | (2040-3) | **Surface Isoelectric Focusing (SIEF) for Therapeutic Protein Separations** ADRIENNE R MINERICK, Michigan Technological University, Zhichao Wang |
| 10:20 | | **Recess** |
| 10:35 | (2040-4) | **Microfluidic-Based Electrokinetic Methods for Protein Separation and Sensing and Manipulation of Particles and Droplets** CAROLYN L REN, University of Waterloo |
| 11:10 | (2040-5) | **Towards Organelle Separation Exploiting Deterministic Absolute Negative Mobility** ALEXANDRA ROS, Arizona State University, Jinghui Luo, Edgar Arriaga, Katherine Muratore N/A |

**SYMPOSIUM** **Session 2050**

***Advances in Vibrational Spectroscopy for Medical Diagnostics***
arranged by Igor K Lednev, University at Albany, SUNY

**Thursday Morning, Room B302**
Igor K Lednev, University at Albany, SUNY, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Igor K Lednev** |
| 8:35 | (2050-1) | **Stimulated Raman Scattering Microscopy as a Tool for Brain and Skin Cancer Tissue Diagnoses** SUNNEY XIE, Harvard University |
| 9:10 | (2050-2) | **Raman Spectroscopy for Clinical Cell Analysis** JÜERGEN POPP, Friedrich-Schiller University Jena |
| 9:45 | (2050-3) | **Classification of Lung Cancers by Infrared Spectral Histopathology (SHP)** MAX DIEM, Northeastern University |
| 10:20 | | **Recess** |
| 10:35 | (2050-4) | **Label-Free Spectroscopic Imaging for Molecular Diagnosis** JI-XIN CHENG, Purdue University |
| 11:10 | (2050-5) | **Raman Spectroscopy of Blood for Alzheimer's Disease Diagnostics** IGOR K LEDNEV, University at Albany, SUNY, Elena Ryzhikova, Oleksandr Kazakov, Lenka Halamkova, Eric Molho, Earl Zimmerman |

**SYMPOSIUM** **Session 2060**

***Computational Chemistry Coupled to Analytical Measurements: A Synergistic Relationship***
arranged by Bruce Chase, University of Delaware

**Thursday Morning, Room B303**
Bruce Chase, University of Delaware, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Bruce Chase** |
| 8:35 | (2060-1) | **Advancing the Understanding of Rigid Rod Polymers with Statistical Mechanics and Analytical Chemistry** STEVE LUSTIG, DuPont, Steven Allen, Juan David Londono, Christopher Seay |
| 9:10 | | **Binding Free Energy of DNA on Graphite and Carbon Nanotubes by Single-Molecule Peeling** ANAND JAGOTA, Lehigh University N/A |
| 9:45 | (2060-3) | **Theory and Simulations of Macromolecular Soft Materials: Linking Molecular Design to Macroscale Morphology and Function** ARTHI JAYARAMAN, University of Delaware, Tyler B Martin |
| 10:20 | | **Recess** |
| 10:35 | (2060-2) | **Recent Computational Studies Related to the Use of Plasmonic Materials for Analytical Applications** GEORGE C SCHATZ, Northwestern University |
| 11:10 | (2060-4) | **Differentiation of Alpha and Beta Crystalline Polymorphs in Biodegradable Poly Hydroxybutyrate** BRUCE CHASE, University of Delaware, Brian Sobieski, Isao Noda |

**SYMPOSIUM** **Session 2070**

***Identification and Analysis for Food Safety***
arranged by Perry G Wang, US FDA

**Thursday Morning, Room B304**
Perry G Wang, US FDA, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Perry G Wang** |
| 8:35 | (2070-1) | **Validation and Challenge for the Determination of Chemical Components in Cosmetic Products Using LC-MS and GC-MS** PERRY G WANG, US FDA, Wanlong Zhou, Alexander J Krynitsky |
| 9:10 | (2070-2) | **Development of Multi-Functional Ambient Mass Spectrometry for Food Safety Screening and Characterizing Polymers in Packing Materials** JENTAIE SHIEA, National Sun Yat-sen University |
| 9:45 | (2070-3) | **Emerging Disinfection Byproducts Halobenzoquinones in Treated Drinking Water** XING-FANG LI, University of Alberta |
| 10:20 | | **Recess** |
| 10:35 | (2070-4) | **Effects of Different Dietary Doses of Copper and High Fructose Feeding on Rat Fecal and Liver Metabolome** XIANG ZHANG, University of Louisville, Ming Song, Xiaoli Wei, Xinmin Yin, Aminul Prodhan, Craig McClain |
| 11:10 | (2070-5) | **Identification and Confirmation of Chemical Residues in Foods for Regulatory Purposes** STEVEN J LEHOTAY, USDA Agricultural Research Service |

**SYMPOSIUM** **Session 2080**

***Integrated Microfluidics***
arranged by R Scott Martin, Saint Louis University

**Thursday Morning, Room B305**
R Scott Martin, Saint Louis University, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - R Scott Martin** |
| 8:35 | (2080-1) | **Integrated Microfluidics for Forensic Analysis: Creating Simple, Portable and Cost-effective Systems** JAMES LANDERS, University of Virginia |
| 9:10 | (2080-2) | **Microfluidic Technology for Protein Crystallization and Pharmaceutical Solid form Screening** PAUL KENIS, University of Illinois at Urbana Champaign |
| 9:45 | (2080-3) | **Integrated Microfluidic Systems for Measuring Secretion from Cellular Networks** MICHAEL G ROPER, Florida State University, Lian Yi, Adrian M Schrell, Xue Wang, Nikita Mukhitov, Basel Bandak, Kimberly Evans |
| 10:20 | | **Recess** |
| 10:35 | (2080-4) | **New Strategies for Enhancing Human-on-Chip Systems** DANA SPENCE, Michigan State University |
| 11:10 | (2080-5) | **Integrated Microfluidic Platform for Mass Spectrometry based Metabolomics** JAMES L EDWARDS, Saint Louis University |



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 2090**

***New Bioanalytical Separations for Molecular Mechanisms of Disease***

arranged by B Jill Venton, University of Virginia and Lisa A Holland, West Virginia University

**Thursday Morning, Room B309**

B Jill Venton, University of Virginia, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - B Jill Venton and Lisa A Holland** |
| 8:35 | (2090-1) | **Capillary Separations that Unravel Molecular Mechanisms of Endocrine Dysfunction** LISA A HOLLAND, West Virginia University, Vincent T Nyakubaya, Jennifer R Stueckle |
| 9:10 | (2090-2) | **Separation-Based Methods for Measuring Reactive Oxygen and Nitrogen Species in Biological Samples** SUSAN M LUNTE, University of Kansas |
| 9:45 | (2090-3) | **How Separations—Both High and Low Resolution—Enable Selection of Clinically Useful Aptamers** REBECCA WHELAN, Oberlin College |
| 10:20 | | **Recess** |
| 10:35 | (2090-4) | **Merging Microfluidics, Electrophoresis, and Mass Spectrometry for Protein Assays** ROBERT T KENNEDY, University of Michigan |
| 11:10 | (2090-5) | **CE-FSCV for Determining Neurotransmitter Tissue Content in Drosophila Disease Models** B JILL VENTON, University of Virginia, Madelaine E Denno, Ryan Borman |

**SYMPOSIUM** **Session 2100**

***Overcoming the Obstacles to Making Measurements in the Brain***

arranged by Stephen Weber, University of Pittsburgh

**Thursday Morning, Room B310**

Stephen Weber, University of Pittsburgh, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Stephen Weber** |
| 8:35 | (2100-1) | **Probing the Spatial and Temporal Dynamics of Signaling Peptides in the Nervous Systems by a Multi-Faceted MS Approach** LINGJUN LI, University of Wisconsin |
| 9:10 | (2100-2) | **Overcoming Obstacles to Understanding Voltammetric Measurements of Dopamine in the Brain** ADRIAN C MICHAEL, University of Pittsburgh, Seth H Walters, Elaine M Robbins, Brendan P Sestokas, Andrea Jaquins-Gerstl |
| 9:45 | (2100-3) | **Simultaneous Optical Imaging of Neuronal, Glia, and Hemodynamic Waves During Seizures** HONGTAO MA, Weill Cornell Medical College, Andy Daniel, Eliza Baird-Daniel, Philippe Laffont, Mingrui Zhao, Theodore H Schwartz |
| 10:20 | | **Recess** |
| 10:35 | (2100-4) | **Placing New Pieces in the Puzzle of Human Traumatic Brain Injury Using Multimodal Monitoring** MARTYN G BOUTELLE, Imperial College London, Michelle L Rogers, Sally A Gowers, Chi Leng Leong, Vassilios Kontojannis, Anthony J Strong, Sharon Jewell |
| 11:10 | (2100-5) | **Electroosmotic Perfusion in Brain Tissue for Determining Ectopeptidase Activity** STEPHEN WEBER, University of Pittsburgh, Stephen R Groskreutz, Khanh Ngo, Yangguang Ou, Rachael Wilson, Jenna DeVivo, Bocheng Yin |

**SYMPOSIUM** **Session 2110**

***SAS - Handheld Spectrometers***

arranged by Richard A Crocombe, PerkinElmer and Mark A Druy, Technology Assessment & Partnering

**Thursday Morning, Room B311**

Richard A Crocombe, PerkinElmer, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Richard A Crocombe and Mark A Druy** |
| 8:35 | (2110-1) | **Handheld Laser-Induced Breakdown Spectroscopic Instruments** AMY JO RAY BAUER, TSI, Incorporated |
| 9:10 | (2110-2) | **Chemometrics in Action: Moving the Lab to the Field** SUZANNE SCHREYER, Thermo Fisher Scientific, Michael Hargreaves |
| 9:45 | (2110-3) | **Mass Spectrometry in Miniature** CHRISTOPHER BROWN, 908 Devices |
| 10:20 | | **Recess** |
| 10:35 | (2110-4) | **Next Generation Portable Spectrometers: Spectroscopy Solutions Wherever You Want Them** KATHERINE A BAKEEV, B&W Tek, Inc, Ken Li, Sean Wang, Jing Li, Jack Zhou |
| 11:10 | (2110-5) | **High Sensitivity Measurements in Liquids Using Mid-IR Lasers** DON KUEHL, RedShift Systems, Rick Sharp, Eugene Ma, Jinghong Kim, Chip Marshall |

