# PITTCON Conference and Expo 2015

**Abstracts**

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## 8-12 March 2015

## Volume 1 of 3

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# SUNDAY, MARCH 8, 2015
# AFTERNOON

## THE WALLACE H. COULTER LECTURE — Session 10

*The Wallace H. Coulter Lecture*

**Sunday Afternoon, Room Great Hall A**

| | | |
|---|---|---|
| 4:45 | (10-1) | **Plasmonics: Shedding Light on Cross-Cutting Science and Technologies** NAOMI J HALAS, Rice University |

## AWARDS — Session 20

**Sunday Afternoon, Room Great Hall A**

*ACS Pittcon Travel Grant Award*

| | | |
|---|---|---|
| 4:20 | (20-1) | **ACS Pittcon Travel Grant Award** |

*Pittcon Heritage Award*

| | | |
|---|---|---|
| 4:30 | (20-1) | **Presentation of the 2015 Pittcon Heritage Award** A BLAINE BOWMAN, Illumina |

## SYMPOSIUM — Session 30

*Accurate Mass Analysis of Environmental Samples and Food by both LC and GC/Q-TOF-MS*

arranged by E Michael Thurman and Imma Ferrer, University of Colorado

**Sunday Afternoon, Room 238**

E Michael Thurman, University of Colorado, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - E Michael Thurman and Imma Ferrer** |
| 1:35 | (30-1) | **LC/QTOF MS Analysis of Microcystins in Natural Waters** RALPH HINDLE, Vogon Labs |
| 2:10 | (30-2) | **The Analysis of Complex Samples by 2D-GC Combined with High-Resolution Mass Spectrometry** A JOHN DANE, JEOL USA, Inc., Robert Cody, Masaaki Ubukata |
| 2:45 | (30-3) | **Analysis of Honey and Maple Syrups by LC/Q-TOF-MS** IMMA FERRER, University of Colorado, E Michael Thurman, Jerry Zweigenbaum |
| 3:20 | | **Recess** |
| 3:35 | (30-4) | **Dioxins Analysis in Low Level Environmental Samples by MS/MS** ENRICO DAVOLI, IRCCS Istituto Mario Negri |
| 4:10 | (30-5) | **Analysis of Hydraulic Fracturing Waters by both LC/Q-TOF-MS, Ion Mobility, and ICP MS** E MICHAEL THURMAN, University of Colorado, Imma Ferrer |

## SYMPOSIUM — Session 40

*ACS DAC - Silica Nanoparticles in Analytical Chemistry*

arranged by Gabor Patonay, Georgia State University

**Sunday Afternoon, Room 239**

Gabor Patonay, Georgia State University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Gabor Patonay** |
| 1:35 | (40-1) | **Fluorescent Silica Nanoparticles for Biomedical Applications** COLETTE MCDONAGH, Dublin City University, Robert Nooney, Barbara Korzeniowska, Dorota Wencel |
| 2:10 | (40-2) | **Enhancing the Photostability and Quantum Yield of Near Infrared Dye Fluorescence with Silica Nanoparticles** SAMUEL ACHILEFU, Washington University |
| 2:45 | (40-3) | **Modified Silica Nanoparticles for the Rapid Separation and Detection of *E. coli*** SAM R NUGEN, University of Massachusetts Amherst, Samuel D Alcaine, Juhong Chen |
| 3:20 | | **Recess** |
| 3:35 | (40-4) | **Silica-Based Near-Infrared Fluorescent Nanomaterials and Their Bioapplications** JULIA XIAOJUN ZHAO, University of North Dakota, Xu Wu |
| 4:10 | (40-5) | **Fluorescent Silica Nanoparticles in Bioanalytical Applications** GABOR PATONAY, Georgia State University, Gala Chapman, Maged Henary, Kyle Emer, Sidney Crow |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

## SYMPOSIUM — Session 50

*Analytical Strategies for Assessing Wound Infections and Healing*

arranged by Mark H Schoenfisch, University of North Carolina at Chapel Hill

**Sunday Afternoon, Room 242**

Mark H Schoenfisch, University of North Carolina at Chapel Hill, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Mark H Schoenfisch** |
| 1:35 | (50-1) | **Microfluidic Electrochemical Sensors for Wound Analysis** MARK H SCHOENFISCH, University of North Carolina at Chapel Hill |
| 2:10 | (50-2) | **Integrated Omics Using Untargeted Structural Mass Spectrometry Strategies To Decipher Complex Biology** JOHN A MCLEAN, Vanderbilt University |
| 2:45 | (50-3) | **Xerogel-Based Sensors for Wound Characterization** FRANK V BRIGHT, University of Buffalo, SUNY |
| 3:20 | | **Recess** |
| 3:35 | (50-4) | **Development of Smart Bandage Systems for Monitoring Chronic Wounds** ANNA MCLISTER, University of Ulster, Jolene Phair, James Davis, Karl McCreadie, Jill Cundell |
| 4:10 | (50-5) | **Nitric Oxide Level Determinations in Wound Fluid as a Clinical Tool for the Prediction of Healing** JOSEPH V BOYKIN, HCA Virginia Healthcare, Stephanie F Bernatchez |

## SYMPOSIUM — Session 60

*Differential Ion Mobility Spectrometry: New FAIMS Instrumentation and Applications*

arranged by Alexandre A Shvartsburg, Wichita State University

**Sunday Afternoon, Room 252**

Alexandre A Shvartsburg, Wichita State University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Alexandre A Shvartsburg** |
| 1:35 | (60-1) | **Characterization of a Novel ESI-FAIMS Interface** MICHAEL W BELFORD, Thermo Fisher Scientific, Satendra Prasad, Jean-Jacques Dunyach |
| 2:10 | (60-2) | **FAIMS Combined With FTICR-MS For the Analysis of Glycosaminoglycan Mixtures** JONATHAN AMSTER, University of Georgia |
| 2:45 | (60-3) | **Differential Mobility Spectrometry Design Optimization and Simulations** BRADLEY B SCHNEIDER, AB SCIEX, Erkinjon G Nazarov, Frank Londry, Thomas R Covey |
| 3:20 | | **Recess** |
| 3:35 | (60-4) | **High Resolution, Extreme Field Spectra of Small (< 350D) Molecules with Advanced FAIMS Configuration** ASHLEY T WILKS, Owlstone Inc |
| 4:10 | (60-5) | **Pushing the Limits of FAIMS Resolution through Novel Buffer Gas Compositions** ALEXANDRE A SHVARTSBURG, Wichita State University |

## SYMPOSIUM — Session 70

*New Tools for Environmental Water Analyses*

arranged by Lisa A Holland, West Virginia University

**Sunday Afternoon, Room 254**

Lisa A Holland, West Virginia University, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Lisa A Holland** |
| 1:35 | (70-1) | **Environmental Water Analysis: Modern Tools for Emerging Contaminants and Complex Samples** SUSAN D RICHARDSON, University of South Carolina |
| 2:10 | (70-2) | **Microscale Analytical Systems for Detection of Water Contamination** VINCENT T REMCHO, Oregon State University, Leslie J Loh, Christopher A Heist |
| 2:45 | (70-3) | **Quantitative Point-of-Need Diagnostics** SCOTT PHILLIPS, The Pennsylvania State University |
| 3:20 | | **Recess** |
| 3:35 | (70-4) | **Adverse Biological Effects Monitoring in Fishes for Identification of Chemicals of Emerging Concern in the Aquatic Environment** VICKI S BLAZER, U.S. Geological Survey, Luke Iwanowicz |
| 4:10 | (70-5) | **Microscale Analyses to Monitor Water Contamination: Detecting Endocrine Disrupting Chemicals through the Direct Determination of Multiple Circulating Steroids in Individual Fish** LISA A HOLLAND, West Virginia University, Vincent Nyakubaya, Marriah C Ellington, Brandon C Durney, Jennifer R Stueckle |

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 80**

***Re-learning Biology with Mass Spectrometry***
arranged by Rena Robinson, University of Pittsburgh
and Lisa M Jones, Indiana University-Purdue University Indianapolis

**Sunday Afternoon, Room 255**
Lisa M Jones, Indiana University-Purdue University Indianapolis, Presiding
Liqing Gu, University of Pittsburgh, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Rena Robinson and Lisa M Jones** |
| 1:35 | (80-1) | **Mass Spectrometry and Bioinformatics: Key Components for Breakthrough Discoveries in Cancer Research** CAROL NILSSON, University of Texas Medical Branch, Ekaterina Mostovenko, Cheryl Lichti, Erik Sulman, Frederick F Lang, Akos Vegari, Gyorgy Marko-Varga, David Fenyo |
| 2:10 | (80-2) | **An *In Vivo* Protein Footprinting Method Coupled with Mass Spectrometry for the Structural Analysis of Proteins** LISA M JONES, Indiana University-Purdue University Indianapolis |
| 2:45 | (80-3) | **The Importance of Ultrahigh Specificity in Reading the Complex Language of Biology** DAVID C MUDDIMAN, North Carolina State University |
| 3:20 | | **Recess** |
| 3:35 | (80-4) | **Understanding the Complexity of Disease with Proteomics** LIQING GU, University of Pittsburgh, Rena Robinson |
| 4:10 | (80-5) | **Re-Learning Pain** GARY SIUZDAK, Scripps |

**SYMPOSIUM** **Session 90**

***SEAC - Electroanalysis from Benchtop to Bedside***
arranged by Shelley Minteer, University of Utah

**Sunday Afternoon, Room 253**
Shelley Minteer, University of Utah, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Shelley Minteer** |
| 1:35 | (90-1) | **Multiplexed Electrochemical and ECL Protein Detection and Translation to Personalized Cancer Diagnostics** JAMES F RUSLING, University of Connecticut |
| 2:10 | (90-2) | **Portable Integrated Electrochemical Paper-Based Analytical Devices** CHARLES HENRY, Colorado State University |
| 2:45 | (90-3) | **Aptamer-Hydrogel Hybrid Surfaces for Stable Real Time Monitoring of Therapeutics** RYAN J WHITE, University of Maryland Baltimore County, Lauren R Schoukroun-Barnes, Ethan Glaser, Jennie B Leach |
| 3:20 | | **Recess** |
| 3:35 | (90-4) | **In Vivo Electrochemistry to Understand Physiological Roles of Ascorbate** LANQUN MAO, Chinese Academy of Sciences |
| 4:10 | (90-5) | **Enzymatic Bioelectrocatalysis: From Buffer to Bodily Fluids** SHELLEY MINTEER, University of Utah |

**SYMPOSIUM** **Session 100**

***SERS in Medical Applications***
arranged by Mustafa Culha, Yeditepe University

**Sunday Afternoon, Room 256**
Mustafa Culha, Yeditepe University, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Mustafa Culha** |
| 1:35 | (100-1) | **SERS for Genomic Diagnostics** HSIN-NENG WANG, Duke University, Naveen Gandra, Tuan Vo-Dinh |
| 2:10 | (100-2) | **Plasmonic Nanoparticles SERS of Phase Synchronized Single Cells with Time, Advantages and Possible Problems** MOSTAFA A EL-SAYED, Georgia Institute of Technology |
| 2:45 | (100-3) | **Biomedical Applications of SERS: UTI Diagnostics, Cancer Metabolomics and Forensics** LAWRENCE ZIEGLER, Boston University |
| 3:20 | | **Recess** |
| 3:35 | (100-4) | **SERS From Living Cells** JOSEPH IRUDAYARAJ, Purdue University |
| 4:10 | (100-5) | **Surface-Enhanced Raman Scattering for Clinical Microorganism Identification** MUSTAFA CULHA, Yeditepe University, Ertug Avci, Kelestemur Seda |

**WORKSHOP** **Session 110**

***ALMA - Best Practices in Laboratory Management***
arranged by Dennis FH Swijter, IFF R&D

**Sunday Afternoon, Room 269**
Dennis FH Swijter, IFF R&D, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Dennis FH Swijter** |
| 1:35 | (110-1) | **S.M.A.R.T. Laboratory Practices** JULIUS BUENCONSEJO, Keppel Infrastructure |
| 2:05 | (110-2) | **Success Metrics for Laboratory Management: How Do We Know When We're Doing Well?** ERIC MARTIN, Harvard Center for Nanoscale Systems |
| 2:35 | (110-3) | **Monitoring the Health of Your Laboratory Through Key Performance Indicators** VERONICA JEAN GODLEY, San Antonio Water System |
| 3:05 | | **Recess** |
| 3:20 | (110-4) | **Managing the Sandbox: Coaching Toward Collaboration and Teamwork** RICHARD R DURAND, JR, Sun Chemical Corporation |
| 3:50 | (110-5) | **Motivation and Safety: Driving Forces in Academia** KIMBERLY MOSER, University of Oklahoma |

**ORGANIZED CONTRIBUTED SESSION** **Session 120**

***Characterization of the Fate and Effects of Contaminants of Emerging Concerns by Chemical and Biological Methods***
arranged by Diana S Aga, University at Buffalo

**Sunday Afternoon, Room 260**
Diana S Aga, University at Buffalo, Presiding

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|---|---|---|
| 1:30 | (120-1) | **Identification of Flame Retardant Additives in Consumer Products Using Mass Spectrometry and Understanding Human Exposure Pathways** ELLEN M COOPER, Duke University, Heather Stapleton, Katie Davis, Lee Ferguson |
| 1:50 | (120-2) | **Investigating Contaminant Fate and Environmental Risk of Synthetic Steroids Using Mass Spectrometry and Bioassays** EDWARD P KOLODZIEJ, University of Washington |
| 2:10 | (120-3) | **The Biological Effects of Engineered Nanoparticles on Plant DNA** BRYANT C NELSON, National Institute of Standards and Technology |
| 2:30 | (120-4) | **Analysis of Hydroxylated Metabolites of Polybrominated Diphenyl Ethers (PBDEs) by Ultra Performance Convergence Chromatography (UPC$^2$) Coupled with Time of Flight Mass Spectrometry** HERNANDO J OLIVOS, Waters Corporation, Diana S Aga, Michael S Gross, James R Olson |
| 2:50 | | **Recess** |
| 3:05 | (120-5) | **The Fate of Emerging Biochemical Contaminants in Wastewater Disinfecting Treatments** KRISTA WIGGINTON, University of Michigan |
| 3:25 | (120-6) | **A Framework for Establishing Biologically Meaningful Relationships Between Specific Bacterial 16S rRNA Sequence Abundances and Micropollutant Biotransformation Rates** DAMIAN E HELBLING, Cornell University, David Johnson, Tae Kwon Lee, Andreas Scheidegger, Kathrin Fenner |
| 3:45 | (120-7) | **Characterization of Bacterial Antibiotic Resistance Gene Deactivation During Water and Wastewater Disinfection Processes** MICHAEL DODD, University of Washington, Peiran Zhou, Kyle Shimabuku, Shu Li |
| 4:05 | (120-8) | **Trace Analysis of Pharmaceutical Pollutants and Their Transformation Products in Wastewater** DIANA S AGA, University at Buffalo |

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## ORGANIZED CONTRIBUTED SESSION — Session 130

***Handheld Spectrometers – New Techniques, New Instruments***

arranged by Mark A Druy and Richard A Crocombe, Thermo Fisher Scientific

**Sunday Afternoon, Room 261**

Mark A Druy, Presiding

| | | |
|---|---|---|
| 1:30 | (130-1) | **Quantum Cascade Lasers: The New Light?** DON KUEHL, RedShift Systems, Eugene Ma, Charles Marshall, Richard Sharp, Jinhong Kim |
| 1:50 | (130-2) | **Laser-Based Standoff Methane Sensors for Enhancing Coal Miner Safety** MICKEY FRISH, Physical Sciences Inc., Clinton Smith, Richard Wainner, Gerrit Goodman, James Rutherford, Steve Chancey, Paul Wehnert |
| 2:10 | (130-3) | **Handheld LIBS: Development of a Fully Self-Contained, High Resolution, Gated, and Purged Instrument** DAVID DAY, SciAps |
| 2:30 | (130-4) | **Next Generation Handheld Elemental Analyzers – Smarter, Smaller and Faster** ESA NUMMI, Thermo Fisher Scientific |
| 2:50 | | **Recess** |
| 3:05 | (130-5) | **Automated Colorimetric Handheld Spectrometers** TRAVIS R KISNER, Detectachem |
| 3:25 | (130-6) | **Handheld Mass Spectrometry at High Pressures** CHRISTOPHER D BROWN, 908 Devices |
| 3:45 | (130-7) | **MEMS based Miniature Spectrometer** MIKE WALKER, Texas Instruments DLP® |
| 4:05 | (130-8) | **Advances in Handheld Raman and FTIR Chemical Identification Devices** MICHAEL D HARGREAVES, Thermo Scientific |

## ORGANIZED CONTRIBUTED SESSION — Session 140

***High Throughput Drug Analysis by LC/MS: Validation and Challenges***

arranged by Perry G Wang, US Food and Drug Administration

**Sunday Afternoon, Room 262**

Perry G Wang, US Food and Drug Administration, Presiding

| | | |
|---|---|---|
| 1:30 | (140-1) | **Method Validation Issues for NDAs and ANDAs: A Reviewer's Perspective** MICHAEL TREHY, US Food and Drug Administration, Lucinda Buhse, John Kauffman, Jamie Dunn, Michael Hadwiger |
| 1:50 | (140-2) | **High-Throughput LC/MS/MS Bioanalytical Method Validation for GLP Studies: Application to Small and Large Molecule Analysis** MING WANG, Merck & Co., Inc., Tonya Jackson, Kenneth J Willson, Yang Xu, Helengrace Schuck, Dina Goykhman, Justina M Thomas, Michelle Groff, Bernard K Choi, William B Emary |
| 2:10 | (140-3) | **Simultaneous Determination of Febuxostat and Its Three Active Metabolites in Human Plasma by Liquid Chromatography–Tandem Mass Spectrometry and Its Application to a Pharmacokinetic Study in Chinese Healthy Volunteers** XIN DI, Shenyang Pharmaceutical University, Yingli Wu |
| 2:30 | (140-4) | **Fast Detection and Identification of Totally Unknown Drugs, Metabolites and Other Xenobiotics Using HRMS-Based Data Mining Technology: Current Status and Challenges** MINGSHE ZHU, Bristol-Myers Squibb |
| 2:50 | | **Recess** |
| 3:05 | (140-5) | **Emerging Technologies for High Throughput Drug Analysis: The Impact of Personalized Medicine on the Modern Laboratory** MIKE S LEE, Milestone Development Services, Gary Valaskovic, Kenneth C Lewis |
| 3:25 | (140-6) | **The Profiling and Identification of the Absorbed Constituents and Metabolites of a Traditional Chinese Medicine Paeoniae Radix Rubra Decoction in Rat Plasma and Urine by the HPLC-DAD-ESI-IT-TOF-MSn Technique** SHAO-QING CAI, Peking University |
| 3:45 | (140-7) | **Development and Validation of an LC-MS/MS Assay for Measuring Hepcidin in Human Urine** TAO YE, Biogen Idec Inc., Ron Huang, Liyu Yang |
| 4:05 | (140-8) | **Development and Validation of High-Throughput (HT) Mass Spectrometry (MS)-Based Hepatobiliary Transporter Inhibition Assays** ANDREW WAGNER, Bristol-Myers Squibb, Lisa Elkin, Lizbeth Gallagher, Matt Soars, Kathy Mosure, Wilson Shou |

## ORGANIZED CONTRIBUTED SESSION — Session 150

***Hyphenated Ion Mobility Spectrometry***

arranged by Charles S Harden, US Army Edgewood Chem Bio Center and Herbert H Hill, Washington State University

**Sunday Afternoon, Room 263**

Charles S Harden, US Army Edgewood Chem Bio Center, Presiding

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|---|---|---|
| 1:30 | (150-1) | **Gas Chromatography with Tandem Differential Mobility Spectrometry** GARY ALAN EICEMAN, New Mexico State University, Marlen Menlyadiev, Dedeepya Pasupuleti, Karisa M Pierce |
| 1:50 | (150-2) | **Planar Differential Mobility Spectrometry and Hyphenated DMS Systems: GC-DMS, DMS-IMS, DMS-MS** ERKINJON G NAZAROV, Charles Stark Draper Laboratory |
| 2:10 | (150-3) | **Evaluation of a Gas Chromatograph-Differential Mobility Spectrometer for Potential Water Monitoring on the International Space Station** WILLIAM T WALLACE, Wyle Science, Technology, and Engineering Group, Thomas F Limero, Daniel B Gazda, Ariel V Macatangay, Prabha Dwivedi, Facundo M Fernández |
| 2:30 | (150-4) | **Accounting for Gas-Phase Intermediates Using Fourier Transform Ion Mobility Mass Spectrometry** BRIAN H CLOWERS, Washington State University, William F Siems |
| 2:50 | | **Recess** |
| 3:05 | (150-5) | **Accuracy in Ion Mobility Spectrometry – High Resolution Without Reduction in Sensitivity** HERBERT H HILL, Washington State University |
| 3:25 | (150-6) | **High Performance Ion Mobility Spectrometry Brings a New Dimension to HPLC Separation** CHING WU, Excellims Corporation |
| 3:45 | (150-7) | **A New Approach for the Detection and Identification of Explosives by a Combination of IMS and Raman Spectroscopy** BERT UNGETHUEM, Airsense Analytics, Andreas Walte |
| 4:05 | (150-8) | **Ion Modification – A New Technology to Enhance the Selectivity of TOF-IMS Detectors** JONATHAN RICHARD ATKINSON, Smiths Detection - Watford Ltd, Alastair Clark, Bruce Grant, Steve J Taylor |

## ORAL SESSION — Session 160

***Bioanalytical - Commercial Applications (Half Session)***

**Sunday Afternoon, Room 240**

Katie A Edwards, Cornell University, Presiding

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| 1:30 | (160-1) | **Development and Implementation of Quick and Reliable Quantitation Methods Using a Fluorometer** ANDREW DIX, Thermo Fisher Scientific |
| 1:50 | (160-2) | **The Effect of Temperature on Column Stability and the Retention of Biomolecules in Reversed-Phase HPLC** HILLEL BRANDES, Supelco/Sigma-Aldrich, David S Bell, Stacy Squillario, Roy Eksteen |
| 2:10 | (160-3) | **Multivariate Data Analysis of Raman Spectroscopy for Bioprocess Applications** JAKOB CHRISTENSEN, Umetrics, Maryann Cuellar |
| 2:30 | (160-4) | **Analysis of Monoclonal Antibody and Related Substances Using a Family of New Hydrophobic Interaction Chromatography (HIC) Columns** JULIA BAEK, Thermo Fisher Scientific, Xiaodong Liu |

## ORAL SESSION — Session 170

***Clinical Chemistry Applications by Novel Techniques***

**Sunday Afternoon, Room 241**

Omowunmi A Sadik, SUNY-Binghamton, Presiding

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|---|---|---|
| 1:30 | (170-1) | **There is More to Medical Marijuana than THC, CBC and CBD: Comprehensive Analysis of Cannabis Using Gas Chromatography – High Resolution TOFMS** DAVID E ALONSO, LECO Corporation, Joe E Binkley, Jeffrey S Patrick |
| 1:50 | (170-2) | **Microfluidic Electrochemiluminescent Array for Oxidized DNA Using $Os(bpy)_2phen^{2+}$ Composite Films** ITTI BIST, University of Connecticut, Islam Mosa, Robert J Forster, James F Rulsing |
| 2:10 | (170-3) | **Nonaqueous Microchip Electrophoresis with Online Mass Spectrometric Detection of Lipid Species** ERICK R FOSTER, University of Notre Dame, Paul Bohn |
| 2:30 | (170-4) | **Continuous Monitoring of Volatile Organic Compounds (VOCs) in the Breath of Mechanically Ventilated Patients by Means of Proton Transfer Reaction Time-of-Flight Mass Spectrometry (PTR-ToF-MS)** BEATE BROCK, University Medicine of Rostock, Svend Kamysek, Phillip Trefz, Josephine Silz, Wolfram Miekisch, Jochen K Schubert |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

# TECHNICAL PROGRAM

| | | |
|---|---|---|
| 2:50 | | **Recess** |
| 3:05 | (170-5) | **All-in-One Ion-Sensing Platform Based on Paper** JINBO HU, University of Minnesota, Kieu Ho, Andreas Stein, Philippe Buhlmann |
| 3:25 | (170-6) | **Use of Dual-Force Aggregation for Label-Free Detection and Quantification of DNA in Clinical and Forensic Applications** DANIEL A NELSON, University of Virginia, Mackenzie E Long, Leonidas B Southerland, Casey Engel, James P Landers |
| 3:45 | (170-7) | **A Four-Channel Portable SPR Instrument to Quantify Therapeutic Drugs and Other Small Molecules** JEAN-FRANÇOIS MASSON, Universite de Montreal, Sandy S Zhao, Joelle N Pelletier, Natalia Bukar |
| 4:05 | (170-8) | **Sensors for Detection of Pain Biomarkers** OMOWUNMI A SADIK, SUNY-Binghamton, Idris Yazgan, Naumih Noah |

## ORAL SESSION — Session 180

*Environment - Non-Metals and Particulate Determination*

**Sunday Afternoon, Room 257**
John Saffell, Alphasense Ltd., Presiding

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|---|---|---|
| 1:30 | (180-1) | **Monitoring of Atmospheric Methane with Tunable Quantum Cascade Laser Combined with Photoacoustic Spectroscopy** ISMO KAUPPINEN, Gasera Ltd., Jussi Raittila, Jaakko Lehtinen, Sauli Sinisalo |
| 1:50 | (180-2) | **Withdrawn** |
| 2:10 | (180-3) | **Oxycombustion Flue Gas Measurements from Coal Fired Plants - Analytical Challenges** MORGANE RIVIERE, Air Liquide - Centre de recherche Paris-Saclay, Daniel Missault, Jean-Marc Rabillier, Martine Carre, Anne-Laure Lesort, Mathieu Leclerc, Chris Spero |
| 2:30 | (180-4) | **Study of Chemical Modification to Prepare Activated Carbon Suitable for Simultaneous Removal of Organic and Inorganic Pollutants** MUHAMMAD N KHAN, University of Karachi, Agha Arslan |
| 2:50 | | **Recess** |
| 3:05 | (180-5) | **Rapid, Green Method for Testing Hydrocarbon Contamination in Environmental Water Samples** IAN ROBERTSON, PerkinElmer Limited, Dean Smith, Luke Doucette, Tom Schwarz |
| 3:25 | (180-6) | **Improved Determination of Sulfide and Cyanide** JUN CHENG, Thermo Fisher Scientific, Yan Liu, Christopher A Pohl |
| 3:45 | (180-7) | **Rapid Speciation of Airborne PM2.5 Particulate Matter Using FT-IR Imaging** IAN ROBERTSON, PerkinElmer Limited, Mitsuhiko Morimoto, Justin Lang |
| 4:05 | (180-8) | **Measuring PM1, PM2.5 and PM10 in Air Quality Networks** JOHN SAFFELL, Alphasense Ltd., Roderic Jones, Paul Kaye, Paul Williams |

## ORAL SESSION — Session 190

*Fluorescence/Luminescence Bioanalytical Applications*

**Sunday Afternoon, Room 264**
Yanyue Wang, University of Florida, Presiding

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|---|---|---|
| 1:30 | (190-1) | **Construction and Characterization of a Portable, Low-Volume Fluorescence Spectrometer** MIRANDA S SCARBOROUGH, Maryville University, Thomas M Spudich |
| 1:50 | (190-2) | **High Sensitive Fluorescence Turn-on Probe for Monitoring of Cerebral Ascorbic Acid Based on Tris-Derived Carbon Dots-CoOOH Hybridized Surface** YUQING LIN, Capital Normal University, Linbo Li |
| 2:10 | (190-3) | **A Low-Cost PDMS/Paper Hybrid Microfluidic Biochip for Rapid and Sensitive Bordetella Pertussis Diagnosis** MAOWEI DOU, University of Texas at El Paso, Delfina Dominguez, XiuJun (James) Li |
| 2:30 | (190-4) | **Enzyme Biosensors Based on Water-Soluble Conjugated Polymers** YANLI TANG, Shaanxi Normal University, Chun Wang, Guo Yang |
| 2:50 | | **Recess** |
| 3:05 | (190-5) | **pH Switchable, Charge Dependent Transport in a Weak Polyelectrolyte Multilayer** LAWRENCE J TAUZIN, Rice University, Lydia Kisley, Bo Shuang, Christy Landes, Andrea P Mansur, Jixin Chen, Al de Leon, Rigoberto C Advincula |
| 3:25 | (190-6) | **Multifunctional Aptamer-Based DNA Nanoassembly for Targeted Cancer Theranostics** CUICHEN WU, University of Florida, Da Han, Weihong Tan |
| 3:45 | (190-7) | **Development of Fluorescent Molecular Probes based on Dansyl Fluorophore for the Detection of Proteins or DNAs** SUZUKI YOSHIO, AIST |
| 4:05 | (190-8) | **DNA Micelle Flares: Investigation of Basic Properties** YANYUE WANG, University of Florida, Weihong Tan, Cuichen Wu, Tao Chen, Hao Sun |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

## ORAL SESSION — Session 200

*Forensic GC (Half Session)*

**Sunday Afternoon, Room 265**
Maria K Ferguson, PA Dept of Environmental Protection, Presiding

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|---|---|---|
| 1:30 | (200-1) | **Uncertainty of Blood Alcohol Concentration (BAC) Results as Related to Different Carrier Gases: Helium or Hydrogen?** MAURA MCGONIGAL, The Pennsylvania State University, Frank Dorman, Cedric Neumann |
| 1:50 | (200-2) | **Extracellular Fatty Acid Analysis for the Forensic Attribution of *Bacillus* Spores** CRISTINA E STANCIU, Virginia Commonwealth University, Christopher J Ehrhardt, Donald K Jessup, Elizabeth A Lapatovich, Jessica M Goss, Ashley Cooley |
| 2:10 | (200-3) | **Evaluation of Chromatography Parameters for Improved Analysis of Explosives by GC-MS, GC-ECD, & LC-TOFMS** LINDSAY MITCHELL, The Pennsylvania State University, Frank Dorman |

## ORAL SESSION — Session 210

*GC Fuels Analysis (Half Session)*

**Sunday Afternoon, Room 266**
Lee Marotta, PerkinElmer Instruments, Presiding

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| 1:30 | (210-1) | **Rapid Determination of Water in Petroleum and Petroleum Products Using Headspace Gas Chromatography with Sensitive Barrier Ionization Detection** LILLIAN FRINK, University of Texas at Arlington, Daniel W Armstrong |
| 1:50 | (210-2) | **Application of UV Detection to Diesel Analysis by Gas Chromatography** BRANDON WEBER, University of Alberta, James J Harynuk |
| 2:10 | (210-3) | **C1 to C100 Boiling Point Distribution of Crude Oil with Speciation of C1 to Biomarker Phytane, on One Gas Chromatograph** CHRIS GOSS, Alberta Innovates Technology Futures, Dan Wispinski, Lee Marotta |
| 2:30 | (210-4) | **A New ASTM Method for Residue in Pressurized Gas Analysis by Thermal Desorption/Gas Chromatography** LEE MAROTTA, PerkinElmer Instruments, Dave Murray, Dan Wispinski, Tom Kosik, Jodi Johnston |

## ORAL SESSION — Session 220

*Sampling and Sample Preparation - SPME; Clinical, Forensic*

**Sunday Afternoon, Room 267**
Scott Hazard, Xylem/OI Analytical, Presiding

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| 1:30 | (220-1) | **Utility of BioSPME for Micro Extraction of Biological Fluids** CRAIG AURAND, Supelco/Sigma-Aldrich, Robert Shirey, Leonard M Sidisky |
| 1:50 | (220-2) | **Maintaining the Power Grid - A Simplified and Efficient Approach to Routine Monitoring of Transformers Using Automated Solid Phase Extraction Furan Testing in Transformer Oil** VINSON LEUNG, Horizon Technology, Inc., Jim Fenster, David Gallagher, Zoe Grosser, Toni R Hofhine, Erica Pike Safan, Michael David McGinley |
| 2:10 | (220-3) | **The Introduction of PDMS-Overcoated Adsorbent Based Fiber Coatings** ROBERT SHIREY, Supelco/Sigma-Aldrich, Yong Chen, Leonard M Sidisky |
| 2:30 | (220-4) | **QuEChERS with GC-MS/MS and GCxGC-ToFMS for the Analysis of Steroids from Water and Herbal Medicines** MICHELLE L SCHMIDT, Seton Hall University, Nicholas H Snow |
| 2:50 | | **Recess** |
| 3:05 | (220-5) | **Stability Testing of Novel SPME Coating Prepared via Physical Vapor Deposition** ANUBHAV DIWAN, Brigham Young University, Bhupinder Singh, Matthew R Linford |
| 3:25 | (220-6) | **From Matrix Interference Reduction to Phospholipid Enrichment… Adoption of HybridSPE-Phospholipid Technology** CRAIG AURAND, Supelco/Sigma-Aldrich, David S Bell, Tracy Ascah, Michael Wright |
| 3:45 | (220-7) | **Microwave Sample Preparation of Infant Formula and Nutritional Supplements** ROBERT LOCKERMAN, CEM Corporation, Daniel Iversen, Tina Restive, Rebecca Ebaugh |

## SUNDAY POSTER SESSION — Session 230

**Sunday posters will be on display from 3:30 PM to 7:30 PM with authors present at their posters from 5:30 PM to 7:30 PM. The location for the Sunday posters is outside of the Great Hall A.**

*New Developments in Analytical Instrumentation and Software*

**Sunday Afternoon, Outside of Great Hall A**

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|---|---|
| (230-1 P) | **Drug and Excipient Interaction Using DSC and TGA-FTIR** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Gabriele Kaiser |
| (230-2 P) | **Selective Stability-Indicating Determination of Dimenhydrinate in Presence of Six of Its Related Substances and Potential Impurities Using a Direct GC-MS Method** TAREK BELAL, Alexandria University, Karim Abdel-Hay, C Randall Clark |
| (230-3 P) | **Modeling Heterogeneous Reaction Rates with Mixed Diffusion and Kinetic Control** KATHRYN BEZBATCHENKO, William Smith Colleges, Walter Bowyer |
| (230-4 P) | **Withdrawn** |
| (230-5 P) | **Forced-Flow Planar Chromatography** HUBA I KALASZ, Semmelweis University, Kornelia Tekes |
| (230-6 P) | **Determination of Formaldehyde - A Reliable Tool to Scout Blood-Brain Barrier Penetration of Xenobiotics** KORNELIA TEKES, Semmelweis University, Huba I Kalasz |
| (230-7 P) | **Chromatographic Behavior in Reversed-Phase Liquid Chromatography Using Water as the Mobile Phase Solvent** SHIMAZAKI YOUKI, Rikkyo University, Tsuzuki Seiji, Mochizuki Yuji, Miyabe Kanji |
| (230-8 P) | **An Interdisciplinary Approach to the Examination of Chinese and African Ceramics in the Earlham College Art Collection** MICHAEL A DEIBEL, Earlham College, Corinne C Deibel, Julia S May, Thomas T Abe, Angelica C DeSimio, Johnathon R Hornak, Ram C Itani, Charlotte M Page |
| (230-9 P) | **Analysis of Fatty Acids in Archaeological Pottery Fragments Using GC-MS** TIMOTHY J WARD, Millsaps College, Diane J Ward, Sara Barker, Amanda Kaminski |
| (230-10 P) | **A Spectroscopic Study on Ultrasound-Assisted Interaction of Human Serum Albumin with Chlorin-e6** MIHAELA MOCANU, North Carolina Central University, Charles C Okechukwu, Joanna L Isaac, Michelle S Smith, Fei Yan |
| (230-11 P) | **Effects of Macromolecular Crowding on Diffusion and Enzyme Kinetics** ALLISON WILCOX, William Smith Colleges, Dominique Hargreaves, Erin McLaughlin, Walter Bowyer, Kristin Slade |
| (230-12 P) | **Online Extraction of Bilirubin Utilizing Needle Trap Molecularly Imprinted Polymer Sol-Gel Xerogel** MOHAMED ABDEL-REHIM, Stockholm University, Mohammad Moein |
| (230-13 P) | **Fast Ammonia Determinations Using a Coulometric Titration Method** TATSUYA TAKEUCHI, Central Kagaku Corporation, John MacFarlane |
| (230-14 P) | **Sonic Level Sensor for HPLC Solvent Reservoirs** KEN KITAMURA, FLOM Corporation, John MacFarlane |
| (230-15 P) | **Withdrawn** |
| (230-16 P) | **Evaluation of the Mutagenic Activity Due to Heavy Metals of Water Collected From the Cauca River in the City of Cali, Columbia by Using the Ames Test** FERNANDO E LARMAT, Universidad del Valle, Alejandro Soto |
| (230-17 P) | **GC-MS with Cold EI and Its Enhancement Technologies** AVIV AMIRAV, Tel Aviv University, Bogdan Belgorodsky, Alexander Fialkov, Tal Alon |
| (230-18 P) | **Manganese Based Magnetic Nanoparticles for Electrochemical Immunosensing** AMOS MUGWERU, Rowan University |
| (230-19 P) | **Inline Dilution for Enhanced Oil Analysis by ICP-OES** RYAN BRENNAN, Glass Expansion, Jerry Dulude |

# MONDAY, MARCH 9, 2015
# MORNING

## AWARDS — Session 240

*Chromatography Forum of the Delaware Valley Dal Nogare Award*

arranged by Mary Ellen McNally, EI DuPont de Nemours and Company

**Monday Morning, Room 243**

Mary Ellen McNally, EI DuPont de Nemours and Company, Presiding

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| 8:30 | | **Introductory Remarks - Mary Ellen McNally** |
| 8:35 | | **Presentation of the 2015 Dal Nogare Award to Mark R Schure, Kroungold Analytical Inc., by Mary Ellen McNally, EI DuPont de Nemours and Company** |
| 8:40 | (240-1) | **Particle Simulation Methods in Separation Science Research** MARK R SCHURE, Kroungold Analytical Inc. |
| 9:15 | (240-2) | **An Alternative to Sub-2 µm UHPLC Columns** JOSEPH J DESTEFANO, Advanced Materials Technology, Inc., Barry E Boyes, Stephanie A Schuster, William L Miles, Joseph J Kirkland |
| 9:50 | (240-3) | **The Continuing Evolution of Multidimensional Chromatography** HERNAN J CORTES, HJ Cortes Consulting, LLC |
| 10:25 | | **Recess** |
| 10:40 | (240-4) | **The Analysis and Characterization of Bioconjugates by Two-Dimensional Liquid Chromatography Mass Spectrometry** ROBERT E MURPHY, Kroungold Analytical Inc. |
| 11:15 | (240-5) | **Sequential Elution Liquid Chromatography with Multimodal or Serially-Coupled Columns** JOE FOLEY, Drexel University, Catherine Kita, Adam Socia, Erin Ennis, Michael Fletcher |

## AWARD — Session 250

*Pittsburgh Conference Achievement Award*

arranged by Adrian C Michael, Society for Analytical Chemists of Pittsburgh

**Monday Morning, Room 244**

Jonathan V Sweedler, University of Illinois, Presiding

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| 8:30 | | **Introductory Remarks - Adrian C Michael** |
| 8:35 | | **Presentation of the 2015 Pittsburgh Conference Achievement Award to Ryan C Bailey, University of Illinois at Urbana-Champaign, by Susan K Zawacky, Chair, Society for Analytical Chemists of Pittsburgh** |
| 8:40 | (250-1) | **Multiplexing with Microrings: Silicon Photonic Sensor Arrays for Clinical Diagnostics and Biomolecular Interaction Screening** RYAN C BAILEY, University of Illinois at Urbana-Champaign |
| 9:15 | (250-2) | **Deep Proteomic Analysis Using Capillary Zone Electrophoresis** NORMAN J DOVICHI, University of Notre Dame, Liangliang Sun, Guijie Zhu, Matthew Champion, Joshua Coon |
| 9:50 | (250-3) | **Manipulation of Laminar Flows for Biosensing and Fabrication of Hybrid Materials** FRANCES S LIGLER, University of North Carolina at Chapel Hill and North Carolina State University |
| 10:25 | | **Recess** |
| 10:40 | (250-4) | **Ultrasensitive Bioaffinity Sensing with Single Nanoparticle SPR Imaging Microscopy and On-Chip Templated Microarray Synthesis** ROBERT M CORN, University of California Irvine |
| 11:15 | (250-5) | **Electrically Driven Protein Separations in Packed Capillaries and Channels** MARY WIRTH, Purdue University |

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 260**

***ACS DAC - Fieldable MS for Environmental and National Security Applications***
arranged by David Koppenaal, Pacific Northwest National Laboratory and R Kenneth Marcus, Clemson University

**Monday Morning, Room 238**
David Koppenaal, Pacific Northwest National Laboratory, Presiding
R Kenneth Marcus, Clemson University, Presiding

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|---|---|---|
| 8:30 | | **Introductory Remarks - David Koppenaal and R Kenneth Marcus** |
| 8:35 | (260-1) | **Mass Spectrometer Design for Field Analysis** RICHARD ARKIN, Hill Country Instruments |
| 9:10 | (260-2) | **Development of Backpack and Desktop Ion Trap Mass Spectrometry Systems** ZHENG OUYANG, Purdue University, Linfan Li, Yue Ren, Xiao Wang, Chien-Hsun Chen, R Graham Cooks |
| 9:45 | (260-3) | **The Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD): A Pragmatic Ion Source for Field-Based Elemental/Isotopic MS** R KENNETH MARCUS, Clemson University |
| 10:20 | | **Recess** |
| 10:35 | (260-4) | **Fieldable MS - New Directions & Approaches** DAVID W KOPPENAAL, Pacific Northwest National Laboratory |
| 11:10 | (260-5) | **In-Water Mass Spectrometry for Characterization of Light Hydrocarbon Seeps and Leaks** TIM SHORT, SRI International, Strawn Toler, Ryan Bell, Andres Cardenas-Valencia, Jwalant Dholakia, Steve Untiedt |

**SYMPOSIUM** **Session 270**

***Adverse Outcome Pathways (AOPs) in Human Systems Biology: In Vivo Discovery for Developing In Vitro Target Methods***
arranged by Joachim D Pleil, US EPA and Wolfram Miekisch, University Hospital of Rostock

**Monday Morning, Room 239**
Joachim D Pleil, US EPA, Presiding

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| 8:30 | | **Introductory Remarks - Joachim D Pleil and Wolfram Miekisch** |
| 8:35 | (270-1) | **Adverse Outcome Pathways (AOPs) in Human Systems Biology: Gas-Phase Probes for Assessing In Vitro Enzyme System Perturbations** JOACHIM D PLEIL, US EPA, Michelle Angrish, Michael Madden |
| 9:10 | (270-2) | **Real-Time Mass Spectrometry for Rapid Throughput in Adverse Outcome Pathways Assessments** JONATHAN D BEAUCHAMP, Fraunhofer IVV |
| 9:45 | (270-3) | **Personalized Medicine Using Mid-IR Spectroscopy: Fact or Fiction?** TERENCE H RISBY, Johns Hopkins University |
| 10:20 | | **Recess** |
| 10:35 | (270-4) | **Systems Toxicology of Environmental Metals: Identifying Key Molecular Pathways Linking Environmental Exposure with Disease** REBECCA FRY, University of North Carolina at Chapel Hill |
| 11:10 | (270-5) | **Nano-Scale Fingerprinting of Human Blood Protein Adducts for Exposure Assessments** WILLIAM E FUNK, Northwestern University |

**SYMPOSIUM** **Session 280**

***Analytical Chemistry at the Single Molecule and Single Particle Level***
arranged by Cynthia G Zoski, New Mexico State University

**Monday Morning, Room 242**
Cynthia G Zoski, New Mexico State University, Presiding

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| 8:30 | | **Introductory Remarks - Cynthia G Zoski** |
| 8:35 | (280-1) | **Mt/AFM-SECM Imaging of Redox-Immunomarked Proteins on Native Viruses: From Sub-Particle to Single Protein Resolution** CHRISTOPHE DEMAILLE, University Paris-Diderot / CNRS |
| 9:10 | (280-2) | **Electrochemical Detection of Collisions of Soft Nanoparticles** ALLEN BARD, University of Texas at Austin, Byung-Kwon Kim, Jeffrey Dick |
| 9:45 | (280-3) | **Electrochemical Detection of Collisions of Metal Nanoparticles** CYNTHIA G ZOSKI, New Mexico State University, César Ortiz-Ledón |
| 10:20 | | **Recess** |
| 10:35 | (280-4) | **Single-Molecule Imaging of Single-Particle Photoelectrocatalysis** PENG CHEN, Cornell University |
| 11:10 | (280-5) | **Single Molecule and Single Nanoparticle Plasmonics** RICHARD P VAN DUYNE, Northwestern University |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

**SYMPOSIUM** **Session 290**

***Atomic Tools as Solutions to Molecular Problems***
arranged by Jacob T Shelley, Kent State University

**Monday Morning, Room 255**
Jacob T Shelley, Kent State University, Presiding

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| 8:30 | | **Introductory Remarks - Jacob T Shelley** |
| 8:35 | (290-1) | **Plasma Spectrometry–Not Just for Atoms Anymore** GARY M HIEFTJE, Indiana University, Gerardo Gamez, Kevin P Pfeuffer, Steven J Ray, Andrew J Schwartz, Jacob T Shelley, Andrew P Storey |
| 9:10 | (290-2) | **Laser Ablation Molecular Isotopic Spectrometry (LAMIS) – Direct Solid-Sample Isotopic Analysis Through All-Optical Means** GEORGE CHAN, Lawrence Berkeley National Laboratory, Xianglei Mao, Huaming Hou, Arnab Sarkar, Meirong Dong, Richard E Russo |
| 9:45 | (290-3) | **Single-Cell-Based Tissue Analysis by Isotopically Tagged Antibodies Using Laser Ablation-cy TOF** DETLEF GUENTHER, ETH Zurich, Alexander G Gundlach, Hao Wang, Gunnar Schwarz |
| 10:20 | | **Recess** |
| 10:35 | (290-4) | **"Say Cheese": Getting the Molecular Picture with Plasmas** GERARDO GAMEZ, Texas Tech University, Marcel Kroschk |
| 11:10 | (290-5) | **The Atomic Side of Molecular Mass Spectrometry** JACOB T SHELLEY, Kent State University, Sunil Badal, Kelsey Williams, Garett Maclean |

**SYMPOSIUM** **Session 300**

***Chemical Heritage Foundation - New Perspectives on the History of Infrared Instrumentation***
arranged by Richard Ulrych, Chemical Heritage Foundation

**Monday Morning, Room 245**
Richard Ulrych, Chemical Heritage Foundation, Presiding

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| 8:30 | | **Introductory Remarks - Richard Ulrych** |
| 8:35 | (300-1) | **The Early Days of Modern Infrared Spectroscopy: The First Three Years of FT-IR** PETER R GRIFFITHS, Griffiths Consulting LLC |
| 9:10 | (300-2) | **Synthetic Rubber, Spectros and War: The Start of Beckman Instruments in IR** DAVID C BROCK, Chemical Heritage Foundation, Gerald Gallwas |
| 9:45 | (300-3) | **Anecdotes Involving Some Infrared Pioneers** FOIL A MILLER, Retired - University of Pittsburgh |
| 10:20 | | **Recess** |
| 10:35 | (300-4) | **Major Developments in the History of Infrared Spectroscopy** ROBERT W HANNAH, Chemical Heritage Foundation, Michael Ford |
| 11:10 | (300-5) | **Baird Associates and Early Infrared Spectroscopy** DAVIS W BAIRD, Clark University |

**SYMPOSIUM** **Session 310**

***Fluorescence Sensing of Biologically Important Metal Ions: Detection, Speciation, Quantitation and Localization***
arranged by Partha Basu, Duquesne University

**Monday Morning, Room 256**
Partha Basu, Duquesne University, Presiding

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| 8:30 | | **Introductory Remarks - Partha Basu** |
| 8:35 | (310-1) | **Spatio-Temporal Fluorescence Metal Analysis at the Single Cell Level Reveals Zinc Fluxes Controlling Mammalian Cell Cycle and Fertilization** THOMAS V O'HALLORAN, Northwestern University |
| 9:10 | (310-2) | **Fluorescence Sensing of Biological Copper and Zinc** CHRISTOPH J FAHRNI, Georgia Institute of Technology |
| 9:45 | (310-3) | **Metal Ion Indicators** AKWASI MINTA, Teflabs |
| 10:20 | | **Recess** |
| 10:35 | (310-4) | **Sensing Lead through Small Molecule Fluorescence** PARTHA BASU, Duquesne University |
| 11:10 | (310-5) | **Novel Compounds for Fluorogenic Detection of Physiologically Relevant Metal Ions in Live Cells and Tissue** KYLE GEE, Thermo Fisher Scientific, Dan Beacham, Jolene Bradford, Trillium Blackmer, Vladimir Martin |

**SYMPOSIUM** **Session 320**

***Isotope Innovations for Metabolomics-Mass Spectrometry***
arranged by Richard A Yost and Timothy J Garrett, University of Florida

**Monday Morning, Room 257**
Richard A Yost, University of Florida, Presiding
Timothy J Garrett, University of Florida, Presiding

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| 8:30 | | **Introductory Remarks - Richard A Yost and Timothy J Garrett** |
| 8:35 | (320-1) | **Metabolic Network Elucidation via Stable Isotope Resolved Metabolomics: Successes and Challenges** RICHARD HIGASHI, University of Kentucky, Teresa Fan, Andrew Lane, Hunter Moseley |
| 9:10 | (320-2) | **Use of Stable Isotopes and Metabolite Profiling for Functional Characterization of Dysregulated Gene Expression and Protein Function Seen in Diabetes Development** IRWIN J KURLAND, Albert Einstein College of Medicine |
| 9:45 | (320-3) | **Protocol to Determine Signatures for Toxicity** CHRIS BEECHER, IROA Tech |
| 10:20 | | **Recess** |
| 10:35 | (320-4) | **Global Tracking of Isotopes by Untargeted Metabolomics** GARY PATTI, Washington University in St. Louis |
| 11:10 | (320-5) | **Innovative Isotope Labeling Strategies for MALDI/MS/MS Tissue Imaging for Metabolomics** RICHARD A YOST, University of Florida |

**SYMPOSIUM** **Session 330**

***Microfluidics-to-Mass Spectrometry***
arranged by Michael G Roper, Florida State University

**Monday Morning, Room 260**
Michael G Roper, Florida State University, Presiding

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| 8:30 | | **Introductory Remarks - Michael G Roper** |
| 8:35 | (330-1) | **Microfluidic Separations Devices with Integrated Nano-Electrospray Ionization** J MICHAEL RAMSEY, University of North Carolina at Chapel Hill, J Scott Mellors, Erin Redman, William A Black |
| 9:10 | (330-2) | **Nanospray and Segmented Droplet Flow: Small Scale Enables Transformative Speed** GARY VALASKOVIC, New Objective Inc., Robert T Kennedy, Shuwen Sun, Mike S Lee |
| 9:45 | (330-3) | **Mass Spectrometry-Based Metabolite Profiling Using an Integrated Microfluidic Platform** JAMES EDWARDS, Saint Louis University |
| 10:20 | | **Recess** |
| 10:35 | (330-4) | **Coupling Atomic Force Microscopy with Laser Ablation Capture for Biomolecule Mass Spectrometry** KERMIT K MURRAY, Louisiana State University, Chinthaka A Seneviratne, Suman Ghorai |
| 11:10 | (330-5) | **Digital Microfluidic Sample Processing for Separations and Mass Spectrometry** AARON WHEELER, University of Toronto |

**SYMPOSIUM** **Session 340**

***New Developments and Challenges in Laser Induced Breakdown Spectroscopy***
arranged by Jagdish P Singh, Mississippi State University
and Richard Russo, Lawrence Berkeley National Laboratory

**Monday Morning, Room 261**
Jagdish P Singh, Mississippi State University, Presiding

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| 8:30 | | **Introductory Remarks - Jagdish P Singh and Richard Russo** |
| 8:35 | (340-1) | **Oceanic LIBS Spectroscopy: Concepts, Challenges and Tests in Mediterranean Waters** JAVIER LASERNA, University of Malaga |
| 9:10 | (340-2) | **Analytical LIBS in the Forensic Science Laboratory** JOSE R ALMIRALL, Florida International University |
| 9:45 | (340-3) | **Progress and Challenges in Using LIBS for Bacteriological Identification** STEVEN J REHSE, University of Windsor |
| 10:20 | | **Recess** |
| 10:35 | (340-4) | **Laser Induced Breakdown Spectroscopy (LIBS): Application to Combustion Science** JAGDISH P SINGH, Mississippi State University, Yueh Y Yueh, Markandey M Tripathi, Kemal E Eseller |
| 11:10 | (340-5) | **Ultrafast LIBS for 3D Chemical Imaging** VASSILIA ZORBA, Lawrence Berkeley National Laboratory |

**SYMPOSIUM** **Session 350**

***New Developments in Doping Detection***
arranged by Janusz Pawliszyn, University of Waterloo

**Monday Morning, Room 262**
Janusz Pawliszyn, University of Waterloo, Presiding

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| 8:30 | | **Introductory Remarks - Janusz Pawliszyn** |
| 8:35 | (350-1) | **Doping with Anabolic Androgenic Steroids: Adjusting to New Realities** CHRISTIANE AYOTTE, INRS-Institut Armand-Frappier |
| 9:10 | (350-2) | **Exploring the Potential of High-Throughput Solid-Phase Microextraction for Analysis of Prohibited Substances in Urine, Plasma, Blood and Saliva** KRZYSZTOF GORYNSKI, Nicolaus Copernicus University Collegium Medicum, Nathaly Reyes-Garcés, Ezel Boyaci, Angel Rodríguez-Lafuente, Vincent Bessonneau, Barbara Bojko, Janusz Pawliszyn |
| 9:45 | (350-3) | **Chiral Separation in Doping Detection** DANIEL W ARMSTRONG, University of Texas at Arlington |
| 10:20 | | **Recess** |
| 10:35 | (350-4) | **Anti-Doping Testing for Novel Psychoactive Substances** MARILYN A HUESTIS, National Institute on Drug Abuse |
| 11:10 | (350-5) | **Non-Invasive In Vivo SPME Sampling of Human Saliva** JANUSZ PAWLISZYN, University of Waterloo, Barbara Bojko, Vincent Bessonneau, Ezel Boyaci, Malgorzata Maciazek-Jurczyk |

**SYMPOSIUM** **Session 360**

***SERS for 'Omics***
arranged by Zachary Schultz, University of Notre Dame and Richard A Dluhy, University of Georgia

**Monday Morning, Room 263**
Zachary Schultz, University of Notre Dame, Presiding
Richard A Dluhy, University of Georgia, Presiding

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| 8:30 | | **Introductory Remarks - Zachary Schultz and Richard A Dluhy** |
| 8:35 | (360-1) | **Surface Enhanced Spectroscopies for High-Throughput Applications** NAOMI J HALAS, Rice University |
| 9:10 | (360-2) | **Identification of Virulence Determinants in Influenza** RICHARD A DLUHY, University of Georgia |
| 9:45 | (360-3) | **Perm-Selective SERS Substrates for Direct Drug Metabolite Detection** AMANDA J HAES, University of Iowa |
| 10:20 | | **Recess** |
| 10:35 | (360-4) | **Surface-Enhanced Raman Spectroscopy for Qualitative and Quantitative Determination of DNAs and Proteins** BIN REN, Xiamen University, Li-Jia Xu, Xiaoshan Zheng |
| 11:10 | (360-5) | **High-Throughput SERS Detection in Solution for Metabolomics** ZACHARY SCHULTZ, University of Notre Dame |

**WORKSHOP** **Session 370**

***A Survey of Current Microsampling Techniques in Developing Analytical Methods from Whole Blood***
arranged by Michael D McGinley and Bobby Virasingh, Phenomenex

**Monday Morning, Room 269**
Michael D McGinley, Phenomenex, Presiding

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| 8:30 | | **Introductory Remarks - Michael D McGinley and Bobby Virasingh** |
| 8:35 | (370-1) | **Challenges and Progress in Implementing Dried Matrix MicroSampling Technology in Drug Development** QIN C JI, Bristol-Myers Squibb |
| 9:05 | (370-2) | **Application of Microsampling Techniques for Drug Discovery and Development** CHRISTOPHER A JAMES, Amgen, Guifen Xu |
| 9:35 | (370-3) | **A Novel Microsampling Device that Absorbs a Fixed Amount of Fluid for the Collection of Biological Samples to be Dried and Stored for the Later Extraction of Analytes** STUART KUSHON, Phenomenex |
| 10:05 | | **Open Discussion** |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

# TECHNICAL PROGRAM

## WORKSHOP — Session 380

*Advances in Clinical Infrared and Raman Spectroscopy*
arranged by Matthew J Baker, University of Strathclyde

**Monday Morning, Room 274**
Matthew J Baker, University of Strathclyde, Presiding

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| 8:30 | | **Introductory Remarks - Matthew J Baker** |
| 8:35 | (380-1) | **A Pilot Study for Malaria Diagnosis in Thailand Using ATR-FTIR Spectroscopy** BAYDEN R WOOD, Monash University, David Perez-Guaita, Phil Heraud, Patcharee Jearanaikoon |
| 8:55 | (380-2) | **Rational Design of Gold Nanostars for Plasmon-Enhanced Raman Spectroscopic Assay for Metastatic Breast Cancer Detection** ISHAN BARMAN, Johns Hopkins University, Ming Li |
| 9:15 | (380-3) | **Improving Prediction of Organ Transplant Outcome Using FT-IR Spectroscopic Imaging** MICHAEL J WALSH, University of Illinois at Chicago, Vishal Varma, Peter Nguyen, Hari Sreedhar, Andre Kajdacsy-Balla, Grace Guzman, Suman Setty |
| 9:35 | | **Recess** |
| 9:50 | (380-4) | **Neurosurgical Guidance Through Stimulated Raman Scattering Microscopy** DANIEL ORRINGER, University of Michigan |
| 10:10 | (380-5) | **Multiplexed and Quantitative Bioanalysis Using SERS** KAREN FAULDS, University of Strathclyde, Duncan Graham, Kirsten Gracie, Sarah McAughtrie |
| 10:30 | (380-6) | **Developments in Clinical Infrared and Raman Spectroscopy** HUGH JAMES BYRNE, Dublin Institute of Technology |
| 11:10 | | **Open Discussion** |

## ORGANIZED CONTRIBUTED SESSION — Session 390

*Electrochemistry at Nanoscale Structures*
arranged by Takashi Ito, Kansas State University and Lane A Baker, Indiana University, Bloomington

**Monday Morning, Room 264**
Takashi Ito, Kansas State University, Presiding

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| 8:30 | (390-1) | **Electron Propagation Through Redox-Active Microdomains in Thin Films of Side-Chain Ferrocene-Containing Diblock Copolymers** TAKASHI ITO, Kansas State University, Govinda Ghimire, Yi Yi, Maksymilian A Derylo, Lane A Baker |
| 8:50 | (390-2) | **Ligand-Induced Electrochemical Band-Gap Engineering of Ultrasmall Semiconductor Clusters** RAJESH SARDAR, Indiana University-Purdue University Indianapolis, Katie N Lawrence, Meghan B Teunis |
| 9:10 | (390-3) | **Electrochemical Detection of Colloidal Semiconductor Nanoparticles** MARIO A ALPUCHE-AVILES, University of Nevada, Reno, Suman Parajuli, Pushpa Chhetri, Nelum Karunathilake, Neluni Perera, Ashantha Fernando, Kazemi Rezvan, Rezvan Barakoti |
| 9:30 | (390-4) | **Electron-Transfer Kinetics on Single Nanoparticles** BO ZHANG, University of Washington |
| 9:50 | | **Recess** |
| 10:05 | (390-5) | **Selective Deposition of 1-2 nm Diameter Au Nanoparticles onto Electrode Surfaces by Migration** FRANCIS ZAMBORINI, University of Louisville, Rafael Masitas, Stacy Allen |
| 10:25 | (390-6) | **Using Unusual Ion Channel Behavior to Build Nanopore Sensors** RYAN J WHITE, University of Maryland Baltimore County, Florika C Macazo |
| 10:45 | (390-7) | **Fabrication of Electrochemical DNA Sensors on Gold-modified Recessed Platinum Nanoelectrodes** REBECCA Y LAI, University of Nebraska-Lincoln |
| 11:05 | (390-8) | **All-in-One Nanopore Battery and Controlled 3D Networked Pores** SANG BOK LEE, University of Maryland |

## ORGANIZED CONTRIBUTED SESSION — Session 400

*Infrared Spectroscopy (Well Beyond) the Diffraction Limit*
arranged by Ellen Miseo, Analytical Answers, Inc. and Andreas Huber, Neaspec, GmbH

**Monday Morning, Room 265**
Ellen Miseo, Analytical Answers, Inc., Presiding

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| 8:30 | (400-1) | **Expanding Applications for Nanoscale Infrared Spectroscopy** CRAIG PRATER, Anasys Instruments |
| 8:50 | (400-2) | **Introducing Nano-FTIR – Imaging and Spectroscopy at 10nm Spatial Resolution** ANDREAS HUBER, Neaspec GmbH |
| 9:10 | (400-3) | **Synchrotron Infrared Nano-Spectroscopy** HANS A BECHTEL, Lawrence Berkeley National Laboratory, Michael C Martin, Eric A Muller, Robert L Olmon, Markus B Raschke |
| 9:30 | (400-4) | **Nanoscale Characterization of Engineered Thermoplastic Blends by Atomic Force Microscopy – Infrared Spectroscopy (AFM-IR) in Combination with Traditional Microscopy and Spectroscopy Methods** ANNE M LEMON, SABIC, Lanti Yang, Pooja Bajaj, Nancy L Jestel |
| 9:50 | | **Recess** |
| 10:05 | (400-5) | **Natural 2D Materials as Novel Superlenses for Nondestructive Infrared Nano-Imaging Below the Surface** THOMAS TAUBNER, RWTH Aachen |
| 10:25 | (400-6) | **Tip-Enhanced Infrared Nanospectroscopy via Molecular Expansion Force Detection** MIKHAIL A BELKIN, The University of Texas at Austin, Feng Lu, Mingzhou Jin |
| 10:45 | (400-7) | **Polarized AFM-IR Studies of Anisotropically Oriented Polymers in Films and Nanofibers** JOHN F RABOLT, University of Delaware, Wenwen Liu, Isao Noda, Bruce Chase |
| 11:05 | (400-8) | **Infrared Near Field Study of Phase Transition Materials** MENGKUN LIU, University of California San Diego |

## ORAL SESSION — Session 410

*Biomedical Sensors*

**Monday Morning, Room 240**
Mustafa Culha, Yeditepe University, Presiding

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| 8:30 | (410-1) | **Multiplexed Detection of Serum-Based Biomarkers Using Silicon Photonic Microring Resonator Arrays** WINNIE W SHIA, University of Illinois at Urbana-Champaign, Shannon P Wetzler, Ryan C Bailey |
| 8:50 | (410-2) | **Equilibration Times of Solid Contact Ion-Selective Electrodes with PEDOT (PSS) on Platinum, Gold and Glassy Carbon Substrates** MARCIN GUZINSKI, University of Memphis, Jennifer Jarvis, Erno Lindner, Bradford Pendley, Felio Perez |
| 9:10 | (410-3) | **Polymer-Grafted Hyaluronic Acid Coatings for the Specific Detection of Inflammatory Markers in Complex Samples** MOHAMED H RAMADAN, Carnegie Mellon University, Newell R Washburn |
| 9:30 | (410-4) | **Probing Phosphatase Activity Using Redox Active Nanoparticles: A Novel Approach for the Detection of Enzyme Activity** GONCA BULBUL, Clarkson University, Silvana Andreescu, Akhtar Hayat |
| 9:50 | | **Recess** |
| 10:05 | (410-5) | **Urine Carbon Dioxide as Prognostic Indicator in Septic Shock** JAMES G ATHERTON, University of Memphis, William E King, Marcin Guzinski, Bradford Pendley, Erno Lindner |
| 10:25 | (410-6) | **Medical Applications of Ion Mobility Spectrometry** WOLFGANG VAUTZ, ISAS, Timm Westhoff, Thorsten Perl |
| 10:45 | (410-7) | **Fabrication of A Novel Fiber-Optic based Single-Cell pH Sensor** QINGBO YANG, Missouri University of Science and Technology, Hanzheng Wang, Sisi Chen, Xinwei Lan, Hai Xiao, Yinfa Ma, Honglan Shi |
| 11:05 | (410-8) | **Evanescent Wave-Based Microfluidic Capillary Biosensor** CHUN-WEI WANG, University of Florida |

**ORAL SESSION** **Session 420**

*Electrochemical Approaches to Understanding Brain Function*

**Monday Morning, Room 241**
Rose A Clark, Saint Francis University, Presiding

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| 8:30 | (420-1) | **Multi-Modal Electrochemical and Electrophysiological Recordings in Brain Slices** DOUGLAS KIRKPATRICK, University of North Carolina at Chapel Hill, Robert M Wightman |
| 8:50 | (420-2) | **Electrochemical Characterization of Serotonin Release Alterations in Huntington's Disease Model Mice** RACHEL C GEHRINGER, University of Kansas, Sarah Fantin, Sam V Kaplan, Michael A Johnson |
| 9:10 | (420-3) | **In Vivo Electrochemical Studies of Salicylates in Rat Brains** LINGBO LU, University at Buffalo-SUNY, Jin W Park, Nataly Roitershtein, Jinwoo Park |
| 9:30 | (420-4) | **Hydrogen Peroxide-Specific Sensors for *In Vivo* Measurements Using Chronically Implanted Carbon-Fiber Microelectrodes** ANDREAS C SCHMIDT, North Carolina State University, Leslie R Wilson, Leslie A Sombers |
| 9:50 | | **Recess** |
| 10:05 | (420-5) | **Voltammetric Measurement of Rapid Dopamine Dynamics During Continuous Intracranial Self-Stimulation** NATHAN RODEBERG, University of North Carolina at Chapel Hill, Elizabeth Bucher, Robert M Wightman |
| 10:25 | (420-6) | **Combining Voltammetry and Microdialysis to Study Electrically Evoked Dopamine Release** ERIKA L VARNER, University of Pittsburgh, Kathryn M Nesbitt, Adrian C Michael |
| 10:45 | (420-7) | **Bedside Microdialysis Measurements: Monitoring TBI Patients** MICHELLE L ROGERS, Imperial College, Chi Leng Leong, Anthony J Stong, Martyn G Boutelle |
| 11:05 | (420-8) | **Long-Term Voltammetric Measurements of Dopamine Signaling in the Nucleus Accumbens of Freely Moving Animals** CHRISTOPHER W ATCHERLEY, University of Arizona, Richard F Vreeland, Jennifer Xie, Frank Porreca, Michael L Heien, Donna Lu |