**SYMPOSIUM** **Session 2120**

***Single Cell Molecular Analysis***

arranged by Milan Mrksich, Northwestern University

**Thursday Morning, Room B312**

Milan Mrksich, Northwestern University, Presiding

| | | |
|---|---|---|
| 8:30 | | **Introductory Remarks - Milan Mrksich** |
| 8:35 | (2120-1) | **Using Single Molecule Arrays (Simoa) to Measure Proteins and Nucleic Acids in Single Cells** DAVID R WALT, Tufts University, Stephanie Walter, Stephanie Schubert, Payal Ghatak |
| 9:10 | (2120-2) | **Semiconducting Polymer Dots (Pdots) for Single-Cell Sensing and Molecular Analysis** DANIEL T CHIU, University of Washington |
| 9:45 | (2120-3) | **Assaying Single Cells as a Diagnostic Tool** NANCY ALLBRITTON, University of North Carolina at Chapel Hill |
| 10:20 | | **Recess** |
| 10:35 | (2120-4) | **Using SAMDI Mass Spectrometry to Measure Enzyme Activity in Single Cell Lysates** MILAN MRKSICH, Northwestern University |
| 11:10 | (2120-5) | **A Novel Tool for Detection and Enumeration of Circulating Tumor Cells** DAVID A GILJOHANN, AuraSense |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 2130**

***Recent Advances in Ion Analysis***

arranged by Kannan Srinivasan, Thermo Fisher Scientific

**Thursday Morning, Room B313**

Kannan Srinivasan, Thermo Fisher Scientific, Presiding

| | | |
|---|---|---|
| 8:30 | (2130-1) | **Anion Analysis Using Capillary Ion Chromatography of Steam Cycle Water and Anion Analysis of Reactor Water by Matrix Elimination in a Nuclear Power Plant** RICHARD WALLWORK, Pacific Gas and Electric |
| 8:50 | (2130-2) | **New Developments in Multidimensional Analysis for Drinking Water Applications** HERB WAGNER, Independent Contractor |
| 9:10 | (2130-3) | **Recent Advances in Suppressor Technology in Ion Chromatography for Achieving Low Noise Performance** KANNAN SRINIVASAN, Thermo Fisher Scientific, Brittany Omphroy, Sheetal Bhardwaj, Rong Lin, Christopher Pohl |
| 9:30 | (2130-4) | **Indirect Pulsed Electrochemical Detection following Anion-Exchange Chromatography** BILL LACOURSE, University of Maryland Baltimore County N/A |
| 9:50 | | **Recess** |
| 10:05 | (2130-5) | **Revisiting the Many Facets of Ion Exclusion Chromatography** C PHILLIP SHELOR, University of Texas Arlington, Purnendu Dasgupta |
| 10:25 | (2130-6) | **Factors Underlying Recent Advances in High Speed and High Resolution Ion Chromatography** CHARLES A LUCY, University of Alberta |
| 10:45 | (2130-7) | **Peak Shapes in High Efficiency and Fast Chromatography: Contributions from the Slurry Packing Process and Detector Settings** M FAROOQ WAHAB, University of Texas at Arlington, Purnendu Dasgupta, Daniel W Armstrong |
| 11:05 | (2130-8) | **Recent Developments in Stationary Phases for Ion Chromatography** CHRISTOPHER POHL, Thermo Fisher Scientific, Charanjit Saini, Mani Jayaraman, Maria Rey, Andy Woodruff |

**ORAL SESSIONS** **Session 2140**

*Bioanalytical: Fluorescence/Luminescence Techniques*

**Thursday Morning, Room B405**

Nathan Whitman, University of North Carolina at Chapel Hill, Presiding

| | | |
|---|---|---|
| 8:30 | (2140-1) | **Ultrasensitive Detection of Ricin Toxin in Multiple Sample Matrixes Using Single-Domain Antibodies** TRINH DINH, Tufts University, Shonda Gaylord, David R Walt, Kevin Ngan |
| 8:50 | (2140-2) | **Unusual Red Emission of Graphene Quantum Dots at Extremely High pH** YIYANG LIU, University of Kentucky, Doo Young Kim |
| 9:10 | (2140-3) | **Bright Large Stokes' Shift NIR Fluorescent Silica Nanoparticle Labels and Probes** GABOR PATONAY, Georgia State University, Gala Chapman, Maged Henary, Kyle Emer |
| 9:30 | (2140-4) | **Development of Fluorescent Magnetic Particles for "On-Off" Switching based Detection of Various Lectin-Saccharide Interactions** SUZUKI YOSHIO, AIST |
| 9:50 | | **Recess** |
| 10:05 | (2140-5) | **Cell-free Expression of Cytochrome P450-containing Liposomes for Drug Metabolism Screens** NATHAN A WHITMAN, University of North Carolina at Chapel Hill, Julie C McIntosh, Jeffrey B Penley, Matthew R Lockett |
| 10:25 | (2140-6) | **Tethered Cationic Lipoplex Nanoparticle Biochip for Fast Disease Detection** JIAMING HU, The Ohio State University, L J Lee N/A |
| 10:45 | (2140-7) | **Cell Surface Engineering with Lipid-Molecular Beacon Aptamer for Real Time Probing of Proteins in Cellular Microenvironment** WEIJIA HOU, University of Florida |
| 11:05 | (2140-8) | **Ratiometric Fluorescence Assay based Quantum Dots for Recognition of RRE RNA Ligands Using A New Fluorescence Indicator** ZHIQI ZHANG, Shaanxi Normal University N/A |

**ORAL SESSIONS** **Session 2150**

*Electrochemistry - New Methods and Applications*

**Thursday Morning, Room B314**

Leslie A Sombers, North Carolina State University, Presiding

| | | |
|---|---|---|
| 8:30 | (2150-1) | **Elucidating the Structure/Function Relationship of Conductive Polymer Microelectrodes for Use in Fast-Scan Cyclic Voltammetry of Neurotransmitters** ADAM R MEIER, University of Arizona, William Bahureksa, Michael L Heien |
| 8:50 | (2150-2) | **Electrochemically Reduced Graphene Oxide as an Electrocatalyst Support for $H_2S$ Detection** JASON A BENNETT, Penn State Erie - The Behrend College |
| 9:10 | (2150-3) | **Amperometric Determination of Aurocyanide for Hydrometallurgical Gold Processing** WAYNE DICKINSON, Kemira |
| 9:30 | (2150-4) | **Method for Removal of Non-Faradaic Contributions to Fast-Scan Cyclic Voltammetry Recordings** JUSTIN A JOHNSON, University of North Carolina at Chapel Hill, R Mark Wightman |
| 9:50 | | **Recess** |
| 10:05 | (2150-5) | **Quantitative Analysis of Microiontophoresis Drug Delivery** DOUGLAS KIRKPATRICK, University of North Carolina at Chapel Hill, R Mark Wightman |
| 10:25 | (2150-6) | **Fast Scan Cyclic Voltammetry of Metals at Carbon-Fiber Microelectrodes: Correlation Between FSCV Response and Solution Dynamics** PAVITHRA PATHIRATHNA, Wayne State University, Thushani Siriwardhane, Shawn McElmurry, Parastoo Hashemi |
| 10:45 | (2150-7) | **Construction of Training Sets for Valid Calibration Using Principal Component Analysis** NATHAN T RODEBERG, University of North Carolina at Chapel Hill, Justin A Johnson, R Mark Wightman |
| 11:05 | (2150-8) | **Electrochemical Characterization and Catalytic Activity of Ultrasmall Gold Nanoparticles** FRANCIS ZAMBORINI, University of Louisville, Rafael Masitas, Stacy Allen, Dhruba Pattadar |

**ORAL SESSIONS** **Session 2160**

*Food Safety Evaluations - Half Session*

**Thursday Morning, Room B407**

Alice Chen, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (2160-1) | **Characterization of the Adulteration, Counterfeiting and Contamination of Spices, Spice Products and Supplements by the Detection of Toxic and Banned Organic Chemicals in Commercial Botanical Products** PATRICIA ATKINS, SPEX CertiPrep |
| 8:50 | (2160-2) | **Using SPE to Adjust Sensitivity to Analytical Requirements for Food Safety** CHRIS SHEVLIN, Horizon Technology, William Jones |
| 9:10 | (2160-3) | **Ensuring a Safe and Stable Food Supply Using ICP-OES for Elemental Monitoring** NICK SPIVEY, PerkinElmer Inc., Kenneth Neubauer, Stan Smith, Laura Thompson |
| 9:30 | (2160-4) | **Automated Solid Phase Extraction and Quantitative UHPLC Analysis of Cannabis Compounds in Food Matrices** CHRIS SHEVLIN, Horizon Technology, Robert E Buco |

**ORAL SESSIONS** **Session 2170**

*Liquid Chromatography Column Chemistry*

**Thursday Morning, Room B406**

A Carl Sanchez, Phenomenex, Presiding

| | | |
|---|---|---|
| 8:30 | (2170-1) | **Functionalized Octatetrayne as Novel Carbon Media for Capillary Liquid Chromatography** JIAYI LIU, The Ohio State University, Susan Olesik |
| 8:50 | (2170-2) | **Stationary Phases Based on the Thiol-ene Reaction on Mercaptopropylsilane-Modified Nonporous Silica** ERIN SHIELDS, University of Pittsburgh, Kayla Thomas, Stephen Weber |
| 9:10 | (2170-3) | **Using 5 Micron Superficially Porous Particles in Capillary and Microfluidic LC Columns** JAMES P GRINIAS, University of Michigan, Robert T Kennedy |
| 9:30 | (2170-4) | **Selectivity in Reversed-Phase Liquid Chromatography: Impact of Stationary Phase Chemistry** DAVID S BELL, Supelco/Sigma-Aldrich |
| 9:50 | | **Recess** |
| 10:05 | (2170-5) | **A Specialty Column for High Resolution Separation of Aminoglycoside Antibiotics by HPLC** XUEFEI SUN, Thermo Fisher Scientific, Xiao Cui, Yoginder Singh, Xiaodong Liu |
| 10:25 | (2170-6) | **Liquid Chromatography, Hydrophilic Interaction Chromatography, HILIC** DAVID S BELL, Supelco/Sigma-Aldrich |
| 10:45 | (2170-7) | **The Benefits of 1mm ID UHPLC Columns Made Real** STEPHEN LUKE, Agilent Technologies, Norwin Von Doehren, William Long, Jason Link |
| 11:05 | (2170-8) | **Comparison of the Practical Kinetic Performance Limits of Core-Shell and Fully Porous (U)HPLC Sorbents Using Commercially Available Column Formats** A CARL SANCHEZ, Phenomenex, Gareth Friedlander, Jason Anspach, Tivadar Farkas |