**ORAL SESSION** **Session 430**

*Electrochemistry/Nanotechnology*

**Monday Morning, Room 266**
Stephen Gozo, Celgene Corporation, Presiding

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| 8:30 | (430-1) | **Determination of Electron Transfer Rates of Wired and Water-Soluble Gold Nanoparticles Using Scanning Electrochemical Microscopy** DAVID A CRISOSTOMO, Vanderbilt University, David E Cliffel |
| 8:50 | (430-2) | **Detection of Colloidal ZnO Quantum Dots by Stripping Voltammetry** NELUM KARUNATHILAKE, University of Nevada, Reno, Pushpa Chhetri, Mario A Alpuche-Aviles |
| 9:10 | (430-3) | **Effect of Metal Nanoparticle Size on Galvanic Exchange Reactions** RAFAEL MASITAS, University of Louisville, Dhruba Pattadar, Francis Zamborini |
| 9:30 | (430-4) | **Redox Nano-Titrations on Operating Water-Splitting Semiconductor Electrodes for the Quantification of Photogenerated Intermediates** JOAQUIN RODRIGUEZ-LOPEZ, University of Illinois at Urbana-Champaign, Burton H Simpson |
| 9:50 | | **Recess** |
| 10:05 | (430-5) | **Electrodeposition of 90-10 Cu-Ni Nanocomposite Coatings for Corrosion Protection** CASEY THURBER, University of North Texas, Margaret Calhoun, Yahia H Ahmad, Nandika D'Souza, Adel Mohamed, Teresa Golden |
| 10:25 | (430-6) | **Studies of Highly Concentrated Redox Active Species and Their Electrochemical Applications** REZVAN KAZEMI, University of Nevada, Reno, Mario A Alpuche-Aviles |
| 10:45 | (430-7) | **Redox Cycling in Recessed Ring-Disk Nanoelectrode Array in the Absence of Supporting Electrolyte: Evidence of Ion Enrichment and Migration** CHAOXIONG MA, University of Notre Dame, Paul Bohn |
| 11:05 | (430-8) | **Magnetic Enrichment for Ultratrace Electrochemical Detection of Hybrid Pt-$Fe_3O_4$ Nanoparticles** DONALD A ROBINSON, University of Texas at Austin, Jason Yoo, Alma D Castaneda, Radhika Dasari, Timothy M Alligrant, Richard M Crooks, Keith J Stevenson |

**ORAL SESSION** **Session 440**

*Environmental - GC/MS Techniques*

**Monday Morning, Room 267**
John W Novak, Jr, Pidc, Presiding

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| 8:30 | (440-1) | **Comparison of VOCs in Whole Blood From Burn and Smoke Victims With Other Populations by SPME GC-MS** LYDIA G THORNBURG, Centers for Disease Control and Prevention, Christopher M Reese, Eduardo Sanchez, Rachel Karlnoski, David M Chambers, Jessica Ching |
| 8:50 | (440-2) | **Fence Line Monitoring: The Most Cost Effective Green Solution: Single Tube Sampling and Analysis of Volatile and Semi-Volatile Organics in Air** LEE MAROTTA, PerkinElmer Instruments, Roberta Provost |
| 9:10 | (440-3) | **Withdrawn** |
| 9:30 | (440-4) | **Selective and Sensitive Detection and Quantification of Stockholm Convention Pops, Including Dioxins, Using Atmospheric Pressure Gas Chromatography MS/MS** KENNETH ROSNACK, Waters Corporation, Kendon Graham, Jody Dunstan, Mike McCullagh, Ingrid Ericson Jogsten, Jessika Hagberg, Bert van Bavel, Joe Romano |
| 9:50 | | **Recess** |
| 10:05 | (440-5) | **Utilization of Atmospheric Pressure Ionization Coupled to Triple Quadrupole Mass Spectrometry for the Analysis of Mixed-Halogenated Dioxins and Furans** KARI L ORGANTINI, The Pennsylvania State University, Eric J Reiner, Karl Jobst, Anne L Myers, Adam Ladak, Douglas Stevens, Frank Dorman |
| 10:25 | (440-6) | **Comparison and Optimization of Phosphonium Ionic Liquid Phases for the GC Analysis of PAHs** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Daniel Shollenberger, Greg A Baney, James L Desorcie, Gustavo Serrano |
| 10:45 | (440-7) | **Application of Pyrolysis – Cryogenic –GC/MS to Molecular Characterizations of Organic Matter in Different Soils** XIANZHI (AMANDA) SONG, Young Harris College |
| 11:05 | (440-8) | **Simultaneous Sulfur and Hydrocarbon Measurements in Refinery Flare Emissions Using Mass Spectrometry** CHARLES W DECARLO, Extrel CMS |

**ORAL SESSION** **Session 450**

*Fluorescence/Luminescence Bio /Nano and Materials Applications*

**Monday Morning, Room 268**
W Russ Algar, University of British Columbia, Presiding

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| 8:30 | (450-1) | **Analysis of Fluorescent Nucleic Acid Biosensors: Signal-On vs. Signal-Off** C KYLE ALMLIE, Oregon State University, Sean M Burrows |
| 8:50 | (450-2) | **Hydrogel-Enclosed Nanocrystals for Detection of Extracellular $H_2O_2$** WENWAN ZHONG, University of California, Riverside, Liu Yang |
| 9:10 | (450-3) | **Graphene Mediated Surface Plasmon Coupled Emission for Signal Enhanced Interfacial Molecular Beacon** YAO-QUN LI, Xiamen University, Cao Shuo-Hui, Liu Qian, Cai Wei-Peng, Xie Kai-Xin , Weng Yu-Hua, Huo Si-Xin |
| 9:30 | (450-4) | **Distance Dependence of Fluorophore Quenching by Graphene Oxide with Rigid Spacer** XU WU, University of North Dakota, Xiao Liu, Julia Xiaojun Zhao |
| 9:50 | | **Recess** |
| 10:05 | (450-5) | **Highly Fluorescent Mono-Disperse Submicron Sized C-Dots/Silica Particles** ZUQIN XUE, University at Buffalo-SUNY, Luis A Colon |
| 10:25 | (450-6) | **Fluorescent Derivatization of Amines Using O-Phthalaldehyde and Captopril** YING ZHANG, Miami University, Shuo Zhang, Youxin Li, Neil D Danielson |
| 10:45 | (450-7) | **Photodynamics of Carbazole-Based GUMBOS** NOUREEN SIRAJ, Louisiana State University, Tony Karam, Kori McDonald, Louis Haber, Chengfei Lu, Karen E Gall, Isiah M Warner |
| 11:05 | (450-8) | **Quantum Dots as Value-Added Platforms for Bioanalysis** W RUSS ALGAR, University of British Columbia |

# TECHNICAL PROGRAM

## ORAL SESSION — Session 460

*Laboratory Informatics*

**Monday Morning, Room 270**
Graham A McGibbon, ACD/Labs, Presiding

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| 8:30 | (460-1) | **LIMS Validation Made Easy** JEFF VANNEST, LabVantage Solutions, Inc. , Kim Buchanan |
| 8:50 | (460-2) | **CSV Validation – Lessons Learned** KURT ROBAK, CSols, Inc |
| 9:10 | (460-3) | **The Chemical Analysis Metadata Platform** STUART J CHALK, University of North Florida |
| 9:30 | (460-4) | **Ensuring that your Informatics Solution is Embraced by your Organization** DAN FREEL, CSols, Inc |
| 9:50 | | **Recess** |
| 10:05 | (460-5) | **Laboratory Informatics Environments – Why Unified Platforms and Integration Now** GRAHAM A MCGIBBON, Advanced Chemistry Development (ACD/Labs), Ryan Sasaki, Hans de Bie, David Snyderman |
| 10:25 | (460-6) | **Do We Still Need ELNs?** HOWARD J ROSENBERG, CSols, Inc |
| 10:45 | (460-7) | **An Open-Source Modular Python Framework for Controlling Arduino Based Experimental Instruments** JOEL KOENKA, University of Basel, Jorge Saiz, Peter C Hauser |
| 11:05 | (460-8) | **Improving Lab Efficiency Through New Mobility and Data Visualization Techniques** DAVID LEVY, PerkinElmer |

## ORAL SESSION — Session 470

*LC/MS-Bioanalytical*

**Monday Morning, Room 271**
Sisi Chen, Missouri University of Science and Technology, Presiding

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| 8:30 | (470-1) | **Improving the Separation and Sensitivity of HILIC-MS Measurements of Phosphorylated Mono- and Disaccharides** GREGORY A BARDING, California Polytechnic State University, Kang Wang, Cynthia K Larive |
| 8:50 | (470-2) | **Quantitative and Semi-Quantitative Intracellular Pteridinic Profiling by Liquid Chromatography – Quadropole Time-of-Flight – Mass Spectrometry** CASEY BURTON, Missouri University of Science and Technology, Rui Weng, Li Yang, Yu Bai, Huwei Liu, Yinfa Ma |
| 9:10 | (470-3) | **Accurate Measurement of Reduced, Oxidized and Total Glutathione in Biological Samples Using Molecular Speciated Isotope Dilution Mass Spectrometry** MESAY M WOLLE, Duquesne University, Timothy Fahrenholz, Logan T Miller, HM Skip Kingston, Matt Pamuku, Scott Faber |
| 9:30 | (470-4) | **Simultaneous Determination of Febuxostat and Its Three Active Metabolites in Human Plasma by Liquid Chromatography–Tandem Mass Spectrometry and Its Application to a Pharmacokinetic Study in Chinese Healthy Volunteers** XIN DI, Shenyang Pharmaceutical University, Yingli Wu |
| 9:50 | | **Recess** |
| 10:05 | (470-5) | **Development of SPME –LC-MS Method for Concomitant Measurement of Rocuronium Bromide and Tranexamic Acid in Plasma: Application to Pharmacokinetic Study** KRZYSZTOF GORYNSKI, University of Waterloo, Barbara Bojko, Michael Kluger, Angela Jerath, Marcin Wasowicz, Janusz Pawliszyn |
| 10:25 | (470-6) | **Highly Sensitive Detection of Anionic Sugars as Biomarkers for Diseases by HPLC-PIESI-MS** HONGYUE GUO, University of Texas at Arlington, Zachary S Breitbach, Daniel W Armstrong |
| 10:45 | (470-7) | **Application of Dried Blood Spots for Vitamin D Status Analysis in a Large Web-Based Personalized Nutrition Intervention Study with Unsupervised Sampling (FOOD4Me): Methodology and Data Quality** ULRICH HOELLER, DSM Nutritional Products, Manuela Baur, Franz Roos, Hannelore Daniel, Yannis Manios, Eileen R Gibney, Lorraine Brennan, Michael Gibney, Wim H M Saris, Iwona Traczyk, Jose A Martinez, Rosalind Fallaize, Julie A Lovegrove, John C Mathers |
| 11:05 | (470-8) | **Rapid Determination of Adenine Nucleotides by Using Ultra-Fast Ion-Exchange Chromatography Coupled with Tandem Mass Spectrometry** SISI CHEN, Missouri University of Science and Technology, Qingbo Yang, Yinfa Ma, Honglan Shi, Richard K Brow |

## ORAL SESSION — Session 480

*LC/MS-Environmental and Pharmaceutical*

**Monday Morning, Room 272**
KeAndra R Robinson, Pfizer, Presiding

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| 8:30 | (480-1) | **Comparison of Different Extraction Techniques for the Detection of Pharmaceuticals and Pesticides in Surface Water** MUSTAFA I SELIM, East Carolina University, Blake R Rushing, Ashley R Wooten |
| 8:50 | (480-2) | **Confirmation of Haloacetic Acids in Bulk Sodium Hypochlorite Solutions Used for Drinking Water Disinfection** HEATHER FLEMING, The University of Memphis, Dylan Benningfield, Paul Simone, Gary Emmert |
| 9:10 | (480-3) | **Extraction and Analysis of Cytostatic and Cytotoxic Agents from Wastewater, Surface Water and Drinking Water** MAURA MCGONIGAL, The Pennsylvania State University, Jordan Stubleski, Frank Dorman, Philip Smith, William Campbell |
| 9:30 | (480-4) | **The Determination of Iron and Manganese Species in Discolored Drinking Water by LC-ICPMS** MOHAMMAD R SHAFAEI-ARVAJEH, Liverpool John Moores University, Philip G Riby, Derek Clucas |
| 9:50 | | **Recess** |
| 10:05 | (480-5) | **Emerging New Contaminants and Their Metabolites in Surface and Wastewaters in Eastern North Carolina** MUSTAFA I SELIM, East Carolina University, Blake R Rushing, Ashley R Wooten, Jamie C DeWitt |
| 10:25 | (480-6) | **A Pitfall in Accurate Mass XIC for Deamidation Analysis and Its Remedy Based on Mass Spectral Accuracy** MING GU, Cerno Bioscience, Hongliang (Leo) Xu, Yongdong Wang |
| 10:45 | (480-7) | **Method Validation Using HPLC and HPLC/MS for the Determination of Potency and Impurities of a Tablet Formulation in Atypical Matrices** ADRIENE MALSBURY, Bristol-Myers Squibb, Anne Kelly, William Fish, Frank Tomasella |
| 11:05 | (480-8) | **Automating Optimization of Mobile Phase pH for LC-UV-MS Analytical Methods** THOMAS EDWARD WHEAT, Waters Corporation, Amanda B Dlugasch, Patricia R McConville |

## ORAL SESSION — Session 490

*Liquid Chromatography-Pharmaceutical*

**Monday Morning, Room 273**
Frank Dorman, The Pennsylvania State University, Presiding

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| 8:30 | (490-1) | **Comparison of Loading Capacity for Fully Porous and Core-Shell 5um Chromatographic Media** J P PRESTON, Phenomenex, Jeff Layne |
| 8:50 | (490-2) | **Impact of Instrument Characteristics on HPLC Methods Transfer** PAULA HONG, Waters Corporation, Patricia R McConville |
| 9:10 | (490-3) | **Comparison of Superficially Porous and Fully Porous Silica Supports Used for Cyclodextrin and Cyclofructan Based HILIC Stationary Phases** CHOYCE A WEATHERLY, University of Texas at Arlington, Maressa D Dolzan, Daniel A Spudeit, Zachary S Breitbach, Daniel W Armstrong |
| 9:30 | (490-4) | **Rapid Removal of TFA from Prep Chromatography Fractions by Using SPE** J P PRESTON, Phenomenex, Jeff Layne |
| 9:50 | | **Recess** |
| 10:05 | (490-5) | **The Benefits of an Optimized and Robust High pH Stable Core-Shell Stationary Phase for the Analysis and Purification of Basic Analytes** LAWRENCE Y LOO, Phenomenex, Lester Abadilla, Mike Chitty, Ismail Rustamov, Thuylinh Tran, Tivadar Farkas |
| 10:25 | (490-6) | **Examining Orthogonal Separations in Superficially Porous Particles: Maximizing Resolution Through the Use of Bonding Chemistries and New High pH Stable Columns** WILLIAM LONG, Agilent Technologies, Anne E Mack, Jason Link, Xiaoli Wang |
| 10:45 | (490-7) | **Method Development Considerations for Fast Gel Filtration Chromatography of Protein Therapeutics** MICHAEL DAVID MCGINLEY, Phenomenex |
| 11:05 | (490-8) | **Method Development of High Performance Liquid Chromatography for the Determination of Heparin and Its Impurities in Pharmaceutical Products** SUMATE THIANGTHUM, Mahidol University, Leena Suntornsuk, Yvan Vander Heyden, Wolfgang Buchberger |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

## ORAL SESSION — Session 500

*Preparation and Characterization of Nanomaterials for Bioanalytical Applications*

**Monday Morning, Room 277**
Nicole Hanks, University of Cincinnati, Presiding

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| 8:30 | (500-1) | **Metal Oxide Nanoparticle Based Paper Sensors for Field Analysis** GONCA BULBUL, Clarkson University, Silvana Andreescu, Jessica Cunningham, Erica Sharpe, Akhtar Hayat |
| 8:50 | (500-2) | **Carbon Dots – Promising Luminescent Carbon Nanomaterial for Bioanalytical Applications** MICHAEL-MAXIMILIAN LEMBERGER, University of Regensburg, Raphael Urban, Thomas Hirsch, Joachim Wegener |
| 9:10 | (500-3) | **Novel Self-Patented Gold Nanoparticles for Biological and Environmental Applications** TULSI MODI, Western Kentucky University, Hitesh K Waghwani, Rajalingam Dakshinamurthy |
| 9:30 | (500-4) | **Acute Nano Toxicity Study of Effects of Nanoparticles on Embryonic Development** PREEYAPORN SONGKIATISAK, Old Dominion University, Martha S Johnson, Lauren M Browning, Pavan Cherukuri, Seth Warren, Nicole Gonda, X Nancy Xu |
| 9:50 | | **Recess** |
| 10:05 | (500-5) | **Enhancement of Usability and Sensitivity of Gold Nanorod Biochip by a Universal Biofunctionalization Method** LIANG TANG, University of Texas at San Antonio, Xuefeng Wang, Mei Zhong, Yanyan Wang |
| 10:25 | (500-6) | **Study of Size and Dose Dependent Therapeutic Effects of Nano Drug Carriers** X NANCY XU, Old Dominion University, Feng Ding, Pavan Kumar Cherukuri, Preeyaporn Songkiatisak, Tao Huang |
| 10:45 | (500-7) | **Selective Detection and Characterization of Protein Nanocrystals Using Second Harmonic Generation Correlation Spectroscopy** XIMENG YOU, Purdue University, Christopher M Dettmar, Garth Simpson |
| 11:05 | (500-8) | **Reactive Oxygen Species in Pistia Atratiotes Leaves Promoted by Interactions of Silver Forms** NICOLE A HANKS, University of Cincinnati, Joseph A Caruso |

## ORAL SESSION — Session 510

*Sampling and Sample Preparation - MS Oriented; Bioanalytical and Pharma*

**Monday Morning, Room 275**
Christina Henson, Buckman International, Presiding

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| 8:30 | (510-1) | **Assessment of Relative Efficiency and Selectivity of Liquid, Solid-Phase and Size-Exclusion Extraction Methods for Global Metabolomics of Human Plasma by Liquid Chromatography-Mass Spectrometry** DAJANA VUCKOVIC, Concordia University, Cian Monin, Dmitri Sitnikov |
| 8:50 | (510-2) | **Incorporating Advanced Robotics Technology and UPLC-MS/MS to Enable High-Throughput Automation for Serum Cotinine Analysis** RONALD E HUNTER, Centers for Disease Control and Prevention, Connie S Sosnoff, Ernest E McGahee, Kristin A Dortch, Kevin T Caron, Stephen A Arnstein, Lanqing Wang |
| 9:10 | (510-3) | **Demystifying USP 232/233: Sample Preparation Using Microwave Digestion** NJIES PEDJIE, Milestone, David Gunn |
| 9:30 | (510-4) | **Headspace Analysis of Biological Fluids for Metabolomics** JAMES J HARYNUK, University of Alberta, Hye Lin Kim |
| 9:50 | | **Recess** |
| 10:05 | (510-5) | **Desktop RAT for Generating In Vitro Pharmacokinetic Profiles** F MARCEL MUSTEATA, Albany College of Pharmacy and Health Sciences, Brandon LaPorte |
| 10:25 | (510-6) | **Determination of Extracellular Glutamate with Low-Flow Push-Pull of Mouse Brain Slices** GEOVANNIE OJEDA-TORRES, University of Illinois at Chicago, Leena E Williams, David Featherstone, Scott A Shippy |
| 10:45 | (510-7) | **Laser Ablation Sample Transfer and On-Target Digestion for MALDI Imaging** FAN CAO, Louisiana State University, Fabrizio Donnarunna, Kermit K Murray |

## ORAL SESSION — Session 520

*Sensors: Molecular Recognition and Sensing Mechanisms*

**Monday Morning, Room 276**
Emil Ciurczak, Doramaxx Consulting, Presiding

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| 8:30 | (520-1) | **Two-Dimensional Photonic Crystal Sensing Motif for Selective Detection of Concanavalin A** ZHONGYU CAI, University of Pittsburgh, Jian-Tao Zhang, Daniel H Kwak, Xinyu Liu, Sanford A Asher |
| 8:50 | (520-2) | **High-Throughput Thiamine Quantification in Fish Eggs Using Periplasmic-Binding Protein Biorecognition** KATIE A EDWARDS, Cornell University, Woo Jin Seog, Antje J Baeumner |
| 9:10 | (520-3) | **Aptamer-Based Competitive Electrochemical Biosensor for Brevetoxin-2** SHIMAA EISSA, Institut National De La Recherche Scientifique, Mohamed Siaj, Mohammed Zourob |
| 9:30 | (520-4) | **Measuring Hydrogen Bond-Based Non Covalent Interactions in Very Non Polar Solvents with Isothermal Titration Calorimetry** ANTHONY R HORNER, University of Pittsburgh, Thomas Brinzer, Sean Garrett-Roe, Stephen G Weber |
| 9:50 | | **Recess** |
| 10:05 | (520-5) | **Gradient-Based Interrogation of Blood Coagulation Factor Binding Interactions Using Lipid Bilayer Nanodiscs and Microring Resonators** ZACHARY S WIERSMA, University of Illinois, Ellen M Muehl, Joshua M Gajsiewicz, James H Morrissey, Ryan C Bailey |
| 10:25 | (520-6) | **Amplifying Fluorescent Sensors Based on Molecular Systems with Extended Electronic Delocalization** EVGUENI E NESTEROV, Louisiana State University |
| 10:45 | (520-7) | **Thermodynamic and Kinetic Optimization of Reporter-Probe Complexes for Selective miRNA Detection** NICHOLAS E LARKEY, Oregon State University, Sean M Burrows |
| 11:05 | (520-8) | **DNA Quadruplex-Based Sensors: Tuning Response Sensitivity via Deliberate Control of Folding Cooperativity** IRINA V NESTEROVA, Louisiana State University |

## POSTER SESSION — Session 530

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Application of Mass Spectrometry*

**Monday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

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| (530-1 P) | **Investigation of the Adsorption/Absorption Mechanism of Stir Bar Sorptive Extraction Using Laser Enhanced Ionization Mass Spectrometry** ANDREW BOGGESS, Duquesne University, Logan T Miller, HM Skip Kingston, Weier Hao, Steve Shuttleworth |
| (530-2 P) | **An Alternative to DIP/DEP: Pyroprobe Coupled to High Resolution Time-of-Flight Mass Spectrometry** JONATHAN BYER, LECO Corporation, Joe E Binkley, Jeffrey S Patrick |
| (530-3 P) | **Laser Ablation Sample Transfer and On-Target Digestion for MALDI Imaging** FAN CAO, Louisiana State University |
| (530-4 P) | **Derivatization of Metabolites for Improved Sensitivity in Electrospray Ionization Mass Spectrometry** TIANJIAO HUANG, Saint Louis University, Maria Toro, James Edwards |
| (530-5 P) | **Characterization of Nanoparticles in Complex Matrixes Using Single Particle Inductively Coupled Plasma Mass Spectrometry** TAYLOR INGLE, FDA/NCTR, Paul Howard, Yan Li, Lindsay Pack, Joshua Xu, Xiaoqing Guo, Tao Chen |
| (530-6 P) | **A Fast GC Proton-Transfer-Reaction Quadrupole Ion Guide Time-Of-Flight (PTR-QiToF) Mass Spectrometer** ALFONS JORDAN, IONICON Analytik GmbH, Lukas Märk, Jens Herbig, Christian Lindinger, Rene Gutmann, Lukas Fischer, Eugen Hartungen, Simone Jürschik, Gernot Hanel, Philipp Sulzer, Tilmann D Märk |
| (530-7 P) | **Effect of Split Ratio on USEPA Method 8260 Compounds** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor |
| (530-8 P) | **Investigations on the Potentials of Mass Spectrometry Imaging (MSI) with Reactive-DESI** KIHARA KEISHI, Shiseido, Motoyama Akira |
| (530-9 P) | **Design for an Improved TOF-MS with a Highly Folded Flight Tube** NATHAN D LEIGH, University of Missouri |

# TECHNICAL PROGRAM

(530-10 P) **Quantification of a Biomedically Important Analyte by Enhanced Laser Ionization QTOF-Mass Spectrometry with Speciated Isotope Dilution** LOGAN T MILLER, Duquesne University, Sarah Sheffield, HM Skip Kingston

(530-11 P) **Spray Pump Ionization Mass Spectrometry of Pharmaceutical, Peptide, and Protein Ions** JACKIE LOCHRIDGE, Baylor University, Brett Harper, Touradj Solouki

(530-12 P) **Nanostructured Laser Desorption Ionization Device for Small Molecule Analysis** TRUST T RAZUNGUZWA, Protea Biosciences Inc., Matthew Powell, Nicholas Morris

(530-13 P) **Determination of Mycelia Mass on Cracked Corn using Direct Analysis in Real Time – Time-of-Flight Mass Spectrometry (DART-TOFMS)** ETHAN S ROBERTS, Bradley University, Edward Remsen, Kristi McQuade

(530-14 P) **Separation of Silver Ion Adducts of Triacylglycerol Regioisomers by Differential Mobility Spectrometry** MARTIN SALA, National Institute of Chemistry, Lisa Miroslav, Michal Holapek, Larry J Campbell

(530-15 P) **Customized Vacuum Systems – Transferring an Idea to an Optimized Vacuum Solution** TOBIAS STOLL, Pfeiffer Vacuum GmbH

(530-16 P) **Chromatographic Quality Analysis of Salt Reduced White Brined Cheeses** ALI TOPCU, Hacettepe University, Tugba Bulat

(530-17 P) **An Online Open-Tubular Fractionation Scheme Coupled with Push-Pull Perfusion Sampling for Profiling Extravasation of AuNPs in a Mouse Tumor Model** PO-JEN TSENG, National Tsing Hua University

(530-18 P) **Mapping O-GlcNAc Modification Sites in ABL2 by Tandem Mass Spectrometry** KELIN WANG, Louisiana State University, Fabrizio Donnarumma, Paudyal K Amid, Goodwin K Octavia, Megan A Macnaughtan, Kermit K Murray

(530-19 P) **The Use of Thermally Assisted Derivatization Techniques to Improve Data Quality** KAREN SAM, CDS Analytical, Stephen Wesson, Chris Dwyer, Gary Deger

(530-20 P) **Using GC Triple Quadrupole MS in Full Scan, SIM, SRM and Mixed Scan Modes to Provide the Highest Coverage for Target and Non-Target Analysis of Contaminants** PAUL J SILCOCK, Thermo Fisher Scientific, Massimo Santoro, Alexander Semyonov

(530-21 P) **Secretome of the Islets of Langerhans** ANDREW SCHMUDLACH, University of Notre Dame, Norman J Dovichi, Robert T Kennedy

(530-22 P) **Withdrawn**

(530-23 P) **Collision-Energy Resolved Ion Mobility Deconvolution of a Ternary Isomeric Mixture** MICHAEL E PETTIT, Baylor University, Brett Harper, Matthew R Brantley, Touradj Solouki

(530-24 P) **Qualitative and Quantitative Analysis of Naturally Occurring Oligosaccharides Using Tandem Mass Spectrometry** AMR M EL-HAWIET, University of Alexandria, Elena N Kitova, John S Klassen

(530-25 P) **A Tool for Turnkey Reaction Mixture Screening on the Basis of Ambient Mass Spectrometric Images** RACHEL V BENNETT, Georgia Institute of Technology, Chanchala Kaddi, Martin Paine, Mitchel Banks, Arthur Weber, May Wang, Facundo Fernandez

(530-26 P) **Capillary Electrophoresis Mass Spectrometry for Differentiating Single Cells in the Frog (Xenopus Laevis) Embryo** ROSEMARY M ONJIKO, George Washington University, Sydney Morris, Sally A Moody, Peter Nemes

(530-27 P) **Electron Generation in Radio-Frequency Ionization** ABAYOMI OLAITAN, Baylor University, Behrooz Zekavat, Touradj Solouki

(530-28 P) **Analysis of Organic Ligands Attached to Gold and Silver Nanomaterials Using Ambient Ionization Mass Spectrometry** CHADY STEPHAN, PerkinElmer, Sharanya Reddy

(530-29 P) **SP-ICP-MS for Nanoparticle Detection and Size Distribution Determinations - Current State of the Art and Future Perspectives** CHADY STEPHAN, PerkinElmer

## POSTER SESSION — Session 540

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Atomic Spectroscopy - Instrumentation and Analysis*

**Monday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(540-1 P) **Bismuth as Internal Standard for Lead Determinations by ICP OES** MARCOS A BECHLIN, São Paulo State University, Edilene C Ferreira, José A Gomes Neto

(540-2 P) **Standoff LIBS Using a Wide Field of View Spatial Heterodyne Spectrometer with Sub-Microsteradian Collection Optics** PATRICK D BARNETT, University of South Carolina, Nirmal Lamsal, S Michael Angel

(540-3 P) **The Effect of Suspended Particles on LIBS Measurements of Dissolved Elements in Seawater** JOSEPH BONVALLET, University of South Carolina, S Michael Angel

(540-4 P) **Single-Particle ICP-MS Method Development for Simultaneous Detection of Dissolved and Nanoparticulate Metals in Missouri Drinking Water Systems** ARIEL DONOVAN, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma, Craig Adams, Chady Stephan, Todd Eichholz

(540-5 P) **Generation of Volatile Cadmium Species in Acidic Media Using Al(III), Sc(III), Y(III) and KCN for ICP-MS Measurement** AHMET CELIK, Jackson State University, Zikri Arslan, Vedat Yilmaz

(540-6 P) **Determination of Major and Trace Elements in the Tea Leaves by ICP-AES** WANG LI HUA, Shimadzu, Ma X Ling

(540-7 P) **Assessments of Human Hair Quality as a Function of Age, Based on Determination of Selected Metals: Preliminary Results** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Meena K Gella, Shivam M Patel

(540-8 P) **Determination of Nutritionally Beneficial and Toxic Metals in Commercially Available Fish Oil Supplements: Preliminary Results** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Robert P Pritchard

(540-9 P) **Leaching of Lead Through Soil In and Around a Recreational Shooting Range Built on a Reclaimed Strip Mine: Preliminary Results for Lead and Other Analytes** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Luke J Metzler

(540-10 P) **Determination of Selected Metals and Nonmetals in Pre-Workout Supplements: Preliminary Results** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Nicholas E Glotfelty, Kelly M Boyles

(540-11 P) **Effects of Low Level Subchronic Inorganic Mercury Exposure on the Levels of Essential Elements Analyzed by ICP-MS in Rat Tissues** ADEDOJA D WUSU, Lagos State University, Olabisi O Ogunrinola, Olusegun K Afolabi, Esther O Abam, David O Babayemi, Adebisi O Dosunmu, Beno O Onunkwor , Elizabeth A Balogun, Olusegun Odukoya, Chionyedua T Onwordi , Oladapo O Ademuyiwa

(540-12 P) **Elemental Analysis of Challenging Geological Samples Made Easy** EWA M PRUSZKOWSKI, PerkinElmer, Fadi Abou-Shakra, Aaron Hineman

(540-13 P) **Prospecting of Iron and Titanium in Mineralized Area in Kenya Using Termitaria** ONDITI OUMA ANAM, Jomo Kenyatta University of Agriculture and Technology, James Kinaichu

(540-14 P) **Investigation into the Presence of Mercury in Game Controllers** BIN CHEN, P S Analytical, Warren T Corns, Peter B Stockwell, Lee Hewes, Mark Scrimshaw

(540-15 P) **Ultrasonic Nebulization of Liquid Samples for Analytical Microwave Induced Plasma Spectrometry** HENRYK MATUSIEWICZ, Poznan University of Technology

## POSTER SESSION — Session 550

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Bioanalytical Samples - Electrochemical, Fluorescence/Luminescence, Sensors and Lab-on-a-Chip Techniques*

**Monday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(550-1 P) **Electrochemical Synthesis and Characterization of Polypyrrole as a Chemical Sensor Based on the Concept of Molecular Imprinting to the Selective Detection of L-Tyrosine and L-Tryptophan** CESAR ARIZABALETA, Universidad del Valle, Walter Torres, Fernando E Larmat

(550-2 P) **In Situ Copper Detection in Marine Environments** WILLIAM M CUNNING, University of Maryland Baltimore County, William R LaCourse

(550-3 P) **Development of an Electrochemical Proximity Assay with Electroluminescent Detection on a Bipolar Platform** SANJUN FAN, Auburn University, Songyan Yu, Subramaniam Somasundaram, Christopher J Easley, Shannon Curtis

(550-4 P) **Using Artificial Cells for Probing the Effect of Cholesterol on Membrane Dynamics for Exocytosis** NEDA NAJAFINOBAR, Chalmers University of Technology, Lisa Mellander, Michael Kurczy, Johan Dunevall, Ann Sofie Cans

(550-5 P) **Electrochemical and Biocatalytic Properties of Human Liver Microsomes Immobilized on Carbon Nanostructure Electrodes** RAJASEKHAR REDDY NERIMETLA, Oklahoma State University, Sadagopan Krishnan

(550-6 P) **Electrochemical Study of 1,10-Phenanthroline-5,6-dione and Glucose Oxidase Modified Graphite Electrode** ARUNAS RAMANAVICIUS, Vilnius University, Povilas Genys, Yasemin Oztekin, Almira Ramanaviciene

(550-7 P) **Characterization of Dopamine Signals Evoked Via Low-Pulse Stimulations in the Dorsal Striatum** ELAINE M ROBBINS, University of Pittsburgh, Seth H Walters, Zhan Shu, Adrian C Michael

(550-8 P) **Understanding Signal and Background in the Electrochemical Proximity Assay (ECPA) Using DNA Melting Analysis** SUBRAMANIAM SOMASUNDARAM, Auburn University, Mark D Holtan, Christopher J Easley

(550-9 P) **Ultrasensitive Assays for Early Breast Cancer Detection** SHAZIA BAIG, Tufts University, Stephanie M Schubert, Stephanie R Walter, Kudret Usmani, David R Walt

(550-10 P) **Water-Soluble Amplifying Fluorescent Conjugated Polymer Probe for Hydrogen Sulfide Detection** CHIEN-HUNG CHIANG, Louisiana State University, Deepa Pangeni, Evgueni E Nesterov

(550-11 P) **Characterization of Advanced Glycation Endproducts of Human Serum Albumin with D-Galactose: A Study of Galactated Albumin by Fluorescence and Circular Dichroism** MENASHI A COHENFORD, Marshall University, Saroj Sigdel, Muhammad Chaudhry, Leslie Frost, Weixi Liu

(550-12 P) **Direct Electrogenerated Chemiluminescence in Detection for HPLC** FRANCOIS DARDOIZE, UPMC, Eric Mahe, Didier Devilliers

(550-13 P) **A Robust Multiple-Aptamer-Based Labeling Method** WEIJIA HOU, University of Florida, Weihong Tan

(550-14 P) **Identification of Biological Ligands for Hazelnut Allergen, Cor a 1.02, Using a Fluorescence-Based Assay** JANE K MCBRIDE, USDA Agricultural Research Service, Barry K Hurlburt

(550-15 P) **Aligned Nanorod Arrays Fabricated by Hole-Mask Colloidal Lithography for High-Performance Environmental Sensing via SERS** SAMUEL S HINMAN, University of California Riverside, Peter V Shanta, Romie Nguyen, Quan Cheng

(550-16 P) **UV-VIS Spectrophotometric titration of Phenyl Substituted -N,N'-bis(salicylaldehye)-propylenediamine Schiff Base Compounds and Profiling of Their Relative Antimicrobial Activity** SWAMINATHAN SUBRAMANIAM, Miles College, Justin C Biffinger, Roderick Woods, Tyler Huggins, Z Jason Ren, Daniel Barlow

(550-17 P) **Custom Thermal Control System for the Electrochemical Proximity Assay (ECPA)** MARK D HOLTAN, Auburn University, Subramaniam Somasundaram, Christopher J Easley

(550-18 P) **Novel Platform for Superoxide Detection Based on Chain Reaction Amplified Biocatalytic Responses in Nanoplasmonic Sensors** VALBER PEDROSA, UNESP, Caroline Rodrigues

(550-19 P) **β-Gycerophosphate Could Substitute Phosphatidic Acid as a Substrate for Phosphatidic Acid Phosphatase (PAP), EC 3.1.3.4** KANDAN SETHUMADHAVAN, Southern Regional Research Center, ARS, USDA, Heping Cao

(550-20 P) **Detection of PCR Amplified DNA from *Neisseria Gonorrhoeae* and *Chlamydia Trachomatis* on a Disposable Lateral Flow Strip** KWAKU BARYEH, North Dakota State University, Liu Guodong

(550-21 P) **Intracellular Superoxide Detection Using Microchip Electrophoresis Coupled to Laser Induced Fluorescence Detection** RICHARD PIFFER SOARES DE CAMPOS, University of Kansas, Joseph M Siegel, José A Fracassi da Silva, Susan M Lunte

(550-22 P) **Gold Nanoparticle Coated Silica Nanorods for Sensitive Visual Detection of microRNA on a Lateral Flow Strip Biosensor** SUNITHA TAKALKAR, North Dakota State University, Guodong Liu

(550-23 P) **An Integrated "SERS Spectrometer" based on Evanescent Field Excitation** WEIQING XU, Jilin University, Shuping Xu, Haibo Li, Lei Chen, Hailong Wang, Xianghua Zhou

(550-24 P) **Differentiating Human Blood from Animal Blood With FT-IR Microspectroscopy: A Study Using Support Vector Machine Algorithm** MENASHI A COHENFORD, Marshall University, Kristen Campbell, SeungJin Lim, Muhammad Chaudhry, Saroj Sigdel, Weixi Liu

(550-25 P) **Effects of Fructose-Derived Advanced Glycation End Products on Acetylation of Histones in the Brain** ALISSA CORNACCHIA, St. John Fisher College, Melinda Lull, MacKenzie Hall

(550-26 P) **Development of an Electrokinetically Operated Microfluidic Platform for the Analysis of Preterm Birth Biomarkers** MUKUL SONKER, Brigham Young University, Rui Yang, Adam T Woolley

(550-27 P) **In Vivo Electrochemical Measurements of Optogenetic-Stimulated Release of Single Varicosities in Drosophila Melanogaster Larvae** SOODABEH MAJDI, Chalmers University of Technology, Eva Carina Berglund, Johan Dunevall, David Krantz, Andrew G Ewing

(550-28 P) **Real-Time Histamine Measurements In Vivo Using Fast-Scan Cyclic Voltammetry** RHIANNON ROBKE, Grand Valley State University, Srimal Samaranayake, Aya Abdalla, Parastoo Hashemi

(550-29 P) **Implementing a Peptide Reporter Substrate in *Dictyostelium Discoideum*** MICHELLE L KOVARIK, Trinity College, Lorena Lazo de la Vega, Berjana Nazarko

(550-30 P) **Microchip- Based Electrochemical Detection Using 3-D Printing Technology** AKASH S MUNSHI, Saint Louis University, R Scott Martin

(550-31 P) **Chemical Pen based on the Microfluidic Mixing** SIFENG MAO, Tokyo Metropolitan University, Chiho Sato, Hulie Zeng, Katsumi Uchiyama

(550-32 P) **Technical Drawing Pens for Paper-Based Microfluidic Devices (μPADs): A Flexible, Simple, Rapid and Low-Cost Alternative Fabrication Method for In-House Formulated Inks** MIREK MACKA, University of Tasmania, Nantana Nuchtavorn

(550-33 P) **Using 3D-Printed Interface Templates to Fabricate Passive Microfluidic Devices for Time-Resolved Primary Cell Secretion Sampling** JESSICA E BROOKS, Auburn University, Leah A Godwin, Katarena Ford, Mark D Holtan, Stephen B Gass, Dylan Holder, Christopher J Easley

(550-34 P) **Colorimetric pH Paper with a Scale Bar** YEONGBEOM CHO, Hanyang University, Tae-Sun Jun, Yongshin Kim

(550-35 P) **Lab-on-A-Paper Chromatography** CHIKWAN KIM, Hanyang University, Youngbum Cho, Yongshin Kim

(550-36 P) **A Polystyrene-Polydimethylsiloxane Hybrid Device for Enhanced Separations and Cellular Analysis** BENJAMIN T MEHL, Saint Louis University, R Scott Martin

(550-37 P) **A Microfluidic Long-Term Cell Culture Device for Improving Biomimetic Modeling in Diabetes Metabolomics** LAURA FILLA, Saint Louis University, James Edwards

(550-38 P) **Capillary Electrophoresis Coupled with Micro Free Flow Electrophoresis for High Speed Two Dimensional Separations of Biological Samples** ALEXANDER C JOHNSON, University of Minnesota, Michael Bowser

(550-39 P) **Electrokinetic Separation of Polystyrene Microspheres in Conductive Media on a Microfluidic Chip** JIAN GAO, Qilu University of Technology , Junhui Zhen, Ningning Song, Hao Zhang

(550-40 P) **Development of Micropyramid Array Electrode for Quantitative Detection of Biomolecules Immunochromatography** WATARU IWASAKI, The National Institute of Advanced Industrial Science and Technology (AIST), Masaya Miyazaki

(550-41 P) **Microfluidic Device for Simultaneous Detection of Metal-Mediated DNA Oxidation and Chemical DNA Damage** BOYA SONG, University of Connecticut, Min Shen, James F Rusling

(550-42 P) **Electrochemical Detection of Glutamate via Bienzymatic Enhancement in Gapped Electrodes** KIRSTIN C MORTON, National Institute of Standards and Technology, Stephen Semancik

(550-43 P) **A Rapid and Sensitive Nano-Immunosensor for Point-of-Care Diagnostic of Bilharzia in Kenya** NAUMIH NOAH, Kenyatta University, Dickson Andala

(550-44 P) **Mapping Fast and Slow DA Domains with FSCV in the Rat Striatum** SETH H WALTERS, University of Pittsburgh, Adrian C Michael

(550-45 P) **Integration of Whispering Gallery Mode Detectors into Fluidic Platforms for Clinical Diagnostics** DANIEL KIM, University of Kansas, Robert Dunn

(550-46 P) **Determination of Biogenic Amines in Microdialysis Samples by Pre-Column Derivatization and Cyclodextrin-Modified Capillary Electrophoresis with Laser Induced Fluorescence Detection** ELTON E MELO, University of Kansas, Leena Suntornsuk, Fabiane Caxico, Susan M Lunte

(550-47 P) **Development of a Wireless Microfluidic Biosensor System for Real-Time Monitoring of TBI Patients** ISABELLE C SAMPER, Imperial College, Chu Wang, Chi L Leong, Michelle L Rogers, Sally A Gowers, Martyn G Boutelle

## POSTER SESSION — Session 560

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Pharmaceutical - LC, LC/MS, GC*

**Monday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(560-1 P) **Application of Zirconia Phases for Structurally Similar Compounds and Other Difficult HPLC Separations** KELLY S JOHNSON, ZirChrom Separations, Inc., Richard A Henry, Merlin Bicking

(560-2 P) **Use of New YMC-Meteoric Core Core-Shell and YMC-Triart Hybrid Material for an Improved USP Chlorohexidine Gluconate Assay Method** JEFFREY A KAKALEY, YMC America, Inc., Ernest J Sobkow

(560-3 P) **Is Retention Time Precision Only Affected by the LC Pump?** MARKUS MARTIN, Thermo Fisher Scientific, Susanne Fabel, Bruce Bailey, Wulff Niedner

(560-4 P) **Columns Packed with Macrocyclic Chiral Selectors Bonded to Superficially Porous Particles for High Efficiency Chiral Stationary Phases** DARSHANKUMAR C PATEL, University of Texas at Arlington, Zachary S Breitbach, M Farooq Wahab, Daniel W Armstrong

(560-5 P) **Ultrafast Method Screening for Separation of Enantiomers in HPLC and SFC Utilizing Novel Polysaccharides Type Chiral Stationary Phases Based on Small Particles** TAKASHI SATO, YMC Co., Ltd, Noriko Shoji, Takatomo Takai, Noritaka Kuroda, Saoko Nozawa, Ernest J Sobkow

# TECHNICAL PROGRAM

(560-6 P) **Highly Efficient Purification of Enantiomers Using Polysaccharide Type Chiral Stationary Phases and Continuous Purification Technology** TAKASHI SATO, YMC Co., Ltd, Noriko Shoji, Takatomo Takai, Noritaka Kuroda, Saoko Nozawa, Ernest J Sobkow

(560-7 P) **Utilizing Alternative Selectivity Provided by the Novel High-Coverage C18 Phase based on Robust Hybrid Particles High-Coverage C18 Phase for UHPLC/HPLC Method Development** TAKASHI SATO, YMC Co., Ltd, Noriko Shoji, Takatomo Takai, Ernest J Sobkow

(560-8 P) **Ultra-High Speed Analysis of USP Methods Conforming to the New USP General Chapter 621 Allowed Limits** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., William Hedgepeth

(560-9 P) **Label-Free Analysis by HPLC with Charged Aerosol Detection of Glycans Separated by Charge, Size and Isomeric Structure** DAVID H THOMAS, Thermo Fisher Scientific, Ian N Acworth, Bruce Bailey, Marc Plante, Qi Zhang

(560-10 P) **Extraction of the Biomarker of Dimethylformamide in Hemoglobin by Cleanert MAS-B Plate** QIN SUZI, Agela, Li Linsen

(560-11 P) **A Rapid Clean-Up Procedure for Detecting Indomethacin and Ibuprofen from Human Plasma Using Cleanert PEP MicroPlate** WANG WAN, Agela, Junfu Wei, Suzi Qin, Linsen Li

(560-12 P) **Extraction of Telmisartan from Human Plasma Using an Improved Capacity Cleanert SLE Plate** WANG WAN, Agela, Wei Junfu

(560-13 P) **Fast, Quantitative FET-HS-GC Method for Analysis of Residual Solvents in Cannabis Extracts** AMANDA RIGDON, Restek, Corby Hilliard, Jack Cochran, William Schroeder, Christi Schroeder, Ted Flood, Kristi Sellers

(560-14 P) **Approaches for Consistent Assessment of Host Cell Proteins** DAISY RICHARDSON, Merck, Fengqiang Wang, Yuetian Chen, Dennis Driscoll, Mohammed Shameem

(560-15 P) **Techniques for Improving the Efficiency of Large Volume Sample Loading in Preparative Liquid Chromatography** JO-ANN M JABLONSKI, Waters Corporation, Andrew J Aubin, Wendy Harrop

(560-16 P) **Monograph Review and Modernization Development with a Case Study in the Application of Hydrophilic Interaction Chromatography (HILIC) Method Coupled with Charged Aerosol Detector (CAD) for Analysis of UV Transparent Impurities in Metoprolol Succinate and Related Dosage Forms** DONALD MIN, US Pharmacopeia, Qun Xu, Shane Tan, Leonel Santos

(560-17 P) **Development and Application of a "Green" Flash Chromatography Purification System** MATTHEW PRZYBYCIEL, ES Industries, David Kohler, Joseph Stefkovich, Rolf Schlake

(560-18 P) **Increasing Your Hit Rate for Separating Chiral Primary Amines: Which Column?** ZACHARY S BREITBACH, University of Texas at Arlington, Yeeun Lim, Daniel W Armstrong

(560-19 P) **Comparison Between Different Process Methods of Arachidonic Acid in Plasma** LI LINSEN, Agela, Qin Suzi, Wang Wan

(560-20 P) **Extraction of β-blockers from Small Volume Biological Fluid Samples Using a New Versatile SPE 96-well Plate Format** WANG WAN, Agela, Wei Junfu, Wang Ruyi

(560-21 P) **Evaluation of a Low-Cost Mass Spectrometer** MICHAEL W DONG, Genentech, Christine Gu

(560-22 P) **Comparative Determination of "Tar", Nicotine, and Carbon Monoxide Smoke Deliveries of Little Cigars and Traditional Cigarettes** SYDNEY LYNN HOLMBERG, Oak Ridge Institute for Science and Education, José J Pérez, Roberto Bravo, Shakia Smith, Morgan Larango, Clifford H Watson

(560-23 P) **Isolation of Cannabinoid Fractions from Cannabis Extract** ROB DRISCOLL, Robatel Inc.

(560-24 P) **Quantification of Dioxan in Shampoo Using Flash Gas Chromatography** JEAN-CHRISTOPHE MIFSUD, Alpha MOS, Andrew Cowell, Fatma Ayouni, Valerie Vabre, Herve Lechat

(560-25 P) **Critical Concentration of Beta-cyclodextrin Determined for Oral Dosing Solutions of Compound L Prepared in Acetonitrile** REBECCA HARRIS, Metrics Contract Services, Kimberly Lupo, Amy Gladson

(560-26 P) **Improvements in the Characterization of Monoclonal Antibody Primary Structure Using Wide Pore Superficially Porous Particles** ANNE E MACK, Agilent Technologies, Wu Chen, Xiaoli Wang, Stephen Luke

(560-27 P) **Fast Separation of Glycans Using HILIC Chromatography** WILLIAM LONG, Agilent Technologies, James Martosella, Jia Liu, Oscar Potter

(560-28 P) **Extended Dynamic Range ELSD Analysis for Impurity Profiling and Purification** RODOLPHE PENNANEC, Sedere

(560-29 P) **Chemical Profiling of Sutherlandia Frutescens Growing on Contaminated Soil** NTEBOGENG SHARON MOKGALAKA, Tshwane University of Technology

(560-30 P) **Utilization of Design of Experiments to Characterize HPLC Method Precision and Robustness in Early Pharmaceutical Development** LEAH BUHLER, Merck, David Lavrirch

## POSTER SESSION — Session 570

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Vibrational Spectroscopy Advances*

**Monday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(570-1 P) **A Narrow Band Etalon-Based Phased Array for Spectral Imaging** JONATHAN R DAMSEL, Cleveland State University, John F Turner

(570-2 P) **A Novel FT-IR Liquid Sampling Device for Analyzing Fuels, Oils and Other Viscous Materials** STEVE LOWRY, Thermo Fisher Scientific, Mike Garry, Kathy Schulting, Mike Bradley, Simon Nunn, Martin Long

(570-3 P) **Vibrational Spectroscopy of Fluorinated Derivatives of Self-Assembling hIAPP22-29 Octapeptides** ELMER-RICO E MOJICA, Pace University, Jayson Vedad, Adam Profit, Ruel B Desamero

(570-4 P) **Development of an In Situ Cell Death Pathway Detection Method in 3D Tissue Cultures Based on Surface Enhanced Raman Spectroscopy** MINE ALTUNBEK, Yeditepe University, Mustafa Culha

(570-5 P) **Raman Gas Measurement with a Fiber Optic Coupled Multipass Capillary Cell Using a Spatial Heterodyne Raman Spectrometer** WILLIAM J HUNTINGTON, University of South Carolina, S Michael Angel, J Chance Carter

(570-6 P) **FT-Raman Surface Mapping of Remineralized Artificial Dental Caries** RONALD RUBINOVITZ, Thermo Fisher Scientific, Ivan Stangel

(570-7 P) **FTIR Method Validation for Moisture Analysis in Arsine Cylinders** ANDREW FLEMING, Matheson Tri-Gas

(570-8 P) **Use of FTIR Spectroscopy Technique in the Determination of Cotton Fiber Maturity and Crystallinity** YONGLIANG LIU, USDA/ARS, Hee Jin Kim

(570-9 P) **Impact of Water Absorption on Molar Absorptivity Measurements of Solutes Dissolved in Aqueous Media over Near Infrared Wavelengths** ARIEL BOHMAN, University of Iowa, Mark A Arnold

(570-10 P) **Exploration of a Ball Lens Probe for Raman Spectroscopy of Natural Waters** KC M GREENUP, Tennessee Technological University, Andrew F Callender

(570-11 P) **Green Synthesis of Gold Nanoparticles and SERS Detection of Pharmaceuticals and Personal Care Products in Water** UTTAM SHARMS PHUYAL, Tennessee Technological University, Andrew Callender

(570-12 P) **Spectroscopic Comparison of Signals of Aniline Derivatives from Surface-Enhanced Raman Scattering and Infrared Techniques** MARYAM ALDOGHAIM, Middle Tennessee State University, Ngee Chong, Ooi Beng, Eman Sharba

(570-13 P) **Preliminary Evaluation of a Home-Made CRDS** JIN-CHUN WOO, Korea Research Institute of Standards and Science

# MONDAY, MARCH 9, 2015
# AFTERNOON

**AWARDS** **Session 580**

***SEAC - Charles N Reilley Award and Royce W Murray Award***
arranged by Adrian C Michael, University of Pittsburgh

**Monday Afternoon, Room 243**
Adrian C Michael, University of Pittsburgh, Presiding

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| 1:30 | | **Introductory Remarks - Adrian C Michael** |
| 1:35 | | **Presentation of the 2015 SEAC - Charles N Reilley Award to Hubert H Girault, Ecole Polytechnique Fédérale De Lausanne by Adrian C Michael, SEAC President** |
| 1:40 | (580-1) | **Electrochemical Imaging: Scanning Electrochemical Microscopy and Electrostatic Spray Ionization** HUBERT H GIRAULT, Ecole Polytechnique Fédérale De Lausanne, Fernando Cortes-Salazar, Alexandra Bondarenko, Tzu En Lin, XiaoQin Zhong, Elena Tobolkina, Qiao Liang, Andreas Lesch |
| 2:15 | (580-2) | **Electrochemistry in High Electric Fields Within a Thin-Layer Cell** HENRY S WHITE, University of Utah, Xiong Jiewen, Qianjin Chen |
| 2:50 | (580-3) | **Nanorings and Other Things: Electrodeposited Nanostructured Interfaces for Biosensing and Materials Applications** ROBERT M CORN, University of California Irvine |
| 3:25 | | **Recess** |
| 3:40 | | **Presentation of the 2015 SEAC - Royce W Murray Award to Thomas Hamann, Michigan State University, by Adrian C Michael, SEAC President** |
| 3:45 | (580-4) | **Making and Breaking Ammonia** THOMAS HAMANN, Michigan State University |
| 4:20 | (580-5) | **High-Efficiency Generation-Collection Microelectrochemical Platform for Interrogating Electroactive Thin Films** RICHARD M CROOKS, University of Texas, Morgan Anderson |

**AWARDS** **Session 590**

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

**Monday Afternoon, Room 244**
Laura Bush, LCGC, Presiding

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| 1:30 | | **Introductory Remarks - Laura Bush** |
| 1:35 | | **Presentation of the LCGC 2015 Lifetime Achievement in Chromatography Award to Joseph J Kirkland, Advanced Materials Technology, Inc., by Laura Bush, LCGC** |
| 1:40 | (590-1) | **Tools to Improve Protein Separations** JOSEPH J KIRKLAND, Advanced Materials Technology, Inc., Stephanie A Schuster, Brian M Wagner, Barry E Boyes |
| 2:15 | (590-2) | **Comprehensive Two-Dimensional Liquid Chromatography Versus "Offline" Two-Dimensional Liquid Chromatography: The Crossover Point** MARK R SCHURE, Kroungold Analytical Inc. |
| 2:50 | (590-3) | **Hydrogen-Bond Basicity of Reversed-Phase Columns** LLOYD R SNYDER, LC Resources |
| 3:25 | | **Recess** |
| 3:40 | | **Presentation of the LCGC 2015 Emerging Leader in Chromatography Award to Caroline West, University of Orleans, by Laura Bush, LCGC** |
| 3:45 | (590-4) | **The New Face of Supercritical Fluid Chromatography (SFC): Why Analysts Should Take Another Look** CAROLINE WEST, University of Orléans |
| 4:20 | (590-5) | **The Need for More Academic Researchers and Teachers in SFC** TERRY A BERGER, SFC Solutions, Inc. |

**SYMPOSIUM** **Session 600**

***ACS DAC - Analytical Advances Using Ion Chemistry for Mass Spectrometry***
arranged by Matthew F Bush, University of Washington

**Monday Afternoon, Room 238**
Matthew F Bush, University of Washington, Presiding

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| 1:30 | | **Introductory Remarks - Matthew F Bush** |
| 1:35 | (600-1) | **The Single-Probe: A Microscale Sampling and Ionization Device for Mass Spectrometry Single Cell Analysis and Tissue Imaging** ZHIBO YANG, University of Oklahoma, Anthony Burgett, Ning Pan, Wei Rao, Kothapalli R Naga, Liu Renmeng |
| 2:10 | (600-2) | **Unsaturated Lipid Isomer Identification and Quantitation based on Coupling Photochemistry and MS** YU XIA, Purdue University |
| 2:45 | (600-3) | **Near UV Photodissociation of Peptide Ions** FRANTISEK TURECEK, University of Washington, Christopher J Shaffer, Robert Pepin |
| 3:20 | | **Recess** |
| 3:35 | (600-4) | **Analysis of Peptide Epimers** RYAN JULIAN, University of California Riverside |
| 4:10 | (600-5) | **Cation to Anion Proton Transfer Reactions (CAPTR) of Protein and Protein Complex Ions** MATTHEW F BUSH, University of Washington |

**SYMPOSIUM** **Session 610**

***Atmospheric Pressure Glow Discharges for Atomic and Molecular Spectroscopy***
arranged by Steven J Ray, Indiana University

**Monday Afternoon, Room 239**
Steven J Ray, Indiana University, Presiding

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| 1:30 | | **Introductory Remarks - Steven J Ray** |
| 1:35 | (610-1) | **Plasma Medicine: Past, Present and Future** MICHAEL KEIDAR, George Washington University, Mounir Laroussi |
| 2:10 | (610-2) | **Spatial Discrimination to Improve Analytical Performance of the Atmospheric-Pressure Solution-Cathode Glow Discharge** ANDREW J SCHWARTZ, Indiana University, José A Broekaert, Steven J Ray, Gary M Hieftje |
| 2:45 | (610-3) | **Ambient Desorption/Ionization Mass Spectrometry Using Atmospheric Touchable Plasma** AKITOSHI OKINO, Tokyo Institute of Technology, Hidekazu Miyahara, Ken Kakegawa, Mari Aida, Takeshi Azuma, Takahiro Iwai, Yasuo Seto |
| 3:20 | | **Recess** |
| 3:35 | (610-4) | **Micro-Hollow Glow Discharge Plasma Identification of Volatile Organic Compounds and Carbonaceous Aerosols** RANDY VANDER WAL, The Pennsylvania State University, Chethan K Gaddam |
| 4:10 | (610-5) | **The Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD): Elemental, Isotopic, and Molecular Analysis in One Package** R KENNETH MARCUS, Clemson University, Lynn Zhang, Sarah M Jones, Stefanie Konegger-Kappel |

**SYMPOSIUM** **Session 620**

***Bioanalytical Applications of Nanofluidics***
arranged by Steven Soper, University of North Carolina at Chapel Hill

**Monday Afternoon, Room 260**
Steven Soper, University of North Carolina at Chapel Hill, Presiding

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| 1:30 | | **Introductory Remarks - Steven Soper** |
| 1:35 | (620-1) | **Polymer Nanofluidic Devices for DNA Analysis** STEVEN SOPER, University of North Carolina at Chapel Hill |
| 2:10 | (620-2) | **Thin-Membrane Nanochannels for Nanopore Single-Molecule Sensing and Transmission Electron Microscopy of Liquid Samples** JASON R DWYER, University of Rhode Island |
| 2:45 | (620-3) | **Acceleration of Probe and Target Reactions Using Isotachophoresis** JUAN G SANTIAGO, Stanford University |
| 3:20 | | **Recess** |

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| 3:35 | (620-4) | **Pores with Undulating Diameter for Multipronged Characterization of Single Particles in Resistive-Pulse Technique** ZUZANNA S SIWY, University of California Irvine, Matthew Schiel, Kenneth J Shea, Laura Innes, Luke Theogarajan, Ivan V Vlassiouk |
| 4:10 | (620-5) | **In-Plane Nanofluidic Devices for Counting Single Virus Particles and Their Assembly Products** STEPHEN C JACOBSON, Indiana University, Zachary D Harms, Daniel G Haywood, Lisa Selzer, Adam Zlotnick |

**SYMPOSIUM** **Session 630**

***Bioinformatics: Metabolite Identification and Quantification***

arranged by Xiang Zhang, University of Louisville

**Monday Afternoon, Room 261**

Xiang Zhang, University of Louisville, Presiding

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| 1:30 | | **Introductory Remarks - Xiang Zhang** |
| 1:35 | (630-1) | **RANSY and RAMSY: Ratio Analysis of NMR and MS to Improve Compound Identification** DANIEL RAFTERY, University of Washington, Haiwei Gu, Siwei Wei |
| 2:10 | (630-2) | **Statistical Peak Detection Algorithms for Comprehensive Two Dimensional GC-MS Data** SEONGHO KIM, Wayne State University |
| 2:45 | (630-3) | **Discriminating Precursors of Common Fragments for Untargeted Metabolomics** GARY PATTI, Washington University in St. Louis |
| 3:20 | | **Recess** |
| 3:35 | (630-4) | **Bioinformatics of Mass Spectrometry-Based Stable Isotope Assisted Metabolomics** XIANG ZHANG, University of Louisville |
| 4:10 | (630-5) | **The Exposome: Identifying Drugs and Food Components in Human Cohort Samples Using Untargeted Metabolomics** OLIVER FIEHN, University of California Davis, Tomas Cajka |

**SYMPOSIUM** **Session 640**

***Carbon Materials: Electrochemistry and Beyond***

arranged by Greg M Swain, Michigan State University

**Monday Afternoon, Room 262**

Greg M Swain, Michigan State University, Presiding

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| 1:30 | | **Introductory Remarks - Greg M Swain** |
| 1:35 | (640-1) | **Electroanalytical Performance of Nitrogen-Containing Tetrahedral Amorphous Carbon Thin-Film Electrodes** GREG M SWAIN, Michigan State University, Catherine Munson, Romana Jarosova |
| 2:10 | (640-2) | **Nanodiamonds for Liquid Phase Separations** LUIS A COLON, University at Buffalo-SUNY, Zuqin Xue, Amaris Borges-Muñoz, Lisandra Santiago-Capeles, Karina Tirado-González |
| 2:45 | (640-3) | **Synthesis, Functionalization, Spectroscopy, and Bioimaging Applications of Fluorescent Carbon Nanodots** DOO YOUNG KIM, University of Kentucky |
| 3:20 | | **Recess** |
| 3:35 | (640-4) | **A Sputtered Nanocarbon Film Electrode for Detecting Biomolecules** DAI KATO, National Institute of Advanced Industrial Science , Osamu Niwa |
| 4:10 | (640-5) | **Protein Electrochemistry at Carbon Nanotubes, Graphene, and Graphene Oxides** DAVID E CLIFFEL, Vanderbilt University, Gabriel LeBlanc, Evan A Gizzie |

**SYMPOSIUM** **Session 650**

***Chemical Issues with Contemporary Art***

arranged by Gregory D Smith, Indianapolis Museum of Art

**Monday Afternoon, Room 263**

Gregory D Smith, Indianapolis Museum of Art, Presiding

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| 1:30 | | **Introductory Remarks - Gregory D Smith** |
| 1:35 | (650-1) | **Disappearing Ink! Unraveling the Fading of a Modern Design Object** GREGORY D SMITH, Indianapolis Museum of Art, Caitlyn E Phipps, Victor Chen |
| 2:10 | (650-2) | **California Plastics: Materials and Conservation of LA Art After 1960** RACHEL RIVENC, Getty Conservation Institute |
| 2:45 | (650-3) | **Surfactant Mobility and Monitoring on Artist's Acrylic Dispersion Paints Using 2D DESI Sampling Techniques** RICHARD C WOLBERS, University of Delaware, Anthony Lagalante |
| 3:20 | | **Recess** |
| 3:35 | (650-4) | **Analyzing an Artist's Use of Modern Metals and Finishes with Portable Instrumentation** LYNN F LEE, Getty Conservation Institute, Eleonora E Nagy, Narayan Khandekar |
| 4:10 | (650-5) | **Fluorimetric Analysis of the Constituent Dyes within Daylight Fluorescent Pigments: Implications for Display and Preservation of Daylight Fluorescent Artwork** ELIZABETH HINDE, University of New South Wales, Petronella Nel, Robyn Sloggett, Ann Roberts |

**SYMPOSIUM** **Session 660**

***Miniature Mass Spectrometers***

arranged by Zheng Ouyang and R Graham Cooks, Purdue University

**Monday Afternoon, Room 242**

Zheng Ouyang, Purdue University, Presiding

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| 1:30 | | **Introductory Remarks - Zheng Ouyang and R Graham Cooks** |
| 1:35 | (660-1) | **Miniaturized Ion Traps** DANIEL E AUSTIN, Brigham Young University, Ailin Li, Aaron Hawkins, Justin Sorensen, Yuan Tian |
| 2:10 | (660-2) | **Where We Are in Mini MS and How We Got Here** R GRAHAM COOKS, Purdue University |
| 2:45 | (660-3) | **The Realization of Truly Handheld Mass Spectrometry** J MICHAEL RAMSEY, University of North Carolina at Chapel Hill |
| 3:20 | | **Recess** |
| 3:35 | (660-4) | **Development of High-Resolution Multi-Turn Time-of-Flight Mass Spectrometers** MICHISATO TOYODA, Osaka University |
| 4:10 | (660-5) | **Development of a Dual-Source Linear Ion Trap for the Mars Organic Molecule Analyzer on the ExoMars Rover Mission** WILLIAM BRINCKERHOFF, NASA/GSFC |

**SYMPOSIUM** **Session 670**

***New Frontiers for Electrochemical Trace Metal Detection of Biological and Environmental Samples on Earth and Beyond***

arranged by Parastoo Hashemi and Shawn P McElmurry, Wayne State University

**Monday Afternoon, Room 264**

Parastoo Hashemi, Wayne State University, Presiding

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| 1:30 | | **Introductory Remarks - Parastoo Hashemi and Shawn P McElmurry** |
| 1:35 | (670-1) | **Spectroelectrochemical Sensors for Measurements in Complex Samples and Natural Water** WILLIAM R HEINEMAN, University of Cincinnati, Shirmir D Branch, Sam A Bryan |
| 2:10 | (670-2) | **Quantifying Metals in Inhalable Particulate Matter Using Electrochemical Paper-Based Analytical Devices** CHARLES HENRY, Colorado State University |
| 2:45 | (670-3) | **Strategies for the In-Situ Detection of Heavy Metals in Real Environments** JULIE V MACPHERSON, University of Warwick, Glen D O'Neil, Tania L Read, Mark E Newton |
| 3:20 | | **Recess** |
| 3:35 | (670-4) | **Fast-Scan Cyclic Voltammetry (FSCV) for Rapid Environmental Analysis** SHAWN P MCELMURRY, Wayne State University, Parastoo Hashemi, Annette Tremonti, Thushani Siriwardena, Audrey R Sulkanen |
| 4:10 | (670-5) | **The Mechanisms of Fast-Scan Cyclic Voltammetry for Real-Time Environmental Trace Metal Analysis** PARASTOO HASHEMI, Wayne State University, Pavithra Pathirathna, Yuanyuan Yang, Christopher W Atcherley, Michael L Heien, Ahmad A Ibrahim, Jennifer Stockdill |

**SYMPOSIUM** **Session 680**

***The Twenty-Sixth James L Waters Symposium: Thermal Analysis Instrumentation***
arranged by Annette S Wilson, University of Pittsburgh

**Monday Afternoon, Room 245**
Annette S Wilson, University of Pittsburgh, Presiding

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| 1:30 | | **Introductory Remarks - Annette S Wilson** |
| 1:35 | (680-1) | **A Brief History of Advances in Thermal Analysis Instrumentation** ROGER LEE BLAINE, TA Instruments (Retired) |
| 2:10 | (680-2) | **From Thermometry to Differential Thermal Analysis to Differential Scanning Calorimetry, Key Developments in DSC** ROBERT DANLEY, TA Instruments |
| 2:45 | | **Recess** |
| 3:00 | (680-3) | **Hyphenated Techniques in Thermal Analysis** KEVIN P MENARD, PerkinElmer LAS |
| 3:35 | (680-4) | **Thermomechanical Analysis** BRYAN BILYEU, Xavier University of Louisiana |

**ORGANIZED CONTRIBUTED SESSION** **Session 690**

***Food Packaging***
arranged by Wendy Young, Food and Drug Administration

**Monday Afternoon, Room 265**
Wendy Young, Food and Drug Administration, Presiding

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|---|---|---|
| 1:30 | (690-1) | **A Poisoned Press? Media Coverage of BPA and Endocrine Disruption** TREVOR BUTTERWORTH, Sense About Science USA |
| 1:50 | (690-2) | **Advances in Sample Preparation for Selective Lipid Removal in Contaminant Analysis** DERICK LUCAS, Agilent Technologies, Limian Zhao, Joan Stevens, Bruce Richter |
| 2:10 | (690-3) | **Evaluation of Long Term Migration from Can Coating into Food Simulants** RAFAEL PASEIRO-CERRATO, US Food and Drug Administration, Gregory O Noonan, Timothy H Begley, Marta Vaclavikova |
| 2:30 | (690-4) | **Interaction of Food and Package Components - Positive and Negative Effects** KAY COOKSEY, Clemson University |
| 2:50 | | **Recess** |
| 3:05 | (690-5) | **Active Food Packaging as a Means to Reduce Use of Food Additives** JULIE GODDARD, University of Massachusetts Amherst, Maxine Roman, Eric Decker |
| 3:25 | (690-6) | **Nanoparticle Release from Commercially Available Food Contact Materials under Stressful Use Conditions** SUSANA ADDO NTIM, US Food and Drug Administration |
| 3:45 | (690-7) | **Static HS and HS-SPME GC/MS Analysis of the Diffusion of a Volatile Antimicrobial through Various Gas-Permeable Packaging Polymers** RIC GONZALEZ, ConAgra Foods, Inc., Indarpal Singh, William Belias, Seth Holmen |

**ORGANIZED CONTRIBUTED SESSION** **Session 700**

***High Performance Redefined for the Clinical Laboratory: New Technologies and Methods to Enable Personalized Health Care***
arranged by Mike Lee, Milestone Development Services

**Monday Afternoon, Room 266**
Mike Lee, Milestone Development Services, Presiding

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| 1:30 | (700-1) | **Applications for the Quantification of Proteins from Dried Blood Spots (DBS)** KENNETH C LEWIS, OpAns |
| 1:50 | (700-2) | **History and Innovation in the Analysis of Thyrogolublin by Mass Spectrometry** TIMOTHY J GARRETT, University of Florida |
| 2:10 | (700-3) | **Extraction, Preparation and Quantitative Analysis of Protein Biomarkers in Biological Fluids** ROBERT E BUCO, Shimadzu Corporation |
| 2:30 | (700-4) | **Fusing the HPLC Column Into the ESI-MS Source: Another Step Towards System Integration in Bioanalytical and Clinical Laboratories** SHANE NEEDHAM, Alturas Analytics, Inc., Jennifer Zimmer, Casey Johnsone, Chad Christianson |
| 2:50 | | **Recess** |
| 3:05 | (700-5) | **Digital Chromatography: What Would You Do with Infinite Speed?** GARY VALASKOVIC, New Objective Inc., Robert T Kennedy, Mike S Lee |
| 3:25 | (700-6) | **Gaining Insight into Complex Biology Using Targeted Quantitative µLC-MS** EUGENE FRANCIS CICCIMARO, Bristol-Myers Squibb, Bogdan Sleczka, John Mehl, Lorell Discenza, Zhu Yongxin, Celia D'Arienzo, Timothy Olah |

**ORGANIZED CONTRIBUTED SESSION** **Session 710**

***Impurities/Degradation Products in Drug Substances: Innovative Approaches to Control the Process***
arranged by Andy Miles and Paul Wrezel, Regis Technologies, Inc.

**Monday Afternoon, Room 267**
Andy Miles, Regis Technologies, Inc., Presiding

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| 1:30 | (710-1) | **Selected Case Studies Involving Method Development for Trace-Level Impurities** PAUL WREZEL, Regis Technologies, Inc. |
| 1:50 | (710-2) | **Drug Impurity Isolation for Structure Elucidation** TONY YAN, Pfizer |
| 2:10 | (710-3) | **Integrating the Chemistry of Drug Degradation into the Structure Elucidation Workflow: A Focus on Sample Enrichment** TODD ZELESKY, Pfizer |
| 2:30 | (710-4) | **Structure Elucidation of Impurities in Drug Substances by 2D NMR** IGOR LIKHOTVORIK, Regis Technologies, Inc. |
| 2:50 | | **Recess** |
| 3:05 | (710-5) | **HPLC Method Development for New Drug Candidates with Multiple Chiral Centers** MICHAEL W DONG, Genentech, Kelly Zhang, Goel Meenakshi |
| 3:25 | (710-6) | **Isolation and Characterization of Impurities in Support of Drug Discovery and Development** RAY MCCLAIN, Merck, James Small, Keith Moore, Scott Ceglia |
| 3:45 | (710-7) | **Exploring the Separation Power of HILIC for the Analysis of Polar Impurities** MATTHEW PRZYBYCIEL, ES Industries |

**ORGANIZED CONTRIBUTED SESSION** **Session 720**

***Women in Spectroscopy***
arranged by Ellen Miseo, Analytical Answers, Inc. and Gloria Story, Procter and Gamble Co.

**Monday Afternoon, Room 268**
Ellen Miseo, Analytical Answers, Inc., Presiding

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| 1:30 | (720-1) | **Must Women Try Harder?** JEANETTE GRASSELLI BROWN, BP America, Retired |
| 1:50 | (720-2) | **Career Path of a Female Spectroscopist in an Instrumentation Company** FRAN ADAR, Horiba Scientific |
| 2:10 | (720-3) | **Taking Chances and Trusting Your Instinct** MARY KATE DONAIS, Saint Anselm College |
| 2:30 | (720-4) | **Creating an Environment That Encourages and Supports Women in Science** ANNA DONNELL, University of Cincinnati |
| 2:50 | | **Recess** |
| 3:05 | (720-5) | **An Unconventional Career in Teaching: Pursuing Your Passion in All You Do** SHERRY LYNN HEMMINGSEN, JASCO, Inc. |
| 3:25 | (720-6) | **A Madame Curie Inspired Career in Science: From Physics to Chemistry to Biology, A Journey Through Spectroscopy** KATHRYN SCHADE KALASINSKY, National Institutes of Health |
| 3:45 | (720-7) | **A Career in Spectroscopy Publishing - 27 Years and Counting!** JENNIFER COSSHAM, Wiley |
| 4:05 | (720-8) | **Technical Credibility and Excellence** DIANE GROB SCHMIDT, University of Cincinnati |

# TECHNICAL PROGRAM



**ORAL SESSION** **Session 730**

*Analytical Neurochemistry*

**Monday Afternoon, Room 240**
Elizabeth Harris, Mannkind Corporation, Presiding

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| 1:30 | (730-1) | **Chiral Separation and Measurement of D-Aspartate and D-Glutamate in Single Neurons by Sample Stacking Capillary Electrophoresis with Laser-Induced Fluorescence** AMIT V PATEL, University of Illinois at Urbana-Champaign, Takayuki Kawai, Stanislav S Rubakhin, Jonathan V Sweedler |
| 1:50 | (730-2) | **Oxygen Response to Local Application of Glutamate in the Nucleus Accumbens** LINDSAY WALTON, University of North Carolina at Chapel Hill, Susan Carroll, Nick Boustead, Robert M Wightman |
| 2:10 | (730-3) | **Fluorescence Ratiometric Imaging For Monitoring the Response of the Glutathione System in Rat Organotypic Hippocampal Slice Cultures During Oxygen-Glucose Deprivation and Reperfusion** BOCHENG YIN, University of Pittsburgh, Stephen G Weber, German Barrionuevo |
| 2:30 | (730-4) | **Mass Spectrometry-Based Quantitation of Exercise Induced Peptide Changes in the Mouse Brain** SARAH E DOWD, University of Illinois at Urbana-Champaign, Martina L Mustroph, Elena V Romanova, Justin S Rhodes, Jonathan V Sweedler |
| 2:50 | | **Recess** |
| 3:05 | (730-5) | **Mass Spectrometric Imaging of the Content of Single Neurotransmitter Vesicles** JELENA LOVRIC, Chalmers University of Technology, Bengt R Johansson, Anders Meibom, Per Malmberg, Andrew G Ewing |
| 3:25 | (730-6) | **Mass Spectrometry Imaging and Identification of Peptides in Tissue Regeneration** TA-HSUAN ONG, University of Illinois at Urbana-Champaign, James J Collins, Rachel H Roberts-Galbraith, Phillip A Newmark, Elena V Romanova, Jonathan V Sweedler |
| 3:45 | (730-7) | **Integrated Injection-Molded Microchips for Stimulation and Measurement of Exocytosis from Single PC-12 Cells Using a Polymer Microelectrode** RICHARD F VREELAND, University of Arizona, Marco Matteucci, Rafael Taboryski, Michael L Heien |
| 4:05 | (730-8) | **Novel Impedance based Sensor for In Vivo Cocaine Detection** I MITCH TAYLOR, University of Pittsburgh, Zhanhong Du, Carine White, Xinyan T Cui |

**ORAL SESSION** **Session 740**

*Atomic Spectroscopy-Instrumentation and Analysis*

**Monday Afternoon, Room 241**
Vassili Karanassios, University of Waterloo, Presiding

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| 1:30 | (740-1) | **Applications Enabled by Glow Discharge Optical Emission Spectroscopy Elemental Mapping** GERARDO GAMEZ, Texas Tech University, Marcel Kroschk |
| 1:50 | (740-2) | **Using Direct Mercury Analysis for Mercury Speciation in Marine Environmental Samples** SUMEDH PHATAK, Milestone Inc., David Gunn |
| 2:10 | (740-3) | **Quantitative Evaluation of Interferences in Optical Emission Spectroscopy: Towards Quantitative Line Assignment** MATTHIEU BAUDELET, University of Central Florida, Jessica Chappell, Brandon Seesahai, Martin Richardson, Michael E Sigman |
| 2:30 | (740-4) | **Carbon Nanotubes by Electrothermal, Near-Torch Vaporization Sample Introduction and Inductively Coupled Plasma-Atomic Emission Spectrometry** VASSILI KARANASSIOS, University of Waterloo, A Mohammad, H Lee |
| 2:50 | | **Recess** |
| 3:05 | (740-5) | **Enhanced Limit of Detection and Repeatability of Trace Sulfur Analysis Using Optimized Alternative Pulsed Energy Source** AARON MENDEZ, PAC, Supriyo Ghosh, Ricardo Trevino |
| 3:25 | (740-6) | **Analytical Characterization of the Liquid Sampling-Atmospheric Pressure Glow Discharge for Optical Emission Spectroscopy** SARAH M JONES, Clemson University, Stefanie Konegger-Kappel, R Kenneth Marcus |
| 3:45 | (740-7) | **Technologies for the Preparation of Samples for the Determination of Gold, Silver and PGEs: A Reevaluation** IAN D BRINDLE, Brock University, Yong Wang, Laura Boudreau |
| 4:05 | (740-8) | **Biodiesel Analysis for Inorganic Contaminants Using ICP-OES** STAN SMITH, PerkinElmer, Dan Jones |

**ORAL SESSION** **Session 745**

*Bioanalytical - General Interest*

**Monday Afternoon, Room 277**
Kevin Cantrell, University of Portland, Presiding

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| 1:30 | (745-1) | **Phyto-Constituents Investigation and In-Vivo Hair Growth Promotion of the Leaf of Hibiscus Rosa Sinensis Plant** OLAYINKA T ASEKUN, University of Lagos, Anita K Asekunowo |
| 1:50 | (745-2) | **Quantifying the Effect of Flow Rate on Biofilm Formation and Removal** EDGAR D GOLUCH, Northeastern University, Pegah N Abadian, Bowen Huo |
| 2:10 | (745-3) | **Smart Sensors for Discovery of miRNA-mRNA Binding Sites** SEAN M BURROWS, Oregon State University |
| 2:30 | (745-4) | **The High-Throughput use of Hue Calculated Directly from Digital Images to Quantify the pH of Small-Volume Biological Samples** KEVIN CANTRELL, University of Portland, Jeffery Brown |
| 2:50 | | **Recess** |
| 3:05 | (745-5) | **Whispering Gallery Mode Resonators for the Development of Label-Free Biosensing Platforms** SARAH M WILDGEN, University of Kansas, Daniel C Kim, Robert C Dunn |
| 3:25 | (745-6) | **Distribution Profiling of Circulating MicroRNAs in Serum** KENNETH FLACK, University of California Riverside, Jonathan Ashby, Wenwan Zhong |
| 3:45 | (745-7) | **CNT-Based Nanobiosensor for Differentiating Bacterial and Viral Infections** NUVIA M SAUCEDO, University of California, Riverside, Ashok Mulchandani, YingNing Gao |
| 4:05 | (745-8) | **Design and Development of an Antimicrobial Peptides Sensor for Bacteria Detection** XIAOBO LIU, Clarkson University, Mouna Marrakchi, Dawei Xu, He Dong, Silvana Andreescu |

**ORAL SESSION** **Session 750**

*Capillary Electrophoresis for Bio-Analysis*

**Monday Afternoon, Room 255**
Emelita D Breyer, Breyer Foundation, Presiding

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| 1:30 | (750-1) | **Identification of Deadly Species of Aspergillus in a Microfluidic Device with Phospholipid Nanogel** TYLER DAVIS, West Virginia University, Lisa A Holland |
| 1:50 | (750-2) | **Construction of Ion-Channel Functionalized Detector for Capillary Separations** LEONARD K BRIGHT, University of Arizona, Craig A Aspinwall, Christopher A Baker |
| 2:10 | (750-3) | **Determining Extra-Cellular Amino Acids Secreted from Adipocytes Using Online Microdialysis Capillary Electrophoresis** RACHEL HARSTAD, University of Minnesota, Michael Bowser |
| 2:30 | (750-4) | **Analysis of Metabolites in Exosoms by CE-MS** RUI XU, Jackson State University, Yi-Ming Liu |
| 2:50 | | **Recess** |
| 3:05 | (750-5) | **Selection of Aptamers for Ovarian Cancer Biomarkers Informed by Next-Generation Sequencing and Bioinformatics** REBECCA WHELAN, Oberlin College, Jamie Shallcross, Rachel Eaton, Tae Kyu Uhm, Mildred Felder, Arvinder Kapur, Manish Patankar |
| 3:25 | (750-6) | **Chemical Cytometry of Drug Targets: Direct Quantification of Epidermal Growth Factor Receptor Activity in Single Cells** ABIGAIL H TURNER, University of North Carolina at Chapel Hill, Michael S Lebhar, David S Lawrence, Nancy L Allbritton |
| 3:45 | (750-7) | **Integrating Microscale Enzymatic Reactions Into Capillary Separation** SRIKANTH GATTU, West Virginia University, Cassandra Crihfield, Anthony Moncrief, Lisa A Holland |
| 4:05 | (750-8) | **Fast and Efficient Electrophoresis in Silica Colloidal Crystals** PEI-HSUN WEI, Purdue University, Mary J Wirth |

**ORAL SESSION** **Session 760**

*Electrochemistry - Pharma and Bioanalytical*

**Monday Afternoon, Room 256**
Edgar D Goluch, Northeastern University, Presiding

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|---|---|---|
| 1:30 | (760-1) | **Electrochemistry of Subcellular Liver Fractions in Contact with Carbon and Magnetic Nanostructures** SADAGOPAN KRISHNAN, Oklahoma State University, Rajasekhar Reddy Nerimetla, Lakshmi Kasi Viswanath, Mayowa Akinwale |
| 1:50 | (760-2) | **EIS Studies of Tethered Artificial Phospholipid Bilayer Membranes and the Effects of Potential Drug Targets** PAUL A DUCKWORTH, eDAQ, Bruce Cornell, Sonia Carne, Heba Alkhamici, Charles Cranfield |
| 2:10 | (760-3) | **An Old Approach to a New Problem: Electrochemical Analysis of Hydrazine in Pharmaceuticals** ROBERT B CHANNON, University of Warwick, Eleni Bitziou, Maxim B Joseph, Anthony W Bristow, Andrew D Ray, Jonathan C Newland, Julie V Macpherson |
| 2:30 | (760-4) | **Electrochemical Quartz Crystal Immunosensor for Insulin Detection In Complex Clinical Matrices** VINI SINGH, Oklahoma State University, Sadagopan Krishnan |
| 2:50 | | **Recess** |
| 3:05 | (760-5) | **Amperometric Detection of Heavy Metals by Inhibition of Glucose Oxidase Immobilized on Nitrogen-Doped Carbon Nanotube Electrodes** IAN M RUST, University of Texas at Austin, Keith J Stevenson |
| 3:25 | (760-6) | **Electrochemical Biosensors and Its Application in the Quantification of Biomolecules and Tumor Cells** YUN LIU, Fudan University |
| 3:45 | (760-7) | **Development of Carbon-based Sensors for the Detection of Cellular Communication in Microenvironments** JANINE ELLIOTT, University of Texas at Austin |
| 4:05 | (760-8) | **Decreasing Identification Time for Pseudomonas Aeruginosa Using a Simple Electrochemical Sensor** EDGAR D GOLUCH, Northeastern University, Thaddaeus A Webster, Hunter J Sismaet\| |

**ORAL SESSION** **Session 770**

*Environmental - LC/GC Techniques*

**Monday Afternoon, Room 257**
David Benanou, Veolia Environmental Research and Innovation, Presiding

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|---|---|---|
| 1:30 | (770-1) | **A Comprehensive Removal Study of Selected Pharmaceuticals by PACs in Source and Drinking Water Using LC-MS/MS** RUIPU MU, Missouri University of Science and Technology, Honglan Shi, Craig Adams, Todd Euchholz, Yinfa Ma |
| 1:50 | (770-2) | **Determination of Trace Concentrations of Disinfection Byproduct Anions and Bromide in Drinking Water Using a Hydroxide-Selective Column** BRIAN DE BORBA, Thermo Fisher Scientific, Jeffrey Rohrer |
| 2:10 | (770-3) | **A New Method for ppb Analysis of H2S in Air and Water** JACK N DRISCOLL, PID Analyzers, LLC, Jennifer L Maclachlan |
| 2:30 | (770-4) | **Improving the Accuracy of (Semi) Volatile Organic Compounds Measurements** ANNARITA BALDAN, VSL, Dita Heikens, Jianrong Li |
| 2:50 | | **Recess** |
| 3:05 | (770-5) | **Separation of Uremic Toxins with a Resorcinarene-Based IC Column** TAYYEBEH PANAHI, Brigham Young University, Roger G Harrison, John D Lamb |
| 3:25 | (770-6) | **Advanced Treatment of Sewage Effluent for Enhanced Removal of Typical Pharmaceuticals** DANIELLE M WEST, Missouri University of Science and Technology, Xiangjuan Yuan, Zhimin Qiang, Yinfa Ma, Honglan Shi |
| 3:45 | (770-7) | **Anion and Cation Analysis of Produced Water From Hydraulic Fracturing Using Ion Chromatography** CARL A FISHER, Thermo Fisher Scientific, Terri Christison, Hua Yang, Linda Lopez |
| 4:05 | (770-8) | **Profiling Time-Dependent Concentration Trends of Individual VOC Components for Residential Area Near Petrochemical Plant Using a Sub-ppb Detection µGC** CHIA-JUNG LU, National Taiwan Normal University, Rih-Sheng Jian, Tse-Yu Wang, Lung-Yu Song |

**ORAL SESSION** **Session 780**

*GC/MS-Environmental and Regulatory*

**Monday Afternoon, Room 269**
John Kokosa, Research Consultant, Presiding

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| 1:30 | (780-1) | **Identification of the Halogenated Compounds Resulting from the 1997 Plastimet Inc. Fire in Hamilton, Ontario, Using Comprehensive Two-Dimensional Gas Chromatography and (Ultra) High Resolution Mass Spectrometry** SUJAN FERNANDO, McMaster University, Karl Jobst |
| 1:50 | (780-2) | **Environmental Forensics Determination of Emerging Contaminants in Wastewater Samples** SARAH PREBIHALO, The Pennsylvania State University, Frank Dorman, Jack Cochran |
| 2:10 | (780-3) | **Forensic Identification of Hazardous Substances in Emergency Samples Using Gas Chromatograph-Quadrupole Time-Of-Flight Mass Spectrometer (GC/Q-TOF)** CHUN YANG, Environment Canada, Patrick Lambert, Mike Landriault, Michael Goldthorp, Carl Brown |
| 2:30 | (780-4) | **Advances of Volatile Organic Compound (VOC) Analysis Including Alternate Carrier Gases** LEE MAROTTA, PerkinElmer, Jacob A Rebholz, Roger Bardsley, Thomas Hartlein |
| 2:50 | | **Recess** |
| 3:05 | (780-5) | **Identification of Hookah Tobacco Volatiles Via SPME-GCMS** AMBERLIE CLUTTERBUCK, University of Cincinnati, Willam Wetzel, Ryan T Saadawi, Joseph A Caruso |
| 3:25 | (780-6) | **Development of On-Line and Field Dual TD GC-MS for Automatic VOC Monitoring on Petrochemical Sites** FRANCK AMIET, Chromatotec, Michel Robert |
| 3:45 | (780-7) | **Distinguishing among BTEXS Sources and Confounders in Whole Human Blood Using SPME GC/MS-SIM** CHRISTOPHER M REESE, Centers for Disease Control and Prevention, Lydia G Thornburg, Eduardo Sanchez, David M Chambers |
| 4:05 | (780-8) | **Detection of Hazardous Aromatic Amines and Amides by Mass Spectrometry Methods** KIRILL TRETYAKOV, National Institute of Standards and Technology, Nino Todua, Anzor Mikaia |

**ORAL SESSION** **Session 790**

*GC/MS-General Interest/Plastic and Polymers*

**Monday Afternoon, Room 270**
Huamin Cai, VICI Valco Instruments Co., Inc., Presiding

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| 1:30 | (790-1) | **Extending the Range of Compounds Amenable for GC-MS Analysis** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon |
| 1:50 | (790-2) | **Development of a Soft Ion Source for GC Used with a High Resolution TOFMS** LLOYD ALLEN, LECO Corporation, Viatcheslav Artaev |
| 2:10 | (790-3) | **Rapid Catalyst Screening Using a High Pressure, Tandem Micro-Reactor GC/MS** ROBERT FREEMAN, Frontier Laboratories, Y Kim, Chu Watanabe, Kaige Wang, Terry Ramus, David Randle |
| 2:30 | (790-4) | **Exploring a Novel Solution to Use Hydrogen Carrier Gas in Gas Chromatography Reducing Its Potential Safety Hazards** SERGIO GUAZZOTTI, Thermo Fisher Scientific, Paolo Magni, Franco Ponciroli, Edward B McCauley, Massimo Santoro |
| 2:50 | | **Recess** |
| 3:05 | (790-5) | **Comparison of Headspace Sampling and Polymer Precipitation for Determination of Residual Solvents in Polymer Films** SHUBHEN KAPILA, University of Missouri, Carlo Roggero |
| 3:25 | (790-6) | **Adding High Pressure Capability to a Tandem Micro-Reactor GC/MS** CHU WATANABE, Frontier Laboratories, K Ito, Kaige Wang, Robert Freeman, David Randle |
| 3:45 | (790-7) | **How to Improve Sample Identification by GC-MS** AVIV AMIRAV, Tel Aviv University, Tal Alon |
| 4:05 | (790-8) | **Analytical Derivatives for the NIST/NIH/EPA Mass Spectral Library** ANZOR MIKAIA, National Institute of Standards and Technology, Stephen E Stein, Nino G Todua, Kirill V Tretyakov |

# TECHNICAL PROGRAM



## ORAL SESSION — Session 800

*Methods for Cancer Detection*

**Monday Afternoon, Room 271**
Matthew J Baker, University of Strathclyde, Presiding

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|---|---|---|
| 1:30 | (800-1) | **3D, Paper-Based Cultures to Evaluate Cellular Invasiveness in a Tissue-Like Environment** MATTHEW R LOCKETT, University of North Carolina at Chapel Hill |
| 1:50 | (800-2) | **Isolation of Low Abundance Cancer Cells from Blood Using Surface Acoustic Waves** PENG LI, The Pennsylvania State University, Tony J Huang, Yuchao Chen, Feng Guo |
| 2:10 | (800-3) | **Magnetic-Optical Hybrid Nanoparticles for Isolation and Detection of Rare Cancer Cells in Whole Blood** XIAOHUA HUANG, University of Memphis, Saheel Bhana, Ryan T O'Connor, Yongmei Wang |
| 2:30 | (800-4) | **Multiplexed Phosphoprotein Expression Profiling with Microring Resonator Arrays in Cancer Cell Lysate and Tumor Tissue Homogenate** JAMES H WADE, University of Illinois at Urbana-Champaign, Aurora Alsop, Hongwei Yang, Mark D Johnson, Ryan C Bailey |
| 2:50 | | **Recess** |
| 3:05 | (800-5) | **Illuminating the Future of Cancer Diagnosis via Serum ATR-FTIR Spectroscopy** MATTHEW JAMES BAKER, University of Strathclyde, Graeme Clemens, James Hands |
| 3:25 | (800-6) | **Paper Chemiluminescence ImmunoPAD: Rapid Detection of Cancer Biomarker Proteins Using Magnetic Bead Bioconjugates** CHI TANG, University of Connecticut, James F Rusling, Abhay Vaze |
| 3:45 | (800-7) | **A Controllable Aptamer-Based Self-Assembled DNA Dendrimer for High Affinity Targeting, Bioimaging and Drug Delivery** HUIMIN ZHANG, Xiamen University, Yanli Ma, Yi Xie, Yishun Huang, Yuan An, Zhi Zhu, Chaoyong Yang |
| 4:05 | (800-8) | **Circulating Tumor Cell Analysis for Cancer Metastasis Using a Novel Track-Etched Magnetic Micropore (TEMPO) Filter based Microfluidic Device** JIN A KO, University of Pennsylvania, David Issadore |

## ORAL SESSION — Session 810

*Novel Microfluidic Instrumentation and Devices*

**Monday Afternoon, Room 272**
Kimberley A Frederick, Skidmore College, Presiding

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|---|---|---|
| 1:30 | (810-1) | **Electrokinetic Sample Preconcentration and Hydrodynamic Sample Injection for Capillary Electrophoresis Using a Pneumatic Microvalve** YONGZHENG CONG, Pacific Northwest National Laboratory, Sarah Rausch, Sachin Jambovane, Tao Geng, Ryan T Kelly |
| 1:50 | (810-2) | **Integrated Microfluidics and Mass Spectrometry for Cell Secretion Studies** COLLEEN E DUGAN, University of Michigan, Ormond A MacDougald, Robert T Kennedy |
| 2:10 | (810-3) | **Nano-Liquid Chromatography Coupled with Micro Free-Flow Electrophoresis for Multi-Dimensional Separations** MATTHEW GEIGER, University of Minnesota, Michael Bowser |
| 2:30 | (810-4) | **Dynamic, Flow-based In Vitro Tools for Drug Discovery Using Surface-Modified 3D-printed Platforms and Integrated Electrodes** BETHANY C GROSS, Michigan State University, Dana M Spence |
| 2:50 | | **Recess** |
| 3:05 | (810-5) | **Droplet-Based Screening of Enzyme Modulators Using Sub-Second Microchip Electrophoresis** ERIK D GUETSCHOW, University of Michigan, Robert T Kennedy |
| 3:25 | (810-6) | **Low-Cost Microfluidic Diagnostic Assays Fabricated Using Polycaprolactone** CHRISTOPHER A HEIST, Oregon State University, Chadd Armstrong, Pascal T Sanchez, Vincent T Remcho |
| 3:45 | (810-7) | **Fully Inkjet-Printed Microfluidic Paper-Based Analytical Device for Simultaneous Multiple Analysis of Essential Metal Ions** TERENCE HENARES, Keio University, Shunsuke Takaki, Koji Suzuki, Daniel Citterio |
| 4:05 | (810-8) | **Target-Responsive Hydrogel with Volumetric Bar-Chart Chip for Quantitative Point-of-Care Testing** ZHI ZHU, Xiamen University, Zhichao Guan, Shasha Jia, Chaoyong Yang |

## ORAL SESSION — Session 820

*Pharmaceutical- LC, LC/MS*

**Monday Afternoon, Room 273**
Holly Shackman, Bristol Myers Squibb, Presiding

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|---|---|---|
| 1:30 | (820-1) | **New Ion Chromatography Methods for Pharmaceutical Analysis** JEFFREY ROHRER, Thermo Fisher Scientific |
| 1:50 | (820-2) | **RPLC Separation of IgG2 Disulfide Isomers** XIANG CAO, Purdue University, Oyeleye A Alabi, Mary J Wirth |
| 2:10 | (820-3) | **The Case for Including Core-Type Columns in HPLC and UHPLC Method Development** RICHARD A HENRY, Supelco/Sigma-Aldrich, Carmen T Santasania, Hugh Cramer, David S Bell |
| 2:30 | (820-4) | **The Wait is Over: Enantiomeric Separations in Less than 60 Seconds Using HPLC** DARSHANKUMAR C PATEL, University of Texas at Arlington, M Farooq Wahab, Zachary S Breitbach, Daniel W Armstrong |
| 2:50 | | **Recess** |
| 3:05 | (820-5) | **Reversed-Phase Liquid Chromatography of Intact Monoclonal Antibody Aggregates and Fragments Using Nonporous Submicron Silica Particles** OYELEYE A ALABI, Purdue University, Xiang Cao, Mary J Wirth |
| 3:25 | (820-6) | **Separation of Chiral Pharmaceuticals Using Novel Polymerized Sugar-Based Molecular Micelles in Micellar Electrokinetic Chromatography - Mass Spectrometry (MEKC-MS)** YIJIN LIU, Georgia State University, Shahab Shamsi |
| 3:45 | (820-7) | **Nano RPLC-MS of Protein Digests Using Submicron Nonporous Particles** XIMO ZHANG, Purdue University, Zhen Wu, Nicholas Sortedahl, Mary J Wirth |
| 4:05 | (820-8) | **Effect of Calliandra Portoricensis on the Pharmacokinetics of Glibenclamide in Rats** GRACE E UKPO, University of Lagos, Steve O Ogbonnia, Teddy S Ehianeta, Wuraola A Badiru |

## ORAL SESSION — Session 830

*Quantitative MS for Bio-Analysis (Half Session)*

**Monday Afternoon, Room 274**
Huilin Li, University of California Los Angeles, Presiding

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|---|---|---|
| 1:30 | (830-1) | **Triple Quadrupole Tandem Mass Spectrometric Determination of Desirable Glycolipid Population in Bread Quality Hard Wheat Breeding Nurseries** MARK D BOATWRIGHT, Kansas State University, David L Wetzel, Allan K Fritz |
| 1:50 | (830-2) | **Use of Direct Analysis Methods in Quantification of Drugs in Dried Blood Spots by Mass Spectrometry** ELIZABETH S DHUMMAKUPT, University of Florida, Richard A Yost |
| 2:10 | (830-3) | **Integration of Microfluidics with High Resolution Mass Spectrometry (HRMS) in Drug Metabolism and Bioanalytical Studies** PAUL RAINVILLE, Waters Corporation, Mark Wrona |
| 2:30 | (830-4) | **Native Top-Down FTICR Mass Spectrometry of Soluble and Membrane Protein Complexes** HUILIN LI, University of California Los Angeles, Iain Campuzano, Paul Schnier, Joseph A Loo |

## ORAL SESSION — Session 840

*Raman Spectroscopy Advances*

**Monday Afternoon, Room 275**
Richard Bormett, Renishaw, Inc., Presiding

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|---|---|---|
| 1:30 | (840-1) | **Miniature Deep UV Raman and Fluorescence Instruments for Trace Chemical and Biological Detection** WILLIAM F HUG, Photon Systems, Inc, Rohit Bhartia, Ray D Reid, Luther W Beegle, Lauren P DeFlores |
| 1:50 | (840-2) | **Development of Deep UV Raman Instrumentation for Stand-Off Detection of Energetic Molecules** SERGEI V BYKOV, University of Pittsburgh, Kyle T Hufziger, Katie L Gares, Sanford A Asher |
| 2:10 | (840-3) | **Raman Imaging Using A Digital Micromirror Device (DMD)** VENKATA N K RAO BOBBA, Cleveland State University, Rajesh Morampudi, John F Turner |
| 2:30 | (840-4) | **Transmission Raman Imaging: Large and Fast** TIM SMITH, Renishaw PLC, Philippa C Law, Richard J Blackwell-Whitehead |
| 2:50 | | **Recess** |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

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|---|---|---|
| 3:05 | (840-5) | **Development of a Solution Based SERS Assay for the Detection of Multiple Explosives** RACHEL NORMAN, University of Strathclyde, Neil Shand, Karen Faulds, Duncan Graham |
| 3:25 | (840-6) | **Raman Hyperspectral Imaging Spectrometers Utilizing Crystalline Colloidal Array Photonic Crystal Diffraction** KYLE T HUFZIGER, University of Pittsburgh, Sergei V Bykov, Temiloluwa Olonilua, Sanford A Asher |
| 3:45 | (840-7) | **Improved Material Identification Using an Advanced Handheld Raman Spectrometer** CLAIRE DENTINGER, Rigaku Raman Technologies, Mark Mabry, Eric Roy |
| 4:05 | (840-8) | **An Automated Universal Raman Molecules Analysis System for Material Identification and Quantification** FRANK J YANG, AcuTech Scientific Inc., Frank C Wu, Kevin Wang, Austin Liu |

## ORAL SESSION — Session 850

*Sensors - Spectral Platforms*

**Monday Afternoon, Room 276**
William R LaCourse, University of Maryland Baltimore County, Presiding

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|---|---|---|
| 1:30 | (850-1) | **Fluorescent Organic Nanoparticles: A Selective Recognition of Iodide Using Displacement Assay and Estimating Iodide in Water and Biological Fluids** AMANPREET K CHAHAL, Panajb University Chandigarh |
| 1:50 | (850-2) | **Doped Polystyrene-Core Silica-Shell Nanoparticles for Scintillation Proximity Assays in Aqueous Biological Samples** COLLEEN M JANCZAK, University of Arizona, Isen Andrew C Calderon, Eka Noviana, Craig A Aspinwall |
| 2:10 | (850-3) | **Multiplexed DNA Detection Based on Plasmonic Enhanced Fluorescence** ZHONG MEI, University of Texas at San Antonio, Liang Tang |
| 2:30 | (850-4) | **Enzyme Linked DNA Dendrimers as Nanosensors for Acetylcholine** JENNIFER M MORALES, Northeastern University, Ryan Walsh, Christopher G Skipwith, Timothy T Ruckh, Heather A Clark |
| 2:50 | | **Recess** |
| 3:05 | (850-5) | **Investigation of Ultrathin Oxide Films as Spacers for Multilayer-Enhanced SERS Substrates** PIETRO STROBBIA, University of Maryland Baltimore County, Brian M Cullum |
| 3:25 | (850-6) | **Responsive Ionic Liquid-Polymer Photonic Crystal Gas Sensors** NATASHA L SMITH, University of Pittsburgh, Zhenmin Hong, Sanford A Asher |
| 3:45 | (850-7) | **Electrogenarated Chemiluminescence Biosensing for the Detection of Prostate PC-3 Cancer Cells** CHENGXIAO ZHANG, Shaanxi Normal University, Haiying Yang |
| 4:05 | (850-8) | **Detection of Clenbuterol by Using Localized Surface Plasmon Resonance** TOSHIKAZU KAWAGUCHI, Hokkaido University, Kinichi Morita, Suherman Suherman |

## POSTER SESSION — Session 860

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Advances in Separation Sciences*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

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|---|---|
| (860-1 P) | **Short Chain Fatty Acid Headspace Analysis for GC Using In-Vial Alcohol Esterification** MARK WAKSMONSKI, Shimadzu Scientific Instruments |
| (860-2 P) | **Evaluation of the Effect of Column Length on Optimal Carrier Gas Linear Velocity** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Greg A Baney, Gustavo Serrano, Daniel Shollenberger |
| (860-3 P) | **Quantitative Technology Alternative to GCxGC for Complex Mixtures** STACEY E BEYER, Prism Analytical Technologies, Inc., Alice E Delia, Martin L Spartz, Anthony S Bonanno |
| (860-4 P) | **Measurement Capability Assessment Study for the Analysis of Oxygen in Helium Mixtures** TRAVIS ERVES, Matheson Gas |
| (860-5 P) | **Nitrogen Balance Helium MCA Study Using a Micro GC** ASHLEY ELLIS, Matheson Gas |
| (860-6 P) | **Standard Materials Calibration System for the Expansion of the SI-Traceable Calibration Standard Mixture** SASAKI TOMOHIRO, HORIBA STEC, Co.,Ltd. |
| (860-7 P) | **Ion Beams in Planar Drift Tubes for Ion Mobility Spectrometers with Curved Electric Fields (Simulations and Experiments)** HARIKRISHNAN SUKUMAR, New Mexico State University, Gary Alan Eiceman |
| (860-8 P) | **Influence on Quantitative Response from Moisture in the Supporting Atmosphere of a Drift Tube for Ion Mobility Spectrometry** TIM J WILLY, New Mexico State University, Gary Alan Eiceman |
| (860-9 P) | **Elemental Determinations, Geological to Biological - WDXRF Analysis Using Standard, Standardless, and Advanced Investigative Techniques** AL MARTIN, Thermo Fisher Scientific, Andrea C McWilliams |
| (860-10 P) | **Stability, Linearity and Repeatability of Nitrogen and Carbon Determination by Flash Combustion Using Argon as Carrier Gas** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone |
| (860-11 P) | **GCxGC Column Kits Offer Choice and Convenience** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Gustavo Serrano, Daniel Shollenberger, Jamie L Desorcie, Greg A Baney, Michael D Buchanan |
| (860-12 P) | **Microfluidic Platform for Use in Flow-Based Biosensors and Affinity Separations** RYAN MATSUDA, University of Nebraska-Lincoln, Benjamin Hage, John Vargas, Zhao Li, Elliott Rodriguez, Erika Pfaunmiller, Michael Stoller, Abhiteja Konda, Matt Kottwitz, Stephen Gross, Stephen A Morin, David S Hage |
| (860-13 P) | **New Micro Plasma Emission Detector System for Gas Chromatograph** LOUIS PARADIS, LDetek |
| (860-14 P) | **Development and Evaluation of Inert GC Capillary Columns** KRISHNAT P NAIKWADI, J & K Scientific Inc., Allen J Britten |
| (860-15 P) | **An Innovative, Reliable, Easy Set-Up for the Analysis of Permanent Gases via PDD and Gas Sampling Valve** SERGIO GUAZZOTTI, Thermo Fisher Scientific, Andrea Caruso, Riccardo Facchetti, Massimo Santoro |
| (860-16 P) | **Combining Mass Spectral Detection with Orthogonal Optical Detectors for Chromatographic Analysis** AMANDA B DLUGASCH, Waters Corporation, Thomas Edward Wheat |
| (860-17 P) | **Exploring Mixed-Mode Chromatography – Column Chemistry, Properties and Applications** XIAODONG LIU, Thermo Fisher Scientific, Christopher A Pohl |
| (860-18 P) | **Two-Dimensional Detection in Ion Chromatography: Sequential Conductometry after Suppression and Diethylamine Introduction** HONGZHU LIAO, University of Texas at Arlington, Purnendu K Dasgupta, Dong-Soo Lee, Kannan Srinivasan |
| (860-19 P) | **Silicon vs Classical Mechanical Injection Valves: Performance Comparison and Benefits Assessment** MELANIE PETITJEAN, Apix Analytics, Eric Colinet, Pierre Puget, Morgane Riviere, Sophie Lombard, Martine Carre |
| (860-20 P) | **A Dual-FP-Cavity Micro Gas Chromatography Detector** JIN TAO, Tianjin University, Zhihong Feng, Wei Pang, Hao Zhang, Xuexin Duan, Daihua Zhang, Jing Liu |
| (860-21 P) | **Preparation of Low-Cost Natural Particle Embedded Composite Cryogels for Protein Purification** HUSEYIN ALKAN, Dicle University, Fatma Gurbuz, Şeyda Ceylan, Serap Tanir, Mehmet Odabaşı |
| (860-22 P) | **Synthesis of PHEMA-Water Soluble Imine-Chitosan-$Cu^{2+}$ Composites and Its Use for Lysozyme Adsorption** ÖMUR ACET, Aksaray University, Gökhan Yüksel, Ozlem Arslan, Talat Baran, Ayfer Menteş, Mehmet Odabaşı |
| (860-23 P) | **A Novel Hybrid Cryogel Column for α-Amylase Purification** GÖKHAN YÜKSEL, Aksaray University, Ihsan Alacabey, Nur A Alacabey, Ömür Acet, Ozlem Arslan, Miren Sen, Mehmet Odabaşı |
| (860-24 P) | **A Novel Continuous Flow Extractor** RUDY STROHSCHEIN, Continous Extraction LLC, Mark A Buese |

## POSTER SESSION — Session 870

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Art and Archaeology*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

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|---|---|
| (870-1 P) | **Characterization of Aged Varnishes in Art Conservation: A Raman Study of Decomposition Processes** VERONICA M ALVAREZ, University of Wisconsin Milwaukee, Lisa K Kendhammer, Anahit M Campbell, Sarah K Patch, Joseph H Aldstadt |
| (870-2 P) | **Non-Destructive EDXRF Studies on Chinese Ancient Ceramics: A Comparison of PIXE, Bench-top XRF and HH-XRF** JIYAN GU, Bruker Elemental, Yingfei Xiong, Yuwu Gong |
| (870-3 P) | **Portable X-Ray Fluorescence Analysis of Spanish Colonial Pigments in the Alamo** NATALIE SEITZMAN, Trinity University, Pamela J Rosser, Michelle M Bushey |
| (870-4 P) | **Raman Spectroscopy and Automated Fluorescence Removal for Pigment Identification in Art Conservation Applications** AMY J BAUER, TSI Incorporated, Mary Kate Donais |

# TECHNICAL PROGRAM



## POSTER SESSION — Session 875

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Computational Chemistry, Data Management and Computer Techniques*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(875-1 P) **Computational Analysis of Ethylene Inhibitors** JON GOLD, East Stroudsburg University, Alex Sutton

(875-2 P) **A Theoretical Investigation of Trends in the HOMO to LUMO Transition Energies of Tris (2,2′-bipyridyl)ruthenium(II) Complexes Containing Various Substituted Ligands** JON GOLD, East Stroudsburg University, Christopher Wisniewski, Joseph Sluzevich

(875-3 P) **Electron Transmission Through Thin Membranes for Non Radioactive Ion Sources** BERT UNGETHUEM, Airsense Analytics, Andreas Walte

(875-4 P) **The Potential of Internalization and Self-Reliance of Brazilian Pharmaceutical Products** ANA PAULA P NASCIMENTO, IFRJ, Simone Alves

## POSTER SESSION — Session 880

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Electrochemistry*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(880-1 P) **Selective Polymer Thin-Film for Spectroelectrochemistry of Rhenium Complexes** SHIRMIR D BRANCH, University of Cincinnati, William R Heineman, Sam A Bryan, Amanda Crawford

(880-2 P) **Characterization of a Spectroelectrochemical Micro-Fabricated Sensor** SHIRMIR D BRANCH, University of Cincinnati, William R Heineman, Sam A Bryan, Job M Bello

(880-3 P) **Electrochemically Mediated Desalination** KYLE N KNUST, University of Texas at Austin, Dzmitry Hlushkou, Francisco J Carrillo, Michael R Stanley, Ulrich Tallarek, Richard M Crooks

(880-4 P) **Improving Ion-Selective Electrodes for Applications in Multiplex Analysis** SAMANTHA MENSAH, University of Central Florida, Michelle Rich, Andrew Derouin, Karin Chumbimuni-Torres

(880-5 P) **Rational Design of MMA-DMA Copolymer to Improve the Limit of Detection of Ion-Selective Electrodes** KATHRYNE E YOUNG, University of Central Florida, Valentine K Johns, Kevin De La Rosa, Karin Chumbimuni-Torres

(880-6 P) **In Situ Electrochemical Synthesis of Zinc Substituted Hydrotalcite Films for Corrosion Protection** MICHAEL KAHL, University of North Texas, Teresa Golden

(880-7 P) **Calibration Methodology for Fast-Scan Cyclic Voltammetric Measurements** COLIN R BLYE, Roanoke College, Richard B Keithley

(880-8 P) **A Label-Free Electrogenerated Chemiluminescence Biosensor for the Determination of Lead Ion** ZHANG CHENGXIAO, Shannxi Normal University, Ma Fen

(880-9 P) **Voltammetric Determination of Phenolic Compounds at Prussian Blue Modified Screen-Printed Carbon Electrode** ANTON A CIUCU, University of Bucharest, Andreea A Rabinca, Mihaela Buleandra, Constantin Mihailciuc

(880-10 P) **Anodic Stripping Voltammetric Determination of Copper at Chemically Modified Electrode Based on Aza Crown Ether** KARINA J DIAZ, USACH, Jaime A Pizarro, Alan B Placencio, Rodrigo A Segura

(880-11 P) **Differentiation of Adenosine From Histamine With Fast-Scan Cyclic Voltammetry Using Alternative Waveforms** SCOTT T LEE, University of Virginia, B Jill Venton

(880-12 P) **Use of Boron Doped Diamond Electrode for Determination of the Hydrogen Peroxide in Whitening Gel and Honey Samples** RENATO C MATOS, University in Juiz de Fora, Gustavo C Azevedo, Roberto S Castro

(880-13 P) **Tuning the Structure of Ionic Liquids to Increase the Width of the Electrochemical Window** MARAL PS MOUSAVI, University of Minnesota, Philippe Buhlmann

(880-14 P) **Corrosion Study of Some Metals Under Different Environmental Conditions in Ahmedabad, India** SUNILKUMAR P PAREKH, No Affiliation Listed

(880-15 P) **Gold Nanoparticles Modified Electrodes for Anodic Stripping Voltammetric Determination of Selenium** JAIME A PIZARRO, USACH, Rodrigo A Segura, Karina J Diaz, Alan B Placencio, María P Oyarzún

(880-16 P) **Impedimetric Determination of Sarcosine Biomarker at the Modified Screen Printed Electrode** BANAFSHEH RAFIEE, Islamic Azad University of Shahr-e-Qods, Alireza Fakhari Zavareh

(880-17 P) **Activation of Graphite Electrode Modified by Polyaniline/Chitosan/Pt Nanocomposite for Hydrogen Production** DIDEM BALUN KAYAN, Aksaray University, Merve Ilhan, Derya Koçak

(880-18 P) **Spectroelectrochemical Sensing with a Boron Doped Diamond Optically Transparent Electrode Coated with Charge Selective Polymer Films** CORY A RUSINEK, University of Cincinnati, Michael Becker, Robert Rechenberg, Daoli Zhao, Necati Kaval, William R Heineman

(880-19 P) **Voltammetric Method for the Determination of Diffusion and Partition Coefficients in Organic Solutions and Polymeric Membranes** JAMES SHEPPARD, University of Memphis, Erno Lindner, Bradford Pendley

(880-20 P) **A Novel Electrochemical Method for Restriction Endonuclease Activity Determination** JOANNA ZAJDA, Warsaw University of Technology, Łukasz Górski, El bieta Malinowska

(880-21 P) **Simultaneous Detection of Pb and Cd Using Electrospinning Carbon Nanofiber Modified Electrodes** DAOLI ZHAO, University of Cincinnati, Daewoo Han, Tingting Wang, Cory A Rusinek, Andrew J Steckl, William R Heineman

(880-22 P) **Oxygen Reduction Reaction Study on Metal Halide Compounds Using Density Functional Theory** SU-JIN KIM, Ewha Women University, Jungho Shin, Seung-Cheol Lee, Chongmok Lee, Youngmi Lee

(880-23 P) **Temperature-Controlled Electrochemistry Employing Microfabricated Resistive Microheaters** NICHOLAS M CONTENTO, National Institute of Standards and Technology, Steve Semancik

(880-24 P) **Impact of Protein Clusters on Electrodes: Quantification of Dense Core Proteins During Single Collision Events** HODA MASHADI FATHALI, Chalmers University of Technology, Soodabeh Majdi, Jacqueline Keighron, Ann Sofie Cans, Andrew G Ewing

## POSTER SESSION — Session 890

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Fluorescence/Luminescence Bioanalytical and Other Applications*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(890-1 P) **Characterization of Insulin Aggregates and Fibrillation in Solution Using Fluorescence Correlation Spectroscopy (FCS)** LAUREN DUVALL, Bradley University, Trevor Parr, Edward Remsen, John-Bruce Green

(890-2 P) **Integrating Fluorescent Carbon Nanodot Synthesis and Optical Detection of Methylmercury** CARLOS BENDICHO, University of Vigo, Isabel Costas-Mora, Vanesa Romero, Isela Lavilla

(890-3 P) **Thermofluorimetric Analysis (TFA) for Investigation of Proximity Assays** JUAN HU, Auburn University, Joonyul Kim, Christopher J Easley

(890-4 P) **Application of Fluorescence Correlation Spectroscopy (FCS) for the Analysis of Particle Size and Molecular Adsorption at the Surface of Silica Abrasive Dispersions** LAUREN M JACOBSON, Bradley University

(890-5 P) **Ultrasensitive 4-Methylumbelliferone Fluorimetric Determination of Water Contents in Aprotic Solvents** KATARZYNA KŁUCI SKA, University of Warsaw, Agata Michalska, Krzysztof Maksymiuk, Rafał Jurczakowski

(890-6 P) **A Competitive Approach in Investigating the Binding Interactions of Mangiferin with Human Serum Albumin** JENNIFER NOVAK, Georgia State University, Gabor Patonay, Garfield Beckford

(890-7 P) **Rapid and Sensitive Detection of Bacterial Endotoxins based on Bioluminescent Measurement Using Lyophilized Reagents** YAWATA SATOSHI, DKK-TOA Corporation, Arakawa Satoshi, Noda Kenichi, Kuroda Akio, Hachiya Hiromitu

(890-8 P) **Study of the Reaction and Use of Dimethylaminopyridine as a Derivatization Reagent to Analyze Emerging Disinfection By-Products Found in Drinking Water** BRIAN M YOUNG, Indiana University Southeast, Bradley M Bierly, Nicholas A Long, Andrea M Temple, Lauren R Ogburn, Patty L Ranaivo

(890-9 P) **Fluorescence Enhancement of Pharmaceuticals Using Alkylammonium Formate Ionic Liquids** YING ZHANG, Miami University, Neil D Danielson

(890-10 P) **Withdrawn**

(890-11 P) **Metal-Enhanced Fluorescent Cytometric Bead Immunoassays from Gold Nano-Islands for Multiplexed Low-abundance Protein Biomarker Detections** JIANG YANG, Stanford University

(890-12 P) **A Turn-On Fluorescent Probe for Sodium Azide Detection** KE WANG, Georgia State University, Frederic Friscourt, Chaofeng Dai, Lifang Wang, Yueqin Zheng, Geert-Jan Boons, Siming Wang, Binghe Wang

(890-13 P) **Detection of Caffeine Using Ratiometric Fluorescence Spectroscopy in Complex Matrixes** HALEY M CURTIS, Tennessee Tech University, Andrew F Callender

## POSTER SESSION — Session 900

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Liquid Chromatography - Pharmaceutical and Drug Discovery*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(900-1 P) **Withdrawn**

(900-2 P) **Chromatographic Separation of Structurally-Similar Steroids: Stationary and Mobile Phase Considerations** JASON W COYM, University of South Alabama

(900-3 P) **Improving Impurity Analysis in Photodiode Array Detection** WILLIAM HEDGEPETH, Shimadzu Scientific Instruments, Kenichiro Tanaka

(900-4 P) **Integrated Flash and Preparative LC Capabilities in a Single Instrument Provide a Versatile Purification Platform** MELISSA J WILCOX, Grace Discovery Sciences, Mark Jacyno, Adam Lesniowski

(900-5 P) **Withdrawn**

(900-6 P) **Simultaneous Analysis of Active Pharmaceutical Ingredients and Their Counter-Ions Using a Mixed-Mode Column** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., William Hedgepeth, Yuki Sato

(900-7 P) **High-Throughput Chromatographic Determination of Alkane-Water LogP Using an Alkylated Poly(Styrene-divinylbenzene) Column and Fast Acetonitrile Gradient** DEREK A JENSEN, Hamilton Company

(900-8 P) **Increasing Efficiency of Method Validation for Metoclopramide HCl and Related Substances** MARGARET MAZIARZ, Waters Corporation, Mark Wrona, Sean M McCarthy

(900-9 P) **Migrating Chromatographic Methods from the Analytical to the Microscale** DANIEL ROOT, Waters Corporation, Thomas Edward Wheat, Patricia R McConville

(900-10 P) **Gas and Liquid Chromatography to Solve the Abraham General Solvation Model for Designer and Illegal Drugs** JONATHAN M BISHOP, University of North Texas, Dylan Harbour, Teresa Golden

## POSTER SESSION — Session 910

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Mass Spectrometry*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(910-1 P) **A Simplified Workflow for the Analysis of Pesticide Residues in Foods by Accurate Mass Spectrometry** KENNETH ROSNACK, Waters Corporation, Joe Romano, Dominic Roberts, Sara Stead, Eimear McCall

(910-2 P) **Inexpensive, Programmable, and Modular Radio-Frequency Power Supplies for Mass Spectrometers** MATTHEW R BRANTLEY, Baylor University, Behrooz Zekavat, Olaitan Abayomi, Solouki Touradj

(910-3 P) **Polymer Micro-nozzle Array for Multiple Electrospray Produced by Templated Synthesis and Etching of Microstructured Fibers** YUEQIAO FU, Queen's University, Richard Oleschuk, Graham Gibson, Antoine Proulx, Andre Croteau, Bradley Schneider, Thomas Covey

## UNDERGRADUATE POSTER SESSION — Session 920

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Undergraduate Students Only Poster Session*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(920-1 P) **Optimizing Flow Rate and Electric Potential in Pressurized Simultaneous Chromatography and Electrophoresis** BRAE V PETERSEN, Brigham Young University, David C Collins

(920-2 P) **Treatment of Hydraulic Fracturing Contaminated Water Using Closterium Moniliferum: Ba and Sr Elemental Analysis** LANCE M JUBIC, Westminster College, Helen Boylan, Karen Resendes, Larry Miller

(920-3 P) **Spectroscopic Study of the Oxidase Like Activity of Biomimetic Nanoceria Particles and Their Applications in Colorimetric Detection of Dopamine and Catechol** JESSICA CUNNINGHAM, Clarkson University, Silvana Andreescu, Akhtar Hayat, Gonca Bulbul

(920-4 P) **Dried Blood Spot Analysis by Laser Ablation–Mass Spectrometry for Assessment of Environmental Human Health** SARAH SHEFFIELD, Duquesne University, Logan T Miller, Steve Shuttleworth, HM Skip Kingston

(920-5 P) **Utilizing UPLC-QToF-MS in the Characterization of Polycationic Biocides in Multipurpose Contact Lens Solutions** FREDERIC D DAVID, Furman University, Vikram N Samant, Hazel Davis, Jonathan M Wheeler, Kenneth S Phillips, Sandy K Wheeler, John F Wheeler

(920-6 P) **Transition Metal-DNA Interactions as Measured by PCR, Slab and Capillary Gel Electrophoresis** YASMÍN R ÁLVAREZ-GARCÍA, Furman University, Noel A Kane-Maguire, Sandy K Wheeler, John F Wheeler

(920-7 P) **Effective Additives for the Separation of Enantiomeric Transition Metal Complexes Using Chiral Capillary Electrophoresis** CHRISTOPHER D STACHURSKI, Furman University, Noel A Kane-Maguire, Sandy K Wheeler, John F Wheeler

(920-8 P) **Determination of Peroxynitrite in Macrophage Cells Using HKGreen-3 and Microchip Electrophoresis with Fluorescence Detection** PAIGE M SKILLETT, Hastings College

(920-9 P) **Using Fast-Scan Cyclic Voltammetry to Quantify Serotonin Release in Huntington's Disease Model Mice** SARAH FANTIN, University of Indianapolis, Rachel C Gehringer

(920-10 P) **Determining an Efficient Separation of 1-Butyl-3-Methylpyridinium Bromide Ionic Liquid** JAGDEEP KAUR, Kalamazoo College, Kara Sherman, Cliff Harris, Jennifer R Furchak

(920-11 P) **Approaches to Designing Immobilization Sequences to Improve Preconcentration of Prolactin-Inducible Protein mRNA with Detection Using Complementary Molecular Beacon** THANH THANH N PHAN, Kalamazoo College, Joseph R Widmer, Erik D Guetschow, William A Black, Amy Ong, Jennifer R Furchak

(920-12 P) **Identification of Controlled Substances in Forensics with Handheld Raman Spectroscopy** CASSARA R COOK, Maryville University, Thomas M Spudich, Katherine Bakeev

(920-13 P) **Determination of Metal Content in Paper for Forensic Identification Using ICP-OES or ICP-MS** RACHEL M GOESTENKORS, Maryville University, Thomas M Spudich

(920-14 P) **Simultaneous Detection of Extracellular and Intercellular Potassium Ion Concentration in Whole Blood Using Pulsed Chronopotentiometry** ANDREW SABELHAUS, Northern Kentucky University, Simon Segal, Kebede Gemene

(920-15 P) **Development and Applications of Nanopipette Probes for Hormone Detection** BARBARA CATA, Northern Kentucky University, Theresa Ruwe, Celeste A Morris

(920-16 P) **Synchronous Scan Fluorescence Analysis of Bourbon Whiskey with Solvent-Enhanced Resolution** CHELSEA ZORN, Elmira College, Hillary Andaluz, Jared S Baker

(920-17 P) **The Quantification of Gabapentin or Bexarotene in Tissue Samples by HPLC-ESI-TOF-MS** KATHERINE E WEHDE, The Ohio State University, Ahsley Conley, Shweta Mandrekar, Yan Wang, Noel Paul, Justin C Harris

(920-18 P) **Investigation of the Stability of G-Quadruplex Structures and the Effect on Aptamer Behavior** CASEY FONG, Rensselaer Polytechnic Institute, Christina M Albanese, Linda B McGown

(920-19 P) **Affinity Capture of Proteins at Aptamer-Modified Surfaces Using a MALDI-MS Platform** SUTTIPONG SUTTAPITUGSAKUL, Rensselaer Polytechnic Institute, Christina M Albanese, Linda B McGown

# TECHNICAL PROGRAM

(920-20 P) **Obtaining Accurate Spectra from an LCTF Microfluorometer for Use on Heterogeneous Micro Environments** MAGGIE MALONE-POVOLNY, University of Saint Thomas, Gary Mabbott

(920-21 P) **Fingerprinting Food Metabolomics with LC-MS for the Assessment of Contaminations and Quality Control of Infant Formula** CHIHIRO TANADA, University of Shizuoka, Inoue Koichi, Akiba Takashi, Min Jun Zhe, Todoroki Kenichiro, Yamano Yutaka, Toyo'oka Toshimasa

(920-22 P) **Analysis of Carbonyls by Novel, Low-Cost Liquid Chromatography** HANNAH WILDER, Southside High School, Brian Corbett

(920-23 P) **Characterization of the Stability of Supported Bilayer Membranes in Polydimethysiloxane Microfluidic Devices** LIVIA SHEHAJ, Trinity College, Michelle L Kovarik

(920-24 P) **Exploration of Active Ingredients Contained Within 'Legal High' Supplements: Elucidation and Characterization of Synthetic Drug Compounds** ANDREW HEINLE, Waynesburg University

(920-25 P) **Investigation of a One-Step Synthesis-Grafting Method to Modify Glassy Carbon Electrodes** GARRHETT G VIA, Wittenberg University, Kristin K Cline

(920-26 P) **Behavior of Calcium and Magnesium Ions in the Great Miami River, Ohio** CHI X NGUYEN, Wittenberg University, Sarah K Fortner

(920-27 P) **Application of High-Speed Countercurrent Chromatography for the Purification of Various Natural Chemicals from Raw Materials** HIROAKI NISHIKAWA, University of Shizuoka, Harada Shuuichi, Tanada Chihiro, Jun Z Min, Todoroki Kenichiro, Inoue Koichi, Toyo'oka Toshimasa

(920-28 P) **Measurement of Neuronal Hydrogen Peroxide Release in Chemotherapy Treated Rats** RYAN A LIMBOCKER, University of Kansas, Sam V Kaplan, Michael A Johnson

(920-29 P) **Solar Photodegradation of Antidepressants in the Aquatic Environment - Sertaline, Fluoxetine and Bupropion** LISA KASPRZOK, College of Charleston, Wendy Cory, Taylor Domenick, Caitlin Purvis

(920-30 P) **Solar Photodegradation of Diphenhydramine and Ranitidine in Simulated Natural Waters** ALIYA DUMAS, College of Charleston, Wendy Cory, Omorose Aighewi

(920-31 P) **Creating a Chemometric Model in an Undergraduate Setting** BRITTANY J MAJORS, Westminster College, Helen Boylan

(920-32 P) **Developing a High School Lab Experience to Analyze Environmental Effects of Ozone** ELIZABETH M WADDELL, Westminster College, Helen Boylan

(920-33 P) **Analysis of the Effects of Microwave Exposure on Glucose Oxidase from Aspergillus Niger** TAYLOR E ELIAS, Westminster College

(920-34 P) **The Effect of Basis Set Choice on the Accuracy of Small Molecule Vibrational Frequencies** CODY E FAGAN, Westminster College, Peter M Smith, Larry Miller

(920-35 P) **Evaluation of Truncated Peptides for the Enhancement of Fluorescence Polarization Immunoassays** GABRIELLE M MOORE, Florida State University, Nikita Mukhitov, Michael G Roper

(920-36 P) **Modular Method of Microfluidic Fabrication** BROOKE KAHN, Florida State University, Adrian M Schrell, Raghuram Dhumpa, Michael G Roper

(920-37 P) **Studies of Carbazole-Based NanoGUMBOS for Applications in OLEDS** NASEEM ALAMMAR, Louisiana State University, Suzana Hamdan, Noureen Siraj, Isiah M Warner

(920-38 P) **Enhancement of Raman Signals for Nitroanilines Adsorbed onto Gold Substrates** YVONNE E EJORH, Middle Tennessee State University, William H Ilsley, Beng G Ooi

(920-39 P) **Development of a Paper-Based Fluidic Device for Phosphorus Detection** PATRICIA K RUSCH, Saginaw Valley State University, Kyle A Cissell

(920-40 P) **Photochemical and Thermal Control over Electrolessly Gold-plated Film Structure on Thin Silicon Nitride to Target Sensing Applications** CAITLIN M MASTERSON, University of Rhode Island, YM Nuwan DY Bandara, Brian D Velleco, Julie C Whelan, Buddini Iroshika Karawdeniya, Jason R Dwyer

(920-41 P) **Analysis of the Inhibitory Activity of Dicekol through Cloning and Mutagenesis of αm -Glucosidase** MARC A WILLIAMS, Westminster College, Sarah Kennedy

## ACS POSTER — Session 930

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *ACS DAC Poster Session*

**Monday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(930-1 P) **Age Related Human Scent Differentiation by Gas Chromatography-Mass Spectrometry (GC-MS)** DOUGLAS BEUSSMAN, St. Olaf College, Sarah Elder

(930-2 P) **Fiber and Thread Analysis Via Isotope Ratio Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Dain Brademan, Zachary Rolfs

(930-3 P) **LC-MS Detection of Abused Drugs in Packaging Residues** DOUGLAS BEUSSMAN, St. Olaf College, Kirsten Overdahl

(930-4 P) **Tetrahymena Thermophila Proteomics Using MALDI-TOF/TOF Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Katherine Nash

(930-5 P) **Bioactive Surfaces for Simultaneous Cell Culture and High-Throughput Lysate Analysis Using SAMDI-Mass Spectrometry** MARIA D CABEZAS, Northwestern University, Eric J Berns, Milan Mrksich, Chad A Mirkin