**ORAL SESSIONS** **Session 2180**

*Microfluidics/Lab-on-a-Chip - Bioanalytical I*

**Thursday Morning, Room B403**

Hubert MacDonald, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (2180-1) | **A Method for Measurement of Temporally Resolved Insulin Secretion from Islets of Langerhans in Response to Fatty Acid Hydroxy Fatty Acids** BASEL BANDAK, Florida State University, Lian Yi, Nikita Mukhitov, Michael G Roper |
| 8:50 | (2180-2) | **Macro-to-Microfluidic Interfacing for Primary Endocrine Cell Culture and Sampling Using 3D Printed Device Templates and Fluidic Manifolds** JESSICA C BROOKS, Auburn University, Mark D Holtan, Katarena Ford, Dylan Holder, Christopher J Easley |
| 9:10 | (2180-3) | **A Simple Droplet Microfluidic Capillary Viscometer Based on Droplet Frequency for Rheological Measurements of Proteins** MICHAEL F DELAMARRE, University of Illinois at Chicago, Scott A Shippy |
| 9:30 | (2180-4) | **Improving Detection Sensitivity in Microchip Electrophoresis-Laser Induced Fluorescence Assays by Target-Induced Exonuclease Assisted Strand Circle Signal Amplification** SHULIN ZHAO, Guangxi Normal University, Yingfeng Qin, Liangliang Zhang, Yong Huang, Yi-Ming Liu |



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

# TECHNICAL PROGRAM

| | | |
|---|---|---|
| 9:50 | | **Recess** |
| 10:05 | (2180-5) | **A Complementary Method to CD4 Counting: Measurement of CD4+/CD8+ T Lymphocytes Ratio in a Serial Microfluidic System** WENJIE LI, Texas Tech University, Dimitri Pappas |
| 10:25 | (2180-6) | **PDMS-Based Injection Valves for SPE-MS Analysis of Biomolecules** JAMES P GRINIAS, University of Michigan, Colleen E Dugan, Robert T Kennedy |
| 10:45 | (2180-7) | **Development of an Online Microchip Electrophoresis with LED-Induced Fluorescence System for In Vivo Detection of Excitatory Amino Acid Neurotransmitters Following a Traumatic Brain Injury** MICHAEL L HOGARD, University of Kansas, Nathan Oborny, Elton E Melo Costa, Susan M Lunte, Craig E Lunte |
| 11:05 | (2180-8) | **Determination of Amplification of Cellular Effects by Hormones Derived from Different Tissues** KESHAVARZ HAMIDEH, Michigan State University, Dana Spence |

## ORAL SESSIONS — Session 2190

*Novel Applications with Gas Chromatography Mass Spectrometry*

**Thursday Morning, Room B315**

Rudolf Addink, Toxic Report, Presiding

| | | |
|---|---|---|
| 8:30 | (2190-1) | **How GC-MS with Cold EI Improves NIST Library Identification** AVIV AMIRAV, Tel Aviv University, Uri Keshet, Tal Alon |
| 8:50 | (2190-2) | **Use of Automated Column Chromatography Clean Up with Reduced Solvent Volume in POPs Analysis** RUDOLF ADDINK, Toxic Report, Philip Bassignani |
| 9:10 | (2190-3) | **Effective QuEChERS Cleanup and Quantitation of Planar Pesticides from Spinach and Other Food Matrices Using a Novel Graphitized Carbon Black and a Zirconia-Based Adsorbent** PATRICK MYERS, Supelco/Sigma-Aldrich, William Betz, Bill Ozanich, Jennifer Claus, Michael Ye |
| 9:30 | (2190-4) | **Use of Micro Scale Solid Phase Extraction and Automated Clean Up in POPs Analysis of Human Milk and Serum** RUDOLF ADDINK, Toxic Report |
| 9:50 | | **Recess** |
| 10:05 | (2190-5) | **Multidimensional Comprehensive Gas Chromatography Multireflection High Resolution Time-of-Flight Mass Spectrometry: Combining Accurate Mass Information with Ultra-High Chromatographic Resolution** RALF ZIMMERMANN, University Rostock/HMGU, Thomas Groeger, Benedikt Weggler, Juergen Wendt |
| 10:25 | (2190-6) | **Rapid, New Methods for the Analysis of 3-MCPD and 1,3 DCP in Soy Sauce** SUSAN GENUALDI, US FDA, Lowri DeJager, Patsy Nyman |
| 10:45 | (2190-7) | **A Method Development Software Tool for Comprehensive Two-Dimensional Gas Chromatography Evaluated for GCxGC-TOFMS** MARK F MERRICK, LECO Corporation, Viatcheslav Artaev, Leonid M Blumberg |
| 11:05 | (2190-8) | **Innovative TG-GC-MS Methods for Thermal Degradation Studies of Polymers** KRISTINA LILOVA, Setaram Inc., Link Brown |

## ORAL SESSIONS — Session 2200

*Novel Synthesis and Applications of Nanomaterials*

**Thursday Morning, Room B316**

David Pensenstadler, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 8:30 | (2200-1) | **Nanofibers from Hydrothermal Treatment of Cellulose Nanocrystals** YIMEI WEN, Clemson University |
| 8:50 | (2200-2) | **Graphene Nanoribbons: Engineering, Characterization of Edge Defects and Sensor Applications** PANKAJ RAMNANI, University of California, Riverside, Ashok Mulchandani |
| 9:10 | (2200-3) | **Modeling of Seed-Mediated Nanoparticle Growth** HANS MUSGRAVE, University of North Dakota, Julia Xiaojun Zhao N/A |
| 9:30 | (2200-4) | **Single-Molecule Tracking Studies of the Effects of Solvent Swelling on the Properties of Cylindrical Block Copolymer Microdomains** TAKASHI ITO, Kansas State University, Dol R Sapkota, Khanh-Hoa Tran-Ba, Daniel A Higgins |
| 9:50 | | **Recess** |
| 10:05 | (2200-5) | **Characterization of Single and Multi-Walled Carbon Theranostic Nanovectors** MARKUS MARTINCIC, Institut de Ciencia de Materials de Barcelona, Elzbieta Pach, Belen Ballesteros, Gerard Tobias |
| 10:25 | (2200-6) | **Investigating 4-Wheeled Nanocar Diffusion Kinetics on Differently Modified Solid Surface with Single Molecule Fluorescence Microscopy (SMFM)** FANG CHEN, North Carolina State University, Víctor García-López, James Tour, Gufeng Wang |
| 10:45 | (2200-7) | **Sealing and Opening of Metallic Nanotubes with a Laser Beam: A Potential Drug Delivery Vehicle** NATHALIA ORTIZ, North Carolina State University, Gufeng Wang |
| 11:05 | (2200-8) | **Optically Transparent Carbon Nanotube Film Electrode for Thin Layer Spectroelectrochemistry** TINGTING WANG, University of Cincinnati |

## ORAL SESSIONS — Session 2210

*Sampling and Sample Preparation - Bioanalytical, Neurochemistry, and Material Science*

**Thursday Morning, Room B404**

Denise Wilkins, Bechtel Bettis Inc., Presiding

| | | |
|---|---|---|
| 8:30 | (2210-1) | **Rapid Protein Purification and Digestion with Membrane-Containing Pipette Tips** WENJING NING, Michigan State University, Merlin Bruening |
| 8:50 | (2210-2) | **DNA Extraction and Analysis Using Magnetic Ionic Liquid Solvents** KEVIN D CLARK, Iowa State University, Melissa Yamsek, Omprakash Nacham, Jared L Anderson |
| 9:10 | (2210-3) | **Localized Laser Ablation Sample Transfer for Tissue Proteomics** FABRIZIO DONNARUMMA, Louisiana State University, Michael E Pettit, Touradj Solouki, Kermit K Murray |
| 9:30 | (2210-4) | **An Ultra Sensitive Sample Preparation Approach that Eliminates the Need to Dry Down and Reconstitute** SHAHANA HUQ, Phenomenex, Matthew Brusius, Jessica Detsch, Zeshan Aqeel, Ramkumar Dhandapani |
| 9:50 | | **Recess** |
| 10:05 | (2210-5) | **Pulled Low Flow Push-Pull Perfusion Probe Tips for Sampling from Tissue Slices** MARISSA R BECKER, University of Illinois at Chicago, Scott A Shippy, David E Featherstone |
| 10:25 | (2210-6) | **Design of Protein-Binding Membranes through Adsorption of Star-Shaped Polyelectrolytes in Membrane Pores** WEIJING LIU, Michigan State University, Salinda Wijeratne, Merlin Bruening |
| 10:45 | (2210-7) | **Direct Coupling of Solid Phase Microextraction to Mass Spectrometry Via Nano-Electrospray Ionization: Development and Applications in Bioanalysis** GERMAN A GOMEZ-RIOS, University of Waterloo, Nathaly Reyes-Garces, Ezel Boyaci, Barbara Bojko, Janusz Pawliszyn |
| 11:05 | (2210-8) | **Molecularly Imprinted Polymer-Sol-Gel for Dispersive Micro-Solid Phase Extraction** MOHAMED ABDEL-REHIM, Stockholm University, Aziza El-Beqqali N/A |

## ORAL SESSIONS — Session 2220

*Sensors - Others*

**Thursday Morning, Room B401**

Gufeng Wang, North Carolina State University, Presiding

| | | |
|---|---|---|
| 8:30 | (2220-1) | **PANi Electrospun Fibers and Drop Cast Film Sensor Array for the Detection of Small Chained Alcohols** KELVIN TRAN, University of California Riverside, Andrew J Burris, Quan Cheng |
| 8:50 | (2220-2) | **Application of Thermo-Reversible Interpenetrating Poly(Vinyl Alcohol) Networks to Stabilize Mechanically Fragile Hydrogel Sensors** ANDREW E COUKOUMA, University of Pittsburgh, Sanford A Asher N/A |
| 9:10 | (2220-3) | **Improving the Sustainability of Drinking Water Systems Using Nanostructured Biosensors for Escherichia Coli** HEATHER A CRAPO, Binghamton University, Melissa McDonald, Idris Yazgan, Omowunmi Sadik |
| 9:30 | (2220-4) | **An Innovative Biosensor to Assess Quickly the Biodegradable Organic Fraction** SULIVAN JOUANNEAU, University of Nantes, Marie-José Durand, Gerald Thouand, Ali Boukabache, Yves Primault N/A |
| 9:50 | | **Recess** |
| 10:05 | (2220-5) | **Surface Plasmon Resonance Immunosensor Using Au Nanoparticle Modified Antibody** DULAL C KABIRAZ, Hokkaido University, Kinichi Morita, Toshikazu Kawaguchi |
| 10:25 | (2220-6) | **QCM Virtual Multisensor Array for Detection of Gasoline Adulterants** NICHOLAS SPELLER, Louisiana State University, Noureen Siraj, Isiah M Warner, Stephanie Vaughan |