(930-6 P) **Development of a Microfluidic, Urine-Based Assay for D-Lactate: A Diagnostic Test for Malaria** METI DEBELA, Skidmore College, Sibin Wang, Julie Bryant

(930-7 P) **Development of an Automated Microfluidic Platform for Analysis of Organic Pollutants in Water** JUSTIN O'SULLIVAN, Skidmore College, Sarah Markiewicz, Rafaella Pontes, Kimberley A Frederick

(930-8 P) **Development of Portable Microplate Reader Using Organic Light-Emitting Diodes and Photodiodes** KAZUHIRO MORIOKA, Tokyo Metropolitan University, Miku Takahashi, Akihide Hemmi, Hulie Zeng, Shungo Kato, Hizuru Nakajima, Katsumi Uchiyama

(930-9 P) **Building an Online Database of Open Spectral Data** ANTONY J WILLIAMS, Royal Society of Chemistry, Alexey Pshenichnov, Valery Tkachenko

(930-10 P) **Understanding the Scott Test for Detection of Cocaine** TSUNGTSUEH WU, University of Wisconsin-Platteville, Rima Minazetinova, Nicole Kloepfer

(930-11 P) **Integrated Perfusion and Separation Systems for Entrainment of Insulin Secretion from Islets of Langerhans** MICHAEL G ROPER, Florida State University, Lian Yi

# TUESDAY, MARCH 10, 2015
# MORNING

**AWARD** **Session 940**

***Pittsburgh Analytical Chemistry Award***
arranged by Jane N Chan, Bechtel Bettis, Inc.

**Tuesday Morning, Room 243**
Jane N Chan, Bechtel Bettis, Inc., Presiding

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| 8:30 | | **Introductory Remarks - Jane Chan** |
| 8:35 | | **Presentation of the 2015 Pittsburgh Analytical Chemistry Award to Andrew G Ewing, Chalmers University of Technology, by Susan K Zawacky, Chair, Society for Analytical Chemists of Pittsburgh** |
| 8:40 | (940-1) | **Electrochemical Approaches to Measuring Neurotransmitters in Vesicles Compared to Those Released in Exocytosis** ANDREW G EWING, Chalmers University of Technology, Johan Dunevall, Soodabeh Majdi, Xianchan Li, Neda Najafi Nobar, Jelena Lovric, Jun Wang, Hoda Fathali, Anna Larsson, Lin Ren |
| 9:15 | (940-2) | **Innovative Approaches for Improving the Voltammetric Detection of Neurotransmitter Release** LESLIE A SOMBERS, North Carolina State University, James G Roberts, Samantha Smith, Maxim A Voinov, Tatyana I Smirnova, Leyda Z Lugo-Morales |
| 9:50 | (940-3) | **Nanoscale Electrochemical Imaging of Neuronal Activity with Fluorescence-Enabled Electrochemical Microscopy** BO ZHANG, University of Washington |
| 10:25 | | **Recess** |
| 10:40 | (940-4) | **Nanomachines** JOSEPH WANG, University of California San Diego |
| 11:15 | (940-5) | **Tools to Measure D-Amino Acid Signaling in the Brain** JONATHAN V SWEEDLER, University of Illinois at Urbana-Champaign |

**AWARD** **Session 950**

***The Coblentz Society/ABB - Bomem-Michelson Award***
arranged by Joel Harris, University of Utah

**Tuesday Morning, Room 244**
James W Rydzak, GlaxoSmithKline, Coblentz Society President, Presiding

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| 8:30 | | **Introductory Remarks - James W Rydzak** |
| 8:35 | | **Presentation of the 2015 Coblentz Society/ABB - Bomem-Michelson Award to David M Jonas, University of Colorado, by Henry L Buijs, ABB** |
| 8:40 | (950-1) | **Two-Dimensional Fourier Transform Spectroscopy** DAVID M JONAS, University of Colorado |
| 9:15 | (950-2) | **Multidimensional Infrared Spectroscopy of Molecular Structure and Dynamics** NIEN-HUI GE, University of California Irvine |
| 9:50 | (950-3) | **Femtosecond Stimulated Raman Spectroscopy by Six-Wave Mixing** ANDREW MORAN, University of North Carolina |
| 10:25 | | **Recess** |
| 10:40 | (950-4) | **Coherent Multidimensional Analogues of IR and Vis/UV Absorption, Emission, Raman, and Multiphoton Spectroscopies and Their Applications to Molecular and Materials Spectroscopy** JOHN WRIGHT, University of Wisconsin-Madison |
| 11:15 | (950-5) | **Coherent Spectroscopy and Coherent Control All Across the Spectrum** KEITH A NELSON, Massachusetts Institute of Technology (MIT) |

**SYMPOSIUM** **Session 960**

***ACS DAC - Applications of Analytical and Radiochemistry for Harsh Environments***
arranged by Sam Bryan and Brienne Seiner, Pacific Northwest National Laboratory

**Tuesday Morning, Room 238**
Sam Bryan, Pacific Northwest National Laboratory, Presiding
Brienne Seiner, Pacific Northwest National Laboratory, Presiding

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| 8:30 | | **Introductory Remarks - Sam Bryan and Brienne Seiner** |
| 8:35 | (960-1) | **Interfacial Complexes in Spent Nuclear Fuel Reprocessing Systems** LUTHER W MCDONALD IV, University of Utah, Joseph Levinthal |
| 9:10 | (960-2) | **Development of Fiber Optic Probes and Spectroscopic Instruments for Harsh Environments** JOB BELLO, EIC Laboratories, Inc., Christina Gasbarro |
| 9:45 | (960-3) | **Spectroelectrochemical Sensor for Technetium Applicable to Hanford and Other DOE Sites** SAM A BRYAN, Pacific Northwest National Laboratory, Amanda D Crawford, Brian M Rapko, Shirmir D Branch, Job M Bello, William R Heineman |
| 10:20 | | **Recess** |
| 10:35 | (960-4) | **The Chemical and Material Challenges for Analysis of Tritium Samples** WILLIAM A SPENCER, Savannah River National Laboratory, Robert Lascola, Jose Cotes Concepcion, Laura Tovo, Jonathan S Wright, Ricardo D Torres |
| 11:10 | (960-5) | **Spectroelectrochemical Method for Pu Valence Determination in Nuclear Material Processing Solutions** ROBERT LASCOLA, Savannah River National Laboratory, Patrick E O'Rourke, Courtney E Johnson, Edward Kyser, Michael J Phillips |

**SYMPOSIUM** **Session 970**

***Innovative Mass Spectrometric Characterization of Biopharmaceuticals***
arranged by Hansjoerg Toll, Analytical Characterization, Sandoz GmbH

**Tuesday Morning, Room 239**
Hansjoerg Toll, Analytical Characterization, Sandoz GmbH, Presiding

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| 8:30 | | **Introductory Remarks - Hansjoereg Toll** |
| 8:35 | (970-1) | **Mass Spectrometry Provides Key Insights into the Structural Integrity of Antibody-Drug Conjugates** JOHN VALLIERE-DOUGLASS, Seattle Genetics Inc., Lucy Y Pan, Oscar Salas-Solano |
| 9:10 | (970-2) | **Improved Characterization of Antibody Biotherapeutics with Ultrahigh-Resolution Mass Spectrometry** LISA MARZILLI, Pfizer, Heather S DeGruttola, Keith A Johnson, Jason C Rouse |
| 9:45 | (970-3) | **Leveraging Mass Spectrometry Assessment of Product Quality Attributes to Streamline Manufacturing, Quality Control and Release Testing of Biologics** ALAIN BALLAND, AB Analytical Solutions |
| 10:20 | | **Recess** |
| 10:35 | (970-4) | **Mass Spectrometry in Biopharmaceutical Process Development** CHRISTOPHER YU, Genentech |
| 11:10 | (970-5) | **Finding the Needle in the Haystack: Detecting Low Abundant Protein Species in Biopharmaceutical Development** HANSJOERG TOLL, Sandoz GmbH, Austria |

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 980**

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

**Tuesday Morning, Room 260**
Koichiro Matsuda, JAIMA, Presiding
Takeshi Kawamoto, JAIMA, Presiding

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| 8:30 | | **Introductory Remarks - Shigehiko Hattori** |
| 8:35 | (980-1) | **Nano- and Quantum-Biodevices for Cancer Diagnosis, Cancer Therapy, and iPS Cell Based Regenerative Medicine** YOSHINOBU BABA, Nagoya University |
| 9:10 | (980-2) | **Luminescent Sensors and Switches for Single Cell Analysis** TAKEAKI OZAWA, The University of Tokyo |
| 9:45 | (980-3) | **Designing Mechanized Nanoparticles for Cancer Therapy and Diagnosis: Toward Developing Nanorobots** FUYUHIKO TAMANOI, University of California, Los Angeles |
| 10:20 | | **Recess** |
| 10:35 | (980-4) | **Innovative Electron Microscope for Nano-Biology** BARBARA ARMBRUSTER, Hitachi High Technologies America, Inc. |
| 11:10 | (980-5) | **How to Explore the Bio-Nano World with Surface Plasmon Resonance Imaging** CHIRAZ FRYDMAN, HORIBA Scientific, Marinella G Sandros |

**SYMPOSIUM** **Session 990**

***Mass Spectrometry and Its Biomedical Applications***
arranged by Ronghu Wu, Georgia Institute of Technology

**Tuesday Morning, Room 242**
Ronghu Wu, Georgia Institute of Technology, Presiding

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| 8:30 | | **Introductory Remarks - Ronghu Wu** |
| 8:35 | (990-1) | **Ultraviolet Photodissociation Mass Spectrometry for Biological Problems** JENNY BRODBELT, University of Texas |
| 9:10 | (990-2) | **Optimized Tandem MS for Biomedical Studies** CATHERINE E COSTELLO, Boston University School of Medicine |
| 9:45 | (990-3) | **Immuno-Laser Capture Microdissection/Liquid Chromatography Mass Spectrometry for the Study of Pancreatic Cancer Stem Cells** DAVID M LUBMAN, University of Michigan, Jianhui Zhu, Song Nie |
| 10:20 | | **Recess** |
| 10:35 | (990-4) | **Neucode SILAC and One Hour Proteomes** ANNA MERRILL, University of Wisconsin-Madison, Alexander Hebert, Alicia Richards, Matthew MacGilvray, Christopher Rose, Derek Bailey, Joel Bradley, William Wood, Marwan ElMasri, Michael Westphall, Audrey Gasch, Joshua Coon |
| 11:10 | (990-5) | **Characterization of Protein Complexes by Native MS: Ion Mobility Couple to Surface Collisions** VICKI WYSOCKI, Ohio State University, Sophie Harvey, Royston Quintyn, Yang Song, Yue Ju, Akiko Tanimoto, Yan Jing, Anirrudha Sahasrabuddhe |

**SYMPOSIUM** **Session 1000**

**Microfluidic Innovations to Advance Molecular Analysis of Disease Pathways**
arranged by Yong Zeng, University of Kansas

**Tuesday Morning, Room 261**
Yong Zeng, University of Kansas, Presiding

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| 8:30 | | **Introductory Remarks - Yong Zeng** |
| 8:35 | (1000-1) | **Putting a New Spin on Microfluidics with Laser Print Lithography** JAMES P LANDERS, University of Virginia |
| 9:10 | (1000-2) | **Neurogenetics and Immunology Enabled by Microfluidics and Automation** HANG LU, Georgia Institute of Technology |
| 9:45 | (1000-3) | **Microelectrophoresis-Based Assay of Lipid Signaling in Primary Immune Cells** NANCY L ALLBRITTON, University of North Carolina |
| 10:20 | | **Recess** |
| 10:35 | (1000-4) | **Microfluidic Systems for Measuring Dynamics of Islets of Langerhans** MICHAEL G ROPER, Florida State University, Lian Yi, Raghuram Dhumpa, Nikita Mukhitov, Adrian M Schrell, Xue Wang |
| 11:10 | (1000-5) | **Integrated Microfluidic Molecular Analysis of Circulating Exosomes** YONG ZENG, University of Kansas |

**SYMPOSIUM** **Session 1010**

***Platforms for Point-of-Care Analysis***
arranged by XiuJun (James) Li, University of Texas at El Paso and Hugh Fan, University of Florida

**Tuesday Morning, Room 262**
XiuJun (James) Li, University of Texas at El Paso, Presiding

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| 8:30 | | **Introductory Remarks - XiuJun (James) Li and Hugh Fan** |
| 8:35 | (1010-1) | **Point-of-Surgery Diagnostic for Parathyroid Hormone** FRANCES S LIGLER, University of North Carolina at Chapel Hill and North Carolina State University, Brian M Cummins, Glenn M Walker, Michael Lochhead, Catherine S Hammett-Stabler, Jen Jen Yeh, Kirk Caddell, Nathaniel Hentz |
| 9:10 | (1010-2) | **Towards Point-of-Care Analysis Using Digital Microfluidics** AARON WHEELER, University of Toronto |
| 9:45 | (1010-3) | **Chip-Based Capillary Electrophoresis Platform for Point-of-Care Applications** JCT (JAN) EIJKEL, University of Twente, Steven Staal, Albert van den Berg |
| 10:20 | | **Recess** |
| 10:35 | (1010-4) | **Paper/PDMS Hybrid Microfluidic Platforms for Infectious Disease Diagnosis** XIUJUN (JAMES) LI, University of Texas at El Paso |
| 11:10 | (1010-5) | **Digital LAMP on a SD Chip for Point-of-Care Diagnostics** DANIEL T CHIU, University of Washington, Jason E Kreutz, Bryant S Fujimoto |

**SYMPOSIUM** **Session 1020**

***Recovering the Original Colors of Paintings through Analytical Chemistry***
arranged by Christian A Amatore, CNRS-ENS-UPMC and Philippe Walter, CNRS

**Tuesday Morning, Room 263**
Christian A Amatore, CNRS-ENS-UPMC, Presiding

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| 8:30 | | **Introductory Remarks - Christian Amatore and Philippe Walter** |
| 8:35 | (1020-1) | **Complexity of Chemical Kinetics of Reactions Taking Place in Paintings Over Centuries** CHRISTIAN A AMATORE, CNRS-ENS-UPMC |
| 9:10 | (1020-2) | **Synchrotron-Based Methods for Studying the Alteration Mechanisms of Cadmium Sulfide and Arsenic Sulfide Pigments in Early Modernist and Dutch Golden Age Paintings Respectively** JENNIFER L MASS, Winterthur Museum, Katrien Keune, Apurva Mehta, Florian Meirer, Alyssa Hull |
| 9:45 | (1020-3) | **Development of a New Mobile Instrument Combining XRF and XRD to Reveal the Original Colors of Paintings** PHILIPPE WALTER, CNRS |
| 10:20 | | **Recess** |
| 10:35 | (1020-4) | **Multi-Modal Standoff Chemical Imaging to Elucidate Spatial Features and Pigments of "Hidden" Paintings: Reflectance, Fluorescence and XRF Imaging Spectroscopies** JOHN K DELANEY, National Gallery of Art, Kathryn A Dooley, Damon Conover, Lisha D Glinsman |
| 11:10 | (1020-5) | **Non-Invasive Color Restoration of Mark Rothko's Harvard Murals Using Light from a Digital Projector** JENS STENGER, Yale University, Narayan Khandekar, Raskar Ramesh, Santiago Cuellar, Mohan Ankit, Rudolf Gschwind |

**SYMPOSIUM** **Session 1030**

***SPECIAL SESSION: International Year of Light (SAS)***
arranged by Bernhard Lendl, Vienna University of Technology

**Tuesday Morning, Room 245**
Bernhard Lendl, Vienna University of Technology, Presiding

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| 8:30 | | **Introductory Remarks - Bernard Lendl** |
| 8:35 | (1030-1) | **Quantum Cascade Lasers: Opening New Opportunities for Analytical Chemistry** BERNHARD LENDL, Vienna University of Technology |
| 9:10 | (1030-2) | **Near-Field Mid-IR Imaging in the Material Sciences** CURTIS MARCOTT, Light Light Solutions, Michael Lo, Qichi Hu, Craig Prater, Kevin Kjoller |
| 9:45 | (1030-3) | **Fundamental Science-Driven Infrared Spectroscopic Imaging for Clinical Diagnostic Systems** ROHIT BHARGAVA, University of Illinois at Urbana-Champaign |
| 10:20 | | **Recess** |
| 10:35 | (1030-4) | **Two-Dimensional Correlation Spectroscopy Study of Bioplastics** ISAO NODA, University of Delaware |
| 11:10 | (1030-5) | **Tip-Enhanced Raman Spectroscopy** RICHARD P VAN DUYNE, Northwestern University |

**SYMPOSIUM** **Session 1040**

***Terahertz Spectroscopy and Imaging: Toward Practical Applications***
arranged by Katsuhiro Ajito, NTT Corporation

**Tuesday Morning, Room 264**
Katsuhiro Ajito, NTT Corporation, Presiding

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| 8:30 | | **Introductory Remarks - Katsuhiro Ajito** |
| 8:35 | (1040-1) | **Terahertz Imaging and Spectroscopy for Biomedical, Security and Industrial Applications at the University of Arkansas** MAGDA EL-SHENAWEE, University of Arkansas, Tyler Bowman, Nathan Burford |
| 9:10 | (1040-2) | **Recent Practical Industrial Applications Using Terahertz Technology** EIJI KATO, Advantest America, Inc. |
| 9:45 | (1040-3) | **Medical Application of Spatially Resolved Tissue Water Content Mapping Using Terahertz Imaging** ZACHARY DEIS TAYLOR, University of California Los Angeles |
| 10:20 | | **Recess** |
| 10:35 | (1040-4) | **Quantitative THz Spectroscopic Imaging of Pharmaceutical Cocrystals** KATSUHIRO AJITO, NTT Corporation |
| 11:10 | (1040-5) | **Drug Binding Assays Through Dynamical Fingerprinting** ANDREA G MARKELZ, SUNY Buffalo, Katherine A Niessen, Mengyang Xu, Edward Snell, Vivian Cody |

**ORGANIZED CONTRIBUTED SESSION** **Session 1050**

***Emerging Methods for Monitoring Neurochemicals in Living Systems***
arranged by Kathryn M Nesbitt, University of Pittsburgh and Rachel A Saylor, University of Kansas

**Tuesday Morning, Room 265**
Kathryn M Nesbitt, University of Pittsburgh, Presiding

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| 8:30 | (1050-1) | **Enhancing Voltammetric Detection of Dopamine Near Microdialysis Probes Implanted in the Striatum** KATHRYN M NESBITT, University of Pittsburgh, Andrea Jaquins-Gerstl, Adrian C Michael |
| 8:50 | (1050-2) | **The Impact of Dexamethasone on Penetration Trauma Associated with Microdialysis Implants at 24 Hours** ANDREA JAQUINS-GERSTL, University of Pittsburgh, Kathryn M Nesbitt, Erika L Varner, Adrian C Michael |
| 9:10 | (1050-3) | **Separation and Quantification of Neurotransmitter Tissue Content in D Melanogaster Using Capillary Electrophoresis Coupled to Fast Scan Cyclic Voltammetry** MADELAINE E DENNO, University of Virginia, B Jill Venton, Eve Privman |
| 9:30 | (1050-4) | **Novel Glucose Oxidase-Modified Carbon-Fiber Microelectrode Biosensors Simultaneously Detecting Subsecond Glucose and Dopamine Fluctuations Utilizing Fast Scan Cyclic Voltammetry** SAMANTHA SMITH, North Carolina State University, Lingjiao Qi, Christie Lee, Leslie A Sombers |
| 9:50 | | **Recess** |
| 10:05 | (1050-5) | **Serotonin-Histamine Modulation in Parkinson's Using Fast Scan Cyclic Voltammetry (FSCV)** AYA ABALLA, Wayne State University |
| 10:25 | (1050-6) | **Improved Sensitivity of Neuropeptide Detection by LC-MS and Application with Selective Neuronal Activation *In Vivo*** JENNY-MARIE T WONG, University of Michigan, Ying Zhou, Omar Mabrouk, Robert T Kennedy |
| 10:45 | (1050-7) | **Microfluidic Sensor System for Neurochemical Monitoring of Traumatic Brain Injury Patients** CHI LENG LEONG, Imperial College, Michelle L Rogers, Anthony J Strong, Martyn G Boutelle |
| 11:05 | (1050-8) | **Continuous On-Line Monitoring of Catecholamines in Freely-Roaming Animals Using a Separation-Based Sensor** RACHEL A SAYLOR, University of Kansas, Susan M Lunte |

**ORGANIZED CONTRIBUTED SESSION** **Session 1060**

***Optical Imaging: On Liquid-Solid Interfaces and Cell Membranes***
arranged by Gufeng Wang, North Carolina State University

**Tuesday Morning, Room 266**
Gufeng Wang, North Carolina State University, Presiding

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| 8:30 | (1060-1) | **Single Molecule Resolution of Surface Heterogeneity** DANIEL SCHWARTZ, University of Colorado Boulder |
| 8:50 | (1060-2) | **Single Molecule Tracking and Combinatorial Materials Science: Exploring the Nanoscale Properties of Thin Film Gradients and Their Surfaces** DANIEL A HIGGINS, Kansas State University, Dipak Giri, Maryanne M Collinson |
| 9:10 | (1060-3) | **Super-Resolution Optical Imaging of Real-Time Membrane Transport of Single Live Cells** X NANCY XU, Old Dominion University, Tao Huang, Prakash D Nallathamby, Feng Ding, Kerry Lee |
| 9:30 | (1060-4) | **Understanding Single Molecule Dynamics at Interfaces** CHRISTY LANDES, Rice University |
| 9:50 | | **Recess** |
| 10:05 | (1060-5) | **Optical Microscopy Studies of Receptor Diffusion: Single Particle Tracking and Stimulated Emission Depletion Imaging** EMILY A SMITH, Iowa State University, Aleem Syed, Qiaochu Zhu, Neha Arora |
| 10:25 | (1060-6) | **Chemical Analysis Using Electric Fields From Coupled Plasmonic Structures** ZACHARY SCHULTZ, University of Notre Dame, Hao Wang, Daniel Kwasnieski |
| 10:45 | (1060-7) | **Imaging of Retention Kinetics Within Individual Reversed-Phase Chromatographic Particles** JOEL M HARRIS, University of Utah, Justin T Cooper, David Bryce, Jay P Kitt |
| 11:05 | (1060-8) | **Diffusion Near Surface Studied with Three-Dimensional Super Localization Microscopy** GUFENG WANG, North Carolina State University, Luyang Zhao, Fang Chen, Bhanu Neupane |

**ORAL SESSION** **Session 1070**

***Biomedical Applications for Mass Spectrometry***

**Tuesday Morning, Room 240**
Barbara Bojko, University of Waterloo, Presiding

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| 8:30 | (1070-1) | **Identification of Novel Serum Lipid Biomarkers Predicting Preeclampsia Using a Shotgun Lipidomics Approach** SWATI ANAND, Brigham Young University, John Prince, Steven W Graves, Craig D Thulin, Bruce Jackson, Sean Esplin |
| 8:50 | (1070-2) | **MS Biology Approach to the Investigation of Heart Repair Using Zebra Fish Model** ROBERT S PLUMB, Imperial College |
| 9:10 | (1070-3) | **Investigating the Mechanism of Preeclampsia by Probing the Low Molecular Weight (LMW) Placental Proteome Using Capillary Liquid Chromatography-Orthogonal Time-of-Flight Mass Spectrometer (cLC/Q-TOF-MS)** KOMAL KEDIA, Brigham Young University, Steven W Graves, Stephen F Smith, Craig D Thulin |

# TECHNICAL PROGRAM

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| 9:30 | (1070-4) | **Real-Time Mass Spectrometry for Non-Invasive Monitoring of Chronic Kidney Disease in Children** JULIANE OBERMEIER, University Medicine of Rostock, Josephine Happ, Phillip Trefz, Jochen K Schubert, Hagen Staude, Dagmar C Fischer, Wolfram Miekisch |
| 9:50 | | **Recess** |
| 10:05 | (1070-5) | **Hookah Smoking: Which is Worse, the Tobacco or the Charcoal?** RYAN T SAADAWI, University of Cincinnati, Traci T Hanley, Amberlie Clutterbuck, Julio Landero, Joseph A Caruso |
| 10:25 | (1070-6) | **Application of In Vivo and In Situ Solid Phase Microextraction to Development Chemotherapy Regimen in In Vivo Lung Perfusion Model** BARBARA BOJKO, University of Waterloo, Krzysztof Gorynski, German A Gomez-Rios, Pedro R Dos Santos, Marcelo Cypel, Janusz Pawliszyn |
| 10:45 | (1070-7) | **Retrospective Assessment of Organophosphorus Nerve Agent Exposure in Humans** RUTH N HARDING, Lawrence Livermore National Laboratory, Todd H Corzett, Carlos A Valdez, Audrey M Williams |
| 11:05 | (1070-8) | **Real-Time PTR-TOF-MS Measurements Reveal Effects of Patient's Body Positions onto the Composition of Exhaled Breath** PRITAM SUKUL, University Medicine of Rostock, Phillip Trefz, Jochen K Schubert, Wolfram Miekisch |

## ORAL SESSION — Session 1080

*CE and Microfluidics of Amino Acids, Peptides and Proteins*

**Tuesday Morning, Room 241**
Yinfa Ma, Missouri University of Science and Technology, Presiding

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| 8:30 | (1080-1) | **Separation and Resolution Enhancement for Amino Acid Quantitation in Human Tears Samples Using CE-LIF** VITALY AVILOV, University of Illinois at Chicago, Scott A Shippy |
| 8:50 | (1080-2) | **Analysis of Biological Thiols and Glutamate Using CE-LIF in Individual *D. melanogaster* xCT Mutants under Oxidative Stress Conditions** MARISSA BECKER, University of Illinois at Chicago, Srivani Borra, Scott A Shippy |
| 9:10 | (1080-3) | **Capillary Electrophoretic Separation of Peptides in an Aqueous Solution with the Aid of a Cationic Additive** HASSAN M FAKHREDDINE, California Polytechnic State University, Yan M Liu |
| 9:30 | (1080-4) | **Monitoring Amino Acid Secretions from Islets of Langerhans** XUE WANG, Florida State University, Lian Yi, Michael G Roper |
| 9:50 | | **Recess** |
| 10:05 | (1080-5) | **3D Printed Micro Free-Flow Electrophoresis Device for Proteomic Analysis** SARAH ANCIAUX, University of Minnesota, Michael Bowser |
| 10:25 | (1080-6) | **High-Throughput Biological Mixture Analysis Using Microchip Electrophoresis Interfaced to a Protein Capture Membrane** SHI JIN, University of Michigan, Robert T Kennedy |
| 10:45 | (1080-7) | **Towards Automated Epigenomics: Droplet-Based Microfluidic Device for Chromatin Immuno Capture** YI XU, University of Illinois at Urbana-Champaign, Richard M Graybill, Amy K Oreskovic, Mallika Modak, Steven Doonan, Joshua Tice, Jeong-Heon Lee, Tamas Ordog, Ryan C Bailey |

## ORAL SESSION — Session 1090

*Electrochemistry - Neurochemistry*

**Tuesday Morning, Room 255**
Johna Leddy, University of Iowa, Presiding

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| 8:30 | (1090-1) | **Plasma-Etched Cavity Carbon-Fiber Microelectrodes for Use with Fast-Scan Cyclic Voltammetry (FSCV)** LARS DUNAWAY, North Carolina State University, Andreas C Schmidt, James G Roberts, Leslie A Sombers |
| 8:50 | (1090-2) | **Fast-Scan Cyclic Voltammetry of Neurotransmitters at Conductive Polymer Electrodes** ADAM R MEIER, University of Arizona, Richard F Vreeland, Michael L Heien |
| 9:10 | (1090-3) | **Application of In Vivo Voltammetry for Studying Effect of Aspirin Overdose on Catecholamine Signaling in Rat Brain** JINWOO PARK, University at Buffalo-SUNY, Lingbo Lu, Jin W Park |
| 9:30 | (1090-4) | **Effects of Electrode Conditioning on Background Drift in Fast-Scan Cyclic Voltammetry** JUSTIN A JOHNSON, University of North Carolina at Chapel Hill, Elizabeth Bucher, Douglas Kirkpatrick, Laura Kim, Robert M Wightman |
| 9:50 | | **Recess** |
| 10:05 | (1090-5) | **Rationally Tuning Ionic Interaction for Improving the Selectivity of Biosensors** YU PING, Chinese Academy of Sciences, Lanqun Mao |
| 10:25 | (1090-6) | **Voltammetric Characterization of Histamine-Serotonin Modulation in the Brain** SRIMAL SAMARANAYAKE, Wayne State University, Aya Abdalla, Rhiannon Robke, Parastoo Hashemi |
| 10:45 | (1090-7) | **Versatile Nanosensor Probes for the Detection of Ionic Neurotransmitters at Biological Nanostructures** MEI SHEN, University of Illinois at Urbana-Champaign, Michelle Colombo, Stanislav S Rubakhin, Joaquin Rodriguez-Lopez, Jonathan V Sweedler |
| 11:05 | (1090-8) | **Improved Understanding of Voltammetric Electrode Response Dynamics to Dopamine** SETH H WALTERS, University of Pittsburgh, Adrian C Michael |

## ORAL SESSION — Session 1100

*Environmental - Portable Instrumentation*

**Tuesday Morning, Room 256**
Lara Phelps, US Environmental Protection Agency, Presiding

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| 8:30 | (1100-1) | **Hand-Portable Gradient Liquid Chromatographic Systems** SONIKA SHARMA, Brigham Young University, Alex Plistil, Hal E Barnett, Stanley Stearns, Paul B Farnsworth, Andrew J Alpert, H Dennis Tolley, Milton L Lee |
| 8:50 | (1100-2) | **Culturing the Unculturable: Exploiting the Microscale to Understand Microbial Communication** IMEE G SMITH, US Army ERDC-CERL, Justin R Smith, Ryan R Busby, David B Ringelberg |
| 9:10 | (1100-3) | **Portable Ion Chromatograph for Field Analysis** BRIAN STAMOS, University of Texas at Arlington, Weixiong Huang, Min Zhang, Purnendu K Dasgupta |
| 9:30 | (1100-4) | **Validation of Portable XRF Instruments to Evaluate Personal Exposure to Metals** PATRICK J PARSONS, New York State Department of Health, Diana F Guimaraes, Meredith L Praamsma |
| 9:50 | | **Recess** |
| 10:05 | (1100-5) | **Development of a Solar-Powered, Microcontroller-Based, Remotely Deployable Potentiostat for In-the-field Electrochemical Analysis of Heavy Metals** THOMAS ROUSSEL, University of Louisville, Mohamed M Marei, Robert Keynton, Richard Baldwin |
| 10:25 | (1100-6) | **A New Method for the Analysis of ppb Levels of Mercury in Air and Water** JACK N DRISCOLL, PID Analyzers, LLC, Jennifer L Maclachlan |
| 10:45 | (1100-7) | **Solid Samples by Microplasma-on-a-Chip Optical Emission Spectrometry** VASSILI KARANASSIOS, University of Waterloo, F J Khan, B Spain |
| 11:05 | (1100-8) | **Multi-Component Gas Analysis Applications of Cantilever-Enhanced Photoacoustic Spectroscopy** JAAKKO LEHTINEN, Gasera Ltd., Sauli Sinisalo, Jussi Raittila, Ismo Kauppinen |

## ORAL SESSION — Session 1110

*GC/MS - Fuel, Energy and Petrochemical (Half Session)*

**Tuesday Morning, Room 257**
Richad A Henry, Consultant, Presiding

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| 8:30 | (1110-1) | **Quantification of Tributylamine Using Solid Phase Extraction and Gas Chromatography Mass Spectrometry** SARAH CHAUDHURY, Liquid Light, Inc. |
| 8:50 | (1110-2) | **Characterization and Quantification of Thermal Degradation Products of Bisphenol – A and Non-Bisphenol A Based Electrical Insulators** SHUBHEN KAPILA, University of Missouri, Carlo Roggero, Vander Tumiatti, Michela Tumiatti |
| 9:10 | (1110-3) | **Determination of GCxGC-MS-FID Compound Class Response Factors** THOMAS N LOEGEL, Naval Research Laboratory, Robert E Morris, Mark H Hammond |
| 9:30 | (1110-4) | **Enhanced Molecular Ion in GC/MS by Cold EI** ADAM J PATKIN, PerkinElmer, Ruben Garnica, Andrew N Tyler |

**ORAL SESSION** **Session 1120**

***Liquid Chromatography-Pharmaceutical, Food Science, Bioanalytical, and Process Analytical Chemistry***

**Tuesday Morning, Room 267**
Thomas Edward Wheat, Waters Corporation, Presiding

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| 8:30 | (1120-1) | **Using Core-Shell Media and High pH as Tools for Prep Chromatography on Pharmaceutical Compounds** J P PRESTON, Phenomenex, Jeff Layne |
| 8:50 | (1120-2) | **Analysis of Monoclonal Antibodies with Electrochromatography** AO ZENG, Purdue University, Pei-Hsun Wei, Mary J Wirth |
| 9:10 | (1120-3) | **Comparison of Systematic Protocol and Analytical Quality by Design Approaches for the Method Development of Metoclopromide HCl** MARK WRONA, Waters Corporation, Margaret Maziarz, Sean M McCarthy |
| 9:30 | (1120-4) | **Antioxidant Behavior of Catechins** YUE ZHOU, California Polytechnic State University, Yan Liu |
| 9:50 | | **Recess** |
| 10:05 | (1120-5) | **Surfactant Modified Reversed Phase Columns for Ion Exclusion Ultra-High Performance Liquid Chromatography** JENNIFER M FASCIANO, Miami University, Neil D Danielson |
| 10:25 | (1120-6) | **Separation of Halogenated Pharmaceuticals from Their Dehalogenated Impurities by HPLC** CHANDAN BARHATE, University of Texas at Arlington, Eduardo Pinto, Zachary S Breitbach, Christopher J Welch, Daniel W Armstrong |
| 10:45 | (1120-7) | **Systematic Method Development with Novel, Inert Solid-Core Bonded Phases** THOMAS J WAEGHE, MAC-MOD Analytical, Geoffrey Faden, Carl L Zimmerman, Alan P McKeown |
| 11:05 | (1120-8) | **Rapid Formation of Polymer Frits in Fused Silica Capillaries Using Thermal Radical Polymerization** KENDALL E SANDY, University of Arizona, Elyssia S Gallagher, Leonard K Bright, Christopher A Baker, Craig A Aspinwall |

**ORAL SESSION** **Session 1130**

***Methods for Metabolomics in Medicine (Half Session)***

**Tuesday Morning, Room 268**
Terri T Christison, Thermo Fisher Scientific, Presiding

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| 8:30 | (1130-1) | **Stable Isotope Labeling Analysis for High Resolution Mass Spectrometry-based Metabolomics** XIAOLI WEI, University of Louisville, Pawel Lorkiewicz, Imhoi Koo, Xiang Zhang |
| 8:50 | (1130-2) | **Validation of LC-MS Metabolomics Method in Whole Islets and Application to Studies of Oxidative Stress** CYNTHIA M CIPOLLA, University of Michigan, Mahmoud El Azzouny, Shusheng Lu, Robert T Kennedy |
| 9:10 | (1130-3) | **Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging (MALDI MSI) of Glycolytic and Oxidative Skeletal Muscles** YU-HSUAN TSAI, University of Florida, Timothy J Garrett, Christy S Carter, Richard A Yost |
| 9:30 | (1130-4) | **Non-Targeted Determinations of Anionic Polar Metabolites Using Capillary Ion Chromatography and High Resolution Accurate Mass Spectrometry** TERRI CHRISTISON, Thermo Fisher Scientific, Junhua Wang, Yingying Huang, Linda Lopez |

**ORAL SESSION** **Session 1140**

***MS for Bio-Analysis***

**Tuesday Morning, Room 269**
Robert W Baudoux, Sr., RWB Convention Mgt, Presiding

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| 8:30 | (1140-1) | **GUMBOS Matrices of Variable Hydrophobicity for MALDI Mass Spectrometry** HASHIM A AL GAHFLY, Louisiana State University, Bishnu Regmi, Paul Magut, Noureen Siraj, Waduge Indika S Galpothdeniya, Kermit K Murray, Isiah M Warner |
| 8:50 | (1140-2) | **Analysis of the Essential Oil from the Whole Plant of Physalis Angulata, A Multipurpose Medicinal Herb, by GC-MS** MODUPE MABEL OGUNLESI, University of Lagos, Tobi C Aleshinloye |
| 9:10 | (1140-3) | **New Volatile Molecular Markers for the Diagnosis of Human Cancer** WOLFGANG SCHROEDER, Hamburg University of Technology (TUHH) |
| 9:30 | (1140-4) | **Detection of VOC-Patterns Emitted From Mycobacterial Cultures by Micro-Extraction-Techniques and GC-MS** MARKUS STEFFENS, University Medicine of Rostock, Andreas Bergmann, Sina Fischer, Petra Reinhold, Heike Koehler, Jochen K Schubert, Wolfram Miekisch |
| 9:50 | | **Recess** |
| 10:05 | (1140-5) | **Using Mass Cytometry for the Proteomic Analysis of Single Skeletal Muscle Fibers** HEATHER M GRUNDHOFER, University of Minnesota, Michelle M Henderson, Edgar A Arriaga |
| 10:25 | (1140-6) | **Multimodal MS Imaging: A New Approach to Chemical Analysis in Invertebrate Model Systems** NHU T PHAN, University of Gothenburg, Amir Saeid Mohammadi, Masoumeh Dowlatshahi Pour, John Fletcher, Andrew G Ewing |
| 10:45 | (1140-7) | **LC-MS Determination of Prostanglandis, Leukotrienes, Hydroxyeicosate-traenoic Acids in Rat Colon Microdialysate During Inflammatory Bowel Disease** YUNAN WANG, University of Kansas, Craig E Lunte |
| 11:05 | (1140-8) | **Characterization of Intracellular Organization with Aqueous Biphasic Systems Serving as Cytoplasm Mimics** BRADLEY DAVIS, Waynesburg University/Penn State, William Aumiller, Christine Keating, Antonios Armaou, Negar Hashemian, Costas Maranas |

**ORAL SESSION** **Session 1150**

***Preparation and Characterization of Nanomaterial Biosensors***

**Tuesday Morning, Room 270**
Brian R Strohmeier, United States Steel Coorporation, Presiding

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| 8:30 | (1150-1) | **pH Profiling at a Single Cell Surface upon Exposure to Titanium Oxide Nanoparticles by Using a Novel Micro-pH Probe** SISI CHEN, Missouri University of Science and Technology, Qingbo Yang, Honglan Shi, Yinfa Ma, Hanzheng Wang, Xinwei Lan, Hai Xiao |
| 8:50 | (1150-2) | **The Importance of Organic Ligands around Metal Nanoparticles towards Vapor Sensing** FRANCISCO J IBANEZ, University of La Plata and CONICET, Maria C Dalfovo |
| 9:10 | (1150-3) | **Seedless, Surfactantless, Shape-Controlled Synthesis and Characterization of Gold Nanoparticles** MELISSA A KERR, North Carolina Central University, Keyandra C Cotton, Morgen A Watkins, Fei Yan |
| 9:30 | (1150-4) | **Mimicking Subtle Biological Interactions at Bilayers Using a Colorimetric Liposome Platform** JULIA C REYES, Southern Illinois University, Naveneet Dogra, Morgan Duttrow, Jared Fiske, Nathalie P Becerra, Yuri L Moreno, Natalia A Mariño, Punit Kohli |
| 9:50 | | **Recess** |
| 10:05 | (1150-5) | **Electronic Interaction Between Molecular Machines and Plasmonic Nanoan-tennas** RAJESH SARDAR, Indiana University-Purdue University Indianapolis, Gayatri Joshi |
| 10:25 | (1150-6) | **Development of Self-Assembled Films based on Polyaniline and Functionalized Carbon Nanotubes for Electrochemical Detection of 2,4-D** FÁBIO SIMÕES, Federal University of São Paulo |
| 10:45 | (1150-7) | **Plasmonic Nanoporous Gold Nanocomposites** JIANBO ZENG, University of Houston, Fusheng Zhao, Wei-Chuan Shih |
| 11:05 | (1150-8) | **Single-Particle Analysis of Virus Assembly** ZACHARY D HARMS, Indiana University, Lisa Selzer, Adam Zlotnick, Stephen C Jacobson |

# TECHNICAL PROGRAM



## ORAL SESSION — Session 1160

*Supercritical Fluid Chromatography*

**Tuesday Morning, Room 271**
Geoffrey N Coleman, Elemental Scientific, Meinhard, Presiding

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|---|---|---|
| 8:30 | (1160-1) | **Recent Advances in Supercritical Fluid Chromatography Instrumentation for the Development of Highly Efficient Analytical Methods** JENNIFER LYNNE SIMEONE, Waters Corporation, Paula Hong, Patricia R McConville |
| 8:50 | (1160-2) | **Improving Efficiency in a Quality Control Laboratory by Leveraging the Recent Advances in Supercritical Fluid Chromatography** KEM CHARRON, Amway, Bertil Nshime |
| 9:10 | (1160-3) | **Determination of Brominated Vegetable Oil in Soft Drinks by UPC2-MS** JINCHUAN YANG, Waters Corporation, Joe Romano, Kenneth Rosnack |
| 9:30 | (1160-4) | **Design and Implementation of a Simple Achiral Method Development Strategy** JASON HILL, Waters Corporation, Jacob Fairchild, Cheryl Boissel, Ken Fountain |
| 9:50 | | **Recess** |
| 10:05 | (1160-5) | **Comprehensive Investigation of the Utilization of SFC/ESI Positive Mode MS for Chiral and Achiral Bioanalytical Studies** PAUL RAINVILLE, Waters Corporation, Mark Wrona, Jennifer Lynne Simeone |
| 10:25 | (1160-6) | **Evaluation of New Amide-Based Stationary Phase for Supercritical Fluid Chromatography** AMARIS BORGES-MUÑOZ, University at Buffalo, Luis A Colon |

## ORAL SESSION — Session 1170

*Using Light for Bio-Medical Analysis (Half Session)*

**Tuesday Morning, Room 272**
Robert A Lodder, University of Kentucky, Presiding

| | | |
|---|---|---|
| 8:30 | (1170-1) | **Characterizing Specific Markers for Stored Red Blood Cell Degradation with Raman Spectroscopy** CHAD ATKINS, University of British Columbia, Kevin Buckley, Deborah Chen, Hans G Schulze, Dana Devine, Michael Blades, Robin Turner |
| 8:50 | (1170-2) | **Assessment of Characteristic Nano-Scaled Damage to Collagen Fibrils in Mechanically Overloaded Tendons With SEM and FTIR Spectrochemical Imaging** KATHLEEN M GOUGH, University of Manitoba, Richard E Wiens, Samuel P Veres, Michael J Lee, Jason Morrison |
| 9:10 | (1170-3) | **Mechanistic Insights into Enzyme Cascades** VINITA YADAV, The Pennsylvania State University |
| 9:30 | (1170-4) | **Gold Microhole Arrays For Simultaneous SPR and Fluorescence Detection of PSA** HUGO-PIERRE POIRIER RICHARD, University of Montreal, Julien Breault-Turcot, Jean-François Masson |

## POSTER SESSION — Session 1180

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Agriculture*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

| | |
|---|---|
| (1180-1 P) | **Effect of Environmental Factors on Degradation of Cabofuran Pesticide in Aqueous Media** ABD EL-MONEIM AFIFY, Cairo University, Ghada M Ibrahim, Mohamed A Abo-El-Seoud, Bassam W Kassem |
| (1180-2 P) | **Toxic Metals in Brazilian Environmental Matrix** SONIA ALMEIDA, IQ-UNESP, Danilo Vitorino, Marisa S Crespi, Lilian D Toquatro |
| (1180-3 P) | **Nitrogen and Carbon Determination in Soils and Plants by Flash Combustion Using Argon as Carrier Gas** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone |
| (1180-4 P) | **Selenium Speciation in Ruminant Livestock Feed Using Liquid Chromatography Hydride Generation Atomic Fluorescence Spectrometry (HPLC-HG-AFS)** MICHAEL R LEE, University of Bristol, Hannah R Fleming, Bin Chen, Warren T Corns |
| (1180-5 P) | **Removal of Dioxins and Polychlorinated Biphenyls from Water Using Molecularly Imprinted Polymer** WEICHUN YANG, Kemin Industries, Ezra Shields, Rick A Myers |
| (1180-6 P) | **Seasonal Effect on the Metabolome of Commercial Maize Hybrids Using LC/MS and GC/MS, A Multiyear Study** WEIJUAN TANG, Purdue University, Hamid Baniasadi, Teresa Harp, Chris Vlahakis, Jan Hazebroek, Cathy Zhong, Vincent Asiago |
| (1180-7 P) | **Fast and Direct Determination of Soil pH by Laser Induced Breakdown Spectroscopy** EDILENE C FERREIRA, São Paulo State University, Jesús M Anzano Lacarte, José A Gomes Neto, Ednaldo J Ferreira, Débora M B P Milori |
| (1180-8 P) | **Use of Analytical Science for the Characterization of Experimental Research Soil Samples** MARIA E RODRIGUEZ-ROSAS, Dow Agrosciences, Mary Kubiszak, Ray Boucher, Lei Liu |
| (1180-9 P) | **Gamma-Aminobutyric Acid (GABA) Analyses by HPLC in Phaseolus Vulgaris L. Plants Exposed to Drought and Salt Stresses** FAZILET O CEKIC, Aksaray University, Seyda Yılmaz |

## POSTER SESSION — Session 1190

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Biomedical Applications*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

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|---|---|
| (1190-1 P) | **Withdrawn** |
| (1190-2 P) | **Innovative Technology Development for Environmental Health Sciences Through SBIR/STTR Programs at NIEHS** DANIEL SHAUGHNESSY, NIH/NIEHS, Kirsten Mease, David Balshaw |
| (1190-3 P) | **Low-Cost Glucometer with Ink-Jet Printed Test Strips** KAYLA E GAINEY, Clemson University, Tyler Ovington, John DesJardins, Delphine Dean |
| (1190-4 P) | **Amelioration of Over Expression of Bax, Nrf2 And NFK–B in Nano Sized Titanium Dioxide-Induced Oxidative Liver Injury in Mice by Potent Antioxidants** SAMY A ABDEL AZIM, Cairo University |
| (1190-5 P) | **Biomedical Application of GUMBOS Based on Varied Hydrophobicity** NIMISHA BHATTARAI, Louisiana State University, Paul Magut, Isiah M Warner |
| (1190-6 P) | **Generation and Characterization of a Panel of Aptamers Recognizing Pancreatic Ductal Adenocarcinoma** CAROLE CHAMPANHAC, University of Florida, Weihong Tan |
| (1190-7 P) | **Construction and Expression of CPT1A and CPT1C's Chimeric Fluorescence Proteins** NEUS GIMÉNEZ, University of Barcelona, Dolors Serra, Julia Vallve |
| (1190-8 P) | **Withdrawn** |
| (1190-9 P) | **Structural Identification and Bioactivity Testing of Gold Nanorods Conjugated with Doxorubicin and cRGD for Combined Anti-Cancer Drug Delivery** XIANMING HU, Wuhan University, Yu Haiyan, Yuling Xiao |
| (1190-10 P) | **Monitoring Biodegradable Metal Alloys Using Analytical Methods** TINGTING WANG, University of Cincinnati, Daoli Zhao, Zhongyun Dong, Vesselin N Shanov, Yeoheung Yun, Prashant Kumta, William R Heineman |
| (1190-11 P) | **Synthesis and Handling of Volatile Nitrosothiols Being Proposed as a New Class of Cancer Markers in Human Breath** WOLFGANG SCHROEDER, Hamburg University of Technology (TUHH) |
| (1190-12 P) | **Interaction of Cancer Cells with Microposts in a Microfluidic Device Immobilized with Aptamers** CHEN KANGFU, University of Florida |
| (1190-13 P) | **Alkylated Porous Poly (styrene-divinylbenzene) Particles: A Superior Phase for Analytical and Preparative Oligonucleotide Separations** DEREK A JENSEN, Hamilton Company |
| (1190-14 P) | **Antimicrobial and Phytochemical Screening of Fruit Extract of *Phyllanthus fraternus* Webster** BHANUKUMAR KAIN JAIN, MG Science Institute, Kavit Mehta, Bharat Patel |
| (1190-15 P) | **A Miniaturized, High Frequency Ultrasound System for Monitoring Biological Entities in Physiological Flow** GRAHAM PEYTON, Imperial College London, Emmanuel Drakakis, Martyn G Boutelle |
| (1190-16 P) | **Detection of Doping Agents in Serum Using a NanoSPRi Platform** MARINELLA SANDROS, University of North Carolina Greensboro, Stephen Vance, Effat Zeidan |
| (1190-17 P) | **Multi-Platform Characterization of No Addiction Powder Using Gas-Chromatography Time-of-Flight Mass Spectrometry** CHRISTINA NIEH KELLY, LECO Corporation, David E Alonso, Joe E Binkley |
| (1190-18 P) | **Identification of Metabolites Modulated During Fructose Feeding Using Gas Chromatography with High Resolution Time-of-Flight Mass Spectrometry** JEFFREY S PATRICK, LECO Corporation, Xiang Zhang, Joe E Binkley, David E Alonso, Xinmin Yin, Craig McClain, Ming Song |
| (1190-19 P) | **Use of 3 µm Analytical Size Exclusion Chromatography (SEC) Column for Monitoring Protein Unfolding and Refolding in Stability Studies of Proteins and Monoclonal Antibodies** JUSTIN STEVE, Tosoh Bioscience, LLC, Atis Chakrabarti |
| (1190-20 P) | **Multifunctional Nanoparticles for Biomedicine** ARUNAS RAMANAVICIUS, Vilnius University, Almira Ramanaviciene, Asta Makaraviciute, Julija Baniukevic, Asta Kausaite-Minkstimiene |
| (1190-21 P) | **Proteomic Analysis of Decellularized and Recellularized Biological Scaffolds** QIYAO LI, University of Wisconsin-Madison |

(1190-22 P) **Investigating the Effects of Commercial Preservative Agents on Human Corneal Epithelial Cell Membranes** IAN J HORNER, SUNY University at Buffalo, Frank V Bright, Nadine D Kraut, Crystal M Collado, Alyssa A Rook

(1190-23 P) **Formulation and *In Vitro* Evaluation of an Oral Particulate Therapeutic Breast Cancer Vaccine** ALYSSA M KNAPP, St. John Fisher College, Lipika Chablani

(1190-24 P) **Synergistic Effects of Plant Extracts and Antibiotics on MRSA Isolated from Clinical Specimens** PIYUSH VYAS, Sheth MN Science College, Deepkumar Joshi

(1190-25 P) **Photothermal Therapy of Breast Cancer Based on Gold Nanorods Targeted by Covalently-Coupled Bombesin Peptide** ZAHRA HEIDARI, Tulane University, Mojtaba Salouti, Reyhaneh Sariri

(1190-26 P) **Design and Production of Molecular Imprinted Membranes for Cholesterol Removal** MEHMET ODABAŞI, Aksaray University, Şeyda Ceylan, Lokman Uzun

(1190-27 P) **High Wavenumber Raman Spectroscopy and Simulation Analysis of Ethanol Effects in Oral Cell Lines** LUIS FELIPE CARVALHO, Universidade do Vale do Paraíba, Franck Bonnier, Kate O'Callaghan, Jeff O'Sullivan, Stephen Flint, Bruno Pera, Laurita Santos, Airton Martin, Hugh Byrne, Fiona Lyng

(1190-28 P) **Use of Raman Spectroscopy for the Study of Cell Cycle Phase and Biomarker Expression Levels in Oral Cancerous Cells** OLA IBRAHIM, Focas Research Institute, Luis Felipe Carvalho, Marina Bandeira, Kate O Callaghan, Jeff O Sullivan, Hugh Byrne, Stephen Flint, Fiona Lyng

(1190-29 P) **Preparation of Nanoparticles for Magnetic Separation and SERS Application** SIQI SUN, University of South Florida, Xiao Li

(1190-30 P) **Surface Immobilization of Antimicrobial Peptides via Click Chemistry: Structure-Activity Relationship Studied Using Experimental Methods and Molecular Dynamics Simulation** YAOXIN LI, University of Michigan, Shuai Wei, Jianfeng Wu, Zhan Chen

## POSTER SESSION — Session 1200

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Fuels, Energy & Petrochemical*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1200-1 P) **The Determination of Mercury in Unstabilized Hydrocarbon Liquid Streams by Vaporization-Amalgamation-Atomic Fluorescence Spectrometry** MATTHEW A DEXTER, P S Analytical, Warren T Corns, Peter B Stockwell

(1200-2 P) **Laboratory-Scale Test Systems for Mercury, Selenium and Arsenic Adsorbent Materials for Use in the Oil and Gas and Water Treatment Industries** MATTHEW A DEXTER, P S Analytical, Bin Chen, Warren T Corns, Peter B Stockwell

(1200-3 P) **Methanogenic Potential of a Thermophilic Consortium Enriched from Jharia Coal Mine** MEETA LAVANIA, The Energy and Resources Institute, Banwari Lal

(1200-4 P) **Nitrogen Speciation in Petroleum Distillates Using a Complementary and Powerful Approach by GC×GC-NCD and FT-ICR/MS: Towards a Sub-ppm Molecular Screening of HDN Catalysts Efficiency** JEREMIE PONTHUS, IFPEN, Fabien Chainet, Lyes Assam, Vincent Souchon, Florian Albrieux, Laure Boursier

(1200-5 P) **Rapid Simultaneous Identification of Thermal Maturity and Mineral Contents in Oil Shale with High-Speed Raman Imaging** MOHAMMED IBRAHIM, Thermo Fisher Scientific, John Hellgeth, Ken Smith, Asish R Basu

(1200-6 P) **Rapid Elemental and Isotope Analysis of Coal Material by EA /EA-IRMS** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone, Chris Brodie, Jens Radke, Andreas Hilkert

(1200-7 P) **A Microfluidic Device for Detection of Water Contamination from Hydraulic Fracturing** LESLIE J LOH, Oregon State University, Christopher A Heist, Gayan C Bandara, Vincent T Remcho

(1200-8 P) **Dissolved Gas Determination Using the D-19 ASTM Method** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor

(1200-9 P) **Porphyrin-Based GUMBOS and NanoGUMBOS for Use as Sensitizers in Dye-Sensitized Solar Cells** PAULINA E KOLIC, Louisiana State University, Noureen Siraj, Bishnu Regmi, Xinning Luan, Ying Wang, Isiah M Warner

(1200-10 P) **Safety and Performance Studies on Lithium-Ion Batteries Using Adiabatic and Isothermal Battery Calorimetry** BOB FIDLER, NETZSCH Instruments N.A. LLC, Peter Ralbovsky, Ekkehard Post

(1200-11 P) **Investigation of Palladium Based Nanocatalysts for Direct Formic Acid Fuel Cells** TAMANNA SHANTA, The University of Southern Mississippi, Wujian Miao

(1200-12 P) **Novel Hydrogen Sensor for Applications in the Petrochemical and Power Industries** THOMAS BUIJS, ABB, Michael B Simpson

(1200-13 P) **TD-NMR Combined with Chemometrics Analysis: An Alternative Tool for Monitoring Diesel Fuel Quality** POLIANA M SANTOS, UTFPR, Renata S Amais, Marcos Monteiro, Åsmund Rinnan, Luiz A Colnago

(1200-14 P) **Characterization of Sugarcane Bagasse, Filter Cake and Vinasse from Two Sugarcane Mills** DANIEL R DA SILVA, IQCAr-UNESP, Marisa S Crespi, Jackeline L Mendonça, Paula M Crnkovic

(1200-15 P) **Monitoring of FGD Solids with a Macro TGA System** JOHN THOMAS RILEY, John T Riley Consulting, Mason Marsh, Dennis Lawrenz

(1200-16 P) **Viscosity Reduction of Heavy Crude Oils Using Hydrogen or Methane as Reducing Agents** LAURA O ALEMAN-VAZQUEZ, Instituto Mexicano del Petroleom, Jose L Garcia-Gutierrez

(1200-17 P) **Meeting Novel Challenges in Specialty Gas and Petrochemical Applications with GC Plot U and Select Low Sulfur Plot Columns** KEN LYNAM, Agilent Technologies, Gary Lee, Allen Vickers

(1200-18 P) **On-Site Rapid Analyses of Well Gases for Mud Logging Applications Using Micro Gas Chromatography** REMKO VAN LOON, Agilent Technologies, Coen Duvekot

(1200-19 P) **Withdrawn**

(1200-20 P) **Advances in a New Methodology for Sampling and Analyzing Elemental Sulfur in Natural Gas and Natural Gas Liquids** ALEJANDRO GONZALEZ, DCG Partnership

(1200-21 P) **Characterization of the Emissions of Air Toxics from Biomass-Derived Additives for Diesel and Biodiesel Fuels by GC-MS and Extractive FTIR Spectrometry** SHRUTHI PERNA, Middle Tennessee State University, Christopher Moore

(1200-22P) **Trace Detection of Carbon Monoxide in Hydrocarbon Feedstock Processing Using Continuous-Wave Cavity Ring-Down Spectroscopy (CW-CRDS)** FLORIAN ADLER, Tiger Optics, Elyse Baroncini, Erika Coyne

## POSTER SESSION — Session 1210

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### *Molecular Spectroscopy Advances*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1210-1 P) **Strategies for Controlling Contact Pin-Printed Feature Size on Porous Silicon Microarrays** SIDNEY G COOMBS, University at Buffalo, Frank V Bright

(1210-2 P) **Characterization of Food and Pharmaceutical Packaging by Molecular Spectroscopy** WILLIAM T WIHLBORG, Thermo Fisher Scientific, Alexander Rzhevskii, Ronald Rubinovitz, Ken Smith

(1210-3 P) **Raman Imaging and Polarization Spectroscopy of Draw-Induced Order in Poly-L-lactic Acid** LAKSHMI BALARAMAN, Cleveland State University, John F Turner, Venkata N K Rao Bobba

(1210-4 P) **PERS and PECARS: Microcavity Enhanced Raman Processes** NICHOLAS DJEU, University of South Florida, Andreas Muller, Benjamin Petrak

(1210-5 P) **Rheology-Raman Spectroscopy: Tracking Molecular Structures as a Function of Deformation and Temperature** JAN P PLOG, Thermo Fisher Scientific, Massimiliano Rocchia, Matthew Meyer

(1210-6 P) **Fast Spectrometric Method for Heavy Metals Determination Based on Enzyme Inhibition** ANTON A CIUCU, University of Bucharest, Irina Trandafir

(1210-7 P) **Photoacoustic Instrument for Measurement of Airborne Molecular Contamination at (Sub) nmol/mol Level** ANNARITA BALDAN, VSL, Janneke van Wijk, Stefan Persijn

(1210-8 P) **A Highly Reliable Sensor for Nickel Carbonyl and Iron Carbonyl in Ambient Air** THOMAS BUIJS, ABB, Henry Buijs

(1210-9 P) **Optimization of the Uncertainty of the Quantification of the Photogradation of Methylene Blue** RICARDO BETTENCOURT SILVA, University of Lisbon, Nuno Rosa, M Filomena Camões, Monteiro Olinda

## POSTER SESSION — Session 1220

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *New Products at Pittcon 2015*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1220-1 P) **High Speed WDS Spectrometer for SEM Provides Rapid Id of Overlapped Peaks from Minor and Trace Constituents (WDS) / Materials** JOHN KONOPKA, Thermo Fisher Scientific, Keith Thompson, David Rohde, Brian R Strohmeier, Simon Nunn, Martin Long

# TECHNICAL PROGRAM



## POSTER SESSION — Session 1230

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Pharmaceutical - Vibration Spec, Molecular Spec, Others*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1230-1 P) **Fast Chemical Classification, Quantitation and Imaging Using Optimal Binary Compressive Detection with Raman Spectroscopy** BHARAT R MANKANI, Purdue University, Bradley Lucier, Gregery Buzzard, Dor Ben-Amotz

(1230-2 P) **Study of Simultaneous Spectra of SrCl and SrO by Using Laser Induced Breakdown Spectroscopy (LIBS)** CHET R BHATT, Mississippi State University

(1230-3 P) **USP <232> and <2232> – What is the Sum of Toxic Elements That You Might Ingest Every Day?** EWA M PRUSZKOWSKI, PerkinElmer

(1230-4 P) **Analysis of Commercial ATP Supplements by Capillary Electrophoresis** SHAMAL M GUNAWARDHANA, University of Kansas, John Bliss, Mark Madhavan, Johnny Phan, Julie Peterson, Marci Seuferling, Mario Rivera, Travis Witte, Susan M Lunte

(1230-5 P) **Application of Capillary Electrophoresis-Mass Spectrometry in Clinical Diagnostics: Studying Drug-Drug Interactions between Enantiomers of (±)-Venlafaxine and (±)-Demethylvenlafaxine with HIV Therapy Drug (Indinavir)** YIJIN LIU, Georgia State University, Shahab Shamsi, Michael Jann, Chad Vanderberg

(1230-6 P) **Rheological Properties of Model Pharmaceutical Preparations for Skin** NATALIYA SNEGIREVA, Institute Applied Mechanics, Alla Dirsh, Hammat Valiev, Yulia Karnet, Yuriy Yanovsky, Oleg Yumashev

(1230-7 P) **Product Quality Control of a HME Co-Extrudate Using a Raman Imaging Microscope** DIRK LEISTER, Thermo Fisher Scientific, Katharina Paulsen, Ines Ruff, Karl C Schwan, Simon Nunn, Martin Long

(1230-8 P) **Optical and Thermal Analysis of a Highly Purified L-Phenylalanine Ionic Liquid Comprising the Bis (Pentafluoroethanesulfonyl) Imide Anion** SAMANTHA L LANE, St. John Fisher College

(1230-9 P) **Comparing Different Chemometric Techniques for the Determination of a Ternary Mixture of Betamethasone Dipropionate, Clotrimazole and Benzyl Alcohol** AHMED S AAMER, Cairo University, Eman S Elzanfaly, Abdelaziz B Abdelaleem

(1230-10 P) **Microfluidics for Undergraduate Laboratory: Development of a Fast and Cost Effective Assay to Quantify Antioxidants in Commercial Supplements** MANJULA B WIJESINGHE, University of Kansas, Armeen Rouyanian, Kris Southard, Jennifer Totleben, Mohan Zhang, Travis Witte, Mario Rivera, Susan M Lunte

(1230-11 P) **Comparison of Soxhlet and Accelerated Solvent Extraction (ASE) for Leachable and Extractable Analysis of Packing Material** HUA YANG, Thermo Fisher Scientific, Kate Comstock, Linda Lopez

(1230-12 P) **Understanding Separations in HILIC Chromatography: Impact of High Organic on Solute Descriptors** DAVID S BELL, Supelco/Sigma-Aldrich, Craig Aurand, Hugh Cramer, Gaurang Parmar, Wayne Way

(1230-13 P) **Using Area-Under-the-Curve (AUC) as a Tool for Validating the Hypoglyceamic Effects of Sida acuta Ethanolic Leave Extract in Experimental Diabetes** GRACE E UKPO, University of Lagos, Ajibola Azeez, Teddy S Ehianeta, Steve O Ogbonnia

(1230-14 P) **Effects of Sample Clean-Up and Use of High Purity Additives in Minimizing Ion Suppression in UHPLC/LC-MS Applications** SHYAM VERMA, Supelco/Sigma-Aldrich, Vicki Yearick, Rudi Koheling

(1230-15 P) **Effect of Meglumine-Stearate Supramolecular Polymer Hydrogel Against C. Albicans Biofilm** CLOVIS A RIBEIRO, Chemistry Institute/UNESP, Douglas L Cassimiro, Wanessa de Cassia C Melo, Ana Marisa F Almeida

(1230-16 P) **A Comparison of Polydimethyl Siloxane (PDMS) and 3D Printing as a Platform for In Vitro Pharmacokinetic (IVPK) Models** SARAH Y LOCKWOOD, Michigan State University, Jayda L Erkal, Dana M Spence

(1230-17 P) **USP Monograph Modernization** LEONEL M SANTOS, United States Pharmacopeia, Ramanujam S Prasad

(1230-18 P) **Phthalaz-(2H)-Ones: Novel Agonists for Estrogen Receptor** HAI-BING ZHOU, Wuhan University

(1230-19 P) **Formulation and Evaluation of Diltiazem Sustained Release Tablets** VIVEK C MODI, Cadila Pharmaceutical Ltd.