***Author and presider lists as of January 20, 2016, are available at www.pittcon.org***

| | | |
|---|---|---|
| 10:45 | (2220-7) | **Development of an Aptamer Functionalized Electrode Array for Real-Time In Vivo Cocaine Detection Using Square Wave Voltammetry** IAN MITCHELL TAYLOR, University of Pittsburgh, Emma Bigelow, Tracy Cui |
| 11:05 | (2220-8) | **Optomechanical Switching by Plasmonic Nanoparticle Monolayers on Elastic Substrate Induced by Stretching** MAHMOUD MAHMOUD, Georgia Institute of Technology |

## ORAL SESSIONS — Session 2230

*Vibrational Spectroscopy Instrumentation and Applications*

**Thursday Morning, Room B402**

Jane Chan, Bechtel Bettis Inc., Presiding

| | | |
|---|---|---|
| 8:30 | (2230-1) | **Experimental Studies and Electromagnetic Modeling of Localized Plasmon Surface on a New SERS Platform** MATHIEU EDELY, IMMM Institut des Molécules et Matériaux du Mans, Guy Louarn, Jean-François Bardeau, Nicolas Delorme, Ludovic Douillard N/A |
| 8:50 | (2230-2) | **The Effect of Molecular Polarity and Solubility on Adsorption Rates and Equilibrium Constants for Molecules on Noble Metal Surfaces Using Surface-Enhanced Raman Spectroscopy** ERIK DAVID EMMONS, US Army, Ashish Tripathi, Neal D Kline, Jerry Cabalo, Jason A Guicheteau, Augustus W Fountain, Steven D Christesen |
| 9:10 | (2230-3) | **Room Temperature Freezing and Orientation Control of Surface Immobilized Biomoelcules in Air** YAOXIN LI, University of Michigan, Zhang Xiaoxian, Somayesadat Badieyan, Zhan Chen |
| 9:30 | (2230-4) | **Fiber Spectroscopy for Process Control and Medical Diagnostics** VIACHESLAV ARTYUSHENKO, Art Photonics GmbH |
| 9:50 | | **Recess** |
| 10:05 | (2230-5) | **Characterization of Polymer/Epoxy Buried Interfaces with Silane Adhesion Promoters Before and after Hygrothermal Aging for the Elucidation of Molecular Level Details Relevant to Adhesion** NATHAN W ULRICH, The University of Michigan, John Myers, Zhan Chen |
| 10:25 | (2230-6) | **Surface Interaction of Nitrogen Containing Aromatic Molecules with Gold Investigated with Surface Enhanced Raman Spectroscopy (SERS)** ASHISH TRIPATHI, Leidos, Inc., Erik David Emmons, Augustus W Fountain, Jason A Guicheteau, Steven D Christesen, Martin Moskovits |
| 10:45 | (2230-7) | **Transmission Raman Spectroscopy as a Regulatory-Approved Method for Content Uniformity Analysis – Replacing HPLC** DARREN ANDREWS, Cobalt Light Systems, Julia Griffen, Matthew Bloomfield, Andrew Owen, Mark Mabry, Pavel Matousek |
| 11:05 | (2230-8) | **A New Microscope for FT-IR Microspectrometry** DAVID W SCHIERING, Czitek, Gregg Ressler |

## POSTER SESSION — Session 2240

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Application of Mass Spectrometry*

**Thursday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (2240-1 P) | **Variations on a Theme: The Detection of NBOMe Designer Drugs on Blotter Paper by High Resolution Time-of-flight Mass Spectrometry (TOFMS) with and without Chromatography** DAVID BARAJAS, Boston University School of Medicine, Frank A Kero, Noelle Elliot, Bogdan Bogdanov, Craig Young, Jason Weisenseel, Sabra Botch |
| (2240-2 P) | **Proton Transfer Reaction – Mass Spectrometry: Automated Measurement and Evaluation** JENS HERBIG, IONICON Analytik, Klaus Winkler, Johann Seehauser, Lukas Mäerk, Christian Lindinger, Alfons Jordan |
| (2240-3 P) | **Functionalized Gold Surface for SPR-MS Determination of Enzymatic Activities and Specificity of Lectins** HYOJIK YANG, University of California, Riverside, Quan Cheng |
| (2240-4 P) | **High-Resolution Atmospheric Pressure Drift Tube Ion Mobility Spectrometry Coupled with High-Resolution Accurate Mass Orbitrap Mass Spectrometry** JOEL D KEELOR, Georgia Institute of Technology, Facundo M Fernandez, Brian Clowers |
| (2240-5 P) | **Real-Time Metabolome Analysis by Probe Electrospray Ionization-Tandem Mass Spectrometry (PESI-MS/MS): Preliminary Challenge to Real-Time Metabolomics** ZAITSU KEI, Nagoya University, Hayashi Yumi, Murata Tasuku, Nakajima Hiroki, Nakajima Tamie, Kusano Maiko, Tsuchihashi Hitoshi, Ishikawa Tetsuya, Ishii Akira |
| (2240-6 P) | **Use of High Speed/High Resolution Size Based Chromatographic Separation of Surfactants and Oligomeric Materials with Single Quadrupole Mass Spectrometry Detection** MICHAEL OLEARY, Waters Corporation |
| (2240-7 P) | **Coupling Surface Acoustic Wave Nebulization (SAWN) with Vacuum-Assisted Plasma Ionization (VaPI) Mass Spectrometry for Enhanced Ionization and Transmission Efficiency** STEPHEN C ZAMBRZYCKI, Georgia Institute of Technology, Matthew C Bernier, Joel D Keelor, Fernandez M Facundo, Sung H Yoon, David Goodlett |
| (2240-8 P) | **Withdrawn** |
| (2240-9 P) | **Withdrawn** |
| (2240-10 P) | **Visualizing the Distribution of Volatile and Semi-Volatile Compounds by Low Temperature Plasma Mass Imaging (LTP-MSI)** ROBERT WINKLER, CINVESTAV Unidad Irapuato, Sandra Martinez Jarquín, Abigail Moreno Pedraza |

## POSTER SESSION — Session 2250

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Fluorescence and Luminescence*

**Thursday Morning, Exposition Floor, 400 Aisle**

| | |
|---|---|
| (2250-1 P) | **Determination of Thiamine by Flow Analysis System Based on the Chemiluminescence Inhibition Using Multicommutation** DEBORAH AZZI, Federal University of São Carlos, Marina Batistão, Bruno C Janegitz, Marina Baccarin, Geiser Oliveira, Orlando Fatibello-Filho |
| (2250-2 P) | **Selection of Aptamers Targeting B-Cell Receptor (BCR) Using Antibody Guided Cell-Selex Method - A Novel Approach** SHOMI CHAKRABARTI, City University of New York, The Graduate Center, Hasan E Zumrut, George Maio, Prabodhika Mallikaratchy, Mst Naznin Ara |
| (2250-3 P) | **Spectral Encoders: Detecting Position-Dependent Luminescent Spectra Through Tissue** MELISSA M ROGALSKI, Clemson University, Bobby Smith, Hunter Pelham, Nakul Ravikumar, John D DesJardins, Jeffrey N Anker |
| (2250-4 P) | **Photoluminescence of Novel Osmium and Ruthenium Complexes in the Presence of Polyanions** MEHRUN UDDIN, St. John's University, Cody Piotrowski, Besiana Kurti, Armando Seitllari, Elise Megehee, Enju Wang |
| (2250-5 P) | **Quantifying Free Fatty Acid Uptake Dynamics in Primary Adipocytes Using Customized Micro-Wells Made with 3D-Printed Templates** TESFAGEBRIEL M HAGOS, Auburn University, Jessica C Brooks, Christopher J Easley |
| (2250-6 P) | **Toward Non-Invasively Detecting Radiolabeled Analytes Near Implanted Medical Devices Coated in Radioluminescent Phosphors** GRETCHEN B SCHOBER, Clemson University, Jeffrey N Anker |
| (2250-7 P) | **Development of Silicone Filled Optical Module for Laser Fluorescence Trace Molecular Detection** HIROKAZU HIGUCHI, Kyushu University, Hiroaki Nomada, Hiroaki Yoshioka, Kinichi Morita, Yuji Oki |
| (2250-8 P) | **Recombinant Tobacco Peroxidase: A 100-Fold More Effective Luminescent Label Than Horseradish Peroxidase** IRINA GAZARYAN, Pace University, Galina Zakharova, Andrey Poloznikov, Dmitry Hushpulian, Vladimir Tishkov |
| (2250-9 P) | **Using Diffusional Motion to Gauge Fluidity and Interfacial Adhesion Strength of Supported Octadecylphosphonic Acid (ODPA) Monolayers** STEPHEN BAUMLER, Michigan State University |
| (2250-10 P) | **Improving Selectivity of Fluorimetric Water Sensing in Aprotic Solvents** KATARZYNA KŁUCIŃSKA, University of Warsaw, Patryk Rzepiński, Michał Cyrański, Krzysztof Maksymiuk, Agata Michalska N/A |
| (2250-11 P) | **Irradiation of Gold Nanodots by Ultraviolet Light: Modulation of Ligand Density and Photoluminescence** YU-TING TSENG, National Taiwan University |
| (2250-12 P) | **A Preliminary Study of Factors Affecting Quenching or Enhancement of Fluorescence of 1,10-Phenantrololine Toward Quantitative Determination of Selected Metals in mine Drainage and Related Samples** MARK T STAUFFER, University of Pittsburgh - Greensburg, Tell M Lovelace N/A |
| (2250-13 P) | **Traceable Mercury Gas Phase Calibrations Based Upon Gravimetry** ANNARITA BALDAN, VSL, Janneke van Wijk, Hugo Ent |
| (2250-14 P) | **Detection of Caffeine Using a Field-Portable Fluorescence Device** HALEY CURTIS, Tennessee Technological University, Andrew Callender |
| (2250-15 P) | **The Quenching of Riboflavin Fluorence by Nicotine in Bicontinuous Microemulsion** MAURICE O IWUNZE, Morgan State University |
| (2250-16 P) | **Optimizing Fluorescence Tagging Strategy to Study Single Molecule Diffusion on Air-Solid Surface** TAO JIN, North Carolina State University, Fang Chen, James Tour, Victor Lopez, Gufeng Wang |