(1230-20 P) **Development of a Photoacoustally Well-Behaved Chemical Reporter Molecule** KEVIN W DAVIES, Florida Gulf Coast University

(1230-21 P) **Investigation of Some Novel Schiff Base Metal Complexes of 2-Aminophenol as Potential Antiseptic Agents** FELICIA N EJIAH, University of Lagos, Tolulope M Fasina, Neerish Revaprasadu, Oluwole B Familoni

(1230-22 P) **Vibrational Spectroscopy : A Tool to Determine the Formation of Bioactive Heterocyclic Analogues** DEEPKUMAR S JOSHI, Sheth Mn Science College, Kalpesh S Parikh

(1230-23 P) **Single Submicrometer Particle Analysis for Biopharm Quality Control** BERNARDO CORDOVEZ, Optofluidics, Christopher Earhart

(1230-24 P) **Quantitative Assay of Ketoconazole Using Electrochemistry-Electron Paramagnetic Resonance Technique** MOHAMED A MORSY, King Fahd University of Petroleum & Minerals, Abdel-Nasser M Kawde

(1230-25 P) **Ultraviolet Visible and Infrared Spectroscopy as aTool for Characterization and Classification of Colombian Propolis** GUILLERMO SALAMANCA-GROSSO, Universidad del Tolima, Mónica P Osorio-Tangarife, Laura M Reyes-Méndez

(1230-26 P) **Physicochemical and Quantitative Analysis of Ten Brands of Ofloxacin Tablets Obtained from Mushin Area, Lagos State, Nigeria** ADERONKE A ADEPOJU-BELLO, University of Lagos, Hannat T Akanbi, Abiodun G Ayoola

(1230-27 P) **Stability-Indicating Capillary Electrophoretic Methods for the Simultaneous Determination of Anti-Diabetic Drugs and Their Impurities** LEENA SUNSTORNSUK, Kanas University, Athiporn Doomkaew, Brompoj Prutthiwanasan

(1230-28 P) **3D Bioactive Structure Mapping Using 4D-QSAR Model for Flavonoid Binding at the Benzodiazepine GABA-A Receptor Site** HAYRIYE YILMAZ, Erciyes University, Burcin Turkmenoglu, Yahya Guzel

(1230-29 P) **Automated Sensitive Analysis of Amantadane Drugs by In-Line Derivatization Capillary Electrophoresis with Photometric Detection** PORNPAN PRAPATPONG, Mahidol University, Nantana Nuchtavorn, Michael C Breadmore, Rosanne Guiji, Mirek Macka, Leena Suntornsuk

(1230-30 P) **Enhanced Development of a Two-Step In-Vitro Dissolution Method for an Enteric Coated Formulation with the Aid of Micro-Dissolution Apparatus and UV-Fiber Optic Detection** HUI ZHAO, Bristol-Myers Squibb, Meng Xu, Kamlesh Patel, Urmila Patel, John A Castoro

## POSTER SESSION — Session 1240

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### *X-ray Analysis*

**Tuesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1240-1 P) **EDXRF Method for Ultralow Level Sulfur in Gasoline Analysis to Comply with US EPA Tier 3 Ruling** KIM RUSSELL, Analytical Instruments Marketing

(1240-2 P) **Analysis of Sediment in Nuclear Activity Area by WDXRF** SUELY KS S PORTO, Cidade Universitária, Lucio Angnes, Marcos A Scapin

(1240-3 P) **Chlorine Analysis of Cement Materials by XRF Using Borate Fusion as Sample Preparation** MATHIEU BOUCHARD, Claisse, Sébastien Rivard, Marie-Ève Provencher, John A Anzelmo

# TUESDAY, MARCH 10, 2015
# AFTERNOON

**AWARD** **Session 1250**

***Pittsburgh Spectroscopy Award***
arranged by Fu-mei Lin, The Pittsburgh Conference

**Tuesday Afternoon, Room 243**
Fu-mei Lin, The Pittsburgh Conference, Presiding

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| 1:30 | | **Introductory Remarks - Fu-mei Lin** |
| 1:35 | | **Presentation of the 2015 Pittsburgh Spectroscopy Award to Alfred G Redfield, Brandeis University, by Stephanie J Wetzel, Chair, Spectroscopy Society of Pittsburgh** |
| 1:40 | (1250-1) | **From Rotating Frames to Rotating Bio-Aggregates by NMR** ALFRED G REDFIELD, Brandeis University |
| 2:15 | (1250-2) | **High Resolution Field Cycling 31P NMR Relaxometry – A Tool to Identify Novel Phosholipid Binding Sites on Amphitropic Proteins** MARY F ROBERTS, Boston College |
| 2:50 | (1250-3) | **Decoding the Dynamics Properties of Protein Loops by the Combination of NMR and Molecular Dynamics Simulations** RAFAEL BRUSCHWEILER, The Ohio State University, Yina Gu, Da-Wei Li |
| 3:25 | | **Recess** |
| 3:40 | (1250-4) | **Investigation of Ras Post-Translational Modifications** SHARON CAMPBELL, University of North Carolina, Aaron Hobbs, Atsuo Sasaki, Minh Huynh, Ryan Thurman, Guowei Yin, Samantha Kistler |
| 4:15 | (1250-5) | **Structural Characterization of TRIM5α, A Potent Restrictor of HIV Replication in Rhesus Monkeys** DMITRI IVANOV, University of Texas Health Science Center |

**AWARD** **Session 1260**

***RSC - Robert Boyle Prize for Analytical Science Award***
arranged by Rebecca Brodie, Royal Society of Chemistry

**Tuesday Afternoon, Room 244**
Rebecca Brodie, Royal Society of Chemistry, Presiding

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| 1:30 | | **Introductory Remarks - Rebecca Brodie** |
| 1:35 | | **Presentation of the 2015 Robert Boyle Prize for Analytical Science Award to Eric Bakker, University of Geneva, by Rebecca Brodie, Royal Society of Chemistry** |
| 1:40 | (1260-1) | **Blurring the Lines Between Solution Chemistry and Membrane Recognition** ERIC BAKKER, University of Geneva |
| 2:15 | (1260-2) | **Advanced Thromboresistant/Bactericidal Nitric Oxide Releasing Materials/Devices/Sensors for Biomedical Applications** MARK E MEYERHOFF, University of Michigan |
| 2:50 | (1260-3) | **Paper Diagnostic Devices for Electrochemical Detection of Biological Weapons** RICHARD M CROOKS, University of Texas, Josephine C Cunningham, Andrew Ellington, Ian Richards, Karen Scida, Bo Wang |
| 3:25 | | **Recess** |
| 3:40 | (1260-4) | **Kinetics Adds Discriminative Dimensions for Separation-Free Analysis and Imaging** LUDOVIC JULLIEN, Ecole Normale Superieure |
| 4:15 | (1260-5) | **Light Activated Electrochemistry: A Strategy for Performing Voltammetry on a Monolithic Surface Where You Want, When You Want With Micron Scale Spatial Resolution** J JUSTIN GOODING, The University of New South Wales, Moinul H Choudhury, Simone Ciampi, Ying Yang, Roya Tavallaie |

**SYMPOSIUM** **Session 1270**

***3D Printing in the Chemical Laboratory***
arranged by Dana M Spence, Michigan State University

**Tuesday Afternoon, Room 238**
Dana M Spence, Michigan State University, Presiding

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| 1:30 | | **Introductory Remarks - Dana M Spence** |
| 1:35 | (1270-1) | **Additive 3D Printing for Microreactor Applications and Continuous Flow Chemistry** GAURAV GIRI, Massachusetts Institute of Technology (MIT), Klavs F Jensen |
| 2:10 | (1270-2) | **3D Printing Microfluidic Oxygen Control Devices** DAVID EDDINGTON, University of Illinois at Chicago |
| 2:45 | (1270-3) | **3D Printed Poly(ethylene glycol) Diacrylate Microfluidic Devices with Integrated Valves** GREGORY P NORDIN, Brigham Young University, Chad I Rogers, Kamran Qaderi, Adam T Woolley |
| 3:20 | | **Recess** |
| 3:35 | (1270-4) | **3D Printed Microfluidic Devices Using Consumer-Focused Printers** MICHAEL C BREADMORE, University of Tasmania, Aliaa Shallan, Petr Smjekal, Rosanne Guijt |
| 4:10 | (1270-5) | **3D-Printed Tools for Investigating Blood Components** DANA M SPENCE, Michigan State University |

**SYMPOSIUM** **Session 1280**

***ACS Separations Sciences Subdivision - Using Microfluidics to Automate Flow Biology***
arranged by Yolanda Fintschenko, LabSmith, Inc. and Jennifer R McKenzie, Vanderbilt University

**Tuesday Afternoon, Room 239**
Yolanda Fintschenko, LabSmith, Inc., Presiding
Jennifer R McKenzie, Vanderbilt University, Presiding

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| 1:30 | | **Introductory Remarks - Yolanda Fintschenko and Jennifer R McKenzie** |
| 1:35 | (1280-1) | **Commercial and Home-Grown Microfluidic Pumps and Valves to Enable On-line Perfusion and Analysis of Organs-on-Chips Bioreactors** JENNIFER R MCKENZIE, Vanderbilt University, Frank E Block, Stacy D Sherrod, Virginia Pensabene, Jacquelyn A Brown, John P Wikswo, David E Cliffel |
| 2:10 | (1280-2) | **Development of a Contactless Dielectrophoresis Platform for Bio-Separation Applications** MICHAEL SANO, Stanford University |
| 2:45 | (1280-3) | **Microfluidic Flow-Based Systems to Automate High-Throughput Biology** HANG LU, Georgia Institute of Technology |
| 3:20 | | **Recess** |
| 3:35 | (1280-4) | **Human Physiomimetic Islet Microsystem** ASHUTOSH AGARWAL, University of Miami |
| 4:10 | (1280-5) | **On the Potential of Dielectrophoresis for Microfluidic Preparative Biology Applications** RODRIGO MARTINEZ-DUARTE, Clemson University, Blanca H Lapizco-Encinas |

**SYMPOSIUM** **Session 1290**

***Advances in Separation with Capillary Liquid Chromatography***
arranged by Stephen G Weber, University of Pittsburgh

**Tuesday Afternoon, Room 242**
Stephen G Weber, University of Pittsburgh, Presiding

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| 1:30 | | **Introductory Remarks - Stephen G Weber** |
| 1:35 | (1290-1) | **Resolving DNA Using Narrow Bare Open Capillaries** SHAORONG LIU, University of Oklahoma |
| 2:10 | (1290-2) | **Submicrometer Particles in UHPLC of Proteins and Peptides** MARY WIRTH, Purdue University |
| 2:45 | (1290-3) | **Capillary LC Separations Using Pillar Array Columns** GERT DESMET, Vrije Universiteit Brussel, Wim De Malsche, Manly Callewaert, Heidi Ottevaere, Hugo Thienpont |
| 3:20 | | **Recess** |

# TECHNICAL PROGRAM

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| 3:35 | (1290-4) | **High Resolution Separations by Capillary UHPLC** JAMES W JORGENSON, University of North Carolina at Chapel Hill, Kaitlin Fague, Stephanie Moore, Justin Godinho, James Treadway |
| 4:10 | (1290-5) | **Approaches to Capillary Liquid Chromatography to Achieve Good Concentration Sensitivity and High Speed. Application to Microdialysis of Serotonin and Dopamine with Improved Time Resolution** STEPHEN G WEBER, University of Pittsburgh, Hui Gu, Stephen R Groskreutz, Erika L Varner, Adrian C Michael, Khanh Ngo |

**SYMPOSIUM** **Session 1300**

***Gas-Phase Bioanalytical Diagnostics Using Sensing Nanomaterials***
arranged by Radislav Potyrailo, GE Research and Mark D Allendorf, Sandia National Laboratories

**Tuesday Afternoon, Room 261**
Radislav Potyrailo, GE Research, Presiding

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| 1:30 | | **Introductory Remarks - Radislav Potyrailo and Mark D Allendorf** |
| 1:35 | (1300-1) | **Multi-Dimensional Multi-Channel Micro-Gas Chromatography** XUDONG FAN, University of Michigan |
| 2:10 | (1300-2) | **Chemical Detection Using Metal-Organic Framework Thin Films and Composites** MARK D ALLENDORF, Sandia National Laboratories, Vitalie Stavila, Alec Talin, Curtis Mowry |
| 2:45 | (1300-3) | **Advances in Metal-Organic Framework-Based Materials: Chemical Sensing with High Stability** HONG-CAI J ZHOU, Texas A&M University, Qiang Zhang, Dawei Feng, Zhangwen Wei |
| 3:20 | | **Recess** |
| 3:35 | (1300-4) | **Artificially Intelligent Nanoarrays for Non-Invasive Detection of Disease** HOSSAM HAICK, Technion - Israel Institute of Technology |
| 4:10 | (1300-5) | **High-Selectivity Sensing Using Tunable Nanomaterials and Multivariable Transducers** RADISLAV POTYRAILO, GE Global Research |

**SYMPOSIUM** **Session 1310**

***Imaging Mass Spectrometry of Biological Samples***
arranged by Amanda B Hummon, University of Notre Dame

**Tuesday Afternoon, Room 262**
Amanda B Hummon, University of Notre Dame, Presiding

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| 1:30 | | **Introductory Remarks - Amanda B Hummon** |
| 1:35 | (1310-1) | **The Cell by Cell Chemical Characterization of the Brain via Mass Spectrometry: From Profiling to Imaging** JONATHAN V SWEEDLER, University of Illinois at Urbana-Champaign |
| 2:10 | (1310-2) | **A New Dimension: Ambient Mass Spectrometry of 3-Dimensional Objects by a Vision System-Directed Robotic Sampling Probe** FACUNDO M FERNÁNDEZ, Georgia Institute of Technology, Martin R Paine, Henrik I Christensen, Rachel V Bennett, Alexander C Lambert, Ezequiel M Morzan, Carlton J Davis |
| 2:45 | (1310-3) | **How MS Analysis in General and Innovative Imaging MS Sheds Light on What's Happening in Traumatic Brain Injury** AMINA S WOODS, NIDA IRP, NIH |
| 3:20 | | **Recess** |
| 3:35 | (1310-4) | **Metabolomics by Mass Spectrometry-Based Molecular Networking and Spatial Mapping** NEHA GARG, University of California San Diego, Pieter C Dorrestein |
| 4:10 | (1310-5) | **Examining Pharmacokinetics and Pharmacodynamics in 3D Cell Cultures by Imaging Mass Spectrometry** AMANDA B HUMMON, University of Notre Dame, Xin Liu, Sarah Y Lockwood, Eric M Weaver, Dana M Spence |

**SYMPOSIUM** **Session 1320**

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

**Tuesday Afternoon, Room 260**
Koichiro Matsuda, JAIMA, Presiding
Yoshinobu Baba, Nagoya University, Presiding

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| 1:30 | | **Introductory Remarks - Norio Teramae** |
| 1:35 | (1320-1) | **Enhanced Nano-Drug Delivery After Photoimmunotherapy: Oncologic Applications** HISATAKA KOBAYASHI, NCI/NIH |
| 2:10 | (1320-2) | **Single Molecule Electrical Sequencing Technology** MASATERU TANIGUCHI, Osaka University |
| 2:45 | (1320-3) | **The Achilles Heel of Rapid Mass Spectral Analysis** FRED REGNIER, Purdue University |
| 3:20 | | **Recess** |
| 3:35 | (1320-4) | **Next Generation LCMS Approaches: From Multivariate Panels to Targeted Bioanalysis** CHRISTOPHER GILLES, Shimadzu Scientific Instruments |
| 4:10 | (1320-5) | **Biological Applications of Fine Structure Analysis and Peripheral Technology Using Cryo-Scanning Electron Microscopy** YUJI HASEBE, JEOL Ltd., Yoshiko Takashima, Kazuteru Kawauchi, Toshiaki Suzuki |

**SYMPOSIUM** **Session 1330**

***Optical Probes of Living Systems with Single Cell and Single Molecule Resolution***
arranged by Simon Watkins, University of Pittsburgh

**Tuesday Afternoon, Room 263**
Simon Watkins, University of Pittsburgh, Presiding

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| 1:30 | | **Introductory Remarks - Adrian C Michael and Simon Watkins** |
| 1:35 | (1330-1) | **Live-Cell Super-Resolution Microscopy at <100 nm Resolution: Development and Application** JOERG BEWERSDORF, Yale School of Medicine |
| 2:10 | (1330-2) | **Structured Illumination Microscopy: Fast Super Resolution for Live Cell Imaging** CHRISTOPHER O'CONNELL, Nikon Instruments |
| 2:45 | (1330-3) | **Lattice Light Sheet Microscopy: Imaging Molecules, Cells, and Embryos at High Spatiotemporal Resolution** WESLEY LEGANT, HHMI Janelia Farm Research Campus, Bi-Chang Chen, Kai Wang, Eric Betzig |
| 3:20 | | **Recess** |
| 3:35 | (1330-4) | **Vademecum STED Microscopy – Basic Principle and Recent Developments** ULF SCHWARZ, Leica Microsystems CMS GmbH |
| 4:10 | (1330-5) | **Developing Novel High Throughput Screens for Cystic Fibrosis Therapeutics: Novel Fluorophores and Fast Microscopies** SIMON WATKINS, University of Pittsburgh |

**WORKSHOP** **Session 1340**

***Current Topics in Analytical Food Analysis***
arranged by Michael D McGinley and Erica Pike, Phenomenex

**Tuesday Afternoon, Room 274**
Michael D McGinley, Phenomenex, Presiding

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| 1:30 | | **Introductory Remarks - Michael D McGinley and Erica Pike** |
| 1:35 | (1340-1) | **The Determination of Polyphenols and Related Compounds in Chocolate and Confectionary Products** JEFFREY HURST, The Hershey Co |
| 2:05 | (1340-2) | **Emerging Trends in Food and Feed Testing from the Perspective of a Contract Laboratory** VICTORIA SIEGEL, Eurofins CAL |
| 2:35 | (1340-3) | **How Can it be Hard to Make a QuEChERS Kit?** MICHAEL DAVID MCGINLEY, Phenomenex |
| 3:05 | | **Recess** |
| 3:20 | (1340-4) | **Strategies in Development of LC –MS/MS-Based Methods for Vitamins Analysis in Food and Dietary Supplements – Two Case Studies** SNEH D BHANDARI, Silliker Laboratories, Huaping Wu, Tiffany Gallegos-Peretz |
| 3:50 | (1340-5) | **Implementation of Routine Contaminant Screening to Ensure Higher Confidence in the Modern Food Laboratory** LAURYN BAILEY, AB SCIEX, Andre Schreiber, Christopher Borton, David Cox |

**ORGANIZED CONTRIBUTED SESSION** **Session 1350**

***Current Trends in Pharmaceutical Dissolution Testing***

arranged by Gregory Webster, AbbVie and Derek Jackson, Flexion Therapeutics

**Tuesday Afternoon, Room 265**

Gregory Webster, AbbVie, Presiding

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| 1:30 | (1350-1) | **Applications of USP Apparatus 3: The Reciprocating Cylinder** BRYAN CRIST, Agilent Technologies |
| 1:50 | (1350-2) | **Biphasic Dissolution** GEOFFREY GROVE, Sotax |
| 2:10 | (1350-3) | **In Situ Measurement Techniques: Applications and Validation for Dissolution Testing** SCOTT STEPHENSON, Pion Inc., Konstantin Tsinman |
| 2:30 | (1350-4) | **Dissolution Testing for n=12** ADITYA A MARFATIA, Electrolab |
| 2:50 | | **Recess** |
| 3:05 | (1350-5) | **Fiber-Optic Analysis for Dissolution of Modified-Release Dosage Forms** GREG SMITH, Alkermes |
| 3:25 | (1350-6) | **Dissolution of Pharmaceutical Suspensions** KENNETH J NORRIS, Pfizer, Beverly Nickerson, Michele Xuemei Guo, Ling Zhang |

**ORGANIZED CONTRIBUTED SESSION** **Session 1360**

***SEAC - A Student Session in Electroanalysis***

arranged by Stephen Maldonado, University of Michigan

**Tuesday Afternoon, Room 264**

Stephen Maldonado, University of Michigan, Presiding

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| 1:30 | (1360-1) | **Glutamate Modulation of Fast Acting Spontaneous Adenosine Release is Regulated Through the NMDA Receptor** MICHAEL NGUYEN, University of Virginia, B Jill Venton |
| 1:50 | (1360-2) | **Electrochemical Detection at Carbon Paste and Microwire Electrodes in Paper-Based Microfluidic Devices** JACLYN A ADKINS, Colorado State University, Charles Henry |
| 2:10 | (1360-3) | **Improving Biocompatibility of Intravascular Oxygen Sensing Catheters via Electrochemically Modulated Nitric Oxide Release** REN HANG, University of Michigan, Mark E Meyerhoff |
| 2:30 | (1360-4) | **Galvanic Displacement as an Alternative Avenue Towards Cost Effective and Robust Electrocatalysts** ERIC COLEMAN, The Ohio State University, Kendahl Walz, Muntasir H Chowdhury, Joshua Billy, Kwan Leung, Anne C Co |
| 2:50 | | **Recess** |
| 3:05 | (1360-5) | **Fast Metal Voltammetry on Carbon Fiber Microelectrodes** PAVITHRA PATHIRATHNA, Wayne State University, Shawn P McElmurry, Parastoo Hashemi |
| 3:25 | (1360-6) | **Dopamine Transporter (DAT) Compensates for Impaired Serotonin Transporter (SERT) Function in the Small Intestine of Mice on a High Fat (HF) Diet** MARION FRANCE, Michigan State University, Greg M Swain, James Galligan |
| 3:45 | (1360-7) | **Development of Fluorescence-Enabled Electrochemical Microscopy** STEPHEN OJA, University of Washington, Bo Zhang |
| 4:05 | (1360-8) | **Detection of DNA Damage with the Latch Constriction of alpha-Hemolysin** ROBERT P JOHNSON, University of Utah |

**ORAL SESSION** **Session 1370**

***Advances in Energy Research: From Unconventional Fuels to Solar Energy***

**Tuesday Afternoon, Room 240**

John P Baltrus, The Pittsburgh Conference, Presiding

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| 1:30 | (1370-1) | **Methane Recognition and Quantification by Differential Capacitance at the Hydrophobic Ionic Liquid–Electrified Metal Electrode Interface** ZHE WANG, Xavier University of Louisiana, Xiangqun Zeng |
| 1:50 | (1370-2) | **Dual Function Gas Analyzer for Simultaneous Fourier Transform Infrared and Raman Analysis of Flare Gas Systems** WILLIAM PEARMAN, IMACC LLC |
| 2:10 | (1370-3) | **Raman Spectroscopy and Imaging of Shale** DAVID TUSCHEL, HORIBA Scientific |
| 2:30 | (1370-4) | **Photoelectrochemical Studies on Earth Abundant Pentanickel Polyoxometalates as Co-Catalysts for Water Oxidation** ARUN S SIDDARTH, The University of Southern Mississippi, Wujian Miao |
| 2:50 | | **Recess** |
| 3:05 | (1370-5) | **Analysis of Natural Gas Composition and BTU Content from Fracking Operations** JACK N DRISCOLL, PID Analyzers, LLC, Jennifer L Maclachlan |
| 3:25 | (1370-6) | **Bacteriological Analytical Process Control of Biocide Efficacy in Recycled Petroleum Fracking Drilling Water** EDWARD F ASKEW, Askew Scientific Consulting |
| 3:45 | (1370-7) | **Side-Selective Modification of Photosynthetic Proteins for Highly Oriented Active Layers in Biological Solar Energy Conversion Applications** EVAN A GIZZIE, Vanderbilt University, Gabriel LeBlanc, David E Cliffel |

**ORAL SESSION** **Session 1380**

***Agriculture (Half Session)***

**Tuesday Afternoon, Room 241**

Mary Ellen McNally, El DuPont de Nemours and Company, Presiding

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| 1:30 | (1380-1) | **Effect of Genetics and Environment on the Metabolome of Forage and Grain from Various Maize Hybrids Using LC/MS and GC/MS** WEIJUAN TANG, Purdue University, Chris Vlahakis, Jan Hazebroek, Cathy Zhong, Vincent Asiago |
| 1:50 | (1380-2) | **Standard Test Method for Water in White Lint Cotton by Karl Fischer Titration Extended to Colored Cotton, Flax and Rayon** JOE GEORGE MONTALVO, USDA-ARS-SRRC, Terri M Von Hoven, Doug Hinchliffe, Crista Madison |
| 2:10 | (1380-3) | **Development of a Dispersive Liquid-Liquid Microextraction Microwave Derivatization Method for the Quantification of Free Auxins from Olive (Olea europaea L.) Cuttings by GC/MS** SARA PORFIRIO, ICAAM - Universidade de Evora, Roberto Sonon, Augusto Peixe, Maria J Cabrita, Marco Gomes da Silva, Parastoo Azadi |
| 2:30 | (1380-4) | **Jamaican Sorrel (Hibiscus Sabdariffa) and Citrus (Citrus Sinensis) Waste Extracts: Potential Applications and Utilization** ANDREA M GOLDSON, University of the West Indies, Vanessa Ranger |

# TECHNICAL PROGRAM

**ORAL SESSION** **Session 1390**

*Detection of Weapons of Mass Destruction*

**Tuesday Afternoon, Room 255**
Nathaniel R Gomer, ChemImage Sensor Systems, Presiding

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| 1:30 | (1390-1) | **Chemical Warfare Agent Detection and Quantification with a Person Portable GC/MS System** LINDSAY A HARRINGTON, INFICON |
| 1:50 | (1390-2) | **Withdrawn** |
| 2:10 | (1390-3) | **Portable, Real-Time Shortwave Infrared (SWIR) Hyperspectral Imaging System for the Detection of Explosives and Other Threat Materials** NATHANIEL R GOMER, ChemImage Sensor Systems, Matthew P Nelson |
| 2:30 | (1390-4) | **Development of Polymer Ligand Films for Rapid, Field Deployable Alpha Spectrometry of Uranium and Plutonium** DOMINIC S PETERSON, Los Alamos National Laboratory |
| 2:50 | | **Recess** |
| 3:05 | (1390-5) | **Trace Chemical Signatures of Calcium Hypochlorite; Implications for the Attribution of Hypergolic Mixtures** STEPHANIE A YOCCA, Virginia Commonwealth University, Alicia M Zimmerman, Stephanie R Harrold, Monique Jones, Joseph Turner, Sarah C Rutan, Eric J Hazelrigg, Christopher J Ehrhardt |
| 3:25 | (1390-6) | **Vapor Analysis of Binary Explosive Mixtures** LAURYN DEGREEFF, Naval Research Laboratory, Frank L Steinkamp, Christopher J Katilie, Susan L Rose-Pehrsson |
| 3:45 | (1390-7) | **UV Resonance Raman Study of the Photochemistry of Trinitrotoluene (TNT) and Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)** KATIE L GARES, University of Pittsburgh, Sergei V Bykov, Sanford A Asher |
| 4:05 | (1390-8) | **Ion Mobility Spectrometry for Public Security** WOLFGANG VAUTZ, ISAS, Sascha Liedtke, Strefanie Sielemann, Oliver Kayser |

**ORAL SESSION** **Session 1400**

*Drug Discovery, Pharmaceuticals and Biomedical Analysis*

**Tuesday Afternoon, Room 256**
Gary W Yanik, PDR-Separations, Presiding

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| 1:30 | (1400-1) | **Can a Neurological Disease Begin in the Bloodstream? Remarkable Results from Quantitative Analyses of Blood from People with Multiple Sclerosis** TIFFANY M BELL, Michigan State University, Kristen E Entwistle, Dana M Spence |
| 1:50 | (1400-2) | **The Selection of Functional Ligands for Drug Discovery By Capillary Transient Isotachophoresis Methods** CHRISTA L COLYER, Wake Forest University, Kathryn R Riley, Kazuki Hirose, Shingo Saito, Jason M Gagliano |
| 2:10 | (1400-3) | **Self-Assembled DNA Immuno-Nanoflowers for Immunostimulation in Cancer Therapy** LIQIN ZHANG, University of Florida, Weihong Tan, Guizhi Zhu |
| 2:30 | (1400-4) | **An In Vitro Platform for Quantitatively Investigating Endocrine Secretion Molecules on Neutrophils and Overall Immune Response** KRISTEN E ENTWISTLE, Michigan State University, Dana M Spence |
| 2:50 | | **Recess** |
| 3:05 | (1400-5) | **Phosphodiesterase Type-5 (PDE-5) Inhibitor Trends in Dietary Supplements** SARA E KERN, US Food and Drug Administration, Elisa A Nickum, Rick Flurer, Valerie M Toomey, Sarah E Voelker, Jonathan J Litzau |
| 3:25 | (1400-6) | **Quantitative Enumeration of Viable Bacteria after Antibiotic Dosing Using a 3D Printed Device** JAYDA L ERKAL, Michigan State University, Sarah Y Lockwood, Dana M Spence |
| 3:45 | (1400-7) | **Bench Top NMR of Street Drugs – The New Presumptive Drug Test** ALEXANDER VALENTE, The Pennsylvania State University, Frank Dorman, John Frost, Roscoe Bennett |
| 4:05 | (1400-8) | **Development of Sulfopropyl Ether-α-Cyclodextrin Polymer as a Chiral Selector** YUXIAO WANG, Tianjin University, Youxin Li, James J Bao |

**ORAL SESSION** **Session 1410**

*Electrochemistry - Electrodes*

**Tuesday Afternoon, Room 257**
Eugene Barry, University of Massachusetts Lowell, Presiding

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| 1:30 | (1410-1) | **Novel Electrode Material for Efficient Ethanol Oxidation Using Tunable, Three-Dimensional Poly (amic) Acid (PAA)** JING ZHANG, SUNY-Binghamton, Andrez Kowal, Miomir Pavlovic, Omowunmi A Sadik |
| 1:50 | (1410-2) | **Potentiometric PVC Membrane Sensors and Their Analytical Applications in Pharmaceuticals Analysis: One Example Potentiometric PVC Membrane Sensors Determination of Moxifloxacin in Pharmaceutical Dose Form** GAMAL AE MOSTAFA, King Saud University |
| 2:10 | (1410-3) | **Facile Patterning of Microelectrode Array with Soft Lithography for Highly Sensitive Sensing** ZHANG MEINING, Renmin University of China |
| 2:30 | (1410-4) | **Examining Surface Chemistry of Carbon-Fiber Microelectrodes during the Application of a Dynamic Potential Using Raman Spectroscopy** EDWIN C MITCHELL, North Carolina State University, James G Roberts, Gregory S McCarty, Leslie A Sombers |
| 2:50 | | **Recess** |
| 3:05 | (1410-5) | **Structural Effects on the Performance of Tetrahedral Amorphous Carbon Electrodes** BRANDON W WHITMAN, Michigan State University |
| 3:25 | (1410-6) | **Electrochemical Imaging of Interfacial Ionic Reactivity for the In Situ Investigation of Charge Storage Mechanisms at Battery Anodes** JOAQUIN RODRIGUEZ-LOPEZ, University of Illinois at Urbana-Champaign, Zachary J Barton, Mark Burgess, Philip Benson, Mei Shen |
| 3:45 | (1410-7) | **Kinetic Size-Spectra of Gas Molecules at an Ionic Liquid (IL)-Metal Interface and Its Application for Highly Selective Gas Sensing** ZHE WANG, Xavier University of Louisiana, Xiangqun Zeng |
| 4:05 | (1410-8) | **Rational Modification of Aptamers and Sensor Surfaces to Tune Electrochemical Aptamer-Based Sensor Responses** LAUREN R SCHOUKROUN-BARNES, University of Maryland Baltimore County, Ryan J White |

**ORAL SESSION** **Session 1420**

*Environmental - Sampling*

**Tuesday Afternoon, Room 266**
Anand Mudambi, US Environmental Protection Agency, Presiding

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| 1:30 | (1420-1) | **Passive Sampling Devices – New Tools and Approaches for Site Monitoring and Exposure Measurement from the NIEHS Superfund Research Program** HEATHER HENRY, NIH/NIEHS, William A Suk |
| 1:50 | (1420-2) | **Oil and Grease Measurement Improvement for Better Auditability** DAVID GALLAGHER, Horizon Technology, Inc., Chad Schewe, Michael Ebitson, Alicia Cannon |
| 2:10 | (1420-3) | **An Optical GC Detector for Analyzing Complex Indoor Air Mixtures** ALICE E DELIA, Prism Analytical Technologies, Inc., Stacey E Beyer, Anthony S Bonanno, Martin L Spartz |
| 2:30 | (1420-4) | **Adopting a More Cost Effective Carrier Gas Option for USEPA VOC Methodology** SERGIO GUAZZOTTI, Thermo Fisher Scientific, Paolo Magni, Jacob A Rebholz, Hartlein M Thomas, Massimo Santoro, Terry Jeffers |
| 2:50 | | **Recess** |
| 3:05 | (1420-5) | **Rugged Method 625 for Wastewater Extraction by Solid Phase Materials** ZOE GROSSER, Horizon Technology, Inc., William Jones, David Gallagher, Michael Ebitson |

**ORAL SESSION** **Session 1430**

*LC/MS - 'Omics and Others*

**Tuesday Afternoon, Room 267**
Ryan T Kelly, Pacific Northwest National Laboratory, Presiding

| | | |
|---|---|---|
| 1:30 | (1430-1) | **Derivatization Techniques for Better Quantification, Resolution, and Sensitivity in LC-MS Based Metabolomics** PAIGE A MALEC, University of Michigan, Jenny-Marie T Wong, Omar Mabrouk, Robert T Kennedy |
| 1:50 | (1430-2) | **Development of a LC-MS/MS Method for the Determination of Sugar and Humectant Profiles in Tobacco** LIQUN WANG, Centers for Disease Control and Prevention, Roberto Bravo, Clifford Watson |
| 2:10 | (1430-3) | **LC-MS Cellular Metabolomics Methodology for Type 1 Diabetes Using CD4+ T cells** CANDICE Z ULMER, University of Florida, Richard A Yost, Timothy J Garrett, Jing Chen, Clayton Matthews |
| 2:30 | (1430-4) | **Electron Ionization LC-MS with Supersonic Molecular Beams** AVIV AMIRAV, Tel Aviv University, Boaz Seemann, Svetlana Tsizin, Alexander Fialkov, Tal Alon |
| 2:50 | | **Recess** |
| 3:05 | (1430-5) | **Techniques to Achieve Higher LCMS Sensitivity** ROBERT JAY CLASSON, Shimadzu Scientific Instruments, Christopher Gilles, Rachel Lieberman, William Hedgepeth, David Colquhoun |
| 3:25 | (1430-6) | **Separation of Silver Ions and Silver Nanoparticles Using Size Exclusion Chromatography in Tandem with Diode Array and Inductively Coupled Plasma Mass Spectrometric Detection** TRACI A HANLEY, US Food and Drug Administration, Robert A Wilson, Joseph A Caruso |
| 3:45 | (1430-7) | **Simultaneous Quantification of Inorganic and Organic Mercury Species in Drinking Water at Single-Digit Picogram Levels by Direct Speciated Isotope Dilution (D-SID) IC-ICP-MS** MIZAN RAHMAN, Applied Isotope Technologies |
| 4:05 | (1430-8) | **Withdrawn** |

**ORAL SESSION** **Session 1440**

*LC/MS - Clinical, Biomedical and Drug Discovery*

**Tuesday Afternoon, Room 268**
Bill Barber, Agilent Technologies, Presiding

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|---|---|---|
| 1:30 | (1440-1) | **Injection Technique to Improve Peak Shape and Reduce Break Through in Large Volume Strong Solvent (U)HPLC** JASON A ANSPACH, Phenomenex, Seyed Sadjadi, J P Preston, Leon Aslan, Tivadar Farkas |
| 1:50 | (1440-2) | **Quantitative Immunomagnetic-UHPLC-MS/MS Analysis of Aged Tricresyl Phosphate Metabolites in Human Serum** DARRYL JOHNSON, Centers for Disease Control and Prevention, Melissa D Carter, Brian C Crow, Samantha L Isenberg, Leigh Ann Graham, H Akin Erol, Caroline M Waston, Brooke G Pantazides, Thomas A Blake, Rudolph C Johnson |
| 2:10 | (1440-3) | **New Liquid Chromatography - Mass Spectrometry Method for Monitoring of Multiple Mycotoxins in Human Blood for Exposure Studies** DAJANA VUCKOVIC, Concordia University, Irina Slobodchikova |
| 2:30 | (1440-4) | **Reefer Madness: A Closer Look at Cannabis Testing** SCOTT KUZDZAL, Shimadzu Scientific Instruments |
| 2:50 | | **Recess** |
| 3:05 | (1440-5) | **LC-MS/MS Analysis of Urinary Nicotine Metabolites, Anabasine, and Anatabine to Determine Nicotine Exposure and Metabolic Profiling** SHARYN ELIZABETH MILLER, Centers for Disease Control and Prevention, June Feng, Imran Rehmani, Binnian Wei, Lanqing Wang, Ben Blount |
| 3:25 | (1440-6) | **Purification Support of Late Stage Functionalization Chemistries for Drug Discovery** ERIC STRECKFUSS, Merck |
| 3:45 | (1440-7) | **Method Validation for NDAs and ANDAs: Regulatory Perspective** MICHAEL TREHY, US Food and Drug Administration, Lucinda Buhse, John Kauffman, Jamie Dunn, Michael Hadwiger |
| 4:05 | (1440-8) | **Analysis of Small Molecule Impurities and Excipients in Biotherapeutics by 2D-LC Coupled with MS** YI LI, Genentech, Colin D Medley, Kelly Zhang |

**ORAL SESSION** **Session 1450**

*Novel Microfluidic Instrumentation and Devices*

**Tuesday Afternoon, Room 269**
Xiu Jun (James) Li, University of Texas at El Paso, Presiding

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|---|---|---|
| 1:30 | (1450-1) | **Labo-On-Tablet** NOMADA HIROAKI, Kyushu University, Yoshioka Hiroaki, Yang Fan, Morita Kinichi, Oki Yuji |
| 1:50 | (1450-2) | **Sensitive Paper-Based Colorimetric Sensors Using Hollow-Paper Channel** YONG SHIN KIM, Hanyang University, Tae-Sun Jun, Chi-Kwan Kim, Yeong B Cho |
| 2:10 | (1450-3) | **A Suite of 3D-Printed Biotech Tools to Enhance Cell Analysis** YUELI LIU, Michigan State University, Chengpeng Chen, Dana M Spence |
| 2:30 | (1450-4) | **Integration of Uniform Porous Shell Layers in Pillar Array Columns Using Electrochemical Anodization** KATSUYUKI MAENO, Shiseido Co., Ltd, Jeff Op De Beeck, Manly Callewaert, Sertan Sukas, Hugo Thienpont, Heidi Ottevaere, Han Gardeniers, Gert Desmet, Wim De Malsche |
| 2:50 | | **Recess** |
| 3:05 | (1450-5) | **Enhancement of a Microfluidic Affinity Assay Using Integrated Temperature Control** NIKITA MUKHITOV, Florida State University, Lian Yi, Adrian M Schrell, Michael G Roper |
| 3:25 | (1450-6) | **Microfabricated Sampling Probes for Minimally-Invasive Neurochemical Monitoring with High Spatial Resolution** THITAPHAT NGERNSUTIVORAKUL, University of Michigan, Woong Hee Lee, Robert T Kennedy |
| 3:45 | (1450-7) | **Frequency-Encoded Polarization Immunoassays for Multi-Analyte Determinations** ADRIAN M SCHRELL, Florida State University, Nikita Mukhitov, Michael G Roper |
| 4:05 | (1450-8) | **A Paper/PMMA Hybrid Microfluidic 3D Microplate for ELISA** SANJAY SHARMA TIMILSINA, University of Texas at El Paso, Maowei Dou, XiuJun (James) Li |

**ORAL SESSION** **Session 1460**

*Pharmaceutical-UV/VIS, Vibration Spec, PAT, Others*

**Tuesday Afternoon, Room 270**
William R LaCourse, University of Maryland Baltimore County, Presiding

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|---|---|---|
| 1:30 | (1460-1) | **Sodium Deoxycholate/TRIS Hydrogels for Enantioselective Drug Delivery** KELSEY E MCNEEL, Louisiana State University, Noureen Siraj, Isiah M Warner |
| 1:50 | (1460-2) | **Study on Dependency of Accuracy for the Determination of Active Pharmaceutical Ingredient Concentration on Particle Sizes of Samples** DUY PHAM KHAC, Hanyang University, Hoeil Chung |
| 2:10 | (1460-3) | **Using Raman Spectroscopy to Understand the Effects of Polymeric Excipients on Solid State Pharmaceutical Transformations** ALAN D GIFT, University of Nebraska at Omaha, Madison Mapes, Dane Ewald, Jacob Hettenbaugh, Rachel Quandahl |
| 2:30 | (1460-4) | **NIR Spectroscopy for Pharmaceutical Solid Analysis: Challenges, Mitigations and Beyond** DIMUTHU JAYAWICKRAMA, Bristol-Myers Squibb, Tim Stevens, Gary McGeorge, Dolapo Olusanmi, Boyong Wan, Kevin Macias, John Bobiak, Claudia Corredor, Douglas Both, Pankaj Shah |
| 2:50 | | **Recess** |
| 3:05 | (1460-5) | **PAT Applications for API Development** RUCHI P MEHTA, Pfizer Inc. |
| 3:25 | (1460-6) | **Online UPLC Process Analytical Technology (PAT) for Biotherapeutic Development** DOUGLAS D RICHARDSON, Merck, Zhi Chen, Maria Khouzam, Xiaodun Mou, Daisy Richardson, John Higgins, David Pollard |
| 3:45 | (1460-7) | **Novel Detection Methods for Cadmium and Lead in Pharmaceuticals** SAMUEL M ROSOLINA, University of Tennessee, Knoxville, Carlos W Lee, James Q Chambers, Zi-Ling Xue |
| 4:05 | (1460-8) | **Reverse Flow Injection Analysis Electrochemiluminescence for Determination of Proline** SUHAM TOWFIQ AMEEN, Tikrit University, Adnan M Mohammad |

# TECHNICAL PROGRAM

**ORAL SESSION** **Session 1465**

*Pharmaceutical - Raman Spectroscopic Analysis (Half Session)*

**Tuesday Afternoon, Room 275**
Stuart Farquharson, Real-Time Analyzers, Inc., Presiding

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|---|---|---|
| 1:30 | (1465-1) | **Drug Degradation Analyzer** STUART FARQUHARSON, Real-Time Analyzers, Inc., Wayne Smith, Chetan Shende |
| 1:50 | (1465-2) | **Sterile Raw Materials ID Through Opaque Containers** MATTHEW J BLOOMFIELD, Cobalt Light Systems, Darren Andrews, Pavel Matousek |
| 2:10 | (1465-3) | **Quantification of Crystalline in Amorphous API Using Transmission Raman Spectroscopy** JULIA GRIFFEN, Cobalt Light Systems, Matthew J Bloomfield, Andrew Owen, Darren Andrews, Matousek Pavel |
| 2:30 | (1465-4) | **Developing a Method to Monitor the Degradation of Formulated Monoclonal Antibody (mAb) Pharmaceuticals with Deep-UV Resonance Raman (DUVRR) Spectroscopy** JUSTIN BUENO, US Food and Drug Administration, Sergey Arzhantsev, John Kauffman |

**ORAL SESSION** **Session 1467**

*Polymer Characterization (Half Session)*

**Tuesday Afternoon, Room 276**
Presider - TBD

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|---|---|---|
| 1:30 | (1467-1) | **Liquid Chromatography Under Limiting Conditions of Desorption – A Novel Tool for Efficient Discrimination of Multicomponent Polymers.** DUSAN BEREK, Polymer Institute, Slovak Academy of Sciences |
| 1:50 | (1467-2) | **Fast and Non-Destructive Determination of Mechanical Properties of Polypropylene by Raman Spectroscopy and Chemometrics** BORIS JOHNSON-RESTREPO, Universidad de Cartagena, Julio Banquet-Teran, Alveiro Hernández-Morelo, Jorge Ropero, Rodolfo J Romanach |
| 2:10 | (1467-3) | **Hyphenated ICPMS: Instrumentation and Its Applications in Polymer and Petrochemical Industries** GANESH SANAPUR, SABIC, N Arun Kumar |
| 2:30 | (1467-4) | **Rheological Characterization on Long Chain Branching in LDPE** QIANG WANG, Saudi Basic Industries Corporation |

**ORAL SESSION** **Session 1470**

*Sensors - Bioanalytical (Half Session)*

**Tuesday Afternoon, Room 271**
Garry Lynch, Bechtel Marine Propulsion Corporation, Presiding

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|---|---|---|
| 1:30 | (1470-1) | **Toward Submillisecond Conductance-Based Measurements for Ion Channel Biosensors** MARK T AGASID, University of Arizona, Scott Saavedra, Craig A Aspinwall |
| 1:50 | (1470-2) | **Rational Design of DNA-Based Sensing Systems with Precisely Defined Operational Parameters** IRINA V NESTEROVA, Louisiana State University |
| 2:10 | (1470-3) | **Facilitating the Detection of Informative Multiplexed MicroRNA Panels Using Silicon Photonic Microring Resonator Arrays** RICHARD M GRAYBILL, University of Illinois at Urbana-Champaign, Hongwei Yang, Mark D Johnson, Ryan C Bailey |
| 2:30 | (1470-4) | **Novel Pull-Down Assay for Specific, Sensitive and Label-Free Detection and Identification of Bacterial Toxins Using Polymer Lipid Membranes** JINYAN WANG, University of Arizona, Boying Liang, Isen Andrew C Calderon, Scott Saavedra, Craig A Aspinwall |

**ORAL SESSION** **Session 1480**

*Vibrational Spectroscopy Instruments and Applications*

**Tuesday Afternoon, Room 272**
John P Auses, University of Pittsburgh, Presiding

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|---|---|---|
| 1:30 | (1480-1) | **Multiplexed Detection of Metal Ions Using SERS** JULIE A DOCHERTY, University of Strathclyde, Samuel Mabbott, Ewen Smith, Karen Faulds, Duncan Graham |
| 1:50 | (1480-2) | **Solid Mixtures of Chemically Differing Composition Determined by Quantitative Near Infrared Imaging** DAVID L WETZEL, Kansas State University, Mark D Boatwright |
| 2:10 | (1480-3) | **Cantilever-Enhanced Photoacoustic Spectroscopy of Solids with Widely Tunable Quantum Cascade Laser** JAAKKO LEHTINEN, Gasera Ltd., Ismo Kauppinen, Jussi Raittila |
| 2:30 | (1480-4) | **Performance Comparison Between a Fully-Integrated, Direct-Mount TGA-FTIR System and a Capillary-Coupled Configuration** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Elisabeth Kapsch |
| 2:50 | | **Recess** |
| 3:05 | (1480-5) | **Compressing the Workflow of Infrared Microscopy with Intelligent Automation** IAN ROBERTSON, PerkinElmer Limited, Jerry Sellors, Rupert Aries, Justin Lang |
| 3:25 | (1480-6) | **Developing Metrology for Non-Destructive Characterization of Buried Metal/Polymer and Semiconductor/Polymer Interfaces In Situ** JOHN N MYERS, University of Michigan, Zhan Chen |
| 3:45 | (1480-7) | **Remote Condition Monitoring – What Can You Do When You Take the FTIR to the Samples?** DAVID HILLIGOSS, PerkinElmer, David Wooton |
| 4:05 | (1480-8) | **Conformational Dynamics of Protein Molecular Recognition** MEGAN THIELGES, Indiana University, Rachel Horness |

**ORAL SESSION** **Session 1490**

*X-ray Analysis (Half Session)*

**Tuesday Afternoon, Room 273**
Dean Tzeng, The Pittsburgh Conference, Presiding

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|---|---|---|
| 1:30 | (1490-1) | **Sub-PPM Detection Limits in Powder X-Ray Diffraction Guided by Second Harmonic Generation Imaging** GARTH SIMPSON, Purdue University |
| 1:50 | (1490-2) | **Determination of Pu in Spent Nuclear Fuel - Results from Field Testing of High Resolution X-Ray (hiRX)** KATHRYN G MCINTOSH, Los Alamos National Laboratory, Robert F Gilmore, David M Missimer, Michael K Holland, George J Havrilla |
| 2:10 | (1490-3) | **Application of Micro-XRF Spectroscopy in Geographical Profiling and Sand Analysis** SERGEY MAMEDOV, Horiba |
| 2:30 | (1490-4) | **Analytical Challenges in the Development of Adsorbents for Sulphur Removal from Fuels** CHRISTOPHER JAYARAJ, Indian Oil R&D Centre, Rashmi Bagai, Nitu Singh, Sarvesh Kumar, Alex C Pulikottil, M B Patel |



***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

## POSTER SESSION — Session 1500

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Clinical Chemistry*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1500-1 P) **Caffeic Acid Phenethyl Ester Boosts the Cytotoxic Effect of Tamosifen in Breast Carcinoma** SAMY A ABDEL AZIM, Cairo University

(1500-2 P) **Rapid LC-MS/MS Determination of Digoxin and Digitoxin in Biological Fluids with Minimal Matrix Effects** DAVID S BELL, Supelco/Sigma-Aldrich, Xiaoning Lu, Gaurang Parmar, Wayne Way

(1500-3 P) **The Use of Single Particle-ICP-MS in Nanomedicine and Drug Delivery Systems** CHADY STEPHAN, PerkinElmer, Ciprian Mihai Cirtiu

(1500-4 P) **Method for Assessing Residual Trace Metal Contamination in Acid-Washed Vials** MICHELLE LYNN MADSEN WERMERS, Mayo Clinic, Steven J Eckdahl

(1500-5 P) **Sensitive Determination of Acetaminophen Based on Arginine Functionalized Graphene Nanocomposite Film** ZHE WANG, Xavier University of Louisiana

(1500-6 P) **Development of a Proximity Ligation Assay for Adiponectin Multimers** KATARENA FORD, Auburn University, Joonyul Kim, Robert Judd, Christopher J Easley

(1500-7 P) **A New SRM for Assessment of Arsenic Exposure Through Urine Analysis** LEE L YU, National Institute of Standards and Technology, Cynthia D Ward, W Clay Davis, Rick L Paul

(1500-8 P) **In Vivo Electrochemical Assessment of Nanoparticle-Induced Effects in Embryonic Zebrafish** XIAOBO LIU, Clarkson University, Rifat Emrah Ozel, Kenneth Wallace, Silvana Andreescu

## POSTER SESSION — Session 1510

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Education Posters*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1510-1 P) **Implementing Authentic Science Learning Through Multi-Tiered Collaboration** YI HE, John Jay College/CUNY, Sandra Swenson

(1510-2 P) **The Kinetics of Double Clock Reaction: A Modified Version of Old Experiment for Graduate Experimental Chemistry Laboratory** SADAF BHUTTO, University of Karachi, Muhammad N Khan

(1510-3 P) **Assessment of Water Quality Parameters From the Lowber Abandoned Mine Drainage Treatment Facility Using Potentiometric, Titrimetric, and Spectrometric Methods** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Tell M Lovelace, Joshua M Blaker

(1510-4 P) **Videotaping Experiments in an Analytical Chemistry Course** RITA K UPMACIS, Pace University, Samantha J Pace, Tyler K Brescia, Elmer-Rico E Mojica

(1510-5 P) **Implementation of Globally Harmonized Labels and Their Impact on the Laboratory** ANTHONY R KEMPERMAN, Honeywell, Burdick and Jackson

(1510-6 P) **Calibration Strategies for Absorption and Emission Instruments** LAUREN E GRABOWSKI, University of South Carolina, Scott R Goode

(1510-7 P) **Introducing Analytical Method Transfer (AMT) in the Undergraduate Laboratory** KIMBERLY CHICHESTER, St. John Fisher College, Irene Kimaru, Fang Zhao, Marina Koether

(1510-8 P) **Teaching How to Handle Hazardous Chemicals with Smartphone Apps** ENRIQUE ARCE-MEDINA, ESIQIE, Irma P Flores-Allier

(1510-9 P) **Improving Confidence and Perseverance in a Laboratory Project** SUSAN OXLEY, St. Mary's University

(1510-10 P) **Utilizing a Digital SLR Camera as the Detector for a Low-Cost Raman Spectrometer** TARYN L WINNER, Miami University, Andre J Sommer

(1510-11 P) **Poly (N-Isopropylacrylamide) Hydrogel Diffusion** ABIGAIL SHEPARD, St. John Fisher College

## POSTER SESSION — Session 1520

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental Chromatography*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1520-1 P) **Analysis of Halogenated Persistent Organic Pollutants in Human Breast Milk Using the QuEChERS Extraction Approach and Comprehensive Two-Dimensional Gas Chromatography** MICHELLE MISSELWITZ, Restek, Julie Kowalski, Jack Cochran, Rebecca Stevens, Jaap DeZeeuw, Linx Waclaski, Mike Chang

(1520-2 P) **Improving Workflows and Productivity in Thermal Desorption Air Monitoring** JASON WEISENSEEL, PerkinElmer, Matthew Benton, Roberto Provost

(1520-3 P) **Screening of Environmental Contaminants by High-Capacity Sorptive Extraction and TD–GC–TOF MS** NICOLA M WATSON, Markes International, David Wevill, Peter Grosshans, Vanessa Frost-Barnes, Caroline Widdowson, Steve Davies, Helen Martin

(1520-4 P) **Combining High-Capacity Sorptive Extraction and Bench-Top TOF MS in the Analysis of Personal Care Products** NICOLA M WATSON, Markes International, David Wevill, Peter Grosshans, Vanessa Frost-Barnes, Caroline Widdowson, Steve Davies, Helen Martin

(1520-5 P) **Si-Microfabricated Comprehensive Two-Dimensional Gas Chromatograph with Resistive and Optical Microsensor Detectors** WILLIAM R COLLIN, University of Michigan, Edward T Zellers, Kee Scholten, Katsuo Kurabayashi, Dibyadeep Paul

(1520-6 P) **Multi-Vapor Sensing with Plasmonic Nanoparticle Films: Remarkable Selectivity but Lots of Challenges** CHENGYI ZHANG, University of Michigan, Lindsay K Wright, Scholten Kee, Edward Zellers

(1520-7 P) **Displacement Assay Based on High-Performance Affinity Chromatography for Detecting Emerging Contaminants and Drugs in Water and Biological Samples** RYAN MATSUDA, University of Nebraska-Lincoln, Ellis Kaufmann, Xiwei Zheng, So-Hwang Kye, Elliott Rodriguez, Christopher J White, Donald Jobe, Daniel Snow, David S Hage

(1520-8 P) **Application of GC-MS and FTIR Methods for Studying the Degradation of Organic Compounds by Chlorine Dioxide** SUSHMA APPALA, Middle Tennessee State University, Anna Mooney, Ngee Sing Chong

(1520-9 P) **Determination of Ethylene Thiourea (ETU) in Multiple Formulations Using High Performance Liquid Chromatography with Charged Aerosol Detection (CAD)** DENNIS JOHN HOOBLER, WIL Research Laboratories, LLC, Donna Murphy, Samantha Coffee

(1520-10 P) **Stability Assessment of Primary Standard Gas Mixtures of Ammonia at Low umol/mol in Highly Pressurized Gas Cylinders** YONG-DOO KIM, Korea Research Institute of Standards and Science, Jin Chun Woo, Hyun Kil Bae, Sang Il Lee, Jin Hong Lee, Eun Gyu Yun, Kang Jin Lee

(1520-11 P) **Air Quality Monitoring in Memphis and Surrounding Areas in 2014, Analyzed by Gas Chromatography/Mass Spectrometry (GC-MS)** EBTSAM SETEH, Middle Tennessee State University

(1520-12 P) **Comparison of Scan and SIM Modes in GC-MS Analysis of VOCs in Ambient Air Samples** ARCHANA TIRUMALA, Middle Tennessee State University, Daniel Nguyen, Xintian Yu, Beng Ooi, Ngee Sing Chong

(1520-13 P) **Fenceline Monitoring – Low PPM-Level BTEX Analysis in Air Using a Fast, Portable Micro Gas Chromatograph** REMKO VAN LOON, Agilent Technologies, Duvekot Coen

(1520-14 P) **Fast Analysis of TO-15/TO-17 Air Toxics and Beyond in Urban Air Using TD–GC–TOF MS** NICOLA M WATSON, Markes International, David Wevill, Peter Grosshans, Vanessa Frost-Barnes

# TECHNICAL PROGRAM

## POSTER SESSION — Session 1530

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental Samples - Sampling, Detection and Water/Soil Samples*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1530-1 P) **Automation of a Solid Phase Extraction (SPE) Fractionation Step for Aliphatics and Aromatics in Oil Fingerprinting Analysis** MICHAEL J TANNER, J2 Scientific

(1530-2 P) **Alternative Approaches to the Gel Permeation Chromatography Clean-up Step when Using CLP Method SOM01.1 and EPA Method 3640A** MICHAEL J TANNER, J2 Scientific

(1530-3 P) **Novel Method for the Detection of Arsenic Using a Bare Glassy Carbon Electrode** THOMAS CARPENTER, Uninversity of Tennessee, Knoxville, Carlos W Lee, James Q Chambers, Zi-Ling Xue

(1530-4 P) **Wetland Drying and Wetting Impacts on Greenhouse Gas (GHG) Fluxes** MADISON WILLIAMS, Central Michigan University, Johann Britting, Taylor West, Dale J LeCaptain

(1530-5 P) **Real-Time Voltammetric Characterization of Metal Complexation** THUSHANI M SIRIWARDHANE, Wayne State University, Audrey Sulkanen, Annette Tremonti, Pavithra Pathirathna, Shawn P McElmurry, Parastoo Hashemi

(1530-6 P) **Covalent Scaffolding Functionalization of Carbon Fiber Microelectrodes (CFMs) for High-Selectivity Trace Metal Detection** YUANYUAN YANG, Wayne State University, Ahmad A Ibrahim, Jennifer Stockdill, Parastoo Hashemi

(1530-7 P) **Color Measuring in Industrial Wastewater** MARÍA I TABARES BERNAL, Universidad Pontificia Bolivariana, Beatriz E Gómez Hoyos , Jose A Ríos Arango, Erwin Ramírez Muñoz, Faber E Peñaloza Anaya, Francisco J Jiménez García, Viviana A Martínez

(1530-8 P) **Aptamer-Based Electrochemical Biosensing Platform for Detection of Hormonal Pollutants in Water** GASTON CONTRERAS, UQAM, Shimaa Eissa, Andy Ng, Mohammed Zourob, Mohamed Siaj

(1530-9 P) **Layered Double Hydroxide Membranes as Phosphate Sensitive Electrodes** MARTIN E ENEMCHUKWU, University of South Africa

(1530-10 P) **Analysis of Arsenic in Aqueous Solutions Using Cyclic Voltammetric Determination** SEUNG MOK LEE, Catholic Kwandong University

(1530-11 P) **Development of Electron Tracking Compton Camera for Fine Imaging and Quantitatively Dose-Monitoring to Environmental Gamma-Ray** DAI TOMONO, Kyoto University, Tetsuya Mizumoto, Atsushi Takada, Toru Tanimori, Shotaro Komura, Hidetoshi Kubo, Yoshihiro Matsuoka, Yoshitaka Mizumura, Kiseki Nakamura, Shogo Nakamura, Makoto Oda, Joseph D Parker, Tatsuya Sawano, Naoto Bando, Akira Nabetani

(1530-12 P) **Determination of Veterinary Antibiotics Found Within the Soil and Groundwater of Farmlands** ALEX MESSUR, St. John Fisher College, Kimberly Chichester

(1530-13 P) **Evaluation of the Waste Generated in Wastewater Treatment as Energy's Cogenerator** MARISA S CRESPI, Chemistry Institute/UNESP, Weverton C Nozela, Sandra I Maintinguer, Clovis A Ribeiro

(1530-14 P) **Development of Test Paper for Fluoride Ion with ON-OFF Color Change Reaction** SHOHEI FUKIAGE, Institute of National College of Technology , Atsushi Manaka, Shukuro Igarashi

(1530-15 P) **Analyzing Total Organic Carbon in Sea Water** KRISTINA MASON, Teledyne Tekmar, Tammy Rellar, Thomas Hartlein, Jacob A Rebholz, Tyler Trent, Roger Bardsley

(1530-16 P) **Biosorption of 2-nitrophenol and 4-nitrophenol from Aqueous Solutions Using Activated Charcoal of Grape (Vitis Vinifera) Leaf Litter** BEATRICE O OPEOLU, Cape Peninsula University of Technology, W O Afolabi, Olalekan Siyanbola Fatoki, B J Ximba, Olatunde S Olatunji

(1530-17 P) **Removal and Decolorization of Dye Bearing Textile Effluents by Urea-Formaldehyde Resins** HASUKH S PATEL, SP University

(1530-18 P) **The Application of Infrared Microspectroscopy for the Analysis of Microplastics in Water-Borne Environmental Samples** IAN ROBERTSON, PerkinElmer Limited, Guido Lohkamp-Schmitz, Justin Lang

(1530-19 P) **Light Weight Evaporation Vessel for the Determination of Dissolved Solids** DAVID SMITH, Environmental Express, Joe Boyd, Edward Kim

(1530-20 P) **Soil Respiration and Its Analytical Use for Rating Contaminated Soil** FRANK HONOLD, Xylem - WTW, Klaus Reithmayer

(1530-21 P) **Advanced Portable Water Quality Testing** ANDREW ROBERTS, Industrial Test Systems, Inc.

(1530-22 P) **Development of 4-Channel LED-Based Reflective Photometer for Determination of Trace Elements in River Water Samples with Membrane Filter Extraction** YASUTADA SUZUKI, University of Yamanashi, Susumu Kawakubo

(1530-23 P) **Modern Design of Colorimetric Point-of-Care Devices for Bisphenol A-Dust Measurements** RAMIZ ALKASIR, Clarkson University, Silvana Andreescu, Alan Rossner

(1530-24 P) **A Field Emission Ion Source for High Pressure Mass Spectrometry** CRAIG A CAVANAUGH, University of North Carolina, Kenion H Blakeman, Tina E Stacy, Stanley Pau, J Michael Ramsey

(1530-25 P) **Microfluidic Paper-Based Devices for Titration of Cadmium** SHENGXI JIN, Tennessee Technological University, Andrew F Callender

(1530-26 P) **Plasmon Enhanced Titanium Dioxide Photo-Catalyst Thin Films for the Removal of Bisphenol A and Methyl Orange in Water** PARDON NYAMUKAMBA, University of Fort Hare

(1530-27 P) **Influence of Contamination of Front Opening Unified Pod (FOUP) to Deposited Thin Film Layer of Silicon Nitride** TAE YONG NOH, Withtech Inc, Gil Joo Song, Sung Min Hwang, Soo Jong Koo, Hyoung Ryeun Kim, Hee Chang Jang, Jeong Hoon Hong, Hyun Yul Park, Eungsun Lee, Sojung Kim, Seoung-kyo Yoo

(1530-28 P) **High Resolution Records of Oxygen and Hydrogen Stable Isotopes in Surface Snow and Snow Pits at Greenland Environmental Observatory, Summit (GEOSummit)** LIYING ZHAO, University of California, Merced, Phuong-Thao Ha, Kevin Shen

## POSTER SESSION — Session 1540

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Environmental Samples - Separation Techniques*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1540-1 P) **Extending Hexavalent Chromium Stability in Industrial Hygiene Applications** ANITA HSOUNA, High-Purity Standards, Svetlana Uzunova

(1540-2 P) **Simultaneous Analysis of Isocyanate Monomers and Oligomers as Urea Derivatives Using UHPLC-MS-MS/MS** EMILY R BARREY, Supelco/Sigma-Aldrich, Olga I Shimelis, Kristen Schultz, Michael Ye, Jamie L Brown, Gaurang Parmar

(1540-3 P) **Quantitative Analysis of Isocyanates During Spray Painting Using Dry Air Sampler and LC-MS/MS Analysis** EMILY R BARREY, Supelco/Sigma-Aldrich, Olga I Shimelis, Michael R Halpenny, Jamie L Brown, Michael Ye

(1540-4 P) **Mercury Speciation by Selective Pre-Concentration and Liquid Chromatography Cold Vapour Atomic Fluorescence Spectrometry (Prec HPLC-CV-AFS) - An Efficient Method for Many Sample Matrices** CORNELIUS C BROMBACH, University of Aberdeen, Bin Chen, Warren T Corns, Jorg Feldmann, Eva Krupp

(1540-5 P) **Online Monitoring of Hg, Se and As in FGD Wastewater Treatment Plants** WARREN T CORNS, P S Analytical, Bin Chen

(1540-6 P) **Improved Quantification Method of Organic Toxins for Human Health Assessment Using Direct Isotope Dilution Mass Spectrometry Gas Chromatography** MICHAEL MILES, Duquesne University, Elizabeth Clouser, Andrew Boggess, Logan T Miller, HM Skip Kingston, Scott Faber

(1540-7 P) **Removal of Cr(VI) from Aqueous Solutions Using the Polyurethane Foam Like Adsorbent** HIROAKI MINAMISAWA, Nihon University, Hiromichi Asamoto, Minamisawa Mayumi, Saitoh Kazunori, Tatsuro Nakagama

(1540-8 P) **Determination of Selected Metals in Rice by Inductively Coupled Plasma Optical Emission Spectrometry and Anodic Stripping Voltammetry** JOSEPH SNEDDON, McNeese State University, Joel Richert, Carey J Hardaway

(1540-9 P) **Irrigation of Selected Crops with Abandoned Mine Drainage: Preliminary Results and Evaluation of Uptake of Selected Metal Analytes** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Eric D Deihl

(1540-10 P) **Application of the Leaching Environmental Assessment Framework and Vapour Generation Atomic Fluorescence Spectroscopy to Investigate the Fate of Mercury and Arsenic Species after Smouldering Remediation of Contaminated Soils** CHRISTINE SWITZER, University of Strathclyde, Mara L Knapp, Warren T Corns, Andrew Robson, Rossane C DeLapp, David S Kosson

(1540-11 P) **Solid Phase Extraction and Analysis for Polychlorinated Biphenyls (PCBs) and Organochlorine Pesticides (OCPs) in Plasma Samples of Humans Resident in Lagos, Nigeria** ADEYEMI DAVID KEHINDE, University of Lagos, Adeyao Adeleye, Godfred Darko

(1540-12 P) **Revisions to EPA Method 624 for Analysis of VOCs by GC/MS** BRAHM PRAKASH, Shimadzu Scientific Instruments, Inc., William Lipps, Laura Chambers, Di Wang

(1540-13 P) **Parts-per-Trillion SVOC Air Analysis with Novel Optical GC Detector** MARTIN L SPARTZ, Prism Analytical Technologies, Inc., Anthony S Bonanno, Stacey E Beyer, Alice E Delia

(1540-14 P) **Formation of Disinfection Byproducts and Associated Bromine Substitution Factors Upon Chlorination/Chloramination of Seawater** HAITING ZHANG, Missouri University of Science and Technology, Huiyu Dong, Honglan Shi, Yinfa Ma, Zhimin Qiang

(1540-15 P) **Determination of Endocrine Disrupting Chemicals in Ground Water in Herkimer County** ELAINA ZITO, St. John Fisher College, Kimberly Chichester

(1540-16 P) **Characterization of Microbial Transformation Products of Persistent Organic Pollutants by GC×GC and High Performance Mass Spectrometry** CHRISTINE GALLAMPOIS, Umea University, Peter Haglund, Jonathan Byer, Elizabeth Humston-Fulmer, Joe E Binkley, Lorne M Fell

(1540-17 P) **Application of Newly Developed Inert GC Columns for Analysis of Complex Environmental Samples Using GC and GC/MS** KRISHNAT P NAIKWADI, J & K Scientific Inc., Allen J Britten

(1540-18 P) **Validation of Environmental Water Methods on One System: Considerations for Sample Volume, Purge Parameters and Quality Control Parameters** JACOB A REBHOLZ, Teledyne Tekmar, Thomas Hartlein, Roger Bardsley, Tyler Trent, Kristina Mason, Tammy Rellar

(1540-19 P) **Improved Siloxane Measurement in Air Using Ultra Inert Stainless Steel Vacuum Sampling Canisters** THOMAS X ROBINSON, Entech Instruments, Inc., Daniel B Cardin

(1540-20 P) **Identification of Biomarkers of Exposure to Emerging Environmental Chemicals Using HPLC and Mass Spectrometry** MANORI SILVA, Centers for Disease Control and Prevention, James Preau, Ella Samandar, Donald Hilton, Antonia Calafat, Xiaoyun Ye, Johnathan Furr, L Earl Gray

(1540-21 P) **A Comparative Study of TOC and THM Analysis of Municipal Drinking Water Using Heated Sodium Persulfate Oxidation and a Novel Approach to EPA Method 524.4** JOHN F WELSH, Xylem/OI Analytical, Cynthia Elmore, Steven J Skalski

(1540-22 P) **Screening for Pesticides in Medical Marijuana Using Triple-Quadrupole GC-MS/MS** DI WANG, Shimadzu Scientific Instrument, Laura Chambers, William Lipps, Zhuangzhi 'Max' Wang, Robert Clifford

(1540-23 P) **Cadmium Isotopic Composition Indicates Multiple Geological Sources in Cadmium Anomaly in Jamaican Soils** ADRIAN SPENCE, University of the West Indies, Johann M Antoine, Charles G Grant

(1540-24 P) **Determination of Ni2+ by Dispersive Micro Solid Phase Extraction-Flame Atomic Absorption Using Multi-Wall Carbon Nanotubes Coated by Electro-Reduction Product of 4-Nitrophenol as an Adsorbent** MEHDI JALALI, University of Guilan, Alirez Aliakbar, Narges Larki, Ghahraman Afshar Majid

(1540-25 P) **A Guide to BFB Tuning for VOC Analysis** BRAHM PRAKASH, Shimadzu Scientific Instruments, Inc., William Lipps, Laura Chambers, Di Wang

(1540-26 P) **Applications of Supercritical CO2 as a "Green" Solvent in the Textile Industry** ROLF SCHLAKE, Applied Separations, Al Kaziunas, Anand Anand, J Peter Hobbs

(1540-27 P) **Synthesis, Characterization and Application of a Novel Thiourea-Based Resin for Solid Phase Extraction and Determination of Ultra-Trace Au, Ir, Pd, Pt and Ru by ICP-MS** ZIKRI ARSLAN, Jackson State University, Vedat Yilmaz, Ismet Basaran, Alamgir Hossain

(1540-28 P) **A Novel Chelating Polymer of Salicylaldehyde for Selective Solid Phase Extraction of Uranium(VI) and Thorium (IV) Radionuclides in Seawater for ICP-MS Detection** VEDAT YILMAZ, Erciyes University, Zikri Arslan, Ismet Basaran, Md. Alamgir Hossain

## POSTER SESSION — Session 1550

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Liquid Chromatography - Food Science, Bioanalytical and Biomedical*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1550-1 P) **Separation of Lactose, Lactulose and Epilactose by a New HILIC Column** SATOKO SAKAI, Showa Denko K.K., Naoya Nakajima, Mellissa Turcotte, Ronald Benson

(1550-2 P) **An Abnormal Retention Behavior of Pyrazines with Acetonitrile-Based Mobile Phases in Reversed-Phase Liquid Chromatography** HAYATO TAKEUCHI, Toyohashi University of Technology, Akira Kobayashi, Ikuo Ueta, Yoshihiro Saito

(1550-3 P) **Simultaneous Analysis of Water- and Fat-Soluble Vitamins in Beverages Using an ODS-Modified and Metal-Doped Column** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., William Hedgepeth

(1550-4 P) **Determination of Amyloid Fibrils by High-Performance Liquid Chromatography-Fluorescence Detection With Post Column Labeling** ASAMOTO HIROMICHI, Nihon University, Nakagama Tatsuro, Saitoh Kazunori, Minamisawa Hiroaki

(1550-5 P) **Determination of p-Toluidine, Sulfonated p-Toluidines, 1-Hydroxyanthraquinone, 1, 4-Dihydroxyanthraquinone, and Subsidiary Colors in Ext. D&C Violet No. 2 Using Ultra-Performance Liquid Chromatography** HUEIHSUAN W YANG, US Food and Drug Administration, Julie Barrows

(1550-6 P) **Direct Carbohydrate Analysis in Beverages and Food Using Pulsed Amperometric and Charged Aerosol Detection** BRUCE BAILEY, Thermo Fisher Scientific, Qi Zhang, Marc Plante, Ian N Acworth

(1550-7 P) **Improved Throughput and Resolution of Xanthones in Mangosteen Pericarp** BRUCE BAILEY, Thermo Fisher Scientific, Qi Zhang, Marc Plante, Ian N Acworth

(1550-8 P) **Determination of A-Type and B-Type Procyanidins in Apple, Cocoa and Cinnamon Extracts** DAVID H THOMAS, Thermo Fisher Scientific, Ian N Acworth, Jan Glinsky, Alan Wong, Glinsky B Vitold

(1550-9 P) **Novel Method for Identification of *Deinococcus* and *Hymenobacter* Using High Performance Liquid Chromatography** THOMAS KUBORN, University of Wisconsin Oshkosh, Patrick Klepp, Kevin Crawford, Sabrina Mueller-Spitz

(1550-10 P) **Portable Medium Pressure Capillary Liquid Chromatography based on a Modular Microfluidic System Using Off-the-Shelf Components** YAN LI, University of Tasmania, Miloš Dvořák, Nantana Nuchtavorn, Pavel N Nesterenko, Roger Stanley, Jana Aufartová, Lenka Kujovská Krčmová, Mirek Macka

(1550-11 P) **Characterization of Binding by Second Generation Sulfonylurea Drugs to Glycated Human Serum Albumin by Using High-Performance Affinity Chromatography** RYAN MATSUDA, University of Nebraska-Lincoln, Jeanethe Anguizola, KS Joseph, Zhao Li, Xiwei Zheng, David S Hage

(1550-12 P) **Site-Directed Immobilization of Genetically Engineered Single-Domain Antibodies Significantly Increases the Efficiency of Immunoaffinity Columns** KAITLYNN R DAVENPORT, Northern Illinois University, Chris Smith, James Horn, Oliver Hofstetter

(1550-13 P) **Separation of Heparin and Other Glycosaminoglycans Using Weak Anion Exchange Chromatography** YOUXIN LI, Tianjin University, Jennifer M Fasciano, Ying Zhang, Richard T Taylor, James J Bao, Neil D Danielson

(1550-14 P) **Determination of Ammonia in Tobacco Filler from 24 Brands of Little Cigars and Cigarillos Using Ion Chromatography** SHAKIA SMITH, Centers for Disease Control and Prevention/ORISE, Christina Watson, Roberto Bravo, Clifford Watson

(1550-15 P) **Determination of Collagen Content in Eggshell Membrane Products through Analysis of Hydroxyproline Using Microwave Digestion and HPLC** KEN BOLDA, NOW Foods

(1550-16 P) **Sensitive and Simultaneous Analysis of Biothiols by Hydrophilic Interaction Liquid Chromatography with Fluorescence Detection** MUNEKI ISOKAWA, The University of Tokyo, Makoto Tsunoda, Takashi Funatsu

(1550-17 P) **Separation of Coumarin in Skincare Cream on PHEMA Column by Using HTLC** SEMA AKAY, Aksaray University, Murat Sener, Berkant Kayan, Yu Yang

(1550-18 P) **Development of HPLC Methods for the Analysis of Signaling Species in Non-Mammalian Systems** NICHOLAS J KUKLINSKI, Furman University, Cameron D Hallman, Sarah B Steagall, Kiersten N Rule, Alison M Roark

# TECHNICAL PROGRAM

## POSTER SESSION — Session 1560

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Sampling and Sample Preparation Techniques*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1560-1 P) **Evaluation of a Novel 96-Well Filter Plate for the Effective Removal of Serum Protein and Phospholipids Prior to LC-MS/MS Analysis** ELENA GAIRLOCH, Biotage, Lee Williams, Martin Cherrier, Victor Vandell, Frank Kero

(1560-2 P) **A Novel Approach to Low Volume Sample Preparation** JON BARDSLEY, Thermo Fisher Scientific, Ken Meadows

(1560-3 P) **Using SPE to Achieve a Twenty Fold Pre-Concentration without the Need for Evaporation and Reconstitution** KEN MEADOWS, Thermo Fisher Scientific

(1560-4 P) **Use of Unique Retention Properties of Graphitized Carbon Toward Passive Sampling of 1,3-Butadiene and Other Hazardous Pollutants in Air** JAMIE L BROWN, Supelco/Sigma-Aldrich, Olga I Shimelis, Kristen Schultz, Daniel Vitkuske, Michael Ye

(1560-5 P) **Semi-Automated Large Volume Sample Extraction for Detection of Pharmaceuticals and Personal Care Products** KEVIN CRAWFORD, University of Wisconsin Oshkosh

(1560-6 P) **Fast Analysis of Volatile Organic Compounds in Water in Compliance With EPA Method 8260** ILARIA FERRANTE, Dani Instruments SpA, Abate Chiara, Roberta Lariccia, Daniele Recenti

(1560-7 P) **Automated Liquid-Liquid Extraction of PAH Compounds in Water** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor

(1560-8 P) **The Use of Thermal Extraction to Investigate Hazardous Chemicals in Consumer Products** KAREN SAM, CDS Analytical, Stephen Wesson, Gary Deger, Chris Dwyer

(1560-9 P) **Passive Monitoring – A Guide to Sorbent Tube Sampling for EPA Method 325** NICOLA M WATSON, Markes International, David Wevill, Peter Grosshans, Vanessa Frost-Barnes

(1560-10 P) **Understanding the Health Safety and Environmental Implication of Formulating Solutions in the Laboratory Environment** ANTHONY R KEMPERMAN, Honeywell, Burdick and Jackson

(1560-11 P) **New Selective SPE Clean-Up Method Based on Molecularly Imprinted Polymers for Glyphosate and AMPA Analysis with and without Derivatization for Water, Food and Feed** SAMI BAYOUDH, Polyintell, Kaynoush Naraghi, Delphine Derrien, Berengere Claude, Philippe Morin, Kinga Puzio, Catherine Berho, Laurence Amallric, Emeline Grellet

(1560-12 P) **Improved Extraction Efficiency of Existing Pesticide Residues in Food via Automated Shaking During the QuEChERS Procedure** OLGA I SHIMELIS, Supelco/Sigma-Aldrich, Ken G Espenschied, Michael Ye, Katherine K Stenerson, Jennifer Claus, Daniel Vitkuske

(1560-13 P) **An Update on the QuEChERS Tablet** JULIE KOWALSKI, Restek, Rebecca Stevens, Jack Cochran, Jaap de Zeeuw, Linx Waclaski, Mike Chang

(1560-14 P) **The Use of QuEChERS and IL-SDME for the Extraction of Drugs of Abuse from Urine Using Gas Chromatography-Mass Spectrometry** MICHELLE L SCHMIDT, Seton Hall University, Leanne Mocniak, Nicholas H Snow

(1560-15 P) **Application of Extraction Induced by Emulsion Breaking in the Determination of Chloride in Brazilian Crude Oils by Ion Chromatography** RICARDO J CASSELLA, Universidade Federal Fluminense, Fernanda N Feiteira, Nicolle F Robaina, Alessandra R Cassella

(1560-16 P) **High-Throughput Clean-Up for Drugs of Abuse in Urine Using a Liquid Handling System** JASON WEISENSEEL, PerkinElmer, Amanda Prior, Wilhad M Reuter

(1560-17 P) **Automating Liquid-Liquid Extractions Using a Bench-Top Workstation** EDWARD PFANNKOCH, GERSTEL, Inc., Fredrick Foster, Jacqueline Whitecavage, John Stuff

(1560-18 P) **Performance Update and Review of Coatings used to Improve Reliability and Accuracy for Sulfur, Mercury and $NH_3$ Samples** LUKE PATTERSON, SilcoTek Corporation, Gary Barone

(1560-19 P) **The Bioprinter: Improving Bioanalysis and In Vitro Screening Workflow** DEBORAH CONFER, Theravance Biopharma

(1560-20 P) **Investigation of Neurotransmitters Associated with Multiple Seizure Events** AMANDA M FURNESS, University of Kansas, Hasitha C Rathnayaka Mudiyanselage

(1560-21 P) **Automation of EPA Method 526: Determination of Selected Semi-Volatile Organic Compounds in Drinking Water by SPE and GC/MS** LETICIA D BROWN, J2 Scientific, Mike Tanner, Jeff Wiseman

(1560-22 P) **High-Throughput Automated Analytical Platform for E.coli Derived Antibodies** STEPHEN K KOK, Genentech, Eugene Kim, Zherylynn Vinyard, Kevin Lin, Yun Tang, Martin Vanderlaan

(1560-23 P) **Storage Stability Considerations for Vet Drugs Analyzed by LC-ESI-MS/MS** ANDREW J TIGCHELAAR, University of Guelph Laboratory Services AFL, Perry Martos, Heather McCormick, Jurek Samoluk

## SEAC POSTER SESSION — Session 1570

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *SEAC - Society for Electroanalytical Chemistry Poster Session*

**Tuesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(1570-1 P) **Up-Regulation of Quorum Sensing Molecules for Sensitive and Selective Electrochemical Detection of Bacterial Pathogens** EDGAR D GOLUCH, Northeastern University, Hunter J Sismaet, Thaddaeus A Webster

(1570-2 P) **Synthesis and Analysis of PdPt Nanoalloys via Alloying Individual Bulk Pd and Pt Metals in Molten Lithium for Methanol Electro-Oxidation Applications** HEATHER MARIE BARKHOLTZ, Northern Illinois University, Tao Xu

(1570-3 P) **Nanoelectrochemical Approach to Detect Short-Lived Intermediates of Electrocatalytic Processes: Superoxide** MIN ZHOU, Queens College, Yun Yu, Keke Hu, Michael V Mirkin

(1570-4 P) **A Four-Way Junction Electrochemical Sensor used for Detection of MicroRNA** DAWN MILLS, University of Central Florida, Percy Calvo-Marzal, Dmitry Kolpashchikov, Karin Chumbimuni-Torres

(1570-5 P) **In Situ Quantification and Imaging of Li Insertion in $TiO_2$ by Scanning Electrochemical Microscopy** MARK BURGESS, University of Illinois at Urbana-Champaign, Philip Benson, Joaquin Rodriguez-Lopez

(1570-6 P) **Quantitative Detection of Neurotransmitters Using Nano-Electrochemical Probes Based on the Interface Between Two Immiscible Electrolyte Solutions** MICHELLE COLOMBO, University of Illinois at Urbana-Champaign, Swami McNeil, Garrett Hoepker, Jonathan V Sweedler, Mei Shen

(1570-7 P) **Effect of Counter-ion on Carbonate Binding to Perfluoroalkyl Phenyl Ketones** HAINI ZHANG, University of Minnesota, Adam Dittmer, Philippe Buhlmann

(1570-8 P) **Stability and Stoichiometry of Trifluoroacetophenone-Carbonate Complexes as a Model for Ionophore Binding in Carbonate Ion-Selective Electrodes** MITCHELL LANCASTER, University of Minnesota, Adam Dittmer, Philippe Buhlmann

(1570-9 P) **All-Solid-State Ion-Selective Electrodes and Reference Electrodes Based on Colloid-Imprinted Mesoporous Carbon** JINBO HU, University of Minnesota, Andreas Stein, Philippe Buhlmann

(1570-10 P) **Reference Electrodes with Salt Bridges Contained in Nanoporous Polymers** MARAL PS MOUSAVI, University of Minnesota, Stacey A Saba, Marc A Hillmyer, Philippe Buhlmann

(1570-11 P) **Crosslinked Highly Fluorinated Polymers for Ion-Selective Electrodes** JESSE L CAREY, University of Minnesota, Philippe Buhlmann

(1570-12 P) **Electrochemistry and Electrogenerated Chemiluminescence of Sulfonated 9, 10-Diphenylanthracene and Rubrene in Aqueous Media** PRADIP BASTOLA, The University of Southern Mississippi, Wujian Miao

(1570-13 P) **Potentiometric Layered Membranes** ANNA KISIEL, University of Warsaw, Emilia Wo nica, Krzysztof Maksymiuk, Agata Michalska

(1570-14 P) **Electron Transfer Kinetics of Hydrazine Oxidation on Single Nanoparticles** STEPHEN J PERCIVAL, University of Washington, Bo Zhang

(1570-15 P) **Toward the Selective Detection of Single Virus Collisions** JEFFREY E DICK, The University of Texas at Austin, Allen J Bard

# WEDNESDAY, MARCH 11, 2015
# MORNING

**AWARD** **Session 1580**

***ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science Award***
arranged by Neil D Danielson, Miami University Oxford, Ohio

**Wednesday Morning, Room 243**
Neil D Danielson, Miami University Oxford, Ohio, Presiding

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| 8:30 | | **Introductory Remarks - Neil D Danielson** |
| 8:35 | | **Presentation of the 2015 ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science to Dwight R Stoll, Gustavus Adolphus College, by Neil D Danielson, Miami University Oxford, Ohio** |
| 8:40 | (1580-1) | **A Modern Perspective on the Factors Affecting the Performance of the Second Dimension in Two-Dimensional Liquid Chromatography Separations of Small Molecules** DWIGHT R STOLL, Gustavus Adolphus College, Ray Sajulga, Klaus Witt |
| 9:15 | (1580-2) | **Fundamental Issues in Quantitative Analysis in Multi-Dimensional Liquid Chromatography - The Good, the Bad and the Ugly** PETER CARR, University of Minnesota, Sarah Rutan, Joe Davis, Daniel Cook, Robert Allen, Brian Barnes, Marcelo Filgueira |
| 9:50 | (1580-3) | **Temperature-Assisted On-Column Solute Focusing: A General Method to Enhance Separation Performance in Fast Capillary Liquid Chromatography** STEPHEN R GROSKREUTZ, University of Pittsburgh, Stephen G Weber |
| 10:25 | | **Recess** |
| 10:40 | (1580-4) | **Developing, Improving and Optimizing LC×LC Separations** PETER J SCHOENMAKERS, University of Amsterdam, Henrik Cornelisson van de Ven, Petra J Aarnoutse, Anna Baglai, Michelle Camenzuli, Andrea Gargano, Bob Pirok, Gabriel Vivo-Truyols |
| 11:15 | (1580-5) | **Advanced Separation Technologies for Pharmaceutical Analysis: Are UHPLC, 2D HPLC and a Universal HPLC Method Enough?** TODD D MALONEY, Eli Lilly and Company |

**SYMPOSIUM** **Session 1590**

***A 60 Year Celebration of the Coblentz Society***
arranged by Bruce Chase, University of Delaware and Peter Griffiths, University of Idaho

**Wednesday Morning, Room 244**
Bruce Chase, University of Delaware, Presiding

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| 8:30 | | **Introductory Remarks - Bruce Chase and Peter Griffiths** |
| 8:35 | (1590-1) | **An Historical Perspective from W.W. Coblentz to the Current Coblentz Society Programs** ROBERT W HANNAH, Coblentz Society, Foil A Miller |
| 9:10 | (1590-2) | **Probing Liquid/Solid Interface Chemistry Within Porous Particles by Confocal Raman Microscopy** JOEL M HARRIS, University of Utah, Jay P Kitt |
| 9:45 | (1590-3) | **Single Molecule Spectroelectrochemistry in Zero-Dimensional NanoOptoFluidic Devices** PAUL BOHN, University of Notre Dame, Chaoxiong Ma, Lawrence P Zaino, Dane A Grismer |
| 10:20 | | **Recess** |
| 10:35 | (1590-4) | **The 2000's: The Decade that Started Femtosecond 2D IR Spectroscopy** MARTIN ZANNI, University of Wisconsin-Madison |
| 11:10 | (1590-5) | **Single-Nanoparticle Catalysis at Single-Turnover and Nanometer Resolution** PENG CHEN, Cornell University |

**SYMPOSIUM** **Session 1600**

***Advances in Analytical Technology for Understanding the Central Nervous System***
arranged by Adrian C Michael, University of Pittsburgh

**Wednesday Morning, Room 238**
Adrian C Michael, University of Pittsburgh, Presiding

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| 8:30 | | **Introductory Remarks - Adrian C Michael** |
| 8:35 | (1600-1) | **Evaluating and Modeling Kinetic Diversity of Brain Dopamine Systems** ADRIAN C MICHAEL, University of Pittsburgh, I Mitch Taylor, Zhan Shu, Seth H Walters |
| 9:10 | (1600-2) | **Dopamine Release from Transplanted Neural Stem Cells in Parkinsonian Rat Striatum In Vivo** ZHUAN ZHOU, Peking University |
| 9:45 | (1600-3) | **Optogenetic Control of Neurochemistry During Behavior** JOSEPH CHEER, University of Maryland School of Medicine |
| 10:20 | | **Recess** |
| 10:35 | (1600-4) | **Decoding Serotonin Transmission** ANNE M ANDREWS, University of California Los Angeles, Hongyan Yang |
| 11:10 | (1600-5) | **Mass Spectrometry-Based Comparative Peptidomic Analysis towards Functional Discovery of Neuropeptides** LINGJUN LI, University of Wisconsin |

**SYMPOSIUM** **Session 1610**

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

**Wednesday Morning, Room 239**
Sanford Asher, University of Pittsburgh, Presiding

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| 8:30 | | **Introductory Remarks - Sanford Asher** |
| 8:35 | (1610-1) | **Raman Spectroscopy – The Synergism Between Instrumentation Evolution and Emerging Applications** FRAN ADAR, Horiba Scientific |
| 9:10 | (1610-2) | **Raman Investigation of Chemical Reactivity on the Nanometer Scale** VOLKER DECKERT, IPHT Jena, Zhenglong Zhang, Pushkar Singh |
| 9:45 | (1610-3) | **Stimulated Raman Spectroscopic Imaging for Biology and Medicine** JI-XIN CHENG, Purdue University |
| 10:20 | | **Recess** |
| 10:35 | (1610-4) | **Probing Low Frequency Vibrational Excitations and Their Effect on Electron and Proton Transport in Proteins** PAUL CHAMPION, Northeastern University |
| 11:10 | (1610-5) | **Do Not Pee in a Pool** VLADISLAV YAKOVLEV, Texas A&M University |

**SYMPOSIUM** **Session 1620**

***IAEAC - Ultrafast Electromigrative Separations: Capillary versus Chip Format***
arranged by Antje J Baeumner and Frank M Matysik, University of Regensburg

**Wednesday Morning, Room 262**
Antje J Baeumner, University of Regensburg, Presiding

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| 8:30 | | **Introductory Remarks - Antje J Baeumner and Frank M Matysik** |
| 8:35 | (1620-1) | **Advances in High-Speed Capillary Electrophoresis Coupled to Mass Spectrometry** FRANK M MATYSIK, University of Regensburg |
| 9:10 | (1620-2) | **Microchip Electrophoresis for Monitoring Transient Chemical Species In Vivo and In Vitro** SUSAN M LUNTE, University of Kansas |
| 9:45 | (1620-3) | **Fast Separations in Short Capillaries and Lab-On-Chip Devices With Contactless Conductivity Detection** PETER C HAUSER, University of Basel, Joel Koenka, Jorge Sáiz, Thanh Duc Mai |
| 10:20 | | **Recess** |
| 10:35 | (1620-4) | **Development of an Ultrafast CE-MS** MEHDI MOINI, George Washington University |
| 11:10 | (1620-5) | **New Injection Strategies for High Performance CE Separations in Microchips and Capillaries** RYAN T KELLY, Pacific Northwest National Laboratory, Cong Yongzheng, Sarah Rausch, Tao Geng, Keqi Tang |

# TECHNICAL PROGRAM

**SYMPOSIUM** **Session 1630**

***Nano-Tools for Imaging and Therapy of Cancer, Heart and Brain Disease: Is the Outlook Bright?***

arranged by Raoul Kopelman, University of Michigan and Weihong Tan, University of Florida

**Wednesday Morning, Room 242**

Raoul Kopelman, University of Michigan, Presiding

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| 8:30 | | **Introductory Remarks - Raoul Kopelman and Weihong Tan** |
| 8:35 | (1630-1) | **Gold Nanoparticles for Imaging and Studying the Dynamics in a Single Cancer Cell** MOSTAFA A EL-SAYED, Georgia Institute of Technology |
| 9:10 | (1630-2) | **Nanodiagnostics and Nanotherapy: From Brain Cancer to Heart Arrhythmia** RAOUL KOPELMAN, University of Michigan |
| 9:45 | (1630-3) | **Nanoscience Approaches to Heterogeneity in Biological Systems** PAUL S WEISS, University of California Los Angeles |
| 10:20 | | **Recess** |
| 10:35 | (1630-4) | **Biomarker Discovery Using DNA Aptamers** WEIHONG TAN, University of Florida |
| 11:10 | (1630-5) | **Liposomal Spherical Nucleic Acids: A New Approach to Gene Regulation Therapy** CHAD A MIRKIN, Northwestern University |

**SYMPOSIUM** **Session 1640**

***Nanoelectrochemistry of Energy Conversion and Storage***

arranged by Michael V Mirkin, CUNY, Queens College

**Wednesday Morning, Room 260**

Michael V Mirkin, CUNY, Queens College, Presiding

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| 8:30 | | **Introductory Remarks - Michael V Mirkin** |
| 8:35 | (1640-1) | **Nanocrystals in Energy Generation and Storage: Fuel Cells and Batteries** HECTOR D ABRUNA, Cornell University |
| 9:10 | (1640-2) | **Nanoelectrocatalysis for Indirect Electrolysis** HUBERT H GIRAULT, Ecole Polytechnique Fédérale De Lausanne, Veronique Amstutz, Pekka Peljo, Heron Vrubel |
| 9:45 | (1640-3) | **Development of Electroanalytical Tools for Nanoparticle Catalyst Evaluation and Screening** KEITH J STEVENSON, Skolkovo Institute of Science and Technology, Radhika Dasari, Donald A Robinson |
| 10:20 | | **Recess** |
| 10:35 | (1640-4) | **Probing Electrocatalytic Processes by Nanoelectrochemical Tools** MICHAEL V MIRKIN, CUNY, Queens College |
| 11:10 | (1640-5) | **Mechanisms of Electrochemical Charge Storage in Two-Dimensional $Ti_3C_2$ MXene** YURY GOGOTSI, Drexel University, Maria Lukatskaya, Majid Beidaghi, Michel W Barsoum, Mikhael D Levi, Doron Aurbach |

**SYMPOSIUM** **Session 1650**

***SEAC - New Electrodes for Neurochemistry***

arranged by B Jill Venton, University of Virginia

**Wednesday Morning, Room 261**

B Jill Venton, University of Virginia, Presiding

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| 8:30 | | **Introductory Remarks - B Jill Venton** |
| 8:35 | (1650-1) | **Carbon Nanomaterial Based Microelectrodes for Neurotransmitter Detection** B JILL VENTON, University of Virginia, Cheng Yang, Alex Zestos, Christopher B Jacobs, Hillary R Rees |
| 9:10 | (1650-2) | **Implantable Conductive Polymer Electrodes for In Vivo Measurements** MICHAEL L HEIEN, University of Arizona, Adam R Meier, Richard F Vreeland, Wilfred Russel |
| 9:45 | (1650-3) | **Microfabricating Biochemical Sensors for In Vivo Applications** GREGORY S MCCARTY, North Carolina State University |
| 10:20 | | **Recess** |
| 10:35 | (1650-4) | **Electrochemical Quantification of Reactive Nitrogen and Oxygen Species (RNOS) Using Reduced Graphene Oxide** SABINE SZUNERITS, University Lille 1, Serban Peteu, Rabah Boukherroub |
| 11:10 | (1650-5) | **Temperature Differences in Sympathetic Neuroeffector Transmission in Arteries and Veins** GREG M SWAIN, Michigan State University, Hua Dong, Jinwoo Park, James Galligan, Greg D Fink |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

**WORKSHOP** **Session 1660**

***Recent Initiatives by FDA and Compendia: How do They Impact Analytical Development for Pharmaceuticals?***

arranged by Shreekant V Karmarkar, Baxter Healthcare

**Wednesday Morning, Room 269**

Shreekant V Karmarkar, Baxter Healthcare, Presiding

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| 8:30 | | **Introductory Remarks - Shreekant V Karmarkar** |
| 8:35 | (1660-1) | **A Review of Applying QbD Concepts for Analytical Development for Pharmaceutical Drug Products** SHREEKANT V KARMARKAR, Baxter Healthcare |
| 9:05 | (1660-2) | **IQ Consortium Initiatives with Respect to AQbD/Analytical Method Lifecycle Management** MARK D ARGENTINE, Eli Lilly and Company, Qinggang Wang |
| 9:35 | (1660-3) | **Lifecycle Management Concepts to Analytical Procedures: A Compendial Perspective** HORACIO NICOLAS PAPPA, US Pharmacopeia |
| 10:05 | | **Recess** |
| 10:20 | (1660-4) | **Why the Tolerance Intervals Fill the Gap Between Method Validation and QbD Guidances: The USP Trend** BRUNO E BOULANGER, Arlenda |
| 10:50 | | **Open Discussion** |

**ORGANIZED CONTRIBUTED SESSION** **Session 1670**

***Celebrating Diversity through Diverse Analytical Chemistry***

arranged by Rena Robinson, University of Pittsburgh and Lisa M Jones, Indiana University-Purdue University Indianapolis and Michelle M Ward, University of Pittsburgh

**Wednesday Morning, Room 263**

Michelle M Ward, University of Pittsburgh, Presiding

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| 8:30 | (1670-1) | **Broadening Participation in the Chemical Sciences** MICHELLE M WARD, University of Pittsburgh |
| 8:50 | (1670-2) | **Analytical Chemistry Employing Ionic Liquids and GUMBOS** ISIAH M WARNER, Louisiana State University, Noureen Siraj |
| 9:10 | (1670-3) | **Kinetic Intermediates of Peptides and Proteins Using HDX-TIMS-MS** FRANCISCO FERNANDEZ-LIMA, Florida International University |
| 9:30 | (1670-4) | **Proteomics of Membrane-Associated Organelles** CARTHENE R BAZEMORE-WALKER, Winston-Salem State University |
| 9:50 | | **Recess** |
| 10:05 | (1670-5) | **Mass Spectrometry Based Approaches for Understanding Cellular Protein Methylation** BENJAMIN A GARCIA, University of Pennsylvania School of Medicine |
| 10:25 | (1670-6) | **Toward On-Site Detection of Nucleic Acids for Pathogen Monitoring** SAPNA DEO, University of Miami Miller School of Mediine, Sylvia Daunert, David Broyles, Eric Hunt, Manoj Kumar, Daohong Zhang, Vineet Gupta |
| 10:45 | (1670-7) | **A Voltammetric Characterization of Serotonin's Roles in Depression and Neurodegenerative Diseases Associated Depression** PARASTOO HASHEMI, Wayne State University, Aya Abdalla, Michael Reed, Janet Best |
| 11:05 | (1670-8) | **Innovation and Research: Converting Science to Meaningful Solutions** KAVEH KAHEN, PerkinElmer |

**ORGANIZED CONTRIBUTED SESSION** **Session 1680**

***Ionophore-Based Chemical Sensors I***

arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

**Wednesday Morning, Room 264**

Philippe Buhlmann, University of Minnesota, Presiding

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|---|---|---|
| 8:30 | (1680-1) | **Nanopores for Selective Detection of Ions and Biological Polyelectrolytes** RÓBERT E GYURCSÁNYI, Budapest University of Technology and Economics, Gyula Jágerszki, Gergely Lautner, István Makra, Péter Terejánszky, Péter Fürjes, László Simon |
| 8:50 | (1680-2) | **Ion-Selective Thin Layer Voltammetry** ERIC BAKKER, University of Geneva |
| 9:10 | (1680-3) | **Voltammetric Diagnosis of Ion-Transfer Reactions at Polymeric Membranes for Ultrasensitive Ion-Selective Electrodes** SHIGERU AMEMIYA, University of Pittsburgh |
| 9:30 | (1680-4) | **Ion-Selective Optodes Based on Reversible Meta-Stable Photoacids** KARIN CHUMBIMUNI-TORRES, University of Central Florida, Valentine K Johns, Parth Patel, Percy Calvo-Marzal |
| 9:50 | | **Recess** |
| 10:05 | (1680-5) | **Hydrophobic Ion-to-Electron Transducer Materials for Solid-Contact Ion-Selective Electrodes** TOM LINDFORS, Åbo Akademi University, Zhanna A Boeva, Ning He, Róbert E Gyurcsányi |
| 10:25 | (1680-6) | **Micro- and Nanospheres for Tuneable Optical Sensing** AGATA MICHALSKA, University of Warsaw, Anna Kisiel, Klucinska Katarzyna, Maksymiuk Krzysztof |
| 10:45 | (1680-7) | **A Surface Study of the Electrochemical Reactivity of Redox Molecules in Nanoscaled Membrane Phases** ROLAND DE MARCO, University of the Sunshine Coast, Eric Bakker, Zdenka Jarolimova, Zou Xu, Philippe Buhlmann |
| 11:05 | (1680-8) | **Calibration-Free Solid-Contact Ion-Selective Electrodes?** PHILIPPE BUHLMANN, University of Minnesota, Xue V Zhen, Jinbo Hu, Andreas Stein |

**ORGANIZED CONTRIBUTED SESSION** **Session 1690**

***PAI-NET - New Detection Methods for Functional Materials and Biomolecules***

arranged by Manabu Tokeshi, Hokkaido University and Kenji Kojima, PAI-NET

**Wednesday Morning, Room 265**

Manabu Tokeshi, Hokkaido University, Presiding

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| 8:30 | (1690-1) | **Label-Free Detection of Biomolecules Using Nanostructures** MANABU TOKESHI, Hokkaido University |
| 8:50 | (1690-2) | **Nanowires for Functional Biomolecule Detection** TAKAO YASUI, Nagoya University, Yanagida Takeshi, Kaji Noritada, Kawai Tomoji, Baba Yoshinobu |
| 9:10 | (1690-3) | **Development of Miniaturized LC Columns Concerning On-Site Analysis** TOYOHIRO NAITO, Kyoto University, Akihiro Kunisawa, Shunta Futagami, Takuya Kubo, Koji Otsuka |
| 9:30 | (1690-4) | **Microfluidic Pretreatments of Microdroplet Contents by Utilizing Spontaneous Emulsification Nanodroplet Formation** AKIHIDE HIBARA, Tokyo Institute of Technology |
| 9:50 | | **Recess** |
| 10:05 | (1690-5) | **Ultrasensitive Asorptiometry with Near-Field Light for Nanofluidic Technology** KAZUMA MAWATARI, The University of Tokyo |
| 10:25 | (1690-6) | **High Spatial Resolution of Single Cell Exocytosis Studied with Microwell-Based Ultra-Microelectrode Arrays** WANG JUN, Chalmers University of Technology, Andrew G Ewing |
| 10:45 | (1690-7) | **Control of Crystal Growth in Microfluidic Chip for Structure Analysis** MASAYA MIYAZAKI, AIST, Masatoshi Maeki |
| 11:05 | (1690-8) | **Temperature-Swing Separation of Lanthanides and Actinides Using Thermoresponsive Polymer Brushes** TAKEHIKO TSUKAHARA, Tokyo Institute of Technology |

**ORAL SESSION** **Session 1700**

***Bio Applications of Vibrational Spectroscopy***

**Wednesday Morning, Room 240**

Catherine R Findlay, University of Manitoba, Presiding

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|---|---|---|
| 8:30 | (1700-1) | **Good Vibrations: Shining Light on Metabolism** ROYSTON GOODACRE, University of Manchester |
| 8:50 | (1700-2) | **A Novel Infrared Imaging Spectrometer: Applications to the Whole Face Skin Spectroscopy** RYUJI TAO, Kagawa University, Akira Nishiyama, Kenji Wada, Ichiro Ishimaru |
| 9:10 | (1700-3) | **Surface Plasmon Resonances in the Mid-Infrared** DEVON BOYNE, University of Delaware, Karl Booksh |
| 9:30 | (1700-4) | **Analysis of the Maillard Reaction Inside Human Hair by Using FTIR-FPA** IN KEUN JUNG, Amorepacific, Sang Chul Park, Sung Ah Bin, Kim Boo Min, John Hwan Lee |
| 9:50 | | **Recess** |
| 10:05 | (1700-5) | **UV Resonance Raman Studies of Primary Amide Vibrations** ELIZABETH DAHLBURG, University of Pittsburgh, David Punihaole, Zhenmin Hong, Ryan Jakubek, Sanford A Asher |
| 10:25 | (1700-6) | **Investigating the Use of Quantum Cascade Laser (QCL) Infrared Microspectroscopy for the Rapid Screening of Blood Serum** MATTHEW JAMES BAKER, University of Strathclyde, Graeme Clemens, Benjamin Bird, Matthew Barre, Miles Weida |
| 10:45 | (1700-7) | **High Resolution Chemical Imaging of Implanted Medical Device Surfaces** JEFFREY N ANKER, Clemson University, Fenglin Wang, Yash Raval, Tzeng-Rong Jeremy Tzeng, John DesJardins |
| 11:05 | (1700-8) | **FTIR Spectro-Microtomography of Individual Diatom Cells Harvested from Arctic Sea Ice** CATHERINE R FINDLAY, University of Manitoba, Alexandra Ciapala, Jason Morrison, C J Mundy, Kathleen M Gough |

**ORAL SESSION** **Session 1710**

***Biology, Health and Imaging with Mass Spectrometry***

**Wednesday Morning, Room 241**

J David Pinkston, Kellogg Company, Presiding

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| 8:30 | (1710-1) | **Investigation of the Aptamer Capability of Human Oncogene Promoter Regions** CHRISTINA M ALBANESE, Rensselaer Polytechnic Institute, Suttipong Suttapitugsakul, Linda B McGown |
| 8:50 | (1710-2) | **Ion Mobility Strategies for Separation of Vitamin D Metabolites by LC-MS/MS** CHRISTOPHER D CHOUINARD, University of Florida, Christopher R Beekman, Timothy J Garrett, Richard A Yost |
| 9:10 | (1710-3) | **Food-Induced Changes of Lipids and Vitamin E in Rat Neuronal and Intestinal Tissue Visualized by Imaging ToF-SIMS** MASOUMEH DOWLATSHAHI POUR, Chalmers University of Technology, Eva Jennische, Stefan Lange, Andrew G Ewing, Per Malmberg |
| 9:30 | (1710-4) | **Combining Secondary Ion Mass Spectrometry, Matrix Assisted Laser Desorption Ionization Mass Spectrometry, and Electron Microscopy for Characterization of Biofilms with Enhanced Spatio-Chemical Information** SAGE J DUNHAM, University of Illinois at Urbana-Champaign, Eric J Lanni, Nameera F Baig, Rachel N Masyuko, Callan M Driscoll, Joshua D Shrout, Paul Bohn, Jonathan V Sweedler |
| 9:50 | | **Recess** |
| 10:05 | (1710-5) | **Using Ion Mobility-Mass Spectrometry to Study the Interactions between Human Histone Deacetylase 8 and Poly-r(C)-binding Protein 1** SHUAI NIU, University of Michigan, Brandon Ruotolo, Carol Fierke, Byung Chul Kim |
| 10:25 | (1710-6) | **Effects of Humidity on Breath VOC Biomarker Analysis in PTR-ToF-MS Studies** PHILLIP TREFZ, University Medicine of Rostock, Jochen K Schubert, Wolfram Miekisch |
| 10:45 | (1710-7) | **Cationic Surfactants Assisted Protein Sample Analysis by MALDI Mass Spectrometry with Improved Performance** PUNPRABHASHI VIDANAPATHIRANA, Louisiana State University, Farhana Hasan, Isiah M Warner |
| 11:05 | (1710-8) | **Metabolomic Analysis of Skin Lesions for Melanoma by Mass Spectrometry** MICHAEL T COSTANZO, University of Florida, Candice Z Ulmer, Nikolaus Gravenstein, Richard A Yost |

# TECHNICAL PROGRAM

**ORAL SESSION** **Session 1720**

*Chemometrics*

**Wednesday Morning, Room 255**
Stephen L Morgan, University of South Carolina, Presiding

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| 8:30 | (1720-1) | **Accurate Deconvolution of GC-MS Data Using Gaussian Model-Based Curve Fitting of Selected Ion Chromatogram** IMHOI KOO, University of Louisville, Xinmin Yin, Pawel Lorkiewicz, Seongho Kim, Xiang Zhang |
| 8:50 | (1720-2) | **LCMRL: Improved Estimation of Quantitation Limits** JOHN CARSON, CB&I Federal Services LLC, Robert O'Brien, Steve Winslow, Steve Wendelken, David Munch |
| 9:10 | (1720-3) | **Synergy of Target and Anomaly Detection in Hyperspectral Images** NEAL B GALLAGHER, Eigenvector Research, Inc. |
| 9:30 | (1720-4) | **Comparison of Feature Selection Processes for Chemometric Modeling** JAMES J HARYNUK, University of Alberta, Lawrence A Adutwum, Ahmad Mani-Varnosfaderani |
| 9:50 | | **Recess** |
| 10:05 | (1720-5) | **Pattern Recognition Assisted Infrared Library Searching of the PDQ Database to Improve Investigative Lead Information from Automotive Paints** BARRY K LAVINE, Oklahoma State University, Ayuba Fasasi, Collin White, Mark Sandercock |
| 10:25 | (1720-6) | **Enhancing Spectral Shape-Based Hyperspectral Image Contrast Using Principal Components** LEANNA N ERGIN, Cleveland State University, John F Turner |
| 10:45 | (1720-7) | **Designing Digital Filters by Linear Discriminant Analysis (LDA) and Applications for Fast Detector Deconvolution in Fluorescence Microscopy** GARTH SIMPSON, Purdue University |
| 11:05 | (1720-8) | **The Mathematics and Methods for Wavelength Standards Used for Spectroscopy** JEROME WORKMAN, Unity Scientific |

**ORAL SESSION** **Session 1730**

*Chromatography in Fuels, Energy and Petrochemical Analyses*

**Wednesday Morning, Room 256**
Melissa Wilcox, Grace Materials Technologies, Presiding

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| 8:30 | (1730-1) | **Bonded High Retentive and Selective Column for Analyzing Hydrocarbons, Sulfur Gases and Halogenated Compounds** JAAP DE ZEEUW, Restek, Rebecca Stevens, Kristi Sellers, Linx Waclaski |
| 8:50 | (1730-2) | **Innovative Optical GC System for Municipal Waste Gasification and Biorefining Processes** SHAWN FREITAS, TRI Inc, Martin L Spartz, Alice E Delia |
| 9:10 | (1730-3) | **Characterization of Volatiles in Tanker Car Crude Oil Shipments by Headspace Gas Chromatography** JOHN WALTERS, PerkinElmer, John Irion, Jay Ferraro |
| 9:30 | (1730-4) | **Characterization and Quantification of Additives and Oxidation Byproducts Including Copper Species in Natural Ester Based Dielectric** SHUBHEN KAPILA, University of Missouri, Radhesyam Panta, Racha Seemamahannop |
| 9:50 | | **Recess** |
| 10:05 | (1730-5) | **Determination of Small Carbohydrates and Uronic Acids in Acid Hydrolysates of Wood** JEFFREY ROHRER, Thermo Fisher Scientific, Lipika Basumallick |
| 10:25 | (1730-6) | **Analysis of Trace Impurities in Hydrogen for Fuel Cell Applications** DAVID CARTEAU, Air Liquide, Marie-Claude Konan, Martine Carre, Tracey Jacksier |
| 10:45 | (1730-7) | **Dramatically Improved Hydrocarbon Mixtures Analysis by GC-MS with Cold EI** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon |
| 11:05 | (1730-8) | **Bioethanol to Ethylene Characterization Using a Tandem Micro-Reactor GC/MS** ICHI WATANABE, Frontier Laboratories, N Teramae, T Muroi, Robert Freeman, Terry Ramus |

**ORAL SESSION** **Session 1740**

*Electrochemical Techniques for Biomedical Monitoring*

**Wednesday Morning, Room 257**
Leslie A Sombers, North Carolina State University, Presiding

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| 8:30 | (1740-1) | **Electrochemical Analysis of Metabolic Flux in Nanoliter Samples from Organ-on-a-Chip Systems** ANNA DAVIS, Vanderbilt University, Jennifer R McKenzie, Ron S Reiserer, John P Wikswo, David E Cliffel |
| 8:50 | (1740-2) | **Continuous Monitoring of Superoxide Anion Radical with an Electrochemical Biosensor-An Investigation of Nanoceria as a Model Antioxidant In Vivo** MALLIKARJUNARAO GANESANA, Dartmouth College, James Leiter, Silvana Andreescu |
| 9:10 | (1740-3) | **Wireless Microfluidic-Based Biosensor Auto-Calibration System with Real-Time Concentration Display** CHU WANG, Imperial College London, Sally Gowers, Agnes Leong, Michelle L Rogers, Martyn G Boutelle |
| 9:30 | (1740-4) | **Reducing Power Consumption for Fast Scan Cyclic Voltammetry** LINGJIAO QI, North Carolina State University, Christie Lee, Kristen Blanton, Alison Amos, Gregory S McCarty, Leslie A Sombers |
| 9:50 | | **Recess** |
| 10:05 | (1740-5) | **Flexible Methodologies for the Electrochemical Monitoring of Cell Cultures** ANDREW COGNATA, Vanderbilt University, David E Cliffel |
| 10:25 | (1740-6) | **Direct Detection of Gas-Phase Nitric Oxide via Amperometric Platinized Nafion-Based Sensors** ZHENG ZHENG, University of Michigan, Mark E Meyerhoff |
| 10:45 | (1740-7) | **Conductivity as a Sensing Tool for Monitoring Magnesium Corrosion Under Cell Culture Conditions** KOLADE O OJO, University of Cincinnati, William R Heineman, Sarah Pixley, Tracy Hopkins |
| 11:05 | (1740-8) | **Computer-Controlled Microfluidic Platform for the Development and Optimization of Novel Biosensors** TONGHATHAI PHAIRATANA, Imperial College London, Thomas Watts, Chu Wang, Martyn G Boutelle |

**ORAL SESSION** **Session 1750**

*Environmental - Sensors (Half Session)*

**Wednesday Morning, Room 266**
Omowunmi A Sadik, SUNY-Binghamton, Presiding

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| 8:30 | (1750-1) | **Discrimination of Closely Related Organic Solvents Using Ionic Liquid Sensor Arrays** WADUGE INDIKA S GALPOTHDENIYA, Louisiana State University, Bishnu Regmi, Kevin S McCarter, Isiah M Warner |
| 8:50 | (1750-2) | **Selection and Characterization of High Affinity Aptamers for Development of Impedimetric Aptasensor for Cyanotoxin Cylindrospermopsin** REDA ELSHAFEY, QUAM, Mohamed Siaj, Mohammed Zourob |
| 9:10 | (1750-3) | **Highly Sensitive and Selective Detection of Toxic Metals Using a DNAzyme-Based Quartz Crystal Microbalance Biosensor** SAM LI, National University of Singapore |
| 9:30 | (1750-4) | **Detection of Harmful Algal Bloom Species Using Oligonucleotide Modified Surfaces** KAREN L BRUCE, Flinders University, Claire E Lenehan, Sophie C Leterme, Amanda V Ellis |

**ORAL SESSION** **Session 1760**

*Food Safety (Half Session)*

**Wednesday Morning, Room 267**
Timothy G Strein, Bucknell University, Presiding

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| 8:30 | (1760-1) | **Column Selection Study for Analysis of Multiple Mycotoxins by LC-MS/MS** EMILY R BARREY, Supelco/Sigma-Aldrich, Olga I Shimelis, David S Bell, Gaurang Parmar |
| 8:50 | (1760-2) | **What Can You Do with a $40 Do-It-Yourself Spectrometer?** YAGIZ SUTCU, InfoScope Research, Aysegul Ergin |
| 9:10 | (1760-3) | **Comparison of Ion Trap and Single Quadrupole Mass Spectrometry for In-Process Quality Control of Recycled Paperboard for Food Packaging** SERGIO GUAZZOTTI, Thermo Fisher Scientific, Maurizio Boccacci Mariani, Vanessa Giannetti, Andrea Caruso, Massimo Santoro |
| 9:30 | (1760-4) | **Comparison of Sample Preparation Methods for the Analysis of Aminoglycosides in Porcine Tissue** EMILY R BARREY, Supelco/Sigma-Aldrich, Michael Ye, Ken G Espenschied, Olga I Shimelis, Jennifer Claus, Daniel Vitkuske |



***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

**ORAL SESSION** **Session 1770**

*Laser Ablation/Desorption/Nanopeptides Applications of Mass Spectrometry*

**Wednesday Morning, Room 268**
Martin J Beres, The Ohio State University, Presiding

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| 8:30 | (1770-1) | **Surface-Assisted Laser Desorption/Ionization Mass Spectrometry of Peptides/Proteins Using Electrospun Polymer Nanofibers as Substrates** MARTIN J BERES, The Ohio State University, Susan V Olesik |
| 8:50 | (1770-2) | **Wavelength Dependence of Tip Enhanced Laser Ablation for Mass Spectrometry** CHINTHAKA A SENEVIRATNE, Louisiana State University, Suman Ghorai, Kermit K Murray |
| 9:10 | (1770-3) | **Characterization of Nanopipettes as ESI-MS Emitters** ELIZABETH M YUILL, Indiana University, Steven J Ray, Gary M Hieftje, Lane A Baker |
| 9:30 | (1770-4) | **Determination of Glucosidase Activity Using MALDI-TOF/MS and a Polyfluorinated Gold Surface** YANG HYOJIK, University of California Riverside, Cheng Quan |
| 9:50 | | **Recess** |
| 10:05 | (1770-5) | **Nanopipettes for Nanoscale Analysis by MALDI-MS** ANUMITA SAHA-SHAH, Indiana University, Jonathan A Karty, Steven J Ray, Gary M Hieftje, Lane A Baker |
| 10:25 | (1770-6) | **Cross Point of Gas Cluster Ion Beam SIMS and High Spatial Resolution Nanoparticle Laser Desorption Ionization in Lipid Imaging** AMIR SAEID MOHAMMADI, Chalmers University of Technology, Gavin Jeffries, John Fletcher, Andrew G Ewing |
| 10:45 | (1770-7) | **Collision Cross Sections for 20 Protonated Amino Acids: Comparison of FTICR-MS, IMS and TWIMS Results** ANUPRIYA ANUPRIYA, Brigham Young University, Chad A Jones, David V Dearden |

**ORAL SESSION** **Session 1780**

*Liquid Chromatography-Drug Discovery and Others*

**Wednesday Morning, Room 270**
Patty L Ranaivo, Indiana University Southeast, Presiding

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| 8:30 | (1780-1) | **Decoupling the Adsorption and Partitioning Mechanism in Hydrophilic Interaction Liquid Chromatography** FABRICE GRITTI, University of Tennessee |
| 8:50 | (1780-2) | **Fast Centrifugal Partitioning Chromatography** ROB DRISCOLL, Robatel Inc. |
| 9:10 | (1780-3) | **Analysis of Equilibrium and Kinetic Characteristics of Intermolecular Interaction Between β-Bromo-cyclodextrin and 2-Phenoxypropionic Acid by Liquid Chromatography** KANJI MIYABE, Rikkyo University |
| 9:30 | (1780-4) | **Chiral Separations by High Performance Liquid Chromatography for the Characterization of ADC Linkers** SONIA TAKTAK, ImmunoGen, Inc. |
| 9:50 | | **Recess** |
| 10:05 | (1780-5) | **Chromatographic Separation of C-dots** KARINA TIRADO-GONZÁLEZ, University at Buffalo-SUNY, Luis A Colon, Zuqin Xue |
| 10:25 | (1780-6) | **Development of Hydrolytically Stable HILIC Phases - Challenges and Solutions** M FAROOQ WAHAB, University of Texas at Arlington, Zachary S Breitbach, Daniel W Armstrong |
| 10:45 | (1780-7) | **Identification of Six-Ring Cata-Condensed $C_{26}H_{16}$ Polycyclic Aromatic Hydrocarbons in Coal Tar by Liquid Chromatography with Ultraviolet-Visible Spectroscopy, Gas Chromatography with Mass Spectrometry, and Theoretical Analysis** JORGE O ONA-RUALES, National Institute of Standards and Technology, Stephen A Wise, Lane C Sander, Yosadara Ruiz-Morales |
| 11:05 | (1780-8) | **Withdrawn** |

**ORAL SESSION** **Session 1790**

*Mass Spec of Homeland Security, Environmental, Fuel, Energy and Petrochemical*

**Wednesday Morning, Room 271**
Heather L Rudolph, University at Buffalo, Presiding

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| 8:30 | (1790-1) | **Cutting the Mustard: Evidence of VX Nerve Agent Use from Contaminated White Mustard Plants** MATTHEW JAMES BAKER, University of Strathclyde, Matthew R Gravett, Christopher M Timperley |
| 8:50 | (1790-2) | **Nanoparticle Assisted Laser Desorption Ionization of Forensically Significant Samples** RACHEL WEST, Flinders University, Stewart Walker, Paul Kirkbride |
| 9:10 | (1790-3) | **Real-Time Analysis of EPA Method TO-14A Compounds Using Selected Ion Flow Tube Mass Spectrometry (SIFT-MS)** VAUGHAN S LANGFORD, Syft Technologies, Daniel B Milligan, Barry J Prince, Diandree Padayachee, Murray J McEwan |
| 9:30 | (1790-4) | **Innovating Vapor Generation Approach for Cadmium Determination: Novel Ti(III) and Ti(IV) Catalysts for Improved Generation of Volatile Cadmium Species** ZIKRI ARSLAN, Jackson State University, Vedat Yilmaz, LaKeysha Rose |
| 9:50 | | **Recess** |
| 10:05 | (1790-5) | **Parametric Evaluation of an Ambient Desorption/Ionization Source Utilizing a Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) for Mass Spectrometry** LYNN ZHANG, Clemson University, R Kenneth Marcus |
| 10:25 | (1790-6) | **Photobioreactor Ethanol Quantitation and Optimization Using Vapor Phase On-Line Mass Spectrometry** KEVIN HETTENBACH, Joule Unlimited Technologies, Kari Paisley-Flango |
| 10:45 | (1790-7) | **Dynamic Two-Dimensional Mapping of Combustion Product Concentrations in Solid-Fuel Combustion: Looking into a Burning Cigarette During Puffing** RALF ZIMMERMANN, University of Rostock, Romy Hertz-Schuenemann, Sven Ehlert, Thorsten Streibel, Kevin McAdam, Chuan Liu, Steven Coburn |
| 11:05 | (1790-8) | **Novel Methods for Human Waste Detection in Swimming Facilities** HEATHER L RUDOLPH, University at Buffalo, Troy D Wood |

**ORAL SESSION** **Session 1800**

*Microfluidics of Particles and Cells*

**Wednesday Morning, Room 272**
Brandon Thompson, University of Virginia, Presiding

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|---|---|---|
| 8:30 | (1800-1) | **Immunolabeling of Autophagy-Related Organelles from Cell Cultures and Tissue for their Analysis by Capillary Electrophoresis Coupled to Laser Induced Fluorescent Detection** KATHERINE MURATORE, University of Minnesota, Edgar A Arriaga |
| 8:50 | (1800-2) | **Image Analysis of Paramagnetic Bead Aggregation Inhibition Following Isothermal Amplification Allows for the Detection of Bacterial and Viral Pathogens with Low Copy Number Sensitivity** JACQUELYN DUVALL, University of Virginia, Juliane Borba, Kylene Kehn-Hall, Melissa Kendall, James P Landers |
| 9:10 | (1800-3) | **Microfluidic Analysis of DNA-Templated Calcium Phosphate Mineralization with Integrated Mass and Microscopy Sensing** AREN E GERDON, Emmanuel College |
| 9:30 | (1800-4) | **Microfluidic Devices to Isolate Microorganisms in their Natural Environments** EDGAR D GOLUCH, Northeastern University, Nil Tandogan, Slava Epstein, Yoshiteru Aoi |
| 9:50 | | **Recess** |
| 10:05 | (1800-5) | **Microfluidic Isolation and Enumeration of CD4+ T Lymphocytes from Blood Samples** WENJIE LI, Texas Tech University, Dimitri Pappas |
| 10:25 | (1800-6) | **Analysis of Macrophage Cells for Reactive Nitrogen Species Using Microchip Electrophoresis with Simultaneous Laser Induced Fluorescence and Electrochemical Detection** JOSEPH M SIEGEL, University of Kansas, Damith Randika, Christopher T Culbertson, Susan M Lunte |
| 10:45 | (1800-7) | **Protein and Hematocrit Quantitation from Whole Blood on Polyester-Toner Laser-Printed Microfluidic Discs with Cell Phone Image Analysis** BRANDON L THOMPSON, University of Virginia, Yiwen Ouyang, Rachel J Gilbert, Nishant Shukla, Maximo Mejia, Doris M Haverstick, Gavin T Garner, James P Landers |
| 11:05 | (1800-8) | **Identification of Seprase (FAPα)+ and EpCAM+ Circulating Tumor Cells in Serially Processed Blood of Localized and Metastatic Cancer Patients** MAGGIE A WITEK, University of North Carolina at Chapel Hill, Steven Soper |

# TECHNICAL PROGRAM

**ORAL SESSION** **Session 1810**

*Microscopy Techniques for Biomedical and Pharmaceutical Applications*

**Wednesday Morning, Room 273**
X Nancy Xu, Old Dominion University, Presiding

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|---|---|---|
| 8:30 | (1810-1) | **Toxicity Evaluation of Doxorubicin Loaded Poly(butylcyanoacrylate) (PBCA) Nanoparticles Using In Vitro and In Vivo Models of the Blood Brain Barrier** CELESTE A MORRIS, Northern Kentucky University, Andrew Hall, Brandon Mucker, Hannah Hughes, Kristi L Haik |
| 8:50 | (1810-2) | **Three-Dimensional (3D) Diffusion of Individual Nanoparticles in Cylindrical Nanopores: The Effects of Adsorption and Viscosity** LUYANG ZHAO, North Carolina State University, Gufeng Wang |
| 9:10 | (1810-3) | **Multi-Channel Lissajous Trajectory Beam-Scanning Microscopy for High Frame Rate 2D and 3D Imaging** JUSTIN A NEWMAN, Purdue University, Shane Z Sullivan, Ryan D Muir, Suhas Sreehari, Charles A Bouman, Garth Simpson |
| 9:30 | (1810-4) | **Label-Free Measurement of Cell-Gold Cleft Gap Distance Using Surface Plasmon Microscopy** KOJI TOMA, Tokyo Medical and Dental University, Hiroshi Kano, Andreas Offenhäusser |
| 9:50 | | **Recess** |
| 10:05 | (1810-5) | **Quantitative Measurement of Proteins at Attomole Levels via Active Microfluidic Sampling and Homogeneous Proximity Assays** JEAN T NEGOU, Auburn University, Xianpeng Li |
| 10:25 | (1810-6) | **Analysis of Pharmaceutical Crystallization by Video Rate Polarization-Modulated Second Harmonic Generation Ellipsometric Microscopy** EMMA L DEWALT, Purdue University, Shane Z Sullivan, Paul D Schmitt, Garth Simpson |
| 10:45 | (1810-7) | **Particle ID Robots - Design and Application of Image Directed Raman + LIB Spectroscopy** OLIVER K VALET, rap.ID Inc. |
| 11:05 | (1810-8) | **A Comparison of Digital Filtering Methods for Identification of Particle Types Using Imaging Particle Analysis** LEW BROWN, Fluid Imaging Technologies, Inc. |

**ORAL SESSION** **Session 1820**

*Near Infrared Breakthroughs*

**Wednesday Morning, Room 274**
Edward A Orr, ABB, Presiding

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|---|---|---|
| 8:30 | (1820-1) | **Near Infrared Chemical Imaging as a Tool for Analyzing the Purity of Flour Milling Streams** MARK D BOATWRIGHT, Kansas State University, David L Wetzel |
| 8:50 | (1820-2) | **Variable Temperature Infrared Spectroscopy: An Elegant Tool to Quantify Hydrogen Bonding During Vitrification of Molecular Glasses** AUDREY LAVENTURE, University of Montreal, Guillaume De Grandpré, Armand Soldera, Olivier Lebel, Christian Pellerin |
| 9:10 | (1820-3) | **Scanning Grating Spectrometers vs FT-NIR: A Fair Comparison** TERRY R TODD, Guided Wave Inc., Susan F Foulk |
| 9:30 | (1820-4) | **Rapid, Simple Non-Targeted Screening for Contaminants in Food and Feed Ingredients** DEAN ROBERTS, Bruker |
| 9:50 | | **Recess** |
| 10:05 | (1820-5) | **Comments on NIR Wavelength Standards** TERRY R TODD, Guided Wave Inc. |
| 10:25 | (1820-6) | **Purity in Durum Milling Fractions Determined via Quantitative Near Infrared Imaging** MARK D BOATWRIGHT, Kansas State University, Jason Jarrett, David L Wetzel |
| 10:45 | (1820-7) | **Head Space Raman Spectroscopy** DAVID TUSCHEL, HORIBA Scientific |
| 11:05 | (1820-8) | **Quality Control of PET Bottles by FTNIR** THOMAS BUIJS, ABB, Frederic Despagne, Josée Labrecque |

**ORAL SESSION** **Session 1830**

*Polymers and Plastics*

**Wednesday Morning, Room 275**
John Chalmers, VS Consulting, Presiding

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|---|---|---|
| 8:30 | (1830-1) | **Comparison of MALDI-MS and HPLC Analyses on the Oligomer Fractions of Synthetic Polymers** DAVID ZOLLER, SABIC, Stephanie Eastwood |
| 8:50 | (1830-2) | **Developing Chemically Diverse Sensor Arrays of Electrochemically Copolymerized Pyrrole and Styrene Derivatives** AKIN A IYOGUN, University of Manitoba, Ramesh Kumar Mani, Michael S Freund |
| 9:10 | (1830-3) | **Advances in Two-Dimensional Chromatography Applied to Complex Polymeric Systems** STEPHAN MOYSES, SABIC, Robert Allen, Uliyanchenko Elena |
| 9:30 | (1830-4) | **Approaches to the Size Exclusion Chromatography Analysis of Blends of Engineering Thermoplastics** ELENA ULIYANCHENKO, SABIC, Christian Wold |
| 9:50 | | **Recess** |
| 10:05 | (1830-5) | **Sacrificial Substrate for Responsive 2-D Photonic Crystal Hydrogel Sensing** ANDREW E COUKOUMA, University of Pittsburgh, Natasha L Smith, Sanford A Asher |
| 10:25 | (1830-6) | **Investigating the Effect of Diffuser Particles on 3-Dimentional Light Scattering Distribution for Polymer Blends** XIAOFENG YU, SABIC |
| 10:45 | (1830-7) | **Synthesis and Characterization of Novel Heterocyclic Based Colored Poly(urea-urethanes)** SMITA M JAUHARI, SVNIT, Medha M Joshi, Kishor M Desai |
| 11:05 | (1830-8) | **Process Analytical Technology and Chemometrics Application to Plastics: Benefits and Challenges** YUSUF SULUB, SABIC, Mark Nelson, Zhensheng Ding, Derek Lake |

**ORAL SESSION** **Session 1840**

*Sampling and Sample Prep of Food Samples (Half Session)*

**Wednesday Morning, Room 276**
Bhupinder Singh, Brigham Young University, Presiding

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|---|---|---|
| 8:30 | (1840-1) | **Improving the Consistency and Accuracy of Antibiotics Detection in the Global Food Chain Through Regulatory Laboratory Testing Using New Methodologies that Enable the Use of Simple Automation and Modern Chemistry and Technologies** TONI R HOFHINE, Horizon Technology, Inc., Zoe Grosser, Michael Ebitson, Sami Bayoudh, Kaynoush Naraghi, Curtis Hedman, Robert E Buco, Richard Koeritz, Zachary Lilla, Rob Freeman, Cheri A Barta, Pamela Doolittle |
| 8:50 | (1840-2) | **Development of Nanoporous Solid Phase Microextraction (SPME) Fibers by Sputtering** BHUPINDER SINGH, Brigham Young University, Anubhav Diwan, Matthew R Linford |
| 9:10 | (1840-3) | **Using Response Surface Methodology to Optimize Microwave Distillation Solid Phase MicroExtraction for Catfish Flavor Analysis** STEVEN W LLOYD, USDA-ARS-SRRC, Karen L Bett-Garber, Casey Grimm, Deborah L Boykin |
| 9:30 | (1840-4) | **Efficient and Innovative Methodology for the Accurate Pre-Column Derivatization and Determination of Linearity Results from Optimal Thermal Conditions and Liquid Chromatography Fluorescence Emission Wavelengths of Mycotoxins** TONI R HOFHINE, Horizon Technology, Inc., Zoe Grosser, Michael Ebitson, Elizabeth Krantz, Pamela Doolittle, Cheri A Barta, Robert E Buco, Richard Koeritz, Zachary Lilla, Ken G Espenschied, Jennifer Claus, Michael Ye |

## ORAL SESSION — Session 1850

*Spectroscopic Characterization of Nanomaterials*

**Wednesday Morning, Room 277**
Swaminathan Subramaniam, Miles College, Presiding

| | | |
|---|---|---|
| 8:30 | (1850-1) | **Single Particle ICP-MS: Novel Analytical Technique Becoming Common Nanometrology Practice in the Laboratory** CHADY STEPHAN, PerkinElmer, Denise M Mitrano |
| 8:50 | (1850-2) | **Thermal Analysis Couples with Spectroscopic Techniques for Studying Aging of Coated Nanoparticles and Characterizing Interaction of Nanoparticles with Organic Pollutants** SAHLE-DEMESSIE ENDALKACHEW, U.S. Environmental Protection Agency, Chady Stephan, Heidi Grecsek, Amy Zhao |
| 9:10 | (1850-3) | **Characterization of Volatile Component in a Carbon Based Nanomaterial Samples Utilizing Integrated Synergistic Analytical Techniques** JOHN IRION, PerkinElmer, Kevin P Menard, Chady Stephan |
| 9:30 | (1850-4) | **In Situ Molecular Level Study of the Interaction of Gold Nanoparticles with Model Cell Membranes** PEIPEI HU, University of Michigan |
| 9:50 | | **Recess** |
| 10:05 | (1850-5) | **AFM-IR Studies of Individual Electrospun Nanofibers: Structural Analysis and Mapping of Poly[(R)-3-hydroxybutyrate-co-(R)-3-hydroxyhexanoate] (PHBHx) Fibers** LIANG GONG, University of Delaware, Bruce Chase, Isao Noda, John F Rabolt |
| 10:25 | (1850-6) | **Template-Guided Gold Nanorod Assembly with Defined Surface Plasmon Pattern** ZHONG MEI, University of Texas at San Antonio, Liang Tang |
| 10:45 | (1850-7) | **Control of NanoGUMBOS: Strategies for Size and Optical Properties** SUZANA HAMDAN, Louisiana State University, Noureen Siraj, Naseem Alammar, Isiah M Warner |
| 11:05 | (1850-8) | **Electron Exchanges in Films of Ferrocenated Au Nanoclusters** TESSA M CARDUCCI, University of North Carolina at Chapel Hill, Raymond E Blackwell, Royce W Murray |