# TECHNICAL PROGRAM

## POSTER SESSION — Session 2260

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Fuels, Energy and Petrochemical*

**Thursday Morning, Exposition Floor, 400 Aisle**

(2260-1 P) **Increasing Resolution of Propylene Glycol Impurities with High-Efficiency GC Columns** RAMKUMAR DHANDAPANI, Phenomenex, Tim Anderson, Kristen Parnell

(2260-2 P) **Analysis of Impurities in Propane/Propylene Streams Using a Pulsed Flame Photometric Detector (PFPD)** CYNTHIA ELMORE, OI Analytical, Michael Duffy, Brian Mistovich, J Garrett Slaton

(2260-3 P) **High C6+ Analysis** MATTHEW MONAGLE, AIC LLC N/A

(2260-4 P) **High Performance Chromatographic Diatomaceous Earth (DE)** KATARINA ODEN, Restek, Jaap de zeeuw, Barry Burger, Linx Waclaski, Rebecca Stevens

(2260-5 P) **Methanizer – A Simple Solution for CO/CO2 Gas Analysis by Gas Chromatography (GC)** KATARINA ODEN, Restek, Jaap de zeeuw, Barry Burger, Linx Waclaski, Rebecca Stevens

(2260-6 P) **Analysis of A Sulfur Mixture in Hydrocarbon Standard Cylinder in ppb Level** YANG QIN, Air Liquide Specialty Gases

(2260-7 P) **Reactive Pyrolysis-GC/MS of Polymers in a Steam Environment Used to Study Potential Bio-oil** KAREN SAM, CDS Analytical, Gary Deger, Steve Wesson

(2260-8 P) **Extended Lower Detection Range for Hydrogen Sulfide and Carbonyl Sulfide with Metal Surface Deactivated Sample Inlet for Micro Gas Chromatography** REMKO VAN LOON, Agilent Technologies, Thomas Szakas, Coen Duvekot

(2260-9 P) **The Improvement of ASTM D3612 TOGA Analysis** MAX WANG, Shimadzu Scientific Instrument Inc., Clifford M Taylor, Marty Smith

(2260-10 P) **Accurate and Reproducible Determination of Halogens in Coal Using Combustion Ion Chromatography** CARL FISHER, Thermo Fisher Scientific, Daniel Khor, Mark Manahan, Adelon Augustin, Kirk Chassaniol

(2260-11 P) **Nitrogen Determination in Lubricant by Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone

(2260-12 P) **New Methodology for the Analysis of Silicon in Petrochemical Samples by ICP-MS** ANTHONY PALERMO, PerkinElmer, Kenneth Neubauer, Stan Smith

(2260-13 P) **Artificial Photosynthesis** MINGMING WANG, Auburn University, Wei Zhan, Chao Li

(2260-14 P) **Rapid Measurement of Xylose and Glucose for Monitoring Corn Stover Fermentation in Bioethanol Production** WILLIAM MILLER, YSI, Inc, June Klingensmith

(2260-15 P) **Safety and Performance Testing of Li-ion Cells Using Thermal Analysis** PETER RALBOVSKY, Netzsch Instruments, Bob Fidler

(2260-16 P) **The Determination of Mercury in Liquefied Petroleum Gas – A Comparison of Sampling Techniques** MATTHEW A DEXTER, P S Analytical, C A Rogers, Warren T Corns

(2260-17 P) **Salen Quinoxalinol Ligands for Selective Coordination and Sensors** ANNE E GORDEN, Auburn University

(2260-18 P) **A New Hydroxide Selective Anion Exchange Phase for Ion Chromatography** CHARANJIT SAINI, Thermo Fisher Scientific, Christopher Pohl, Yan Liu

(2260-19 P) **Physicochemical Characterization of Microalgal Biodiesel** KIZGEL DAVIS-DESOUZA, Oglethorpe University, Grace Djokoto, Md H Kabir

(2260-20 P) **Graphene Quantum Dots Immobilized Nanoporous N-TiO2 Thin Films for Efficient Photocatalytic Water Splitting** NAMAL WANNINAYAKE, University of Kentucky, Syed Z Islam, Allen Reed, Stephen E Rankin, Doo Young Kim

(2260-21 P) **Techniques for Polysaccharide Research at the Complex Carbohydrate Research Center** ROBERTO SONON, Complex Carbohydrate Research Center, Stephanie A Archer-Hartmann, Zhirui Wang, Ian Black, Radnaa Naran, Mayumi Ishihara, Christian Heiss, Dandan Zhou, Artur Muszynski, Scott Forsberg, Asif Shajahn, Justyna Dobruchowska, Parastoo Azadi

(2260-22 P) **Application of Laser Induced Breakdown Spectroscopy (LIBS) in Analysis of Out Crop Samples from the Marcellus Shale** JINESH JAIN, AECOM, Alexander Bol'shakov, Herve Sanghapi, Christina Lopano, Dustin McIntyre, Richard Russo

(2260-23 P) **Direct Detection of Hydrocarbons from Microalgae Using Low Temperature Plasma – Mass Spectrometry (LTP-MS)** ABIGAIL MORENO PEDRAZA, Cinvestav, Robert Winkler

(2260-24 P) **Comprehensive Online Real-Time Analysis of Natural Gas Using VUV Absorption Spectroscopy** JAMES ANTHONY DIEKMANN III, VUV Analytics, Jonathan Smuts, Michael Roecker

(2260-25 P) **IR-Spectroscopic Analyses of Chemical Adaptation Dynamics of Live Microalgal Biomass to Shifting Nutrient Conditions** FRANK VOGT, University of Tennessee N/A

(2260-26 P) **Inorganic Salt Doped with Nanoparticulate Additives for Thermal Energy Storage with Improved Radiative Heat Transfer** PHILIP D MYERS, University of South Florida Clean Energy Research Center, D Yogi Goswami N/A

(2260-27 P) **Transformer Oil Gas Analysis Using Gas Chromatography – Vacuum Ultraviolet Absorbance Spectroscopy** JONATHAN SMUTS, VUV Analytics, Lindsey Nichole Shear, James Anthony Diekmann III, Jeff Tenney, Andy Shkolnik

(2260-28 P) **Ionic Liquids as Electrolytes for Electrochemical Double-Layer Capacitors: Structures that Optimize Specific Energy** MARAL PS MOUSAVI, University of Minnesota, Benjamin E Wilson, Sadra Kashefolgheta, Evan Anderson, Andreas Stein, Philippe Buhlmann

(2260-29 P) **Using Time Resolved FT-IR-ATR Spectroscopy to Study Biodiesel Fuel Diffusion in Flexible Elastomer Materials** JAMES M SLOAN, U.S. Army Research Laboratory N/A

(2260-30 P) **Engine State Monitoring Technology based on Engine Exhaust Test** WEIKUI WANG, Beijing Research Institute of Telemetry, Xiantao Yang, Yi Zheng N/A

## POSTER SESSION — Session 2270

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *New Developments in GC*

**Thursday Morning, Exposition Floor, 400 Aisle**

(2270-1 P) **Introduction of a New, High-Quality, Cost Efficient Headspace GC Autosampler** MAX WANG, Shimadzu Scientific Instrument Inc., Clifford M Taylor, Marty Smith

(2270-2 P) **Unique Selectivity: The Power of Ionic Liquid GC Columns** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Greg A Baney, James L Desorcie, Gustavo Serrano, Daniel Shollenberger, Michael D Buchanan

(2270-3 P) **Use of Traditional/Apex Track Integration in Commercially Available Software for GC Data Generated for EPA Methods 8082 and 8015** TOM KWOKA, PerkinElmer, Bill Hahn, Sharanya Reddy

(2270-4 P) **Evaluation of GC Conditions Using Inert Nano Stationary Phase GC Columns** ALLEN BRITTEN, Cape Breton University, Krishnat Naikwadi, Amy Clemens, Robyn Novorolsky, Allison Clarke N/A

(2270-5 P) **Evaluation of Gas Chromatographic Liner Deactivation when Exposed to Various Solvents and Extracts** LINX WACLASKI, Restek, Jack Cochran, Scott Adams, Rebecca Stevens, Dan Li

(2270-6 P) **Development of an Innovative New Thermal Modulator for Comprehensive Multidimensional Gas Chromatography** MATTHEW S KLEE, DANI Instruments, Roberta Lariccia, Vincenzo Casilli N/A

(2270-7 P) **Modification of a GC for High Level Tritium Exposure** WILLIAM SPENCER, SRNL, Jose Cortes Concepcion, Jacob Schaufler, Robert Lascola

(2270-8 P) **Micro-Scale Vapor Extractor for Micro-GC Analysis of VOCs in Biofluids** JUNQI WANG, University of Michigan, Joseph A Potkay, Edward T Zellers

## POSTER SESSION — Session 2280

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *UV/VIS*

**Thursday Morning, Exposition Floor, 400 Aisle**

(2280-1 P) **Qualitative Colorimetric and Quantitative Flow Injection Determination of Alkyl Nitrite** ABD AL-KARIM ALI, Miami University, Neil D Danielson

(2280-2 P) **Multi-order Visible Absorption and Reflectance Spectrometry: Parallels to Atomic Emission Line Interferences** ALEXANDER SCHEELINE, SpectroClick, Mark D Ginsberg

(2280-3 P) **Nano-Embedded Optochemical Sensors for In-Vivo Photo-acoustic Chemical Imaging of Potassium Ions** WULIANG ZHANG, University of Michigan, Chang Lee, Jeffery Folz, Xueding Wang, Raoul Kopelman

(2280-4 P) **Colorimetric Determination of Sulfate Using Barium Ion and the Chromate/Dichromate Equilibrium: Preliminary Results and Comparison with the Classical Gravimetric Method** MARK T STAUFFER, University of Pittsburgh - Greensburg, Jarrod W Qualk, Jeremiah C Jamrom N/A

(2280-5 P) **Derivatives of 4,5-Diazafluorene for Chelation and Colorimetric Determination of FE(II) and CU(I): Better FE(II) and CU(I) Chelators Than 1,10-Phenanthroline?** MARK T STAUFFER, University of Pittsburgh - Greensburg, Luke J Metzler, Matthew R Luderer N/A

(2280-6 P) **Simultaneous Determination of Iron and Aluminum by Spectrophotometry and Partial Least Squares Regression: Comparison of Two Potential Ligands and Application to Mine Drainage and Related Water Samples** MARK T STAUFFER, University of Pittsburgh - Greensburg

(2280-7 P) **A Highly Selective Naked Eye Anion Detector Based on Chromone Derivatives and their Electroanalytical Studies** NEHA GUPTA, IIT Roorkee, Ashok K Singh N/A

(2280-8 P) **TBAF and It's Spectral Interference** IAN ADAMS, The University of Alabama

## POSTER SESSION — Session 2290

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Various Applications of GCMS*

**Thursday Morning, Exposition Floor, 400 Aisle**

(2290-1 P) **Evaluation of Methylisothiazolinone (MI) Extraction from Sunscreen Using Supported Liquid Extraction prior to GC/MS Analysis** RHYS JONES, Biotage GB Limited, Lee Williams, Victor Vandell

(2290-2 P) **Extending the Range of GC-MS Applications with Cold EI** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Uri Keshet , Tal Alon

(2290-3 P) **New Sampling Device for Early Cancer Screening by Non-Invasive Detection of VOCs Biomarkers in Exhaled Breath** PAOLO BENEDETTI, IIA - CNR, Ettore Guerriero, Federico Marini, Mark Ragusa, Maria Cristina Zappa, Carlo Crescenzi

(2290-4 P) **Quantitative and Qualitative Multi-Residue Analysis of Chemical Contaminants in Food and Feed by GC-HRTOFMS** JONATHAN D BYER, Leco Corporation, Joseph E Binkley, David E Alonso N/A

(2290-5 P) **Chemical Warfare Agents (CWAVX) by Large Volume Injection/Programmable Temperature Vaporization (LVI/PTV) - Gas Chromatography/Quadrupole Mass Spectrometry** TOM FOWLER, CSS-Dynamac, Kelly Head, Julia Capri

(2290-6 P) **Quantification of Persistent Organic Pollutants in Dietary Supplements Using Stir-bar Sorptive Extraction- Thermal Desorption- GC/MS and Isotope Dilution Mass Spectrometry** WEIER HAO, Duquesne University, Andrew Boggess, Skip Kingston

(2290-7 P) **Automated Sampling of Methanol Extractions** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor, Justin Murphy

(2290-8 P) **Complex Sample Characterization by GC×GC-TOF** ROBERTA LARICCIA, DANI Instruments, Vincenzo Casilli, Matthew S Klee N/A

(2290-9 P) **Pesticide Analysis in Drinking Water and Beverages Using Multiple Techniques** XIAOPING LI, Georgia Gwinnett College, Zoe Goldstein, Hongxia Guan, Michelle Huang, Rashad Simmons, Simon Mwongela

(2290-10 P) **Identification of Contaminants in Powdered Foods by Direct Extraction Thermal Desorption GC/MS** RONALD SHOMO, Scientific Instrument Services, Christopher Baker, John Manura

(2290-11 P) **Methods Development for Sampling and Analysis of Biogenic Volatile Organic Compounds Released from Plants** PRITHVIRAJ SRIPATHI, Middle Tennessee State University, Christopher Moore, Kathleen Kuklewicz, James G Milstead, Beng Guat Ooi, Ngee Sing Chong

(2290-12 P) **Pyrolysis-GC/MS as a Screening Tool for Phthalate Esters and Brominated Flame Retardants in the RoHS Directive** NICOLE M LOCK, Shimadzu Scientific Instruments, Shilpi Chopra, Di Wang, Laura Chambers, Mark Janeczko

(2290-13 P) **Withdrawn**

(2290-14 P) **Improved Flavor Profile of Italian Wine and Scotch Whiskey Using an Aqueous-Stable Polyethylene Glycol Stationary Phase** RAMKUMAR DHANDAPANI, Phenomenex, Tim Anderson, Kristen Parnell

(2290-15 P) **Separation Solutions for Triglycerides in Food Fat and Oil by High Temperature GC** RAMKUMAR DHANDAPANI, Phenomenex, Kristen Parnell, Tim Anderson

(2290-16 P) **Volatile Organic Compounds in Energy Drinks as Determined by GC/MS with Purge and Trap Sample Concentration** CYNTHIA ELMORE, OI Analytical, J Garrett Slaton

(2290-17 P) **What's in Your Morning Drink? Comprehensive Characterization of Coffee and Tea Extracts by GCxGC–TOF MS** LAURA MCGREGOR, Markes International Ltd, Nicola Watson, Massimo Santoro, Chris Hall, Ken Umbarger

(2290-18 P) **Research of Polychlorinated Biphenyls (PCBs) in Vegetables by GC-MS/MS** XIZHI WANG, Shimadzu, Shiheng Luo, Feifei Tian, Jun Fan, Guixiang Yang, Taohong Huang, Shin-ichi Kawano, Yuki Hashi

(2290-19 P) **Analysis of FAMEs Using Cold EI GC/MS for Improved Molecular Ion Information** ADAM J PATKIN, PerkinElmer, Sharanya Reddy

(2290-20 P) **Basmati or Not Basmati? That is the Question** KENNETH ROSNACK, Waters Corporation, Gareth Cleland, Adam Ladak, Jennifer Burgess, Steven Lai

## POSTER SESSION — Session 2300

**All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the posters is on the Exposition Floor, 400 Aisle. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Vibrational Spectroscopy Advances*

**Thursday Morning, Exposition Floor, 400 Aisle**

(2300-1 P) **Development of a Non-Invasive Probing Method for Pharmaceutical Analysis Using Spatially Offset Raman Spectroscopy** HYUNG MIN KIM, Kookmin University

(2300-2 P) **Spatial Heterodyne Raman Spectrometer with LED Sources** WILLIAM HUNTINGTON, University of South Carolina, S Michael Angel

(2300-3 P) **Silver-Coated Self-Assembled Polystyrene Nanospheres for Surface-enhanced Raman Spectroscopy** LARA MIKAC, Rudjer Boskovic Institute, Mile Ivanda, Marijan Gotic, Vesna Janicki, Hrvoje Zorc, Tibor Janci, Sanja Vidacek N/A

(2300-4 P) **Second Harmonic Generation of Gold Nanorods Coupled with Atomic Force Microscopy** DARBY NELSON, University of Notre Dame, Zachary D Schultz

(2300-5 P) **Chemical Detection and Tracking of c-RGD Peptide-Conjugated Gold Nanoparticles Interacting with αVβ3 Integrins in Living Cells** HAO WANG, University of Notre Dame, Lifu Xiao, Zachary D Schultz

(2300-6 P) **Molecular Interactions between Nanoparticles and Model Cell Membranes Determined via Combined Vibrational Spectroscopic Studies** PEIPEI HU, The University of Michigan at Ann Arbor

(2300-7 P) **A Stable, Disposable Nanostructured Substrate for Surface Enhanced Raman Scattering (SERS) Detection of Drugs with Environmental Applications** HONEY MADUPALLI, Central Michigan University, Brandon Russell, Mary M Tecklenburg N/A

(2300-8 P) **A New Diamond ATR Video Microscopy Accessory** DAVID W SCHIERING, Czitek

(2300-9 P) **From Mars to Mission Critical Process Control** DAN WOOD, Keit Ltd

(2300-10 P) **Measurement of Component Distribution in "Soft Chew" Formulations by ATR FTIR Imaging** RONALD RUBINOVITZ, Thermo Fisher Scientific, William Wihlborg

# TECHNICAL PROGRAM

# THURSDAY, MARCH 10, 2016
# AFTERNOON

**SYMPOSIUM** **Session 2310**

***ACS-ANLY - Ultrasensitive Bioanalysis on the Pico-to Femtoliter Scales***
arranged by Yong Zeng, University of Kansas

**Thursday Afternoon, Room B308**
Yong Zeng, University of Kansas, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Yong Zeng** |
| 1:35 | (2310-1) | **Bioanalysis in Ultrasmall Volumes** DANIEL T CHIU, University of Washington N/A |
| 2:10 | (2310-2) | **Engineering Hydrogels for Sensitive miRNA Assays** PATRICK DOYLE, Massachusetts Institute of Technology |
| 2:45 | (2310-3) | **Microfluidic Devices with Integrated Nanochannel Arrays to Study Development and Aging of Individual Bacteria** STEPHEN C JACOBSON, Indiana University, Joshua D Baker, David T Kysela, Yves V Brun |
| 3:20 | | **Recess** |
| 3:35 | (2310-4) | **Single Cell Genomic and Proteomic Analysis** ANUP K SINGH, Sandia National Laboratories |
| 4:10 | (2310-5) | **Ultrasensitive and Broad-Range Microfluidic Immunoassays** YONG ZENG, University of Kansas |

**SYMPOSIUM** **Session 2320**

***Analytical Techniques in Neuroscience***
arranged by Hang Lu, Georgia Tech and Andriana San Miguel, North Carolina State University

**Thursday Afternoon, Room B309**
Hang Lu, Georgia Tech, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Hang Lu** |
| 1:35 | (2320-1) | **The Chemical Characterization of the Brain: From New MS-Based Measurement Tools to New Insights** JONATHAN V SWEEDLER, University of Illinois |
| 2:10 | (2320-2) | **Scalable Proteomic Imaging of Intact Biological Systems** KWANGHUN CHUNG, MIT |
| 2:45 | (2320-3) | **In Situ RNA Profiling by FISH SCALYS (Sequential Coding anALYSis)** LONG CAI, Caltech N/A |
| 3:20 | | **Recess** |
| 3:35 | (2320-4) | **Expansion Sequencing (ExSEQ): Comprehensive In Situ Transcriptome Characterization Throughout Intact Brain Circuits** SHAHAR ALON, Massachusetts Institute of Technology |
| 4:10 | (2320-5) | **Genetic Approaches to Brain Circuit Mapping and Cell Type Characterization** HONGKUI ZENG, Allen Institute for Brain Science |

**SYMPOSIUM** **Session 2330**

***Bioanalytical Chemistry Using the Next Generation of Nanomaterials***
arranged by Isiah M Warner, Louisiana State University and Chieu D Tran, Marquette University