## POSTER SESSION — Session 1855

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*Chemical Methods*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

| | |
|---|---|
| (1855-1 P) | **Design of a Novel Self-Oscillation Chemical System Driven by Metal Complexes** TAKASHI ARIMURA, AIST, Masaru Mukai |
| (1855-2 P) | **A Study of Physico-Chemical and Fertility Analysis of Soil Samples of Rural Area of Kheda, Gujarat (India)** MEHUL J PATEL, J & J College of Science |
| (1855-3 P) | **Analysis of Free Cyanide in Environmental Water and Wastewater Samples by ASTM Method D 7237-10** LIBBY AUSTIN BADGETT, Xylem/OI Analytical, Brant Hoekstra |
| (1855-4 P) | **Scavenging of Residual Impurities and Coupling Reactions** YVAN CHOUINARD, SiliCycle Inc., Genevieve Gingras, Valerie Desyroy, Steeves Potvin |
| (1855-5 P) | **Gumbos-Gold Core-Shell Nanoparticles: Synthesis and Characterization** MINGYAN CONG, Louisiana State University, Isiah M Warner, Noureen Siraj, Ashleigh R Wright |
| (1855-6 P) | **Aptamer-Based Cancer Diagnosis Development Targeting Microvesicles** CHENG CUI, University of Florida, Weihong Tan |
| (1855-7 P) | **Formation of Phase-Changing Vanadium Dioxide Nano-Asterisks** AARON W DANIEL, Vanderbilt University, David E Cliffel |
| (1855-8 P) | **Automated, In-Line Extraction and Analysis of Methylene Blue Active Substances (MBAS) in Waters** LYNN M EGAN, Lachat Instruments |
| (1855-9 P) | **Synthesis of π-Conjugated Poly (Amic) Acid Stabilized Gold and Silver Nanoparticles** VICTOR M KARIUKI, SUNY-Binghamton, Omowunmi A Sadik, Ana Cartaya |
| (1855-10 P) | **Eliminate TKN and Obtain Better Total Nitrogen Data** WILLIAM LIPPS, Shimadzu Scientific Instruments, Daniel Davis |
| (1855-11 P) | **Synthesis and Biological Activity of Azetidin-2-one Containing Acetyl Pyrazoline Derivatives** SHAILESHKUMAR H SHAH, Patel JDKD Science College, Borsad |
| (1855-12 P) | **Physico-Chemical Analysis of Drinking Water of Kheda District Gujarat, India** YESHA R PATEL, J & J College of Science |
| (1855-13 P) | **One-Pot Synthesis and Application of Highly Concentrated, Monodisperse Silver Nanoparticles with an Ultra-Thin Silica Shell** DANIEL WILLETT, Clemson University, George Chumanov |
| (1855-14 P) | **Measurement Capability Assessment (MCA) Study of Trace Level Impurities in Helium** WENWEN ZHANG, Matheson Tri-Gas, Andrew Fleming, Joshua Cooper |
| (1855-15 P) | **Rate and Mechanistic Investigation of Eu(OTf)[sub(2)/sub]-Mediated Reduction of Graphene Oxide at Room Temperature** TUFAN GHOSH, Indian Institute of Technology Madras, Sandeepan Maity, Edamana Prasad |
| (1855-16 P) | **Tutorials and Spreadsheets for Designing Valid Least Squares Calibrations** RICARDO BETTENCOURT SILVA, University of Lisbon |
| (1855-17 P) | **Antioxidant Effects and Kinetic Properties of Carvacrol, Thymol and Thymoquinone against the Fenton Reaction** CEVDET DEMIR, Uludag University, Onder Aybastıer |
| (1855-18 P) | **High-Precision Oxygen Concentration Analysis Using a Novel High-Temperature Pyrolysis Technique** MARC RUPPENTHAL, Elementar, Marian DeReus, Sabine Kraus, Tony Szuppa, Christian Schmidt, Lutz Lange, Albrecht Sieper, Hans-Peter Sieper |
| (1855-19 P) | **Part Per Trillion Continuous Total Organic Carbon Monitoring by Ultra-Violet Cavity Enhanced Absorption Spectroscopy** CHARLES P SHELOR, University of Texas at Arlington, Purnendu K Dasgupta, Ruchika Bhawal, Yin-Huan Li |
| (1855-20P) | **Spectrochemical Characterization of a New Water Soluble O-Carboxymethyl Chitosan Schiff Base and Its Pd(II) Complex** AYFER MENTES, Aksaray University, Talat Baran |

## POSTER SESSION — Session 1860

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*Detection of Explosives and Hazardous Chemicals*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

| | |
|---|---|
| (1860-1 P) | **Field Test of High-Throughput Auto-Sampling Explosives Trace Detection Systems Using Mass Spectrometry at Train Station** HISASHI NAGANO, Hitachi, Ltd., Hideo Kashima, Masakazu Sugaya, Koichi Terada, Yohei Kawaguchi, Yasuaki Takada, Yuichiro Hashimoto, Minoru Sakairi |
| (1860-2 P) | **Issues Related to Standoff Detection of Solutions Using Spatial Heterodyne Raman Spectroscopy** K ALICIA STRANGE (FESSLER), University of South Carolina, Nirmal Lamsal, S Michael Angel |
| (1860-3 P) | **Monitoring of Critical Infrastructure with a Stationary Detection System Based on Ion Mobility Spectrometry and Other Orthogonal Detectors** BERT UNGETHUEM, Airsense Analytics, Andreas Walte |

## POSTER SESSION — Session 1870

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*Food Contaminants*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

| | |
|---|---|
| (1870-1 P) | **Determination of Polycyclic Aromatic Hydrocarbons in Sea Food by an Automated QuEChERS Solution** TYLER TRENT, Teledyne Tekmar, Thomas Hartlein, Ed Price |
| (1870-2 P) | **Analysis of Bisphenol A in Milk and Canned Broths Using Molecularly Imprinted Polymer SPE and LC with Fluorescence Detection** MICHAEL YE, Supelco/Sigma-Aldrich, Ken G Espenschied, Olga I Shimelis, Daniel Vitkuske |
| (1870-3 P) | **Analysis of Iodide, Iodate, and Iodine Containing Hormones in Dog Treat Matrices by High Performance Liquid Chromatography Coupled with Inductively Coupled Plasma Mass Spectrometry Detection** WILSON A ROBERT, US Food and Drug Administration, Enrique YanesSantos, Traci A Hanley, Catherine Dasenbrock |
| (1870-4 P) | **Rapid Detection of Adulteration of Food and Health Products Using Mid- and Near-Infrared Spectroscopy** IAN ROBERTSON, PerkinElmer Limited, Ben Perston, Justin Lang |
| (1870-5 P) | **Electrochemical Identification and Classification of Bacterial Redox Species** HEATHER CRAPO, State University of New York at Binghamton, William Ford, Walker Land, Robert Congdon, Yinglei Li, Omowunmi A Sadik |
| (1870-6 P) | **Natural vs. Synthetic Wine Corks: The Great Cork Debate from a Mercury Content Perspective** JASON P GRAY, Nippon Instruments North America, Alvin Chua, Koji Tanida, Tomoaki Watanabe |
| (1870-7 P) | **Evaluation of Inorganic Contaminants Present in Ceramic Houseware** PAULO HENRIQUE M KIYATAKA, ITAL, Sandra B Jaime, Bianca H Oliveira |

# TECHNICAL PROGRAM

(1870-8 P) **Arsenic Speciation in Food Materials Using Hydride Generation Atomic Fluorescence Spectrometry (HG-AFS) with Automatic Online Solid Phase Extraction (SPE)** BIN CHEN, P S Analytical, Warren T Corns, Peter B Stockwell, Cornelius C Brombach

(1870-9 P) **Determination of Polymerized Triaclyglycerides by High Pressure Liquid Chromatography and Corona Veo Charged Aerosol Detector** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Thomas H David, Ian N Acworth

(1870-10 P) **A Simple and Rapid Extraction Method of Rhodamine B Detection in Raw Samples Using SERS** HUAIZHI KANG, Xiamen University, Zhongqun Tian

(1870-11 P) **Wheat off Flavor Assessment with an Electronic Nose** JEAN-CHRISTOPHE MIFSUD, Alpha MOS, Herve Lechat, Fatma Ayouni, Valerie Vabre, Marion Bonnefille, Andrew Cowell

(1870-12 P) **Migration of Di-2-ethylhexyl Maleate and Fumarate from Pressure-Sensitive Adhesive Labels to Food Simulants** WILLIAM LIMM, FDA, Timothy H Begley

(1870-13 P) **An Indirect Method for Pea Protein Quantification in Milk Formula by Real-Time Polymerase Chain Reaction** SON QUANG PHAM, Abbott, Chunyan Zhang

(1870-14 P) **Uncertanity of the Identification of Trace Levels of Pesticides in Food Stuffs** RICARDO BETTENCOURT SILVA, University of Lisbon, M Filomena Camões

(1870-15 P) **Colorimetric Detection of Isopropylamine via HOBt-Catalyzed Dye Labeling: Reaction Optimization** JACQUELYN L CUNNING, University of Maryland Baltimore County, William LaCourse

(1870-16 P) **Development of a Sensitive Headspace-Gas Chromatography Mass Spectrometry Method for Off-Flavor Compounds in Water** DELAUREN MCCAULEY, University of Maryland Baltimore County, William LaCourse

(1870-17 P) **Withdrawn**

(1870-18 P) **Determination of Antioxidant Capacities of Individual and Combined Phenolic Compounds by CHROMAC and Chromatographic Methods** SALIHA SAHIN, Uludag University, Cevdet Demir

(1870-19 P) **Improvements in the QuEChERS Method for Multi-Residue Analysis of Pesticides in Tobacco** JOAN STEVENS, Agilent Technologies, Derick Lucas, William Long

## POSTER SESSION — Session 1880

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### *Food Identification*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1880-1 P) **Solid Phase Micro Extraction of Tea Flavor Components** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor

(1880-2 P) **The Qualitative and Quantitative Analysis of Steviol Glycosides by HPLC-PDA in Energy/ Vitamin Drinks** WILHAD M REUTER, PerkinElmer, Jason Weisenseel, Mandy Prior

(1880-3 P) **Data Fusion of LC/MS Results for Olive Oil Analysis** CATHERINE STACEY, PerkinElmer, Robert J Seward

(1880-4 P) **UPLC Ion Mobility Mass Spectrometry: A New Approach to Authentication and Routine Screening of Ginsenocide Isomers in Functional Food Products** KENNETH ROSNACK, Waters Corporation, Mike McCullagh, Robert Lewis, David Douce, Joe Romano

(1880-5 P) **Nitrogen/Protein Determination in Milk Proteins by Dumas Combustion Method** GUIDO GIAZZI, Thermo Fisher Scientific, Krotz Liliana, Ali Muhammad, Khan Bilal

(1880-6 P) **Withdrawn**

(1880-7 P) **Current Advances in Instrumentation of Protein Analyzers** DOMINIK MARGRAF, Elementar Analysensysteme GmbH, Sabine Kraus, Tony Szuppa, Christian Schmidt, Lutz Lange, Hans-Peter Sieper

## POSTER SESSION — Session 1890

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### *Improvements in Forensic Analysis*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1890-1 P) **Analytical and Synthetic Studies on Substituted Cathinones: Bath Salt-Type Aminoketone Designer Drugs** C RANDALL CLARK, Auburn University, Jack DeRuiter, Karim Abdel-Hay, Younis Abiedalla

(1890-2 P) **Analytical Studies on 1-n-pentyl-naphthoylindoles: Regioisomeric Compounds Related to the Synthetic Cannabinoids** C RANDALL CLARK, Auburn University, Forrest Smith, Karim Abdel-Hay, Jack DeRuiter, Amber Thaxton, Tarek Belal

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

(1890-3 P) **Application of LIBS-Enhancement Techniques to Uranium-Containing Materials** ALAN FORD, Alakai Defense Systems, Jorge Martinez, Staci Brown, Lewis Johnson

(1890-4 P) **Multivariate Classification Model Transfer for the Discrimination of Textile Fibers by UV-Visible Microspectrophotometry** NATHAN FUENFFINGER, University of South Carolina, John Goodpaster, Edward Bartick, Stephen L Morgan

(1890-5 P) **Rapid Screening of Synthetic Cannabinoids in Herbal Products by Thermal Desorption Counter-Flow Introduction Atmospheric Pressure Chemical Ionization Mass Spectrometry** HIROYUKI INOUE, National Research Institute of Police Science, Hiroaki Hashimoto, Yukiko Nakazono, Kenji Tujikawa, Kenji Kuwayama, Tatsuyuki Kanamori, Tadashi Yamamuro, Yuko T Iwata, Kazuna Miyamoto, Fumiyo Kasuya

(1890-6 P) **Forensic Differentiation of Bacillus Cereus Spores Grown with Different Culture Media Using Raman Spectroscopy** JAMES M ROBERTSON, Federal Bureau of Investigation, Jessica M Goss, Joshua R Dettman, Christopher J Ehrhardt, Kristina A Scott, Jason D Bannan

(1890-7 P) **Approaching the Ideal Forensic GC-MS** AVIV AMIRAV, Tel Aviv University, Belgorodsky Bogdan, Alexander Fialkov, Tal Alon

(1890-8 P) **Automated Substance Identification Using Proton-Transfer-Reaction Mass Spectrometry (PTR-MS): Exemplary Analysis of a New Psychoactive Substance Blend** LUKAS MÄRK, IONICON Analytik GmbH, Jens Herbig, Christian Lindinger, Matteo Lanza, Gernot Hanel, Kostiantyn Breiev, Eugen Hartungen, Simone Jürschik, Philipp Sulzer, Tilmann D Märk

(1890-9 P) **Chemometric Arson Detection with Quantified Uncertainty** SALGUEIRO S PEDRO, Departamento de Química e Bioquímica da FCUL, Carlos M Borges, João Aires-de-Sousa, Diogo A Latino, Rui P Fartaria, Ricardo B Silva

(1890-10 P) **New Technology for Rapid Dynamic Headspace Concentration followed by DART-MS and Chemometric Analysis** BRIAN MUSSELMAN, IonSense, Robert Goguen, Joseph LaPointe, Adam Hall, Fred Li, Ashley Davis

## POSTER SESSION — Session 1900

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### *LC - MS*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1900-1 P) **Development of an LC-MS Method for the Simultaneous Determination of Metformin and Miglitol in Human Plasma: Application to Pharmacokinetic Studies** MAHESH V ATTIMARAD, King Faisal University, Bander E Al Dubaib, Sree N Harsha, Ahmed O Alnajjar

(1900-2 P) **LC-MS/MS Determination of Arachidonic and Linoleic Acid Product Profiles in Colon Cancer Cells** STACY BROWN, East Tennessee State University, Martha Borketey, Sharon Campbell

(1900-3 P) **Effects of Biogenic Amines on the Stomatogastric Nervous System of Cancer Borealis** BRYAN CROOK, Santa Clara University, Soni Anjali

(1900-4 P) **High Resolution LC/MS Combined With Nanoseparations in the Identification of Trace Level Environmental Metabolites** JEFFREY ROSS GILBERT, Dow AgroSciences, Jesse Balcer, Yelena Adelfinskaya, Suresh Annangudi, David McCaskill, Pete L Johnson, Gerrit J DeBoer, Mike J Hastings

(1900-5 P) **New HPLC Column and Sample Preparation Methodology to Enhance Analytical Performance** GENEVIEVE GINGRAS, SiliCycle Inc., Vincent Bédard, François Béland, Valerie Desyroy, Yvan Chouinard

(1900-6 P) **Column Performance: Comparison of the Superficially Porous Particle (SPP) to the Fully Porous Particle (FPP)** SHARON LUPO, Restek, Shun-Hsin Liang, Frances Carroll, Ty Kahler, Paul D Connolly, Carrie Sprout, Rickard J Lake, Rob Freeman

(1900-7 P) **Simultaneous Quantitative Determination of Multiple Bioactive Markers in Ocimum Sanctum and Its Marketed Herbal Formulations Using UPLC-ESI-MS/MS Combined with Principal Component Analysis** RENU PANDEY, CSIR-Central Drug Research Institute, Lucknow, Preeti Chandra, Brijesh Kumar

(1900-8 P) **Optimization of a Platform Method for Characterization of Intact Proteins by RP-LC-MS Using a Standard Protein Mix** KEVIN RAY, Sigma-Aldrich Corporation, Benjamin Cutak, Jim Blasberg

(1900-9 P) **Analysis of Vitellogenin in Fish Serum by Using Liquid Chromatography Coupled with Mass Spectrometry** LIJUAN SU, University at Buffalo, Diana S Aga, Troy Wood

(1900-10 P) **LC/MS Analysis of Various Anionic Substances Using Polymer-Based Multimode Column** MELLISSA TURCOTTE, Showa Denko America, Inc., Junji Sasuga, Ronald Benson, Satoko Sakai

(1900-11 P) **Simultaneous Quantitative Analysis of Polar and Nonpolar Compounds in the Brain with Hydrophilic Interaction Liquid Chromatography-Triple-Quadrupole Mass Spectrometry** LIN WANG, University of Illinois at Urbana-Champaign, Stanislav S Rubakhin, Justin S Rhodes, Jeffrey Baxter, Jonathan V Sweedler

(1900-12 P) **Determination of Diglycolic Acid in Food Grade Carboxymethyl Cellulose and Food Packaging Containing Carboxymethyl Cellulose** WENDY M YOUNG, US Food and Drug Administration, Lowri DeJager, Timothy H Begley

(1900-13 P) **Using an Online Database of Chemical Compounds for the Purpose of Structure Identification** ANTONY J WILLIAMS, Royal Society of Chemistry

(1900-14 P) **Identification and Structure Determination of Phenylephrine Unknown Impurities seen in Commercial Cold and FLU Stability Product** ZBIGNIEW MARCINOW, GlaxoSmithKline

(1900-15 P) **Characterization of Organic Compounds in Marcellus Shale Produced Waters Using Liquid Chromatography/Quadrupole Time-of-Flight Mass Spectrometry** VIDHI MISHRA, USDOE National Energy Technology Laboratory, Athanasios Karamalidis, Jinesh Jain, Sheila Hedges, Alexandra Hakala

(1900-16 P) **Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS) Detection of 2-Monochloro-1,3-propanediol (2-MCPD) Esters and their Occurrence in Edible Oils** NICOLE SHYONG, US Food and Drug Administration, Lowri DeJager, Shaun MacMahon

(1900-17 P) **A Rapid LC/MS/MS Method for the Analysis of Catechins in Green Tea Beverages and Supplements** MATTHEW J VERGNE, Lipscomb University, Lincoln Shade

(1900-18 P) **Screening for Controlled Substances in Performance Enhancing Product by Time of Flight with All Ions Confirmation** SUE DANTONIO, Agilent Technologies, Lynne Marshall, Rita Steed

(1900-19 P) **LC/MS Method for the Determination of Glyphosate, AMAP, Glufosinate in Milk** NARONG CHAMKASEM, FDA, Cynthia Morris, Tiffany Harmon

## POSTER SESSION — Session 1910

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### *Material Sciences*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1910-1 P) **Injectable Hydrogels for Controlled Release of Drugs** WENLANG LIANG, University of Central Florida, Jiyu Fang

(1910-2 P) **Material Characterization** BHARAT THAKER, VN South Gujarat University, Ashwin S Patel, Bina Shah

(1910-3 P) **Comparative Study of Saturation Effect in Laser Induced Breakdown Spectroscopy (LIBS) and Laser Induced Molecular Emission Spectroscopy (LIMES)** BADER ALFARRAJ, Mississippi State University, Krishna Ayyalasomayajula, Herve Sanghapi, Chet R Bhatt, Fang Yueh, Singh Jagdish

(1910-4 P) **Withdrawn**

(1910-5 P) **Synthesis and Characterization of Stable, Long-Lived Carbazole-Derived GUMBOS (Group of Uniform Materials Based on Organic Salts) for Organic Light Emitting Diodes (OLEDs)** DEEPTHIKA DE SILVA, Louisiana State University, Noureen Siraj, Isiah M Warner, Kori McDonald

(1910-6 P) **Dielectric Measurements of Materials Embedded in Polymer Matrixes with Terahertz Time Domain Spectroscopy** BANDARANAYAKE M BANDARANAYAKE, University of Iowa, Mark A Arnold

(1910-7 P) **Multiple Light Scattering for the Analysis of Physical Stability of Concentrated Dispersions** JONATHAN DENIS, Formulaction Inc, Gérard Meunier

(1910-8 P) **Inkjet Approach for Preparation of Monodisperse Porous Polymer Particles** JIANMIN YANG, Tokyo Metropolitan University, Daisuke Katagiri, Hulie Zeng, Hizuru Nakajima, Katsumi Uchiyama

(1910-9 P) **Silk/PLA Bio-alloy Materials for Medical Applications** XIAO HU, Rowan University

(1910-10 P) **Uncertainty in Dry Powder Particle Size Analysis by Laser Diffraction** JEFFREY BODYCOMB, HORIBA Scientific, Ian Treviranus, Kiwan Park, Tetsuji Yamaguchi, Hirosuke Sugasawa, Shigemi Tochino

(1910-11 P) **Solid-State NMR Studies of Energy Storage Materials** YAN-YAN HU, Florida State University

(1910-12 P) **Single Step Fabrication of 3D-Nanostructured Polymer Microstructures** MATEUSZ L HUPERT, University of North Carolina Chapel Hill, Malgorzata Witek, Ashlyn Young, Rajalekha M Rajamahendiran, Steven A Soper

(1910-13 P) **Long –Term Thermal Stability of Na-PHEMA Stationary Phase in HTLC** SEMA AKAY, Aksaray University, Berkant Kayan, Mehmet Odabaşı, Yu Yang

(1910-14 P) **Determination of Different Types of Rosins in Mixtures Using Derivatisation and Analysis by GC** DEEPALI SAXENA, Alent Plc, R Umashankar, Siuli Sarkar

(1910-15 P) **Low Concentration Measurement of Particle Size Distribution in the sub-100 nm Range with the Ultrasound Pulsed Doppler (USPD) Method** STEVEN A AFRICK, Prodyne Corporation

## POSTER SESSION — Session 1915

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### *Sensors - Bioanalytical, Electrochemical, Spectroscopic and General Interest*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1915-1 P) **Characterization of Meta-Stable Photoacids for the Use in Ion-Selective Optodes** JAMES E BOONE, University of Central Florida, Valentine K Johns, Parth K Patel, Percy Calvo-Marzal, Karin Chumbimuni-Torres

(1915-2 P) **Terbium Luminescence: An Inexpensive Sensitive Probe for Detecting SNPs in DNA** AMIRA F EL-YAZBI, University of Alexandria, Glen R Loppnow

(1915-3 P) **A Compact Sensor for Sensitive Multi-Spectral Fluorescence Detection in Molecular Diagnostics** STEPHEN T JENNINGS, Pixelteq, Fiona Chan, Eric Chandler

(1915-4 P) **Controlled Optical Sensing Films Based on a Meta-Stable Photoacid: Extension of Ion-Selective Optode Theory** PARTH K PATEL, University of Central Florida, Karin Chumbimuni-Torres

(1915-5 P) **Molecular Recognition Using Templated Non-Covalently Crosslinked N-isopropylacrylamide Copolymers** CASEY J GRENIER, University of New Hampshire, W R Seitz, John Csoros, Alex Papantones, Yang W Rongfang

(1915-6 P) **A Ratiometric Fluorescent CU(II) Indicator Based on the Poly(N-Isopropylacrylamide) Phase Transition** FEIFEI WANG, University of New Hampshire, Rui Ding, Tom Williams, W R Seitz, Roy Planalp, Lea Nyiranshuti, Justin Massing

(1915-7 P) **Nanoparticle Supported Ratiometric Fluorescent Indicators for Polar Organics based on Non-Covalent Crosslinked Molecular Imprinting Technology** RONGFANG YANG, University of New Hampshire, Casey J Grenier, John Csoros, Alex Papantones, W R Seitz

(1915-8 P) **Elucidating the Influence of Ionic Liquids and Molecular Switches on the Development of Dynamic Chemical Sensors** LUKASZ K MENDECKI, Keele University

(1915-9 P) **Electrochemical Detection of Aminopyrine in Seized Cocaine Samples** WILLIAM R DE ARAUJO, University of Sao Paulo, Thiago R Paixao

(1915-10 P) **Electrochemically Deposited Gold Nanoparticles and 3D Structures for Glucose Biosensor Design** ALMIRA RAMANAVICIENE, Vilnius University, Natalija German, Laura Sakalauskiene, Arunas Ramanavicius

(1915-11 P) **Preparation of Radioisotope-Responsive Polystyrene-Silica Core-Shell Nanoparticles for Scintillation Proximity Assays** ISEN ANDREW C CALDERON, University of Arizona, Colleen M Janczak, Eka Noviana, Craig A Aspinwall

(1915-12 P) **Controlling Valency in Antibody-Oligonucleotide Conjugate Synthesis for Proximity Immunoassays** XIANGPENG LI, Auburn University, Jessica Crumbley Brooks, Christopher J Easley

(1915-13 P) **Low Power Liquid Crystal Sensors for Rapid, Sensitive Detection of Toxic Gases** SHEILA E ROBINSON, Platypus Technologies LLC, Bart A Grinwald, Timothy G Burland

(1915-14 P) **Reliable Measurements and Influence of Humidity in an Ion Mobility Spectrometer** BERT UNGETHUEM, Airsense Analytics, Andreas Walte

(1915-15 P) **Cellulose Acetate Membrane-Based Colorimetric Device to Discriminate Amines** LIGIA BUENO, IQ - University of Sao Paulo, Subrayal Reddy, Thiago R Paixão

(1915-16 P) **Fluorescent Nanoprobes Confined in a Drop as a novel Sensing Platform for Detection of Metal Species at Trace Level** CARLOS BENDICHO, University of Vigo, Isabel Costas-Mora, Vanesa Romero, Isela Lavilla

## POSTER SESSION — Session 1920

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### *Nanomaterials: Applications and Characterization*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1920-1 P) **Iron Oxide Gold Nanostars Carrying Silicon 2,3-Napthalocyanine Dihydroxide for Photothermal-Photodynamic Therapy of Cancer** SAHEEL BHANA, University of Memphis

(1920-2 P) **Toxicity Determination of Nanoparticles by Using Raman and Surface-Enhanced Raman Spectroscopy** MELIKE SARICHAM, Yeditepe University, Gamze Kuku, Mustafa Culha

(1920-3 P) **Analysis of Silica Dioxide Nanoparticles Using Single Particle ICP-MS (SP-ICP-MS)** KENNETH NEUBAUER, PerkinElmer, Chady Stephan, Charles Schneider

(1920-4 P) **Absorption Spectroscopy as Powerful Technique for the Characterization of Single-Walled Carbon Nanotubes (SWCNTs)** IVO STEMMLER, PerkinElmer, Claudia Backes, Chris Lynch

# TECHNICAL PROGRAM

(1920-5 P) **Characterizing Nanoparticles in Sunscreens and Other Cosmetic Formulations to Quantitate and Compare the Contribution of Absorbance, Large Particle and Nanoparticle Scattering** JEFFERY TAYLOR, PerkinElmer, Chris Lynch, Peter Muller

(1920-6 P) **The Characterization of Nanoparticle Element Oxide Slurries Used in Chemical-Mechanical Planarization by Single Particle ICP-MS** CHADY STEPHAN, PerkinElmer, Leon Davidowski

(1920-7 P) **Rapid Analysis of Titanium Dioxide Nanoparticles in Sunscreen Using Single Particle Inductively Coupled Plasma-Mass Spectrometry Method** DAN YONGBO, Missouri University of Science and Technology, Honglan Shi, Xinhua Liang, Chady Stephan

(1920-8 P) **Looking for Optimal Polymer to Yield Ions Optical Nanosensors** ANNA KISIEL, University of Warsaw, Katarzyna Kłucinska, Krzysztof Maksymiuk, Maksymiuk Michalska

(1920-9 P) **Novel Treatment for Cardiac Arrhythmia Using Nanoplatform Assisted Photodynamic Therapy** CHANG H LEE, University of Michigan, Hyungki Yoon, Uma Mahesh R Avula, Jerome Kalifa, Raoul Kopelman

(1920-10 P) **Multiplexed Targeting, Isolation and Detection of Tumor Cells in Blood** RYAN T O'CONNOR, University of Memphis

(1920-11 P) **An Auto Combustion Method for Co-Spinel Ferrite Synthesis a Structural Studies** VIPULKUMAR M CHAUDHARY, Ganpat University

(1920-12 P) **Green Synthesis of Sugar Gold Nanoparticles and Its Applications in Catalysis** FENIL CHAVDA, Western Kentucky University, Tulsi Modi, Hitesh K Waghwani, Rajalingam Dakshinamurthy

(1920-13 P) **Evaluation of the Radiosensitizing Effects of Small Gold Nanoparticles Presenting Linear and Looped RGD-Containing Peptides** ADAM R TRAVIS, Vanderbilt University, Virginia A Liau, David E Cliffel

(1920-14 P) **Biological Synthesis of Conducting Polymer based Nanostructures** ARUNAS RAMANAVICIUS, Vilnius University, Almira Ramanaviciene, Asta Kausaite-Minkstimiene, Viktor Mazeiko, Arunas Stirke, Zigmas Balevicius, Ieva Baleviciute

(1920-15 P) **Metal-Enhanced Fluorescence Biosensors** WILLIAM YU, Louisiana State University - Shreveport

(1920-16 P) **Effect of Dwell Time on SP-ICP-MS Data Acquisition Quality** AARON HINEMAN, PerkinElmer Inc, Chady Stephan

(1920-17 P) **Nanomachines for Motion/Based Chemical Sensing and Microchip Applications** BEATRIZ JURADO SANCHEZ, University of California San Diego, Joseph Wang

(1920-18 P) **Synthesis of Gold and Silver Nanoparticles Using Naturally-Derived Flavonoids** FRANCIS J OSONGA, SUNY-Binghamton, Victor M Kariuki, Ana Cartaya, Francheska Lugo, Omowunmi A Sadik

(1920-19 P) **Understanding of Relationship Between Toxicity and Surface Chemistry of Nanomaterials Used Inks and Pigments** CULHA MUSTAFA, Yeditepe University, Altunbek Mine, Kelestemur Seda, Hatipoglu Manolya

(1920-20 P) **Comparison of Magnetic Properties of Synthesized Different Core-Shell Gold Nanoparticles** AKIF G BOZKURT, Hacettepe University, Ismail H Boyacı, Sadan Ozcan, Adem Zengin, Ugur Tamer

**POSTER SESSION** **Session 1930**

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*Surface Analysis/Imaging*

**Wednesday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(1930-1 P) **Complimentary Use of Raman and FTIR Imaging for the Analysis of Multi-Component Polymer Materials** ROBERT HEINTZ, Thermo Fisher Scientific, Mark H Wall, Jennifer Ramirez, Stephan Woods, Mohammed Ibrahim, Alexander Rzhevskii, Simon Nunn, Martin Long

(1930-2 P) **What Happened when a Superhydrophobic Surface was Immersed in Water? A Study by Optical Transmission Microscopy** LING SUN, Technical University of Denmark, Emil Søgaard, Nis K Andersen, Kristian Smistrup, Simon T Larsen, Rafael Taboryski

(1930-3 P) **Optical Characterization of Printed Carbon Nanotube Films for Electronics** QIHUA WU, Brewer Science Inc, Carissa Jones, Joseph Demster, Christopher Landorf, Stephen Gibbons

(1930-4 P) **Magnetically Modulated Optical Nanoprobes (MagMOONs) for De-gelation Detection through Tissue** KHANHVAN T NGUYEN, Clemson University, Jeffrey N Anker



# WEDNESDAY, MARCH 11, 2015 AFTERNOON

**AWARD** **Session 1940**

*Ralph N Adams Award*

arranged by Robert T Kennedy, University of Michigan

**Wednesday Afternoon, Room 243**

Robert T Kennedy, University of Michigan, Presiding

1:30 **Introductory Remarks - Robert T Kennedy**

1:35 **Presentation of the 2015 Ralph N Adams Award to John R Yates, The Scripps Research Institute, by Robert T Kennedy, University of Michigan**

1:40 (1940-1) **From Yeast to Brain: Disruption in Protein Analysis Technologies** JOHN R YATES, The Scripps Research Institute

2:15 (1940-2) **Quantitative Proteomic Analysis of Protein Complexes and Protein Interaction Networks** MICHAEL WASHBURN, Stowers Institute for Medical Research

2:50 (1940-3) **The Long and The Short of Shotgun Proteomics: 15 Years Post-Breakthrough and Still Going Strong** NEIL KELLEHER, Northwestern University

3:25 **Recess**

3:40 (1940-4) **Protein Interaction Networks and Quantitative Proteomics Reveal Sensors of Viral DNA** ILEANA CRISTEA, Princeton University, Benjamin Diner, Tuo Li, Marni Crow, Krystal Lum

4:15 (1940-5) **LC-MS Based Metabolomics for Brain and Endocrine Systems** ROBERT T KENNEDY, University of Michigan

**AWARD** **Session 1950**

*The Coblentz Society - Williams-Wright Award*

arranged by Janiece Hope, The Coblentz Society

**Wednesday Afternoon, Room 244**

Janiece Hope, The Coblentz Society, Presiding

1:30 **Introductory Remarks - Janiece Hope**

1:35 **Presentation of the 2015 Williams Wright Award to Jagdeesh Bandekar, Dow Automotive Systems, by Janiece Hope, The Coblentz Society**

1:40 (1950-1) **Applications of Vibrational Spectroscopy and Thermal Science** JAGDEESH BANDEKAR, Dow Automotive Systems

2:15 (1950-2) **The Evolution of In-Situ IR Spectroscopy Using Fiber Optics** PETER J MELLING, Remspec Corporation

2:50 (1950-3) **Raman Spectroscopic Investigation of Neuroblastoma and Ganglioneuroma Pediatric Tumors** VAMAN M NAIK, University of Michigan Dearborn

3:25 **Recess**

3:40 (1950-4) **The Myth and Obstacle of Adhesive Bonding for Automotive Steel Body Panel Applications - From a Steel Researcher Perspective** CHANN CHENG, ArcelorMittal USA

4:15 (1950-5) **Standard and Novel Rheological Test Methods for Eliciting Structure-Property Correlations and Making Product Performance Predictions** GREGORY WALTER KAMYKOWSKI, TA Instruments

**SYMPOSIUM** **Session 1960**

***ACS DAC - Analytical Challenges in the World-Wide Import/Export of Agricultural Commodities***

arranged by Spencer S Walse and Wiley A Hall, US Department of Agriculture

**Wednesday Afternoon, Room 238**

Spencer S Walse, US Department of Agriculture, Presiding
Wiley A Hall, US Department of Agriculture, Presiding

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| 1:30 | | **Introductory Remarks - Spencer Walse and Wiley A Hall** |
| 1:35 | (1960-1) | **Postharvest Chemistry Research at USDA-ARS: Analytical Challenges for Key Specialty Crop Trade Barriers** SPENCER S WALSE, US Department of Agriculture |
| 2:10 | (1960-2) | **Colorimetric Sensing Arrays for the Detection of Exotic Pests in Cargo Shipments** SCOTT W MYERS, USDA APHIS, Jeffrey D Ballin |
| 2:45 | (1960-3) | **Gas Chromatography Monitoring of Postharvest Fumigants** LEONEL ROBERTO JIMENEZ, University of California Irvine, Spencer S Walse, Wiley A Hall |
| 3:20 | | **Recess** |
| 3:35 | (1960-4) | **Phosphorus Acid MRL Barrier to EU Export of California Tree Nuts: Analytical Methodology** THOMAS M JONES, DFA of California |
| 4:10 | (1960-5) | **Detection of Fumigant Residues in Foodstuffs Using Solvent-Free Headspace Sampling** WILEY A HALL, US Department of Agriculture, Spencer S Walse, Leonel Roberto Jimenez |

**SYMPOSIUM** **Session 1970**

***Brazil - Analytical Chemistry in Agrobusiness***

arranged by Doraine Barreto, NurnbergMesse Brasil

**Wednesday Afternoon, Room 239**

Adelia Araujo, Technology Institute of Pernambuco - ITEP, Presiding

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| 1:30 | | **Introductory Remarks - Adelia Araujo, Technology Institute of Pernambuco- ITEP** |
| 1:35 | (1970-1) | **Pesticide Analysis: A Toll for the Brazilian Fruit Export Program** ADELIA ARAUJO, ITEP |
| 2:10 | (1970-2) | **Rapid and Non-Invasive Time Domain Nuclear Magnetic Resonance Methods for Analyses of Agri-Food Products** LUIZ A COLNAGO, Embrapa |
| 2:45 | (1970-3) | **Preservation of the Environment in the Production Chain Crop Protection in Brazil** LUIZ R TREVIZAN, Agrosafety Monitoramento Agricola |
| 3:20 | | **Recess** |
| 3:35 | (1970-4) | **Analytical Overview of Agribusiness Demand in Brazil** VALÉRIA C RODRIGUES, Coluna Consultoria |
| 4:10 | | **Open Discussion** |

**SYMPOSIUM** **Session 1980**

***Chemical Analysis in Super-Small Living Systems***

arranged by Andrew G Ewing, Chalmers University of Technology

**Wednesday Afternoon, Room 242**

Andrew G Ewing, Chalmers University of Technology, Presiding

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| 1:30 | | **Introductory Remarks - Andrew G Ewing** |
| 1:35 | (1980-1) | **Exploring the Bio-Nano Interface: Measuring Cell Electric Activities Using Nano-Electrodes** BIANXIAO CUI, Stanford University, Allister McGuire, Carter Lin, Lindsey Hanson |
| 2:10 | (1980-2) | **Chemical Analysis of Insect Neurotransmitters at Single Neurons** MICHAEL L HEIEN, University of Arizona, Catherine L Kramer, Kate L Parent |
| 2:45 | (1980-3) | **Analysis of Homolymph from Individual D. Melanogaster: From Small Molecules to Proteins** SCOTT A SHIPPY, University of Illinois at Chicago |
| 3:20 | | **Recess** |
| 3:35 | (1980-4) | **Genetic Control of Neurotransmission in Drosophila** B JILL VENTON, University of Virginia, Eve Privman, Ning Xiao, Poojan Pyakurel |
| 4:10 | (1980-5) | **Dynamic Chemical Measurements in the Fruit Fly Brain Combined with Mass Spectrometry Imaging** ANDREW G EWING, Chalmers University of Technology, Soodabeh Majdi, Nhu T Phan, Amir Saeid Mohammadi, Masoumeh MasoDowlatshahi Pour, Eva Carina Berglund |

**SYMPOSIUM** **Session 1990**

***Decoding the Biological Roles of Glycans through MS and Tandem MS***

arranged by Yehia Mechref, Texas Tech University

**Wednesday Afternoon, Room 260**

Yehia Mechref, Texas Tech University, Presiding

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| 1:30 | | **Introductory Remarks - Yehia Mechref** |
| 1:35 | (1990-1) | **Cracking the Glyco-Code of the HIV Envelope Glycoprotein** HEATHER DESAIRE, University of Kansas |
| 2:10 | (1990-2) | **Glycomics** CARLITO LEBRILLA, University of California Davis |
| 2:45 | (1990-3) | **A Workflow for Confident Assignment of Site-Specific Glycosylation in Influenza A Virus Glycoproteins** JOSEPH ZAIA, Boston University |
| 3:20 | | **Recess** |
| 3:35 | (1990-4) | **LC-MS Based Analysis of Serum N-Glycans for Biomarker Discovery** HABTOM RESSOM, Georgetown University, Tsung-Heng Tsai, Monkun Wang, Cristina Di Poto, Yunlin Hu, Shiyue Zhou, Yi Zhao, Rency Varghese, Yue Luo, Yehia Mechref |
| 4:10 | (1990-5) | **Biological Attributes of Glycans in Diseases Assessed by LC-MS and Tandem MS** YEHIA MECHREF, Texas Tech University, Ehwang Song, Rui Zhu, Parvin Mirzaei |

**SYMPOSIUM** **Session 2000**

***Isolation and Analysis of Circulating Tumor Cells (CTCs)***

arranged by Z Hugh Fan, University of Florida

**Wednesday Afternoon, Room 261**

Z Hugh Fan, University of Florida, Presiding

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| 1:30 | | **Introductory Remarks - Z Hugh Fan** |
| 1:35 | (2000-1) | **Detection and Characterization of Viable Circulating Tumor Cells as Liquid Biopsy for Cancer** CATHERINE ALIX-PANABIERES, University Medical Center |
| 2:10 | (2000-2) | **Multivalent Binding-Enabled Isolation of Tumor Cells in Microfluidic Devices** Z HUGH FAN, University of Florida, Jinling Zhang, Weian Sheng, Weihong Tan, Thomas J George, Chen Liu |
| 2:45 | (2000-3) | **Microfluidics for CTC Selection, Enumeration and Molecular Analysis** STEVEN SOPER, University of North Carolina at Chapel Hill |
| 3:20 | | **Recess** |
| 3:35 | (2000-4) | **Clinical Integration of Predictive and Pharmacodynamic Biomarkers in Circulating Tumor Cells** JOSHUA M LANG, University of Wisconsin Carbone Cancer Center |
| 4:10 | (2000-5) | **Selectin-Mediated Targeting of CTCs** MICHAEL R KING, Cornell University, Jocelyn R Marshall |

**SYMPOSIUM** **Session 2010**

***Long Wave Infrared Laser-Induced Breakdown Spectroscopy: LIBS beyond UV-VIS***

arranged by A Peter Snyder, Retired from Federal Service

**Wednesday Afternoon, Room 262**

A Peter Snyder, Retired from Federal Service, Presiding

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| 1:30 | | **Introductory Remarks - A Peter Snyder** |
| 1:35 | (2010-1) | **Laser-Induced Thermal Emission: Origins and Futures of the Approach** ALAN CHRISTOPHER SAMUELS, Edgewood Chemical Biological Center |
| 2:10 | (2010-2) | **Instrumentation for Long Wave Infrared Laser-Induced Breakdown Spectroscopy** FENG JIN, Brimrose Corporation, Ken Jia, Emir Haskovic, Chen-Chia Wang, Susan Kutcher, Sudhir Trivedi, Uwe Hommerich, Ei Brown, Clayton Yang, Priyalal Wijewarnasuriya, Eric Decuir, Jacob Khurgin, Fow-Sen Chao, Alan Christopher Samuels, Arvind D'Souza |



***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

# TECHNICAL PROGRAM

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| 2:45 | (2010-3) | **MIR-LWIR Infrared (4-12 αm) Atomic and Molecular Emission Signatures from Inorganic and Organic Chemicals Using Laser-Induced Breakdown Spectroscopy** CLAYTON YANG, Battelle, Ei Brown, Uwe Hommerich, Feng Jin, Sudhir Trivedi, A P Snyder, Alan Christopher Samuels |
| 3:20 | | **Recess** |
| 3:35 | (2010-4) | **Survey and Characteristics of LIBS Spectra in the Infrared Region from 750 to 2000 nm** DAVID CREMERS, Applied Research Associates Inc., Leon Radziemski |
| 4:10 | (2010-5) | **Mid Infrared LIB Spectroscopy of Carbon Plasma** LASZLO NEMES, Retired - Research Center for Chemistry of HAS, Ei Brown, Clayton Yang, Uwe Hommerich |

**SYMPOSIUM** **Session 2020**

***Microelectrodes, Microfluidics and Microdevices – Tools to Study Physiology On-Chip and In Vivo***

arranged by Martyn G Boutelle, Imperial College London

**Wednesday Afternoon, Room 263**

Martyn G Boutelle, Imperial College London, Presiding

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| 1:30 | | **Introductory Remarks - Martyn G Boutelle** |
| 1:35 | (2020-1) | **Inter-Tissue Communication Using a 3D-Printed Device Reveals a Missing Link in Hormone Replacement Therapy in Diabetes** DANA M SPENCE, Michigan State University |
| 2:10 | (2020-2) | **Measurements of Oxygen and Blood Flow in the Brain** ROBERT M WIGHTMAN, University of North Carolina at Chapel Hill |
| 2:45 | (2020-3) | **Using Electrochemistry to Optimize Blood Flow and Metabolism in the Injured Human Brain** MARTYN G BOUTELLE, Imperial College London, Michelle L Rogers, Chi L Leong, Toby Jeffcote, Sharon Jewel, Anthony J Strong, Christos Tolias, Clemens Pahl |
| 3:20 | | **Recess** |
| 3:35 | (2020-4) | **Microengineered Systems for Recapitulating Intestinal Function** NANCY L ALLBRITTON, University of North Carolina |
| 4:10 | (2020-5) | **Instrumenting Organs on a Chip with Real-Time Electrochemical Sensors** DAVID E CLIFFEL, Vanderbilt University, Danielle W Kimmel, McKenzie Jennifer |

**SYMPOSIUM** **Session 2030**

***Petroleomics***

arranged by Ryan P Rodgers, Ion Cyclotron Resonance Program

**Wednesday Afternoon, Room 265**

Ryan P Rodgers, Ion Cyclotron Resonance Program, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Ryan P Rodgers** |
| 1:35 | (2030-1) | **Unprecedented Insights into the Chemical Complexity of Coal Tar from Comprehensive Two-Dimensional Gas Chromatography** CHRISTOPHER REDDY, Woods Hole Oceanographic Institution (WHOI), Robert Nelson, Robert Swarthout, Hector Koolen, Christoph Aeppli |
| 2:10 | (2030-2) | **Recent Advances in Molecular Characterization of Complex Industrial Matrices such as Oils and Polymers** PIERRE GIUSTI, TOTAL, Brice Bouyssiere, Carlos Afonso |
| 2:45 | (2030-3) | **Combination of HPLC High Resolution Mass Spectrometry, and 2D NMR for More Comprehensive Understanding of Petroleum Compounds** SUNGHWAN KIM, Kyungpook National University |
| 3:20 | | **Recess** |
| 3:35 | (2030-4) | **Predictive Petroleomics: Progress Towards Its Full Predictive Power via Comparative Analyses and the Comprehensive Model of the Petroleum Compositional Continuum** YURI E CORILO, National High Magnetic Field Laboratory, Priscila M Lalli, Logan C Krajewski, Alan G Marshall, Ryan P Rodgers |
| 4:10 | (2030-5) | **Recent Advances in Mass Spectrometric Characterization of Asphaltenes** HILKKA KENTTAMAA, Purdue University |

**SYMPOSIUM** **Session 2040**

***Vibrational Spectroscopy at Buried Interfaces***

arranged by John F Rabolt, University of Delaware

**Wednesday Afternoon, Room 266**

John F Rabolt, University of Delaware, Presiding

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| 1:30 | | **Introductory Remarks - John F Rabolt** |
| 1:35 | (2040-1) | **Molecular Structures of Buried Interfaces Involving Polymers and Proteins** ZHAN CHEN, University of Michigan |
| 2:10 | (2040-2) | **Scanning Angle Raman Spectroscopy Measurements of Buried Polymer Interfaces** EMILY A SMITH, Iowa State University, Vy HT Nguyen, Craig Damin |
| 2:45 | (2040-3) | **Biophysical Characterization of the Lateral Organization of Phosphoinositide Signaling Events** ARNE GERICKE, Worcester Polytechnic Institute |
| 3:20 | | **Recess** |
| 3:35 | (2040-4) | **Planar Array Infrared (PA-IR) and AFM-IR Studies of Buried Interfaces** JOHN F RABOLT, University of Delaware, Young Kim, Kristi Kiick, Wenwen Liu, Bruce Chase |
| 4:10 | (2040-5) | **Spectroscopic Studies of the Nanoemulsion Surfaces** JENNIFER HENSEL, University of Oregon, Andrew Carpenter, Geraldine Richmond |

**WORKSHOP** **Session 2050**

***CACA - How to be Successful in Your Career***

arranged by Michael Ye, Supelco/Sigma-Aldrich and Tao Jiang, Mallinckrodt Pharmaceuticals

**Wednesday Afternoon, Room 269**

Michael Ye, Supelco/Sigma-Aldrich, Presiding

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| 1:30 | | **Introductory Remarks - Michael Ye and Tao Jiang** |
| 1:35 | (2050-1) | **From a Research Scientist to a Group Manager, a President, and a Founder of Companies in the US and Taiwan** FRANK J YANG, AcuTech Scientific Inc. |
| 2:05 | (2050-2) | **An Odyssey in Chromatography: Perspectives and Career Development** MICHAEL W DONG, Genentech |
| 2:35 | (2050-3) | **Embracing the Uncertainty in Your Career** RUI CHEN, Thermo Fisher Scientific |
| 3:05 | | **Recess** |
| 3:20 | (2050-4) | **Working in Research and Development in a Global Company** XIAODONG LIU, Thermo Fisher Scientific |
| 3:50 | | **Open Discussion** |

**ORGANIZED CONTRIBUTED SESSION** **Session 2060**

***Ionophore-Based Chemical Sensors II***

arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

**Wednesday Afternoon, Room 264**

Philippe Buhlmann, University of Minnesota, Presiding

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| 1:30 | (2060-1) | **Quantum Dot Ion Sensors in a Printable Format** ELIZABETH (LISA) A HALL, University of Cambridge, Jamie D Walters, Camille A De-Villiers |
| 1:50 | (2060-2) | **Measurement of Megakaryocyte-Released Serotonin by Ratiometric Enzyme-Based Phosphorescent Nanosensors** CHRISTOPHER G SKIPWITH, Northeastern University, Heather A Clark |
| 2:10 | (2060-3) | **Inkjet-Printed Paper-Based Microfluidic Devices Using Chemical Surface Modification of Paper** DANIEL CITTERIO, Keio University, Kei Nakata, Nobutoshi Komuro, Kento Maejima, Koji Suzuki |
| 2:30 | (2060-4) | **Equilibration Time for Solid Contact Ion-Selective Electrodes** ERNO LINDNER, University of Memphis, Marcin Guzinski, Jennifer Jarvis, Bradford Pendley |
| 2:50 | | **Recess** |

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| 3:05 | (2060-5) | **Polyion-Sensitive Polymeric Membrane-Based Pulstrode as a Chromatographic Detector** XUEWEI WANG, University of Michigan, Mark E Meyerhoff |
| 3:25 | (2060-6) | **Detection of High Charge Density Polyanion Contaminants in Heparin Preparations Using Pulsed Chronopotentiometric Polyion Sensors** KEBEDE L GEMENE, Northern Kentucky University, Jacob Lester, Timothy Chandler |
| 3:45 | (2060-7) | **Low Detection Limit of Ion-Selective Electrodes: Is the Story Really Over?** ALEKSANDAR RADU, Keele University, Christina McGraw, Peter Dillingham |
| 4:05 | (2060-8) | **A New Platform for Nanomolar Detection of the Neurotransmitter Acetylcholine Potentiometrically via the Inclusion of Water-Soluble p-Sulfonatocalixarene in the Electrode Inner Filling Solution** MOHAMED K ABD EL-RAHMAN, Cairo University, Philippe Buhlmann, Amr M Mahmoud |

**ORAL SESSION** **Session 2070**

*Advances in Surface and Imaging Analyses*

**Wednesday Afternoon, Room 240**
Brian R Strohmeier, United States Steel Corporation, Presiding

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| 1:30 | (2070-1) | **Rapid, Large Area Super-Resolution Chemical Imaging via Dithering of a Nanoprobe Array** ERIC R LANGUIRAND, University of Maryland Baltimore County, Brian M Cullum |
| 1:50 | (2070-2) | **Raman Imaging for Visualizing Structural Variations in Advanced Materials** MARK H WALL, Thermo Fisher Scientific, Robert Heintz, Jennifer Ramirez, Mohammed Ibrahim, Alexander Rzhevskii, Simon Nunn |
| 2:10 | (2070-3) | **Supported Lipid Bilayer by Amphiphilic Dendrimers on Calcinated Nanofilms for SPR Study of Biomolecular Interactions** MELISSA A MORGAN, University of California Riverside, Jason Cheng |
| 2:30 | (2070-4) | **Thiol-Click Chemistries to Rapidly Functionalize and Pattern Amorphous Carbon Substrates for Enzyme-Based Sensors** MATTHEW R LOCKETT, University of North Carolina at Chapel Hill |
| 2:50 | | **Recess** |
| 3:05 | (2070-5) | **Nonlinear Optical Detection and Analysis of Metastable Crystal Forms** GARTH SIMPSON, Purdue University |
| 3:25 | (2070-6) | **DESI-MS Imaging of Binding Materials in Painting Cross-Sections** KRISTEN E WATTS, Villanova University, Anthony Lagalante |
| 3:45 | (2070-7) | **Non-Destructive Identification of Surface and Subsurface Particles Using Laboratory-Based Micro X-ray Computed Tomography and Confocal Micro X-ray Fluorescence Spectroscopy** NIKOLAUS L CORDES, Los Alamos National Laboratory, Srivatsan Seshadri, Michael Feser, Xiaoli Yuan, Ying Gu, Deming Wang, George J Havrilla, Brian Patterson |
| 4:05 | (2070-8) | **Expanding the Surface and In-Depth Capabilities and Applications of X-ray Photoelectron Spectroscopy (XPS) with a Monatomic and Gas Cluster Ion Source (MAGCIS)** BRIAN R STROHMEIER, Thermo Fisher Scientific, Richard G White, Tim Nunney, Paul Mack, Andrew E Wright |

**ORAL SESSION** **Session 2075**

*Bioanalytical - Vibrational Spectroscopic Applications*

**Wednesday Afternoon, Room 275**
Jin-Woo Choi, Louisiana State University, Presiding

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| 1:30 | (2075-1) | **Analysis of Drugs in the Saliva During Treatment of Military Veterans Suffering from Post-Traumatic Stress Disorder** CHETAN SHENDE, Real-Time Analyzers, Inc., Stuart Farquharson |
| 1:50 | (2075-2) | **Label-Free Protein Detection Using Surface-Enhanced Raman Scattering** MEHMET KAHRAMAN, Gaziantep University, Sebastian Wachsmann-Hogiu |
| 2:10 | (2075-3) | **Discriminate Detection of 100 B Anthracis Ames Spores in 20 Minutes at US Army Facilities Using a Portable SERS Assay** STUART FARQUHARSON, Real-Time Analyzers, Inc., Wayne Smith, Carl Brouillette, Chetan Shende |
| 2:30 | (2075-4) | **Evaluation of Antibody/Antigen Binding by Total Internal Reflection Ellipsommetry and Surface Plasmon Resonance** ARUNAS RAMANAVICIUS, Vilnius University, Ieva Baleviciute, Zigmas Balevicius, Asta Makaraviciute, Almira Ramanaviciene |
| 2:50 | | **Recess** |
| 3:05 | (2075-5) | **Evaluation of Inter-Molecular Interaction of a Protein in Highly Concentrated Solution Investigated by Raman Spectroscopy** SAKIKO AKAJI, Horiba Ltd., Chikashi Ota, Shintaro Noguchi, Kouhei Tsumoto |
| 3:25 | (2075-6) | **Characterization of Two Different Shaped Insulin Nanoparticles Using 2D IR Correlation Spectroscopy and AAMD Simulation** YEONJU PARK, Kangwon National University, Dongjin Pyo, Hyonseok Hwang, Young Mee Jung |
| 3:45 | (2075-7) | **Nano-Scale Broadband Synchrotron FTIR Spectroscopy of Fungal Cell Wall and Exudate Composition** KATHLEEN M GOUGH, University of Manitoba, Susan G Kaminskyj, Tanya E Dahms, Hans A Bechtel, Michael C Martin |
| 4:05 | (2075-8) | **Optimizing an Infrared Spectroscopic Method for QC Analysis of Botanical Dietary Supplements** DEAN BROWN, Molecular Spectroscopy Technical Services, LLC, Ian Robertson, Justin Lang |

**ORAL SESSION** **Session 2080**

*CE and Microfluidics*

**Wednesday Afternoon, Room 241**
Elias S Absey, Waters Corporation, Presiding

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| 1:30 | (2080-1) | **Extremely Simple Headspace In-Tube Microextraction Coupled with Capillary Electrophoresis** DOO SOO CHUNG, Seoul National University, Hye Ryeo Lee, Sung Min Cho |
| 1:50 | (2080-2) | **The Influence of Metal Cation Selection on EOF in CE Separations with Phospholipid Bilayers** CHRISTOPHER R HARRISON, San Diego State University, Eduardo De La Toba, Shane Wells |
| 2:10 | (2080-3) | **Woven Fabric as a Low-Cost Microfluidic Platform for Tuned Electrophoretic Separations** TANYA NARAHARI, Northeastern University, Dhananjaya Dendukuri, Shashi Murthy |
| 2:30 | (2080-4) | **Fabrication and Characterization of an All-Polystyrene Microfluidic Device for Cellular Analysis** AMBER M PENTECOST, Saint Louis University, R Scott Martin |
| 2:50 | | **Recess** |
| 3:05 | (2080-5) | **Nutrient Monitoring in Marine Environments** MARGARET MCCAUL, Dublin City University, John Cleary, Eoghan McNamara, Dermot Diamond |
| 3:25 | (2080-6) | **A Miniature Breadboard Approach for Electrophoretic Separations** JOEL KOENKA, University of Basel, Jorge Saiz, Peter C Hauser, Paul Rempel |
| 3:45 | (2080-7) | **Total Trans Fatty Acids Analysis in Processed Food by Capillary Zone Electrophoresis Using UV Direct Detection** MARCONE DE OLIVEIRA, Federal University of Juiz de Fora, Brenda S Porto |
| 4:05 | (2080-8) | **Integrating SPE with Microchip CE-ESI** WILLIAM BLACK, University of North Carolina at Chapel Hill, J S Mellors, J Michael Ramsey |

**ORAL SESSION** **Session 2090**

*Electrochemistry - Bioanalytical and General Interest*

**Wednesday Afternoon, Room 255**
Glen O O'Neil, University of Warwick, Presiding

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| 1:30 | (2090-1) | **Electrochemical Aptamer-Based (E-AB) Sensors at the Micro/Nano-Scale** JUAN LIU, University of Maryland Baltimore County, Samiullah Wagan, Ryan White |
| 1:50 | (2090-2) | **Ordered Biomaterials Composite on Glassy Carbon Support as Suitable Platform for Improved Performance of DNA Electrochemical Sensor** SYLWIA A STRZALKOWSKA, University of Warsaw, Patrycja Bober, Andreas Ebner , Michael Leitner, Jarno Salonen, Magdalena Maj-Zurawska |
| 2:10 | (2090-3) | **Quantitative Amperometric Measurements of the Molecular Content of Single Vesicles Inside Single Cells with Nanoelectrodes** XIANCHAN LI, Chalmers University of Technology, Soodabeh Majdi, Johan Dunevall, Andrew G Ewing |
| 2:30 | (2090-4) | **Development of a Photocaged Mecaptan for the Modulation of Hydrogen Peroxide in Brain Slices** THOMAS FIELD, University of Kansas, Meng Sun, Rich Givens, Michael A Johnson |
| 2:50 | | **Recess** |
| 3:05 | (2090-5) | **Spectroelectrochemistry of Iron Fluorinated Porphyrins in Mixed RTILs/ Molecular Solvents** ABDERRAHMAN ATIFI, Marquette University, Michael D Ryan |

# TECHNICAL PROGRAM

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| 3:25 | (2090-6) | **Direct Alkalinity Measurement with Coulometric Ion Release into Thin Layer Samples** MAJID GHAHRAMAN AFSHAR, University of Geneva, Eric Bakker, Gaston Crespo |
| 3:45 | (2090-7) | **Measuring Low ppb [As(III)] from 2-4µL Samples in Two Minutes, Without Calibration and No Need for a Blank Electrolyte in the Presence of Other Metal Interferents** MOHAMED M MAREI, University of Louisville, Thomas Roussel, Robert Keynton, Richard Baldwin |
| 4:05 | (2090-8) | **In Situ Electrochemical X-Ray Fluorescence** GLEN D O'NEIL, University of Warwick, Mark E Newton, Julie V Macpherson |

## ORAL SESSION — Session 2100

*Food Contaminants*

**Wednesday Afternoon, Room 256**
Olujide T Akinbo, Butler University, Presiding

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| 1:30 | (2100-1) | **Examination of Commercial Botanical Products (Spices, Teas and Phytomedicines) for the presences of Heavy Metals by ICP-MS** PATRICIA L ATKINS, SPEX CertiPrep, Huifang Lang |
| 1:50 | (2100-2) | **Investigation of Human Exposure to Heavy Metal Through Consumption of Herbal Supplements** OLUJIDE T AKINBO, Butler University, Christopher J Brown, Adam D Glanzer, Jessica K Lukowski, Brittany M Moore, Charlie N Pennington, Jasmine A Williams |
| 2:10 | (2100-3) | **Direct Determination of Arsenic and Selenium in Rice Samples by Slurry Sampling Hydride Generation Inductively Coupled Plasma – Atomic Emission Spectrometry** JERZY MIERZWA, Tennessee State University, Elzbieta A Stefaniak |
| 2:30 | (2100-4) | **A New Algorithm for Rapid Detection of Contamination and Adulteration with Near Infrared Spectroscopy** IAN ROBERTSON, PerkinElmer Limited, Ben Perston, Justin Lang, Jerry Sellors |
| 2:50 | | **Recess** |
| 3:05 | (2100-5) | **The Analysis of Persistant Organic Pollutants in Oily Samples** KATHERINE K STENERSON, Supelco/Sigma-Aldrich, Olga I Shimelis, Michael Ye, Jennifer Claus, Caitlin Brown |
| 3:25 | (2100-6) | **Evaluation of Dispersive Solid Phase Extraction for Trace Analysis of Pesticides and Toxic Chemicals in Foods** BUU TRAN, New York State Department of Health, Jordan Martin, Nathalia Cruz, Gavin Piester, Richard Okoniewski |
| 3:45 | (2100-7) | **Full Automated High Resolution 1H-NMR Solution to Assess Food Quality and Authenticity** MARKUS LINK, Bruker BioSpin GmbH, Manfred Spraul, Hartmut Schaefer, Birk Schuetz, Fang Fang |
| 4:05 | (2100-8) | **Immunomagnetic Separation Combined with Enzyme Linked Immunosorbent Assay for Quick Detection of Salmonella Typhimurium in Raw Eggs** SHIQUAN TAO, West Texas A&M University, Cole Guyer, Alex Maya |

## ORAL SESSION — Session 2105

*Food Science (Half Session)*

**Wednesday Afternoon, Room 276**
Manuel Valiente, Universitat Autonoma de Barcelona, Presiding

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| 1:30 | (2105-1) | **Direct Trace Metals Speciation in Cured Ham for the Identification of Biomarkers of the Curing Process** MANUEL VALIENTE, Universitat Autonoma de Barcelona, Maribel Restituyo, Marta Avila |
| 1:50 | (2105-2) | **Development of a Carbon Dioxide Sensor for Freshness Detection in Meat Packages** ISABEL M PEREZ DE VARGAS SANSALVADOR, Dublin City University/University of Granada, Luis Fermin Capitan Vallvey, Dermot Diamond |
| 2:10 | (2105-3) | **A New Approach for Food Decontamination: Atmospheric Plasama Processing** BEYHAN GUNAYDIN DASAN, Hacettepe University, Mehmet Mutlu, Ismail Hakkı Boyaci |
| 2:30 | (2105-4) | **A Wireless Communication Contact Closure System for Four Mass Spectrometers and Two Liquid Chromatographs in Parallel (LC2/MS4)** WILLIAM C BYRDWELL, USDA, ARS, BHNRC, FCMDL |

## ORAL SESSION — Session 2110

*General Interest with Mass Spectrometry*

**Wednesday Afternoon, Room 257**
Daniel E Austin, Brigham Young University, Presiding

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| 1:30 | (2110-1) | **Direct Mass Spectrometric Screening for Food Contaminants** LUKE K ACKERMAN, FDA-CFSAN, Karim Bentayeb, Timothy H Begley |
| 1:50 | (2110-2) | **Direct-Mass Spectrometry to Rapidly Screen Foods for Sweeteners** ROMINA SHAH, US Food and Drug Administration, Luke K Ackerman |
| 2:10 | (2110-3) | **A Multi-Stage Charge-Detection Mass Spectrometer Made From Printed Circuit Boards** DANIEL E AUSTIN, Brigham Young University, Brandon Barney, Kit Anderson |
| 2:30 | (2110-4) | **MALDI-TOF MS and Capillary Electrophoresis as Analytical Tools for Studying Abiotic RNA Polymerization** KRISTIN M COARI, Rensselaer Polytechnic Institute, Rebecca C Martin, Linda B McGown |
| 2:50 | | **Recess** |
| 3:05 | (2110-5) | **MALDI-TOF MS Analysis of the Abiotic Polymerization of Activated Inosine Monophosphate Nucleotides** REBECCA C MARTIN, Rensselaer Polytechnic Institute, Kristin M Coari, Linda B McGown |
| 3:25 | (2110-6) | **Improved Mass Resolution in Microscale Ion Traps for Hand Portable, High Pressure Mass Spectrometry** KENION H BLAKEMAN, University of North Carolina, Tina E Stacy, Craig A Cavanaugh, J Michael Ramsey |
| 3:45 | (2110-7) | **Achieving Low Part per Trillion Volume Concentrations with the TO-15 Based Air Analysis** WAYNE WHIPPLE, US EPA R5 CRL |
| 4:05 | (2110-8) | **Visualization of Transdermal Drug Delivery by 2D-DESI Mass Spectrometry – A Novel Approach to Generate Pseudo Cross-Sectional Skin Images** KIHARA KEISHI, Shiseido, Motoyama Akira, Mori Yuichiro |