**Thursday Afternoon, Room B310**
Isiah M Warner, Louisiana State University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Isiah M Warner and Chieu D Tran** |
| 1:35 | (2330-1) | **GUMBOS at the Nanoscale: Size Control, Characterization, and Applications** ISIAH M WARNER, Louisiana State University, Suzana Hamden |
| 2:10 | (2330-2) | **Discovering "Genetic Codes" for Nanomaterials Morphologies and Employing the DNA-Encoded Nanomaterials for Sensing and Imaging** YI LU, University of Illinois at Urbana-Champaign, Li Huey Tan, Peiwen Wu, Nitya Sai Reddy Satyavolu |
| 2:45 | (2330-3) | **Free-Standing Gold and Silver Nanoparticles Films as Flexible Sensing Platforms** JENNIFER S SHUMAKER-PARRY, University of Utah |
| 3:20 | | **Recess** |
| 3:35 | (2330-4) | **Ultrafast and Nonlinear Spectroscopy of Plasmonic Nanoparticles for Drug Delivery and Photothermal Applications** LOUIS H HABER, Louisiana State University, Raju R Kumal, Tony E Karam, Holden T Smith, Corey R Landry, Mohammad Abu-Laban, Daniel J Hayes |
| 4:10 | (2330-5) | **Biocompatible Nanoparticle Composite Materials: Green Synthesis and Applications** CHIEU D TRAN, Marquette University |

**SYMPOSIUM** **Session 2340**

***Bioinformatics: Metabolite Identification and Quantification***
arranged by Xiang Zhang, University of Louisville

**Thursday Afternoon, Room B311**
Xiang Zhang, University of Louisville, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Xiang Zhang** |
| 1:35 | (2340-1) | **New Methods for Improved NMR Quantitation and Reliable MS Coverage in Metabolomics** DANIEL RAFTERY, University of Washington |
| 2:10 | (2340-2) | **Point Matching Global Peak Alignment Algorithms for Comprehensive Two-Dimensional Gas Chromatography Coupled with Mass Spectrometry (GC×GC-MS)** KIM SEONGHO, Wayne State University/Karmanos Cancer Institute |
| 2:45 | (2340-3) | **Computational and Database Assisted Structure Identification Tools for Untargeted Metabolomics** DAVID GRANT, University of Connecticut |
| 3:20 | | **Recess** |
| 3:35 | (2340-4) | **Mass Informatics of Quantitative Metabolomics by Integrating LCxLC-MS and GCxGC-MS Data** XIANG ZHANG, University of Louisville, Xiaoli Wei, Imhoi Koo, Pawel Lorkiewicz |
| 4:10 | (2340-5) | **Translating Big Data from HR Imaging MS Data into Molecular Knowledge** THEODORE ALEXANDROV, EMBL |

**SYMPOSIUM** **Session 2350**

***Micro and Nano-Scale Optofluidic Lasers for Biological Applications***
arranged by Xudong Fan, University of Michigan and Seok-Hyun Yun, Harvard Medical School

**Thursday Afternoon, Room B312**
Xudong Fan, University of Michigan, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Xudong Fan and Seok-Hyun Yun** |
| 1:35 | (2350-1) | **Optofluidic Laser as a New Bioanalytical Tool** XUDONG FAN, University of Michigan |
| 2:10 | (2350-2) | **Latest Progress in Spasers** MARK I STOCKMAN, Georgia State University |
| 2:45 | (2350-3) | **Recent Advances in Biolasers: Stimulated Emission from Solid-State Fluorescent Protein and Lasing Inside Live Cells** MALTE C GATHER, University of St Andrews |
| 3:20 | | **Recess** |
| 3:35 | (2350-4) | **Speckle-Free Lasers** HUI CAO, Yale University |
| 4:10 | (2350-5) | **Bio-Lasers** S H ANDY YUN, Harvard University N/A |

**SYMPOSIUM** **Session 2360**

***Nanofiber Materials Overcome Enduring (Bio) Analytical Challenges***

arranged by Margaret W Frey, Cornell University and Antje J Baeumner, University of Regensburg

**Thursday Afternoon, Room B313**

Margaret W Frey, Cornell University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Margaret W Frey and Antje J Baeumner** |
| 1:35 | (2360-1) | **Nanofiber Chemistry and Synthesis and the Impact on Analytical Systems** MARGARET W FREY, Cornell University, Larissa M Shepherd, Edurne Gonzalez, Nidia Trejo |
| 2:10 | (2360-2) | **Electrospun Fibers for Electrochemical Analysis** GREGORY RUTLEDGE, Massachusetts Institute of Technology, Xianwen Mao, Yuxi Zhang, T Alan Hatton, Harry Tuller |
| 2:45 | (2360-3) | **Carbon Nanotube–Nanocrystalline Diamond Hybrid Electrodes: A Route for Development of a Highly Sensitive Neurochemical Microsensor** PRABHU ARUMUGAM, Louisiana Tech University |
| 3:20 | | **Recess** |
| 3:35 | (2360-4) | **Piezoelectric Nanofiber Platform for Cell Monitoring** CAROLINE L SCHAUER, Drexel University |
| 4:10 | (2360-5) | **New Concepts for Lab-on-a-Chip Systems Using Electrospun Nanofibers** ANTJE J BAEUMNER, University of Regensburg |

**SYMPOSIUM** **Session 2370**

***SEAC - Nanoengineered Biosensors***

arranged by Adrian C Michael, University of Pittsburgh

**Thursday Afternoon, Room B314**

Reginald M Penner, University of California Irvine, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Reginald M Penner** |
| 1:35 | (2370-1) | **Biosensors for Early Cancer Detection Based Upon an Electrical Interface to Virus Particles** REGINALD M PENNER, University of California Irvine |
| 2:10 | (2370-2) | **Organic Electronics Biosensors for Label-Free Femtomolar Protein Detection** LUISA TORSI, Università degli Studi di Bari "A. Moro", Maria Magliulo, Gerdo Palazzo |
| 2:45 | (2370-3) | **Single Nanoparticle SPR Imaging and Plasmonic Nanocone Arrays: Smart Materials and Smart Chemistries for Advanced Optical Biosensors and Biomimetic Devices** ROBERT M CORN, University of California Irvine, Adam M Maley, H W Millie Fung |
| 3:20 | | **Recess** |
| 3:35 | (2370-4) | **Ultrasensitive Biomolecular Detection Using Nanostructured Microelectrodes** SHANA KELLEY, University of Toronto |
| 4:10 | (2370-5) | **DNA Nanostructures and Networks** WEIHONG TAN, University of Florida |

**ORGANIZED CONTRIBUTED SESSIONS** **Session 2380**

***Biosensing Devices for Neuron Mapping***

arranged by Chenzhong Li, Florida International University

**Thursday Afternoon, Room B315**

Chenzhong Li, Florida International University, Presiding

| | | |
|---|---|---|
| 1:30 | (2380-1) | **Integration of CNS and PNS Components with Silicon Devices via Surface Microengineering for Neuronal Mapping Applications** JAMES J HICKMAN, University of Central Florida |
| 1:50 | (2380-2) | **Biomimetic Strategies for Seamless Integration of Neural Interface Technology** TRACY CUI, University of Pittsburgh |
| 2:10 | (2380-3) | **Automated Micro- and Nanoscale Systems for Single Neuronal Activity** JIT MUTHUSWAMY, Arizona State University, Swathy Sampath Kumar, Sindhu Anand |
| 2:30 | (2380-4) | **Electronic Biosensing Devices for Recording Neuron Transmitter Expression at Single Cell and 3D Tissue Level** CHENZHONG LI, Florida International University |
| 2:50 | | **Recess** |
| 3:05 | (2380-5) | **Visualization of Nanoscale Neuron Surface Topography and Detection of Neurotransmitter Release Using Nano Electrochemical Microscopy** YASUFUMI TAKAHASHI, Tohoku University, Hitoshi Shiku, Tomokazu Matsue |
| 3:25 | (2380-6) | **Trans-Synaptic In Vitro Mapping Using Microfluidic Approaches for Neuroscience Discovery** ANNE MARION TAYLOR, University of North Carolina at Chapel Hill and North Carolina State |
| 3:45 | (2380-7) | **CMOS Technology Enabled Brain Machine Interface (BMI) For Chronic Neuronal Mapping** MUHAMMAD MUSTAFA HUSSAIN, King Abdullah University of Science and Technology (KAUST), Aftab M Hussain, Amir N Hanna |
| 4:05 | (2380-8) | **Wireless Stimulation and Recording for In-Vivo Electrophysiology** JAMES MORIZIO, Triangle BioSystems Inc. |

**ORAL SESSIONS** **Session 2390**

***Bioanalytical: Electrochemical Techniques***

**Thursday Afternoon, Room B305**

Leslie Wilson, North Carolina State University, Presiding

| | | |
|---|---|---|
| 1:30 | (2390-1) | **Compatibility of Nitric Oxide Release Coatings with Implantable Enzymatic Glucose Sensors Based on Osmium(III/II) Mediated Electrochemistry** KYOUNG HA CHA, University of Michigan |
| 1:50 | (2390-2) | **Application of Nanopipette Electrodes for Real-Time Measurement of Thyroid Hormones to Evaluate Thyrotoxic Storm** CELESTE A MORRIS, Northern Kentucky University, Barbara Cata, Theresa M Ruwe, Edward A Dobrzykowski, Teri Rae Armstrong |
| 2:10 | (2390-3) | **Neurochemical and Behavioral Analysis of Post-Chemotherapy Cognitive Impairment** MICHAEL A JOHNSON, University of Kansas, Sam V Kaplan, David P Jarmolowicz, Rachel C Gehringer, Michael J Sofis, Ryan Limbocker, Mimi Shin, Meng Sun |
| 2:30 | (2390-4) | **In-Vitro Amperometric Sensing of Dynamic Changes of Endogenous NO and CO Gases for Co-cultured Endothelial and Neuronal Cells** HA YEJIN, Ewha Womans University, Heo Chaejeong, Woo Juhyun, Suh Minah, Lee Youngmi |
| 2:50 | | **Recess** |
| 3:05 | (2390-5) | **Real-Time Measurements of Oxidative Stress During Chronic L-DOPA Treatment For Parkinson's Disease** LESLIE WILSON, North Carolina State University, Christie Lee, Catherine F Mason, Leslie A Sombers |
| 3:25 | (2390-6) | **Dual Function Ion Selective Microelectrodes for Scanning Electrochemical Microscopy** GANESH UMMADI, Oregon State University, Corey Downs, Dipankar Koley |
| 3:45 | (2390-7) | **Label-Free Electrochemical microRNA Detection based on Different Modifier: Conducting Polymer and Graphene on the Surface of Pencil Graphite Electrode** MEHMET OZSOZ, Gediz University, Merve Kaplan |
| 4:05 | (2390-8) | **Quantitative Measurement of Transmitters in Individual Vesicles with Microelectrodes** XIANCHAN LI, University of Gothenburg, Soodabeh Majdi, Andrew Ewing |

**ORAL SESSIONS** **Session 2400**

***Bioanalytical: Sampling and Sample Preparation - Half Session***

**Thursday Afternoon, Room B304**

Jinesh Jain, NETL, Presiding

| | | |
|---|---|---|
| 1:30 | (2400-1) | **Aptamer Functionalized Solid Phase Microextraction for Selective Enrichment of Thrombin** MD NAZMUL ALAM, University of Waterloo, Fuyou Du, Janusz Pawliszyn |
| 1:50 | (2400-2) | **New Generation of Solid SPME Coatings for Complementary Gas- and Liquid- Phase Separation: A Step Toward Integration of Metabolomics Platforms** EMANUELA GIONFRIDDO, University of Waterloo, Ezel Boyaci, Janusz Pawliszyn |
| 2:10 | (2400-3) | **Solid Phase Microextraction as Sample Preparation Tool in Brain Tumors Analysis** NATHALY REYES-GARCES, University of Waterloo, Barbara Bojko, Janusz Pawliszyn |
| 2:30 | (2400-4) | **MEMS Based Pre-Concentrator GC-Ion Mobility Spectrometry for Trace Gas Analysis** WOLFGANG VAUTZ, ISAS, Sascha Liedtke, Stefano Zampolli, Chandrasekhara Hariharan |

# TECHNICAL PROGRAM

## ORAL SESSIONS — Session 2410

*Bioanalytical: Techniques Using Sensors*

**Thursday Afternoon, Room B302**
Ke Li, Missouri University of Science and Technology, Presiding

| | | |
|---|---|---|
| 1:30 | (2410-1) | **Core-Shell Nanoparticle Scintillator Probes for Low-Energy Radionuclide Quantification in Aqueous Media** COLLEEN JANCZAK, University of Arizona, Isen Andrew C Calderon, Zeinab Mokhtari, Craig A Aspinwall |
| 1:50 | (2410-2) | **Use of Silicon Photonic Microring Resonators for the High-Throughput Analysis of Multi-Protein Complex Formation in the Blood Coagulation Cascade** ELLEN MUEHL, University of Illinois at Urbana-Champaign, Josh M Gajsiewicz, Ivan Lenov, Jim H Morrissey, Ryan C Bailey |
| 2:10 | (2410-3) | **Label-Free RNA Probes for Live Cell Dual-Color Imaging of EGFR** XIAOHONG TAN, Carnegie Mellon University |
| 2:30 | (2410-4) | **Integration of Whispering Gallery Mode Detectors into Fluidic Platforms for Clinical Diagnostics** DANIEL KIM, University of Kansas, Robert C Dunn |
| 2:50 | | **Recess** |
| 3:05 | (2410-5) | **Ultra-High Spatial Resolution Detection of Localized pH within a Single Live Cell** QINGBO YANG, Missouri University of Science and Technology, Hai Xiao, Honglan Shi, Xiaobei Zhang, Yinfa Ma |
| 3:25 | (2410-6) | **Real Time Analysis of Hepatitis B Virus Assembly with Multi-Pore Nano-fluidic Devices for Enhanced Resolution of Particle Size and Electrophoretic Mobility** PANAGIOTIS KONDYLIS, Indiana University, Jinsheng Zhou, Zachary D Harms, Lisa Selzer, Adam Zlotnick, Stephen C Jacobson |
| 3:45 | (2410-7) | **Graphene-Based Chemiresistive Nanobiosensors for Detection of Citrus Greening Disease** THIEN-TOAN H TRAN, University of California, Riverside, Clark Kelley, Jinxia Shi, Wenbo Ma, Ashok Mulchandani |
| 4:05 | (2410-8) | **A Quantum Dot Based Fiber-Optic Micro-Sensor for Niche-Environment Temperature Monitoring** KE LI, Missouri University of Science and Technology, Qingbo Yang, Honglan Shi, Yinfa Ma, Hai Xiao, Qi Zhang |

## ORAL SESSIONS — Session 2420

*Computers in Chemistry - Half Session*

**Thursday Afternoon, Room B301**
Dean Tzeng, The Pittsburgh Conference, Presiding

| | | |
|---|---|---|
| 1:30 | (2420-1) | **An Inexpensive, Programmable System for Prototyping Instruments, Making Short Run Specialty Measurement Systems, and Computerizing Outdated Hardware** SCOT D ABBOTT, Phoenix Frist Response |
| 1:50 | (2420-2) | **Is SAP the Only System You Need to Operate Your QC Lab?** GEOFF R TURNBULL, CSols, Inc. N/A |
| 2:10 | (2420-3) | **Maximizing the Information from the Infrared Spectra of Mixtures Using Advanced Software Algorithms** IAN ROBERTSON, PerkinElmer Limited, Jerry Sellors, Justin Lang |
| 2:30 | (2420-4) | **Driving Governance and Organizational Change in Large and Complex Informatics Projects** ADAM S BORENSTEIN, LabAnswer, Brian Brunner, Terryl Kibodeaux |

## ORAL SESSIONS — Session 2430

*Glycan Analysis - Half Session*

**Thursday Afternoon, Room B303**
Christa M Snyder, Indiana University, Presiding

| | | |
|---|---|---|
| 1:30 | (2430-1) | **Identification of Serum N-Glycans as Cancer-Specific Biomarkers by Microchip Electrophoresis and Mass Spectrometry** CHRISTA SNYDER, Indiana University, Xiaomei Zhou, Margit I Campos, Milos V Novotny, Stephen C Jacobson |
| 1:50 | (2430-2) | **Improved Separation of Saccharide Standards by EFL-HILIC** RAFFEAL BENNETT, The Ohio State University, Susan Olesik |
| 2:10 | (2430-3) | **Receptor for Advanced Glycation End Products Diffusion and Ligand-Binding Events Studied by Fluorescence Recovery after Photobleaching and Surface Plasmon Resonance** QIAOCHU ZHU, Iowa State University, Aleem Syed, Chamari S Wijesooriya, Emily A Smith |
| 2:30 | (2430-4) | **Comprehensive Quantitative and Structural Analysis of Permethylated N-glycan Using PGC-LC-MS/MS** SHIYUE ZHOU, Texas Tech University, Yehia Mechref |

## ORAL SESSIONS — Session 2440

*LC and Sample Matrix Solutions - Half Session*

**Thursday Afternoon, Room B304**
Jinesh Jain, NETL, Presiding

| | | |
|---|---|---|
| 3:05 | (2440-1) | **Analysis of Biofluids Using Solid Phase Microextraction Devices Made on Plastic Support** NATHALY REYES-GARCES, University of Waterloo, Barbara Bojko, Janusz Pawliszyn |
| 3:25 | (2440-2) | **Studies of Matrix Effects on the Determination of Hydrogen Peroxide by Using High Performance Anion Exchange Chromatography with Pulsed Amperometric Detection** JUN CHENG, Thermo Fisher Scientific, Yan Liu, Kannan Srinivasan, Christopher Pohl |
| 3:45 | (2440-3) | **HPLC Purity Method Development Using Low pH Mobile Phase and Ion-Pairing Reagent: Application to GMP Tert-Leucine Analysis** JOHN VINCI, AbbVie, Inc., Clifford Mitchell |
| 4:05 | (2440-4) | **Combining Orthogonal Separation Modes for Analysis of Multiple Sample Components** THOMAS E WHEAT, Waters Corporation, Amanda B Dlugasch, Patricia R McConville |

## ORAL SESSIONS — Session 2450

*Microfluidics/Lab-on-a-Chip - Bioanalytical II*

**Thursday Afternoon, Room B316**
Michael Woodman, Agilent Technologies, Presiding

| | | |
|---|---|---|
| 1:30 | (2450-1) | **Separation of Preterm Birth Biomarkers Using Capillary and Microchip Electrophoresis** ANNA V NIELSEN, Brigham Young University, Radim Knob, Adam T Woolley |
| 1:50 | (2450-2) | **Analysis of Nitrosative Stress in Macrophage Cells Using Microchip Electrophoresis with Electrochemical Detection** JOSEPH M SIEGEL, University of Kansas, Manjula B Wijeshinghe, Kelci M Schilly, Susan M Lunte |
| 2:10 | (2450-3) | **Ultrasensitive Electrochemical Microfluidic Immunoarray for Assessment of Aggressive vs Indolent forms of Prostate Cancer Biomarkers** BRUNAH A OTIENO, University of Connecticut, Colleen E Krause, Abby Jones, Amit Joshi, Mohammed Sherafeldin, James F Rusling |
| 2:30 | (2450-4) | **Microfluidic and 3-D Printed Devices for Near-Real-Time and Simultaneous Detection of Neurotransmitters** ALEXANDRA D TOWNSEND, Saint Louis University, R Scott Martin |
| 2:50 | | **Recess** |
| 3:05 | (2450-5) | **Electrokinetically Operated Integrated Microfluidic Platform for Preterm Birth Biomarker Analysis** MUKUL SONKER, Brigham Young University, Radim Knob, Vishal Sahore, Adam T Woolley |
| 3:25 | (2450-6) | **Discrete Stimulation of Lymph Node Slices on Chip** ASHLEY E ROSS, University of Virginia, Jacob F Woodroof, Rebecca R Pompano |
| 3:45 | (2450-7) | **Ultrasensitive ELISA for Detection of Infectious Diseases on Surface Modified PMMA Microfluidic Microplates** SANJAY SHARMA TIMILSINA, University of Texas at El Paso, Maowei Dou, Xiujun James Li |
| 4:05 | (2450-8) | **Optical Formulation of 3D Printer Resin for Minimum Microfluidic Flow Channel Size** GREG NORDIN, Brigham Young University, Hua Gong, Michael Beauchamp, Steven Perry, Adam T Woolley |