## ORAL SESSION — Session 2120

*Genomics, Proteomics, Neurochemistry and Pharmaceutical Application of Mass Spectrometry*

**Wednesday Afternoon, Room 267**
Stanislav Rubakhin, University of Illinois at Urbana-Champaign, Presiding

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| 1:30 | (2120-1) | **Pathogenic Response of Metalloproteins in the Fungus *Histoplasma capsulatum* Under Low Zn Stress** ANNA DONNELL, University of Cincinnati, Julio Landero, Joseph A Caruso, Kavitha Vignesh, George Deepe, Alexey Porollo, Jessica Dade |
| 1:50 | (2120-2) | **Mass Spectrometric Analysis of the Cell Surface N-Glycoproteome** RONGHU WU, Georgia Institute of Technology |
| 2:10 | (2120-3) | **Ion Mobility and Native Mass Spectrometry Measurements of the Humanized IgGk NIST Monoclonal Antibody Standard** IAIN CAMPUZANO, Amgen, Carlos Larriba, Bagal Dhanashri, Paul Schnier |
| 2:30 | (2120-4) | **Analysis of Neurotransmitters in GFP-Expressing Dopaminergic Neurons in Primary Cell Cultures from *Drosphila Melanogaster* Using Amperometry and MALDI-MS** CATHERINE L KRAMER, University of Arizona, Kate L Parent, Linda R Restifo, Michael L Heien |
| 2:50 | | **Recess** |
| 3:05 | (2120-5) | **Combining Mass Spectrometry and Nuclear Magnetic Resonance Spectroscopy for Enhanced Coverage of Brain Chemistry** STANISLAV S RUBAKHIN, University of Illinois at Urbana-Champaign, Boris M Odintsov, Lin Wang, Sage J Dunham, Justin S Rhodes, Jonathan V Sweedler |
| 3:25 | (2120-6) | **Trace Metals Analysis in Pharmaceutical Formulations** PHILIP G RIBY, Liverpool John Moores University, Philip John Salmon |
| 3:45 | (2120-7) | **Affinity Purification-Mass Spectrometry of NEIL1 Isoforms in Breast Cancer Cell Lines** JONATHAN ASHBY, University of California, Davis, Sheila David |
| 4:05 | (2120-8) | **Improving Sequence Coverage of Ion Mobility Unresolved Peptide Isomers Using Chemometric Data Deconvolution** BRETT HARPER, Baylor University, Elizabeth Neumann, Touradj Solouki |

**ORAL SESSION** **Session 2130**

*Material Sciences*

**Wednesday Afternoon, Room 268**
Christopher A Pohl, Thermo Fisher Scientific, Presiding

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| 1:30 | (2130-1) | **Comprehensive Thermal Characterization of Fiber Reinforced Plastics** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Stephan Knappe |
| 1:50 | (2130-2) | **Photo-Orientation of Hydrogen-Bonded Polymer-Azobenzene Complexes Using Polarization Modulation Infrared Structural Absorbance Spectroscopy** XIAOXIAO WANG, University of Montreal, Jaana Vapaavuori, C Geraldine Bazuin, Christian Pellerin |
| 2:10 | (2130-3) | **The Interest of High Resolution ICP-OES for the Determination of Trace Elements in a Rare Earth Element Matrix and in Nd Fe B Magnetic Materials** KAYVON SAVADKOUEI, Horiba Scientific, Matthieu Chausseau, Alice Stankova, Philippe Hunault |
| 2:30 | (2130-4) | **Material Analysis Using Euclidean Distance Clustering** MICHAEL BORUTA, ACD/Labs |
| 2:50 | | **Recess** |
| 3:05 | (2130-5) | **Stratified Dipole-Arrays Model Accounting for Perfluoroalkyl Compounds-Specific Bulk Properties** TAKESHI HASEGAWA, Kyoto University, Nobutaka Shioya, Yuki Tanaka, Takafumi Shimoaka, Kohei Moirta, Masashi Sonoyama, Toshiyuki Takagi, Toshiyuki Kanamori |
| 3:25 | (2130-6) | **Characterization of Liquid Crystal Materials by DSC and TGA-GC-MS** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Erwin Kaisersberger |
| 3:45 | (2130-7) | **Graphite from the University of Idaho Thermolyzed Asphalt Reaction (GUITAR): Electrochemical Studies and Applications** ISAIAH O GYAN, University of Idaho, I F Cheng |
| 4:05 | (2130-8) | **Brine Analysis Using Radial Viewing ICP-OES Instrument with Total Plasma View Feature** KAYVON SAVADKOUEI, Horiba Scientific, Matthieu Chausseau, Alice Stankova, Philippe Hunault |

**ORAL SESSION** **Session 2140**

**Methods for Bio-Analysis**

**Wednesday Afternoon, Room 270**
Meng Sun, University of Kansas, Presiding

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| 1:30 | (2140-1) | **Low-Cost 3D-Printed Microfluidic Devices with Integrated Electrodes Prepared by Fused Filament Fabrication for Protein Biosensing Applications** GREGORY W BISHOP, University of Connecticut, Jennifer E Satterwhite, Snehasis Bhakta, James F Rusling |
| 1:50 | (2140-2) | **Solid-Phase Extraction and Labeling Using a Pressure-Actuated Integrated Microfluidic System** SURESH KUMAR, Brigham Young University, Vishal Sahore, Chad I Rogers, Adam T Woolley |
| 2:10 | (2140-3) | **High-Throughput Probing of Multi-Protein Complex Formation Applied to the Blood Coagulation Cascade** ELLEN M MUEHL, University of Illinois at Urbana Champaign, Ryan C Bailey, James H Morrissey, Joshua M Gajsiewicz |
| 2:30 | (2140-4) | **Microfluidic Isolation and Multiplexed Molecular Profiling of Tumor-Derived Circulating Exosomes** YANG YANG, University of Kansas, Zheng Zhao, Mei He, Yong Zeng |
| 2:50 | | **Recess** |
| 3:05 | (2140-5) | **Body System Communication via the Circulation on a 3D Printed Platform** CHENGPENG CHEN, Michigan State University, Dana M Spence |
| 3:25 | (2140-6) | **Dose Response Study by Creating Concentration Gradient Across 256 Cell Culture Array** HIMALI K SOMAWEERA, Texas Tech University, Akif Ibraguimov, Dimitri Pappas |
| 3:45 | (2140-7) | **Inkjet-Printed Gold Nanoparticle Immunoarray for Ultrasensitive Detection of Parathyroid Hormone-Related Protein (PtHrP)** BRUNAH A OTIENO, University of Connecticut, Colleen E Kruase, Benoit Ochietti, Richard B Kremer, James F Rusling |
| 4:05 | (2140-8) | **Measurement of Total Antioxidant Capacity (TAC) on Microfluidic Paper-Based Analytical Devices (μPADs)** MENG SUN, University of Kansas, Michael A Johnson |

**ORAL SESSION** **Session 2150**

*Molecular Spectroscopy: New Developments*

**Wednesday Afternoon, Room 271**
Timothy A Policke, The Babcock & Wilcox Company, Presiding

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| 1:30 | (2150-1) | **Chemical Reaction Spectrophotometry for the Analysis of Petroleum Hydrocarbons** JOHN D HANBY, Hanby Environmental |
| 1:50 | (2150-2) | **A New Simple and Robust Process FT-NIR Spectrometer with Small Footprint and Extended Maintenance Interval** THOMAS BUIJS, ABB, Michael B Simpson |
| 2:10 | (2150-3) | **Quenching of the Solid Matrix Room Temperature Fluorescence of PAH Compounds from a Sugar Glass** MATTHEW MARLOW, Nicholls State University, Jonathan Comeaux |
| 2:30 | (2150-4) | **Analysis of Fatty Acid Methyl Esters Content in Commercial Diesel Fuel Samples Using a Portable FTIR Spectrometer and Pre-calibrated Quantitative Methods** KEITH C SCHOMBURG, PerkinElmer, Justin Lang |
| 2:50 | | **Recess** |
| 3:05 | (2150-5) | **Application of Ionization Spectroscopy to the Real Time Studies of Tobacco Product Smoke Delivery** QUANLI GU, RJ Reynolds Tobacco Company |
| 3:25 | (2150-6) | **Disposable Sampling for Easy Deployment of FTIR QA Applications in the Field** THOMAS BUIJS, ABB, Henry Buijs |
| 3:45 | (2150-7) | **Recent Advances in Cuprac Methodology for Antioxidant Capacity/Activity Assessment** RESAT M APAK, Istanbul University, Mustafa Ozyurek, Kubilay Guclu, Esin S Celik, Burcu Bektasoglu, Sema D Cekic |
| 4:05 | (2150-8) | **UV Raman Using a Spatial Heterodyne Raman Spectrometer (SHRS): Performance Evaluation for Standoff Applications** NIRMAL LAMSAL, University of South Carolina, Shiv K Sharma, Tayro Acosta, S Michael Angel |

**ORAL SESSION** **Session 2160**

*Nanotechnology in Biomedical Analysis*

**Wednesday Afternoon, Room 272**
David F Pensenstadler, The Pittsburgh Conference, Presiding

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| 1:30 | (2160-1) | **Facile and Efficient Surface Functionalization of Hydrophobic Magnetic Nanoparticles** YUAN LIU, University of Florida |
| 1:50 | (2160-2) | **Synchrotron X-Ray Fluorescence to Quantify Single-Cell Nanoparticle Concentrations and to Characterize the Distribution of Nanoparticle Uptake Concentration Across Cell Population** JASON T RASHKOW, Stony Brook University, Sunny Patel, Ryan Tappero, Balaji T Sitharaman |
| 2:10 | (2160-3) | **Bioanalytical Applications of Single Nanoparticle Collision at Microelectrodes** ANAHITA KARIMI, Clarkson University, Naimish P Sardesai, Akhtar Hayat, Daniel Andreescu, Silvana Andreescu |
| 2:30 | (2160-4) | **Probing Interactions Between Mechanical and Biomolecular Cues on Stem Cells in Collagen-GAG Biomaterials** JESSICA M BANKS, University of Illinois at Urbana-Champaign, Laura C Mozdzen, Brendan A Harley, Ryan C Bailey |
| 2:50 | | **Recess** |
| 3:05 | (2160-5) | **Functional Nanobioreactors For Protein Analysis** LIU BAOHONG, Fudan University, Ji Ji, Liu Yun , Qiao Liang, Yang Pengyuan, Hubert H Girault |
| 3:25 | (2160-6) | **Quality Determination of Gold, Silver, and Silica Nanoparticles Formulated for Intravenous Injections—The Importance of Characterization, Methodology, and Correct Method Analysis During Pre-Clinical Testing** KATHERINE M TYNER, US Food and Drug Administration, Gillian Sissman, Archana Raghavan, Grainne Tobin |
| 3:45 | (2160-7) | **Improving the Sensitivity of Nanohole Arrays and Design of a 96-Well Plate Reader for Plasmonic Sensing** MAXIME COUTURE, Universite de Montreal, Jean-François Masson, Hugo-Pierre Poirier Richard |
| 4:05 | (2160-8) | **Highly Sensitive Diagnostic Platform for the Detection of C-reactive Protein in Spiked Human Serum Using Surface Plasmon Resonance Imaging (SPRi)** MARINELLA SANDROS, UNCG, Stephen Vance |

# TECHNICAL PROGRAM

**ORAL SESSION** **Session 2165**

*Separation Methods - GC and GC-MS*

**Wednesday Afternoon, Room 277**
Charles L Wilkins, University of Arkansas, Presiding

| | | |
|---|---|---|
| 1:30 | (2165-1) | **Portable Gas Analyzer for Continuous Monitoring of Sulfur Dioxide in Gas Streams** SAYED A MARZOUK, United Arab Emirates University, Mohamed A Alnaqbi, Muna S Bufaroosha, Maliha R Parvin, Mohamed H Al-Marzouqi |
| 1:50 | (2165-2) | **Improved HPLC and GC Connections for Better Chromatographic Results** KEN LYNAM, Agilent Technologies, Tiantian Li |
| 2:10 | (2165-3) | **Performance Evaluation of a Single-Stage Consumable-Free Modulation System for Comprehensive Two-Dimensional Gas Chromatography** MATTHEW K EDWARDS, University of Waterloo, Tadeusz Górecki, Alina Muscalu, Eric J Reiner |
| 2:30 | (2165-4) | **Mass Spectrometry of Amino Acid Derivatives** NINO TODUA, National Institute of Standards and Technology, Kirill Tretyakov, Anzor Mikaia |
| 2:50 | | **Recess** |
| 3:05 | (2165-5) | **Vacuum Ultraviolet Spectroscopy as Complementary Detection Method for Comprehensive Two-Dimensional Gas Chromatography Time-of-Flight Mass Spectrometry in Breath Gas Analysis** THOMAS M GRÖGER, Joint Mass Spectrometry Centre, Beate Gruber, Mohammad Reza Saraji-Bozorgzad, Dale Harrison, Ralf Zimmermann |
| 3:25 | (2165-6) | **Revisions to US EPA Methods 8260 and 8270** DIANE GREGG, US EPA Region 6, Steve Reimer, Troy Strock, Shen-yi Yang |
| 3:45 | (2165-7) | **Encouraging Results for Some Challenging Industrial Applications Using a Stationary Phase** KEN LYNAM, Agilent Technologies, Gary Lee, K Gras, Ronda Gras, J Luong |

**ORAL SESSION** **Session 2170**

*Techniques in Forensic Analysis*

**Wednesday Afternoon, Room 273**
David L Wetzel, Kansas State University, Presiding

| | | |
|---|---|---|
| 1:30 | (2170-1) | **Forensic Applications of Open Probe Fast GC-MS** AVIV AMIRAV, Tel Aviv University, Bogdan Belgorodsky, Alexander Fialkov, Uri Keshet, Tal Alon |
| 1:50 | (2170-2) | **The Influence of Temperature and Atmospheric Composition on the Pyrolysis of Household Materials** JAMES J HARYNUK, University of Alberta, Xiao Q Lee, Mark Sandercock |
| 2:10 | (2170-3) | **Direct Analysis in Real Time Mass Spectrometry (DART-MS) of Cathinone "Bath Salt" Drugs and Mixtures** JASON SHEPARD, University at Albany, SUNY, Rabi Musah, Robert Cody, A John Dane, Marek Domin |
| 2:30 | (2170-4) | **Forensic Analyses by Morphologically Directed Raman Spectroscopy** BROOKE W KAMMRATH, University of New Haven, Andrew Koutrakos, Josemar Castillo, Joe Wolfgang, Deborah Huck-Jones |
| 2:50 | | **Recess** |
| 3:05 | (2170-5) | **Characterization of Methamphetamine and Its By-Products by DART-MS** JASON SHEPARD, University at Albany, SUNY, Marek Domin, Donna Iula, Brian Musselman |
| 3:25 | (2170-6) | **Using Fourier Transform Infrared Spectroscopy Paired with Multivariate Statistical Analysis to Estimate Blood Age Under Different Environmental Conditions** ZHENYU LU, University of South Carolina, Brianna Cassidy, Katherine A Witherspoon, Alena Bensussan, Michael L Myrick, Stephen L Morgan |
| 3:45 | (2170-7) | **Infrared Microspectroscopic Chemical Characterization of Forensic Fingerprint Ridges Deposited on Reflective Surfaces** DAVID L WETZEL, Kansas State University, Jarrod B Bechard, Mark D Boatwright |

**ORAL SESSION** **Session 2180**

*UV/VIS Applications (Half Session)*

**Wednesday Afternoon, Room 274**
John F Turner II, Cleveland State University, Presiding

| | | |
|---|---|---|
| 1:30 | (2180-1) | **A Tunable Surface Plasmon-Coupled Wide-Field Hyperspectral Imaging Filter** JOHN F TURNER, Cleveland State University, Nick Pallas, Ajaykumar Zalavadia |
| 1:50 | (2180-2) | **Simultaneous Concentration Measurements of Multiple Samples with a Single Spectrometer** CLAUDIO O EGALON, S&ST and Los Angeles Harbor College |
| 2:10 | (2180-3) | **A Rolling Grating Gathers No CMOS: Stacked Transmission Grating Spectrometry** ALEXANDER SCHEELINE, SpectroClick |
| 2:30 | (2180-4) | **A Comparative Study Between Different Signal Processing Techniques for Spectrophotometric Resolution of Binary Mixtures** SAID A HASSAN, Cairo University, Eman S Elzanfaly, Maissa Salem, El-Zeany Badr |

**POSTER SESSION** **Session 2190**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Applications of Gas Chromatography Mass Spectrometry*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

| | |
|---|---|
| (2190-1 P) | **Fast GC-TOF MS for High-Throughput Screening of Environmental Contaminants** NICK BUKOWSKI, Markes International, Matthew Bates, Bob Green |
| (2190-2 P) | **EPA Method TO-17: Thermal Desorption Technique for the Determination of Toxic Organic Compounds in Ambient Air** ILARIA FERRANTE, Dani Instruments SpA, Chiara Abate, Roberta Lariccia, Recenti Daniele |
| (2190-3 P) | **Effects of Pollution on the Religious Activity of Individuals Along the Ganges River: An Interdisciplinary Pilot Study with Sociological and Analytical Chemistry Based Approaches** BRIAN LEMANSKI, Colgate University, Srikar Gullapalli, Steve Connor, Karen Harpp |
| (2190-4 P) | **Box-Behnken Design Applied to Ultrasound-Assisted Extraction for the Determination of Polycyclic Aromatic Hydrocarbons in River Sediment by Gas Chromatography/Mass Spectrometry** MARIA AUXILIADORA C MATOS, University in Juiz de Fora, Mellina D Santos, Marcos R Carqueira, Fausto M Araujo, Marcone L Oliveira |
| (2190-5 P) | **VOC and SVOC Emissions from Materials with Relevance to Vehicle Interior Air Quality: Regulation, Standard Methods and Analytical Implementation** NICOLA M WATSON, Markes International, David Wevill, Peter Grosshans, Vanessa Frost-Barnes, Caroline Widdowson |
| (2190-6 P) | **Development of Extraction Method for Persistent Organic Pollutants in Dietary Supplements Using Stir Bar Sorptive Extraction and Direct Isotope Dilution Mass Spectrometry** WEIER HAO, Duquesne University, Andrew Boggess, HM Skip Kingston |
| (2190-7 P) | **The Effects of Antioxidants on Biomarkers Related to DNA Oxidative Damage** ONDER AYBASTIER, Uludag University, Cevdet Demir |
| (2190-8 P) | **Considerations for Selection of Gas Chromatography Tandem Mass Spectrometry SRM Transitions for Pesticides in Food Matrices** JULIE KOWALSKI, Restek, Rebecca Stevens, Linx Waclaski, Jack Cochran, Jaap de Zeeuw, Jason Fisher |
| (2190-9 P) | **Volatile and Semi-Volatile Profile Comparison of Whole versus Dry Homogenized Wheat, Rye and Barley Grains by Direct Thermal Extraction GC/MS** RONALD E SHOMO, Scientific Instrument Services, Christopher Baker, John J Manura |
| (2190-10 P) | **Introduction of an Improved Cyanopropylphenyl Stationary Phase with High Temperature Stability** JAAP DE ZEEUW, Restek, Rebecca Stevens, Linx Waclaski, Kristi Sellers, Amanda Rigdon |
| (2190-11 P) | **Analysis of Polymers, Additives and Contaminants in Medical Devices Using Pyrolysis-GCMS** GARY DEGER, CDS Analytical, Karen Sam |
| (2190-12 P) | **Headspace Analysis of Dinitrotoluene Isomers** CHRISTOPHER J KATILIE, Nova Research, Inc., Lauryn E DeGreeff, Kevin J Johnson, Susan L Rose-Pehrsson |
| (2190-13 P) | **An Improved Instrumental Method for Determination of Hydroperoxides in Jet and Diesel Fuels** KRISTINA M MYERS, Nova Research, Inc., Thomas N Loegel, Robert E Morris |
| (2190-14 P) | **Improved Analysis of Petroleum Isomer Distribution Using Cold EI GC/MS** ADAM J PATKIN, PerkinElmer, Ruben Garnica, Andrew N Tyler |
| (2190-15 P) | **GC-MS Analysis of Essential Oil Extract from the Roots of Carpolobia Lutea - A Potential Tropical Pro-Fertility Plant** ELIZABETEH A OSIBOTE, University of Lagos, Abdul Fatai A Lawal |

**POSTER SESSION** **Session 2200**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Applications of Super Critical Fluid Chromatography*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2200-1 P) **Extraction, Purification, and Analysis of Dang Gui Root Using Supercritical Fluid Techniques** ANDREW J AUBIN, Waters Corporation, Jo-Ann M Jablonski

(2200-2 P) **Withdrawn**

**POSTER SESSION** **Session 2201**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Capillary Electrophoresis - Bioanalytical and General Interest*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-450**

(2201-1 P) **Separation of Opioid Peptides by Open-Tubular Capillary Electrochromatography Using a Gold Nanoparticle Coated Capillary** ABDULLAH AL-HOSSAINI, University of Kansas, Susan M Lunte

(2201-2 P) **Top-Down Analysis of Reduced Monoclonal Antibodies with Capillary Zone Electrophoresis-Electrospray Ionization-Tandem Mass Spectroscopy** YIMENG ZHAO, University of Notre Dame, Liangliang Sun, Michael D Knierman, Norman J Dovichi

(2201-3 P) **Selection of Aptamers Using Quantum Dot-Assisted Capillary Electrophoresis SELEX** MICHAEL J MARTIN, Eastern Michigan University, Jeffrey W Guthrie

(2201-4 P) **Single ciAP Enzyme Studies Using CE-LIF** EMILY AMENSON, University of Notre Dame, Norman J Dovichi, Bonnie J Huge

(2201-5 P) **Simultaneous Detection of Two UV-Induced DNA Damages Using Capillary Electrophoresis and Quantum Dots** JEFFREY W GUTHRIE, Eastern Michigan University

(2201-6 P) **Improving an In-Capillary Assay for Creatinine** ELIZABETH J SEIDELL, Bucknell University, Abigail F Kreznor, Timothy G Strein

(2201-7 P) **Capillary Electrophoresis Coupled with Automated Fraction Collection** BONNIE J HUGE, University of Notre Dame, Ryan J Flaherty, Norman J Dovichi

(2201-8 P) **Using Simulations to Understand and Optimize EMMA and tITP Conditions of the Jaffe Reaction** MARIA D JONES, Bucknell University, Timothy G Strein, Adam R Meier

(2201-9 P) **Capillary Electrochromatography Coupled to Electrospray Ionization-Mass Spectrometry for Neutral Oligosaccharide Analysis** NICOLE SCHIAVONE, University of Notre Dame, Zhenbin Zhang, Anthony S Serianni, Norman J Dovichi

(2201-10 P) **Investigating Electrospray Behavior in Capillary Electrophoresis Coupled Mass Spectrometry** JARED LAMP, University of Notre Dame, Norman J Dovichi

(2201-11 P) **Bottom-Up Proteome Analysis of Escherichia Coli Using CZE-ESI-MS/MS with Capillary Reversed Phase Liquid Chromatography Prefractionation** XIAOJING YAN, University of Notre Dame, Liangliang Sun, Guijie Zhu, Norman J Dovichi

(2201-12 P) **Understanding Bile Salt-Mediated MECK Chiral Separations Using NMR** ROSS T PIRNIE, Bucknell University, Timothy G Strein, David Rovnyak

(2201-13 P) **Microemulsionelectrokinetic Chromatography with Polarity Switching Stacking Mode for the Determination of Dexamethasone and Dexamethasone Sodium Phosphate: Application to Pharmacokinetic Study in Rabbit Plasma** NOURAH ALZOMAN, King Saud University, Hadir Maher, Mona Alshehria, Haya Joharc, Maha Sultand

**POSTER SESSION** **Session 2205**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Consumer Products*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2205-1 P) **Withdrawn**

(2205-2 P) **Automated Online Desorption and Analysis of DNPH Derivatives of Airborne Aldehydes and Ketones** EDWARD PFANNKOCH, GERSTEL, Inc., Fredrick Foster, John Stuff, Kurt Thaxton

(2205-3 P) **Separation and Characterization of Indian and Australian Sandalwood Oils** DAVID J SCOTT, PerkinElmer, Adam J Patkin, Lee Marotta

(2205-4 P) **Characterization of Silver Nanoparticles in Consumer Products by Single Particle Mode ICP-MS** CHADY STEPHAN, PerkinElmer, Leon Davidowski

(2205-5 P) **Air Sampling of Fragrance Compounds** JOHN STUFF, GERSTEL, Inc., Jackie Whitecavage

(2205-6 P) **Determination of Niacinamide Extracted from Lotions and Creams** KARYN M USHER, Metropolitan State University, Carolyn R Simmons, Daniel W Keating, Henry F Rossi III

**POSTER SESSION** **Session 2210**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

*Developments in Process Analytical Chemistry*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2210-1 P) **Enhanced LC-MS Sensitivity of Vitamin D Assay by Selection of Appropriate Mobile Phase** SUBHRA BHATTACHARYA, Thermo Fisher Scientific, Stephen C Roemer

(2210-2 P) **A No Dry-Down Solid Phase Extraction Method for the Direct Measurement of Imidazoline Based Corrosion Inhibitors in Formulation and New Product Development Prior to LC-TOF-MS** FRANK KERO, Biotage, Phillip Watson, Randi Schilter, Matthew Hill, Victor Vandell, Elena Gairloch, Martin Cherrier

(2210-3 P) **Application of Suggested Formula (ADJ) of Specific Refraction in Binary (Ethanol+Water) Mixtures at 293.15 K, and 313.15 K** SUBASH S ANDHER, The HSNS Ltd Science College

(2210-4 P) **Environmentally Sustainable Analytical Reagent Like 1-[2′-Chororo-5′-Sulphophenyl-3-Methyl-4-Azo – [2″-Carboxy-5″-Sulphonic Acid]-5-Pyrazolone as a Spectrophotometric Reagent** KETANKUMAR C DESAI, PT Sarvajanik College of Science

(2210-5 P) **Chitosan-An-Alginate Nanoparticles as a Curcumin Slow Release System** AGENG TSP PUTRA, Universitas Gadjah Mada, Dwi Siswants, Adhitasari Suratman

(2210-6 P) **A New Method for Continuous Detection of Trace Ions in Pure Water** HIROTO MASUNAGA, Nichiri Manufacturing Co., Ltd., Mizuo Ishii, Hideki Igai

(2210-7 P) **Improved Vaporization Device for LPG Analysis by Gas Chromatography** GIANLUCA STANI, SRA Instruments, Xavier Cardot, Axel Bart, Cyril Ailliot

(2210-8 P) **Fast and On-Site Natural Gas Odorants Analysis Using Micro Gas Chromatography** REMKO VAN LOON, Agilent Technologies, Coen Duvekot

(2210-9 P) **New Fast Micro-Analyzer Equipped with an On-Line Liquid Injection System** ADRIEN MANIQUET, Ideel Factory, Alain Delauzun, Ronan Cozic, Sandra Grimaldi, Franck Baco-Antoniali

# TECHNICAL PROGRAM

**POSTER SESSION** **Session 2220**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Food Safety*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2220-1 P) **FTIR-ATR Characterization of Commercial Honey Samples and Their Adulteration with Sugar Syrups Using Chemometric Analysis** JEFFREY R HEAD, Shimadzu Scientific Instruments, John M Kinyanjui, Chester M Talbott

(2220-2 P) **Examination of Dietary Supplements for PDE-5 Inhibitor Adulteration by PLM and FTIR Microscopy** CHESTER M TALBOTT, Shimadzu Scientific Instruments, John M Kinyanjui, Jeffrey R Head, Anton N Bzhelyansky

(2220-3 P) **Determination of 20 PAEs in Alcoholic Drinks Using Ultra High Performance Liquid Chromatography-Tandem Mass Spectrometry** HENGTAO DONG, Shimadzu (China) Co., Ltd., Jinting Yao, Taohong Huang

(2220-4 P) **Wool Packing or No Wool Packing in a Splitless GC Inlet Liner—What is Better for Pesticide Analysis? A Case Study with a QuEChERS Strawberry Extract** JACK COCHRAN, Restek, Linx Waclaski, Jaap de Zeeuw, Rebecca Stevens

(2220-5 P) **A Novel Fast HPLC Method for Determination of Aflatoxins in Milk and Grains by UV Detection on the Flexar PDA-Plus That Eliminates Derivitization** JASON WEISENSEEL, PerkinElmer, Wilhad M Reuter, Amanda Prior

(2220-6 P) **Analysis of Pesticides Residues in Apples** VALERIE DESYROY, SiliCycle Inc., Vincent Bédard, François Béland, Genevieve Gingras, Yvan Chouinard

(2220-7 P) **Antimicrobial Agents in Bovine Milk: Screening to Confirmatory Analysis by Liquid Chromatography Mass Spectrometry** KENNETH ROSNACK, Waters Corporation, Joe Romano, Dominic Roberts, Sara Stead, Eimear McCall, Danny Chan

(2220-8 P) **Analysis of Kenyan Honey for Essential and Heavy Metals by Atomic Absorption and Atomic Emission Spectroscopy** ONDITI OUMA ANAM, Jomo Kenyatta University of Agriculture and Technology, Anne Mbiri

(2220-9 P) **Comparative Evaluation of the Antibacterial Activities of the Essential Oils of Rosmarinus Officinalis** OMOBOLA OLURANTI OKOH, University of Fort Hare

(2220-10 P) **Food Provenance Verification by Combined ICPMS and LCMS Chemometrics** ROBERT PACKER, PerkinElmer, Kathryn Kuhr

(2220-11 P) **Rapid Determination of 54 Kinds of Pesticide Residues in Vegetables by PTV-GC-MS/MS** LUO SHIHENG, Shimadzu Co., Ltd

(2220-12 P) **A Method for the Simultaneous Analysis of 174 Pesticides in Grape Using GC-MS/MS** FEIFEI TIAN, Shimadzu Co., Ltd, Xizhi Wang, Shiheng Luo, Guixiang Yang, Taohong Huang, Shin-ichi Kawano, Yuki Hashi

**POSTER SESSION** **Session 2225**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *High-Throughput Chemical Analysis*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2225-1 P) **Performance Study on a New Continuous Flow Automated Chemistry Analyzer** LIBBY AUSTIN BADGETT, Xylem/OI Analytical, Brant Hoekstra

(2225-2 P) **Study of Analysis of Slags Using Laser Induced Breakdown Spectroscopy (LIBS)** HERVE SANGHAPI, Mississippi State University, Ayyalasomayajula Krishna, Yueh Fang, Singh Jagdish, Charles Ghany, McIntyre Dustin, Jain Jinesh, Nakano Jinichiro

(2225-3 P) **The Effects of Various Matrices on the Binding Affinity of Estrogens to Titanium Dioxide** MARRIAH ELLINGTON, West Virginia University, Vincent Nyakubaya, Cassandra Crihfield, Lisa A Holland

(2225-4 P) **A Rugged C18 Stationary Phase for Accelerated Analysis** PAUL D CONNOLLY, Restek, Ty Kahler, Frances Carroll, Sharon Lupo, Shun-Hsin Liang, Carrie Sprout, Richard J Lake

(2225-5 P) **Rapid Automated L-Ascorbic Acid Analysis from Milk Powder and Juice** ANNE-MARIA RIIHIMÄKI, Valio Ltd, Mari Klemm, Sari Hartikainen, Annu Suoniemi-Kähärä

(2225-6 P) **A New Ultra-Fast Raman Chemical Analyzer for Online Detection, Identification, and Quantification of HPLC Column Eluents** FRANK WU, AcuTech Scientific Inc., Frank J Yang, Kevin Wang, Austin Liu

**POSTER SESSION** **Session 2230**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Liquid Chromatography - Polymers, Plastics and Others*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2230-1 P) **High-Pressure Electrolytic Carbonate Eluent Generation Devices and Their Applications in Ion Chromatography Systems** YAN LIU, Thermo Fisher Scientific, Zhongqing Lu, Christopher A Pohl

(2230-2 P) **What Efficient Temperature Control Can Teach us on Chromatography** FRANK STEINER, Thermo Fisher Scientific, Michael Heidorn, David H Thomas, Wulff Niedner

(2230-3 P) **A Rapid UHPLC Method for the Analysis of Biogenic Amines and Metabolites in Microdialysis Samples** BRUCE BAILEY, Thermo Fisher Scientific, Ian N Acworth

(2230-4 P) **Development of Online Sample Preparation/Separation System with Polymer-Coated Fiber-Packed Capillary** AKIRA KOBAYASHI, Toyohashi University of Technology, Ikuo Ueta, Yoshihiro Saito

(2230-5 P) **New GFC Columns for Low Noise MALS Analysis** TORU MATSUI, Showa Denko K.K., Mellissa Turcotte, Ronald Benson

(2230-6 P) **Development of a Chiral Method for Levamisole and Related Compounds for Monitoring Abused Use in Horseracing and Cocaine Distribution** DAVID S BELL, Supelco/Sigma-Aldrich, Denise Wallworth, Gaurang Parmar, Jennifer Claus

(2230-7 P) **Highly Sensitive Far Ultraviolet Absorbance Detection in High Performance Liquid Chromatography** YUICHI UCHIHO, Hitachi, Ltd., Masao Kamahori, Yusuke Goto, Toshimichi Aota, Yusuke Hosen, Kimiyoshi Koda

(2230-8 P) **Non-Pneumatic Membrane Gas Remover** MASUNAGA HIROTO, Nichiri Mfg. Co., Ltd., Mizuo Ishii, Igai Hideki

(2230-9 P) **Continuous Flow Reactor for Carbonic Acid Hydrolysis of Biomass** NICHOLAS DUDENHOEFFER, Missouri University of Science and Technology, John K Armstrong, Paul K Nam, Keesoo Lee

(2230-10 P) **Method Transfer and Scalability with a Wide Variety of Superficially Porous Particles** ANNE E MACK, Agilent Technologies, William Long, Jason Link, Xiaoli Wang

(2230-11 P) **Achieving Faster GPC Separations Using Novel High Pore Volume Columns and Conventional Instruments** WILLIAM LONG, Agilent Technologies, Stephen Luke, Alan Brookes, Graham Cleaver

**POSTER SESSION** **Session 2240**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Microscopy Techniques for Nanotechnology and Biomedical Applications*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2240-1 P) **Time Resolved Study of Gold-Coated Iron Oxide Nanoparticle Growth** ELISE CHAFFIN, The University of Memphis

(2240-2 P) **Giant Lipobeads: Preparation, Characterization by Confocal Microscopy, and Mechanisms of Controlled Release** SERGEY V KAZAKOV, Pace University, Alfredo Dumalsen, Khushbu Kanani

(2240-3 P) **Investigating Retention Time in Alumina-Anodic Pore as Function of Surface Modification with Confocal and Confocal-Type STED Techniques** FANG CHEN, North Carolina State University, Bhanu Neupane, Gufeng Wang

(2240-4 P) **High-Throughput Measuring Scattering Spectra and Size of Single Plasmonic Nanoparticle** JING CHAO, East China University of Science and Technology, Yi-Tao Long, Xin Shi

(2240-5 P) **Biomolecular Modification of Collagen Scaffolds for 3D Cell Culture** AURORA ALSOP, University of Illinois, Urbana-Champaign, Ryan C Bailey, Brendan A Harley

(2240-6 P) **Total Holographic Characterization of Colloidal Suspensions** LAURA A PHILIPS, Spheryx, Inc., Fook C Cheong, David G Grier

(2240-7 P) **Super Resolution Microscopy to Characterize Surface Functional Group Heterogeneity of Activated Polymer Surfaces for Application in Nanoscale Electrophoresis** COLLEEN E O'NEIL, University of North Carolina at Chapel Hill, Sang-Hee Shim, Joshua M Jackson, Yoonkyoung Cho, Steve A Soper, Franklin Uba

**POSTER SESSION** **Session 2250**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Polymers and Plastics*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2250-1 P) **Relative Humidity and Karl Fischer: Equivalency Testing of Moisture-Specific Analysis Methods** CHRISTOPHER ALTAMIRANO, Arizona Instrument

(2250-2 P) **Thermal Conductivity of Solid and Liquid Polymers Using Laser Flash Analysis** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Juergen Blumm, Andre Lindemann

(2250-3 P) **Analytical Evaluation of the Utilization of Some Lignin Derivatives as Filler for Enhancing Rubber Properties** FAHIMA M HELALY, National Research Centre

(2250-4 P) **Analyzing Chemical Composition of Rigid Polyurethane Foams Using FTIR Microscopy** JOHN M KINYANJUI, Shimadzu Scientific Instruments, Chester M Talbott, Jeffrey R Head

(2250-5 P) **The Science and Measurement of Color and Haze Important Material Characteristics That Impact Our Everyday Lives** CHRIS LYNCH, PerkinElmer, Frank Padera, Peter Muller

(2250-6 P) **Detection of Contamination in Recycled Plastic Using Fast Gas Chromatography** JEAN-CHRISTOPHE MIFSUD, Alpha MOS, Herve Lechat, Andrew Cowell, Fatma Ayouni, Valerie Vabre

(2250-7 P) **Possible Mode of Action of Cyanuric-Phosphonate Derivatives as Flame Retardants on Cotton Fabric** DUONG NGUYEN THACH-MIEN, USDA, SeChin Chang, Brian Condon

(2250-8 P) **Microrheology Using DWS Spectroscopy for Gel Point Determination** JIM MUNHALL, Formulaction Inc, Roland Ramsch, Gérard Meunier

(2250-9 P) **Withdrawn**

(2250-10 P) **Injection Molded Polymer Chips for Optofluidic Applications** MARCO MATTEUCCI, Technical University of Denmark, Giovanni Nava, Kirstine Berg-Sørensen, Rafael Taboryski

(2250-11 P) **Characterization of Atmospheric Pressure Polyolefin Pyrolysis Products by Fourier Transform Mass Spectrometry and Ion Mobility – Mass Spectrometry** CARLOS AFONSO, University of Rouen, Mathilde Farenc, Mathias Witt, Kirsten Craven, Caroline Barrère-Mangote, Pierre Giusti

**POSTER SESSION** **Session 2255**

**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, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Quality/QA/QC and Laboratory Management*

**Wednesday Afternoon, Exposition Floor, Hall F, Aisles 3900-4500**

(2255-1 P) **Improving the Analysis of Flavonoids in Juices** JINCHUAN YANG, Waters Corporation, Joe Romano, Kenneth Rosnack, Rich DeMuro

(2255-2 P) **Analysis of Pain Killers Dispensed in Kenya for Active Ingredients Using Gas Chromatography-Mass Spectrometry** ONDITI OUMA ANAM, Jomo Kenyatta University of Agriculture and Technology, Elizabeth N Murago

(2255-3 P) **Comparative Studies on the Quality of Selected Samples of Engine Oil Sold in Local Markets in Lagos Nigeria Using X-Ray Fluorescence Spectroscopy (XRFS)** OMOLARA A BAMGBOYE, Lagos State University, Yinka O Shodeke, Medinat O Osundiya

(2255-4 P) **Simultaneous Analysis of Vitamin A and D3 in Vitamin Premixes and Concentrates by UPC2/PDA** GAVIN GU, Dairy Technical Services Ltd, Alex Orlobline, Jinchuan Yang, Joe Romano, Kenneth Rosnack

(2255-5 P) **Quality Comparisons of Prepared Formulations** ANTHONY R KEMPERMAN, Honeywell, Burdick and Jackson

(2255-6 P) **A Fully Automated Universal Raman Scanner for Samples in Vial, SERS Plate, Tablet Form, Powder Form, 96 Microtiter Well Plate, or 384 Microtiter Well Plate** FRANK J YANG, AcuTech Scientific Inc., Kevin Wang, Austin Liu

(2255-7 P) **New Electrical Fusion System for X-Ray Fluorescence Analysis** RAINER SCHRAMM, FLUXANA GmbH & Co.KG

(2255-8 P) **Determination of Brominated Vegetable Oil in Soft Drinks by UPC2-MS** JINCHUAN YANG, Waters Corporation, Joe Romano, Kenneth Rosnack

(2255-9 P) **Determination of a Staff Utilization Model in a Clinical ICP-MS Laboratory** LISA M BECKER, Mayo Clinic, Matthew Clark, Jessica Fox, Sarah Cambern, Sarah Manzey

(2255-10 P) **Interactive Communication with Instrument to Realize Effective Analytical Workflow in the Laboratory** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Takayuki Kihara, Fuyuki Okamoto, Ryuji Nishimoto, Okiyuki Kunihiro, Masami Tomita

(2255-11 P) **Best Practices for the Use of Micropipettes** A BJOERN CARLE, Artel, Doreen Rumery, George W Rodrigues

(2255-12 P) **Controlling Vapor Pressure the Key to Improved Loss-On-Drying Moisture Analysis** BRADY P CARTER, Decagon Devices, Inc, Wendy Ortman

(2255-13 P) **Monitoring Noise and Vibration in Sensitive Facilities to Control End Results** GLADYS UNGER, Acentech, Steven Africk

(2255-14 P) **QCM Virtual Sensor Arrays for Odor Recognition** NICHOLAS C SPELLER, Louisiana State University, Isiah M Warner

(2255-15 P) **Determination of Flavonoids from Ginkgo Biloba Extract by Capillary Electrophoresis Mass Spectrometry Using a Sheath Liquid Interface** RYAN JOHNSON, University of Kansas, Craig Lunte

(2255-16 P) **Setting the Target (Maximum Admissible) Measurement Uncertainty for Different Analytical Goals** RICARDO BETTENCOURT SILVA, University of Lisbon, Alex Williams

(2255-17 P) **Designing an ELE Workspace for Analytical Development** EVAN ROSS GUGGENHEIM, Biogen Idec Inc.

(2255-18 P) **Development and Validation of Pathlength Absorbance Standards for Microliter Volume Spectrophotometers** BRIAN E LANG, National Institute of Standards and Technology, Kenneth Cole

(2255-19 P) **Solutions with Dedicated MicroGC Software** XAVIER CARDOT, SRA Instruments, Robert Mirabel, Christopher Sauer, Jean-Marie Ducrot

# TECHNICAL PROGRAM

# THURSDAY, MARCH 12, 2015
# MORNING

**SYMPOSIUM** **Session 2260**

***ACS Separations Sciences Subdivision - Novel Teaching Approaches in Chemical Separations and Analysis***

arranged by Michelle Kovarik, Trinity College and Christopher Harrison, San Diego State University

**Thursday Morning, Room 238**

Michelle Kovarik, Trinity College, Presiding

Christopher Harrison, San Diego State University, Presiding

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| 8:30 | | **Introductory Remarks - Michelle Kovarik and Christopher Harrison** |
| 8:35 | (2260-1) | **Gamification – A Novel Educational Approach to Access Scientific Communication of Chromatography** BHAVIK ANIL PATEL, University of Brighton |
| 9:10 | (2260-2) | **Guided-Inquiry Tools and Activities for Teaching Analytical Chemistry** W RUSS ALGAR, University of British Columbia, José Rodríguez-Núñez, E Jane Maxwell |
| 9:45 | (2260-3) | **Analysis of the US Presidents by Chromatography with Mass Spectrometry Detection** JEAN-MARIE D DIMANDJA, Spelman College |
| 10:20 | | **Recess** |
| 10:35 | (2260-4) | **Monitoring Water Quality in a Local Wetland: A Collaborative Endeavor Between Analytical Chemistry and Ecology Laboratories** JENNIFER R FURCHAK, Kalamazoo College, E B Girdler |
| 11:10 | (2260-5) | **Tips, Tools and Technology in the Inverted Analytical Chemistry Classroom** JARED S BAKER, Elmira College |

**SYMPOSIUM** **Session 2270**

***Advanced Analytical Techniques for High Throughput Pharmaceutical Analysis***

arranged by Lin Wang, Merck & Company

**Thursday Morning, Room 239**

Lin Wang, Merck & Company, Presiding

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| 8:30 | | **Introductory Remarks - Lin Wang** |
| 8:35 | (2270-1) | **Development and Implementation of Innovative High-Throughput Screening and Analysis Solutions to Support Discovery and Development of Active Pharmaceutical Ingredients in the Pharmaceutical Industry** ROY HELMY, Merck |
| 9:10 | (2270-2) | **Droplet-Based Mass Spectrometry and Electrophoresis for High-Throughput Screening and Protein Assays** ROBERT T KENNEDY, University of Michigan |
| 9:45 | (2270-3) | **Addressing the Throughput Challenges of MS-Based Screening Using Various Front-End Automation Technologies** ANDREW WAGNER, Bristol-Myers Squibb, Zuzana Haarhoff, Lisa Elkin, Tatyana Zvyaga, Jun Zhang, Wilson Shou |
| 10:20 | | **Recess** |
| 10:35 | (2270-4) | **Perspectives on Implementing Highly Automated Analytical Instruments in a Solid Oral Drug Product Manufacturing Process** XIAOYU ZHANG, Eli Lilly and Company, Ian Leavesley, Todd Malnoey |
| 11:10 | (2270-5) | **Reducing the Burden of Analytical Data Decision Making in High Throughput Parallel Synthesis and Route Scouting** MARK A BAYLISS, Virscidian Inc., Joseph D Simpkins, Stephane Murphy |

**SYMPOSIUM** **Session 2280**

***Advanced Surface and Material Analysis by LEIS, XRD, Synchrotron Radiation, XPS, and ToF-SIMS, Individually and Combined***

arranged by Matthew R Linford, Brigham Young University

**Thursday Morning, Room 242**

Matthew R Linford, Brigham Young University, Presiding

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| 8:30 | | **Introductory Remarks - Matthew R Linford** |
| 8:35 | (2280-1) | **Extreme Surface Sensitivity for Analysis of Catalysts and Other Materials via Modern Low Energy Ion Scattering (LEIS)** THOMAS GREHL, ION-TOF GmbH, Philipp Brüner, Hidde H Brongersma, Ewald Niehuis |
| 9:10 | (2280-2) | **The Vast Capabilities of X-Ray Diffraction and Scattering in Material Analysis** STACEY J SMITH, Brigham Young University |
| 9:45 | (2280-3) | **Photoelectron Spectroscopy: From Surface Chemistry To Buried Interfaces** JEFF TERRY, Illinois Institute of Technology |
| 10:20 | | **Recess** |
| 10:35 | (2280-4) | **Analysis of Industrial Materials Using XPS and TOF-SIMS** MICHAELEEN PACHOLSKI, The Dow Chemical Company |
| 11:10 | (2280-5) | **Analysis of New Materials for Chromatography and Data Storage via Multiple Surface/Material Analytical Techniques** MATTHEW R LINFORD, Brigham Young University |

**SYMPOSIUM** **Session 2290**

***Advances in Two-Dimensional Liquid Chromatography***

arranged by Dwight R Stoll, Gustavus Adolphus College

**Thursday Morning, Room 260**

Dwight R Stoll, Gustavus Adolphus College, Presiding

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| 8:30 | | **Introductory Remarks - Dwight R Stoll** |
| 8:35 | (2290-1) | **Combination of the Best of Two Worlds: LCxLC and IMS-qTOF-MS** OLIVER J SCHMITZ, University of Duisburg-Essen |
| 9:10 | (2290-2) | **Selecting a Suitable Column for the Second Dimension in Two-Dimensional Liquid Chromatography** PETER CARR, University of Minnesota, Imad Haidar Ahmad, Brian Barnes, Robert Allen |
| 9:45 | (2290-3) | **Analyze Polysorbate in Monoclonal Antibody Drug Formulations by Multidimensional UHPLC-MS** KELLY ZHANG, Genentech, Yi Li |
| 10:20 | | **Recess** |
| 10:35 | (2290-4) | **Comparison of 1D and 2D Liquid Chromatography Separations of Moderately Complex Mixtures - Simulations and Experiments** DWIGHT R STOLL, Gustavus Adolphus College, Joe Davis |
| 11:10 | (2290-5) | **Preparative Two-Dimensional Chromatography for Drug Discovery and Development** LU ZENG, Takeda California, Inc |

**SYMPOSIUM** **Session 2300**

***Analytical Methodologies to Detect Economic Adulteration and Monitor Food Safety and Quality***

arranged by Romina Shah and Lowri S Dejager, US Food and Drug Administration

**Thursday Morning, Room 261**

Romina Shah, US Food and Drug Administration, Presiding

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| 8:30 | | **Introductory Remarks - Romina Shah and Lowri S Dejager** |
| 8:35 | (2300-1) | **Regulatory Methods for the Detection of Economically Motivated Adulteration in Foods** SHAUN MACMAHON, US Food and Drug Administration, Martin J Stutsman, Lowri DeJager, Timothy H Begley |
| 9:10 | (2300-2) | **Industry Perspective on Food-Related Economic Adulteration** RICHARD STADLER, Nestlé, Matt Dofoo, Yann Epars, Pascal Zbinden, Roman Romero, Etienne Jaccaud, Christophe Cavin |
| 9:45 | (2300-3) | **Screening of Extra Virgin Olive Oil for Assessment of Authenticity: A FT-NIR Spectroscopy and Chemometrics Study** MAGDI M MOSSOBA, FDA, Sanjeewa R Karunthalatika, Hormoz Azizian, Ali Reza Fardin Kia, Pierluigi Delmonte, Cynthia Srigley, John K Kramer, Clark Ridge, John Callahan |
| 10:20 | | **Recess** |
| 10:35 | (2300-4) | **Authentication of Pure Coconut Water** DANA KRUEGER, Krueger Food Laboratories, Inc. |
| 11:10 | (2300-5) | **Current Challenges and Recent Advancements on the Authentication and Adulteration of Olive Oil** SELINA WANG, University of California |

**SYMPOSIUM** **Session 2310**

***Analytical Technologies for the Structural Characterization of Integral Membrane Proteins***

arranged by Iain Campuzano, Amgen

**Thursday Morning, Room 262**

Iain Campuzano, Amgen, Presiding

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| 8:30 | | **Introductory Remarks - Iain Campuzano** |
| 8:35 | (2310-1) | **Selectivity of Membrane Proteins Towards Individual Phospholipids** ARTHUR LAGANOWSKY, University of Oxford, Carol Robinson |
| 9:10 | (2310-2) | **Does Binding of Cholesterol to the Amyloid Precursor Protein Promote Alzheimer's Disease?** CHARLES R SANDERS, Vanderbilt University |
| 9:45 | (2310-3) | **Structural and Functional Analysis of the Native Peripherin/ROM1 Complex Isolated from Photoreceptor Cells** BRIAN KEVANY, Case Western Reserve University, Krzysztof Palczewski, Paul Schnier, Iain Campuzano, Yaroslav Tsybovsky, Andreas Engel |
| 10:20 | | **Recess** |
| 10:35 | (2310-4) | **Methodologies and Analytical Approaches for the Crystallization and Structure Determination of G Protein-Coupled Receptors** AARON A THOMPSON, The Scripps Research Institute, Vadim Cherezov, Ray C Stevens |
| 11:10 | (2310-5) | **Nanodisc Characterization by Tandem Mass Spectrometry, Ion Mobility and Atomic Force Microscopy** IAIN CAMPUZANO, Amgen, Huilin Li, Joseph A Loo, George Svitel, Paul Schnier |

**SYMPOSIUM** **Session 2320**

***Emerging Technologies for Point-of-Care Biomonitoring***

arranged by William R Heineman and Ian Papautsky, University of Cincinnati

**Thursday Morning, Room 264**

William R Heineman, University of Cincinnati, Presiding

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| 8:30 | | **Introductory Remarks - William R Heineman and Ian Papautsky** |
| 8:35 | (2320-1) | **Wearable Sensors and Biofuel Cells** JOSEPH WANG, University of California San Diego |
| 9:10 | (2320-2) | **Point-of-Need Monitoring for Environmental Pollutants and Citizen Science** JOHN VOLCKENS, Colorado State University, Charles Henry, David Cate, Casey Quinn, Jaclyn A Adkins, Daniel Miller-Lionberg |
| 9:45 | (2320-3) | **Point-of-Care Metal Exposure Assessment Using Electrochemical Microsensors** IAN PAPAUTSKY, University of Cincinnati |
| 10:20 | | **Recess** |
| 10:35 | (2320-4) | **Microchip Electrophoresis of Serum N-Glycans as a Cancer Screening Method** STEPHEN C JACOBSON, Indiana University, Christa M Snyder, Indranil Mitra, William R Alley, Milos V Novotny |
| 11:10 | (2320-5) | **Monitoring Corrosion of Biodegradable Magnesium Implants with a Hydrogen Gas Sensor** WILLIAM R HEINEMAN, University of Cincinnati, Tingting Wang, Daoli Zhao, Julia Kuhlmann, Zhongyun Dong, Vesselin N Shanov, Da-Tren Chou, Daeho Hong, Prashant Kumta, Yeoheung Yun |

**SYMPOSIUM** **Session 2330**

***Epigenomics: The Next Analytical Frontier***

arranged by Ryan C Bailey, University of Illinois at Urbana-Champaign

**Thursday Morning, Room 266**

Ryan C Bailey, University of Illinois at Urbana-Champaign, Presiding

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| 8:30 | | **Introductory Remarks - Ryan C Bailey** |
| 8:35 | (2330-1) | **Epigenomics: The Next Frontier in Individualized Medicine** TAMAS ORDOG, Mayo Clinic |
| 9:10 | (2330-2) | **Nanofluidic Mapping of Single Chromatin Fibers** SHUICHI TAKAYAMA, University Michigan |
| 9:45 | (2330-3) | **Nanotechnology Enhanced Analysis of Methylation of Circulating Tumor DNA** TZA-HUEI JEFF WANG, Johns Hopkins University |
| 10:20 | | **Recess** |
| 10:35 | (2330-4) | **Understanding Crosstalk between Signaling and Pathways and Epigenetic Networks** BENJAMIN A GARCIA, University of Pennsylvania School of Medicine |
| 11:10 | (2330-5) | **Microfluidic Automation of Chromatin Immunoprecipitation** RYAN C BAILEY, University of Illinois at Urbana-Champaign, Yi Xu, Amy K Oreskovic, Richard M Graybill, Mallika Modak, Steven Doonan, Jeong-Heon Lee, Tamas Ordog |

**SYMPOSIUM** **Session 2340**

***Forensic Analysis in the Lab and Crime Scene***

arranged by Jose R Almirall, Florida International University

**Thursday Morning, Room 265**

Jose R Almirall, Florida International University, Presiding

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| 8:30 | | **Introductory Remarks - Jose R Almirall** |
| 8:35 | (2340-1) | **Vibrational Spectroscopy for Gunshot Residue Analysis** IGOR K LEDNEV, University at Albany, SUNY, Justin Bueno |
| 9:10 | (2340-2) | **Development of Novel Forensic Sampling Methods and Evaluation of Microextraction Data for the Identification and Classification of Forensic Specimens Utilizing Gas Chromatography Mass Spectrometry** KENNETH G FURTON, Florida International University, Lauren Colon, Vanquilla Shellman, Michelle Cerreta, Rodolfo Messa, Abuzar Kabir |
| 9:45 | (2340-3) | **Towards Fieldable Atomic and Molecular Forensic Mass Spectrometry Technologies** KENYON M EVANS-NGUYEN, The University of Tampa, Hilary Brown, Jennifer Speer, Hanany O Flores Duron, Berk Oktem, Jon Gerling, Vladimir Doroshenko |

# TECHNICAL PROGRAM

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| 10:20 | | **Recess** |
| 10:35 | (2340-4) | **Forensic Source Attribution Using Stable Isotopes: Hairs to Humans and Insects to Carrion** GLEN P JACKSON, West Virginia University, Kateryna I Konstantynova, Mayara P De Matos, Rachel M Mohr |
| 11:10 | (2340-5) | **Paper Microfluidics for Explosives Detection** BRUCE R MCCORD, Florida International University, Kelley Peters |

**SYMPOSIUM** **Session 2350**

***SAS - Atomic Spectroscopy: Going Strong in the 21st Century***
arranged by David Hahn and Nicolo Omenetto, University of Florida

**Thursday Morning, Room 263**
David Hahn, University of Florida, Presiding

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| 8:30 | | **Introductory Remarks - David Hahn and Nicolo Omenetto** |
| 8:35 | (2350-1) | **LIBS on Mars: 200,000 Spectra Later** ROGER C WIENS, Los Alamos National Laboratory, Sylvestre Maurice, Samuel M Clegg |
| 9:10 | (2350-2) | **Laser Resonance Ionization Mass Spectrometry – Unique Tool for Elemental Ultra-Trace Determination and Exotic Isotope Production** KLAUS D WENDT, University of Mainz |
| 9:45 | (2350-3) | **Plasmas for Ambient Ionization: Connecting Plasma Fundamentals to Mass Spectrometric Performance** PAUL B FARNSWORTH, Brigham Young University, Charlotte Reininger, Wade Ellis |
| 10:20 | | **Recess** |
| 10:35 | (2350-4) | **Nanoparticles-Enhanced Laser Induced Breakdown Spectroscopy: Concepts and Applications** ALESSANDRO DE GIACOMO, University of Bari, Can Koral, Rosalba Gaudiuso, Marcella Dell'Aglio, Olga De Pascale |
| 11:10 | (2350-5) | **Add a New Dimension to ICP–AES Analysis: An Automated Diagnostic Tool for Flagging Matrix Interferences** GEORGE CHAN, Lawrence Berkeley National Laboratory, Yan Cheung, Gary M Hieftje |

**WORKSHOP** **Session 2360**

***Innovative Learning Experiences for Analytical Chemistry and Instrumental Analysis***
arranged by Helen M Boylan, Westminster College

**Thursday Morning, Room 269**
Helen M Boylan, Westminster College, Presiding

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| 8:30 | | **Introductory Remarks - Helen M Boylan** |
| 8:35 | (2360-1) | **IF-AT Scratch-Offs Engage Analytical Students with the Chemical Literature** HELEN M BOYLAN, Westminster College |
| 9:05 | (2360-2) | **Taking Analytical Chemistry on the Road, Bonjour Southern France** ROSE A CLARK, Saint Francis University |
| 9:35 | (2360-3) | **Development and Implementation of a Microfluidics Laboratory Module for an Advanced Undergraduate Analytical Chemistry Laboratory** PAUL A PIUNNO, University of Toronto Mississauga, Adrian Zetina, Norman Chu, Anthony J Tavares, M Omair Noor, Eleonora Petryayeva, Andrew Veglio |
| 10:05 | | **Recess** |
| 10:20 | (2360-4) | **Instrumental Analysis of a Crime** ROBERT Q THOMPSON, Oberlin College |
| 10:50 | (2360-5) | **A Novel Experience for Undergraduates to Develop Their Own Laboratory Experiment During Their Instrumental Analysis Course** ROSEMARIE CHINNI, Alvernia University |
| 11:20 | (2360-6) | **Undergraduate Analytical Chemistry: A Semester-Long Mine Drainage Study Within the Framework of an Analytical Chemistry Lab Course, with Research, Community Service, and Professional Service Opportunities for Students** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Joshua M Blaker, Tell M Lovelace, Luke J Metzler, Jesse J Painter |

**WORKSHOP** **Session 2370**

***Successful HPLC Method Development and Method Transfer with Core-Shell and UHPLC Columns***
arranged by Tivadar Farkas and Jason A Anspach, Phenomenex

**Thursday Morning, Room 274**
Tivadar Farkas, Phenomenex, Presiding

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| 8:30 | | **Introductory Remarks - Tivadar Farkas and Jason Anspach** |
| 8:35 | (2370-1) | **Guidelines and Tools for Successful HPLC to UHPLC Gradient Method Translation** A CARL SANCHEZ, Phenomenex |
| 9:05 | (2370-2) | **The Expanding Family of Superficially Porous Particles and the Benefits for Easy Method Development and Transfer** XIAOLI WANG, Agilent Technologies, William Long, Anne E Mack, Wu Chen, Jason Link |
| 9:35 | (2370-3) | **The Critical Choice of Stationary Phase Chemistry during HPLC Method Development** DAVID S BELL, Supelco/Sigma-Aldrich, Craig Aurand, Hugh Cramer |
| 10:05 | | **Recess** |
| 10:20 | (2370-4) | **Flexible HPLC Methods in a Pharmaceutical Environment** JOSE CINTRON, Eli Lilly and Company |
| 10:50 | (2370-5) | **HPLC Method Development and Transfer with Core-Shell Columns for Agricultural Applications** PEILIN YANG, The Dow Chemical Company, Matthias Pursch |

**ORGANIZED CONTRIBUTED SESSION** **Session 2380**

***Advanced Technology for Food Safety and Cosmetics Analysis***
arranged by Perry G Wang, US Food and Drug Administration
and Xiaogang Chu, China Academy of Inspection and Quarantine

**Thursday Morning, Room 267**
Perry G Wang, US Food and Drug Administration, Presiding
Xiaogang Chu, China Academy of Inspection and Quarantine, Presiding

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| 8:30 | (2380-1) | **Rapid Analysis of Peptides for In Vitro Human Skin Penetration Studies by HILIC-MS/MS** WANLONG ZHOU, US Food and Drug Administration, Perry G Wang, Margaret E Kraeling, Alexander J Krynitsky, Jeffrey J Yourick |
| 8:50 | (2380-2) | **Flow Injection Mass Spectrometric Fingerprinting (FIMS) Analysis for Differentiation of Three Black Cohosh Species** PEI CHEN, USDA, Jianghao Sun, James M Harnly |
| 9:10 | (2380-3) | **Is Analysis Really Helping Affected Parties? The Allergen Show-Case** BERT POEPPING, Merieux NutriSciences |
| 9:30 | (2380-4) | **Rapid Determination of Chemical Composition of Various Food Packing Materials Using Laser Desorption/Electrospray+Atmospheric Pressure Chemical Ionization/Mass Spectrometry** JENTAIE SHIEA, National Sun Yat-Sen University |
| 9:50 | | **Recess** |
| 10:05 | (2380-5) | **Introduction of a Novel LC Stationary Phase for Food Safety** YANMING LIU, Shandong Institute for Food and Drug Control, Jun Wang, Hui Zhang, Guosheng Shi |
| 10:25 | (2380-6) | **Metabolomics Study Reveals High Fructose Feeding Inducing Copper Deficiency** XIANG ZHANG, University of Louisville |
| 10:45 | (2380-7) | **Identification of Chemical Contaminants in Food Samples with Mass Spectrometry without Chromatography** YELENA SAPOZHNIKOVA, USDA, ARS, Paul Zomer, Hans Mol |
| 11:05 | | **Open Discussion** |

**ORGANIZED CONTRIBUTED SESSION** **Session 2390**

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

**Thursday Morning, Room 268**
Tracey Jacksier, Air Liquide, Presiding

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| 8:30 | (2390-1) | **Feasibility Study to Determine Trace Sulfur Components in Syngas Using a Plasma Detector** BARBARA ACHENBACH, Air Liquide |
| 8:50 | (2390-2) | **Trace Gas Detection in Fuel-Cell-Grade Hydrogen Using a Broadband Continuous-Wave Cavity Ring-Down Spectrometer** FLORIAN ADLER, Tiger Optics, Erika Coyne, Yu Chen |
| 9:10 | (2390-3) | **New Developments in Standards for Reactive Gases under EPA Protocol** JANNEKE VAN WIJK, VSL, Annarita Baldan, Stefan Persijn, Gerard Nieuwenkamp |
| 9:30 | (2390-4) | **Trace Analysis of Hydride Impurities in Phosphine by Gas Chromatography** WILLIAM GEIGER, CONSCI, LTD, Mark Raynor, Jesus Anguiano |
| 9:50 | | **Recess** |
| 10:05 | (2390-5) | **A New Perspective on Specialty Gas Applications - Vacuum Ultraviolet Absorption Spectroscopy** JONATHAN P SMUTS, VUV Analytics Inc., Hui Fan, Kevin A Schug, Ling Bai, Phillip Walsh, Dale Harrison, Sean Jameson |
| 10:25 | (2390-6) | **HEMS-M, Quantifying Hydrogen Contamination at the Pump: Real-Time Trace Analysis over a Large Dynamic Range** PAOLO MORESCHINI, Power and Energy, Luis Breziner, Peter Bossard, Andrew Kaldor, Casey Quenzel, Ankit Modi |

**ORAL SESSION** **Session 2400**

*Advances in Process Analytical Chemistry*

**Thursday Morning, Room 240**
Jane N Chan, Bechtel Bettis, Inc., Presiding

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| 8:30 | (2400-1) | **Trends and Needs for On Line Micro Analysis for R&D - Innovative Project for Micro-Process Analytical Technology** FRANCK F BACO-ANTONIALI, Ideel, Noémie N Caillol, Sandra S Grimaldi, Serge S Henot |
| 8:50 | (2400-2) | **Lessons Learned from an Industrial Near Infrared Spectroscopic Process Monitoring and Control Project** NANCY L JESTEL, SABIC, Jon Moscovic, Gary Bates, Ken Hunter |
| 9:10 | (2400-3) | **A Secure and Easy to Use UPLC System for the Analysis of Samples Close to a Manufacturing Process** CHARLES H PHOEBE, Waters Corporation, Ernie J Hillier, Aaron D Phoebe, John A MacKay |
| 9:30 | (2400-4) | **Development of VHR-TL Technology for Applications in Collaboration with Blue Industry and Science** ANGELIQUE GUILLOTEAU, Air Liquide/CRCD, Johann Georges des Aulnois, Sophie Lombard |
| 9:50 | | **Recess** |
| 10:05 | (2400-5) | **Advancements in Energy and Wavelength Dispersive X-ray Fluorescence** MARCO VAN DER HAAR, PANalytical, Christos Tsouris, Simon Milner |
| 10:25 | (2400-6) | **A Unique Method of Measuring Metal Particles in Liquefied Gas Using LIBS** ISAJI MEGUMI, Air Liquide Laboratories, Tamura Ayaka, Matsumoto Ayumu, Kawasaki Atsushi, Sakka Tetsuo, Sonobe Jun |
| 10:45 | (2400-7) | **Innovative Spatially and Angularly-Resolved Diffuse Reflectance Spectroscopic System for Inline Process Monitoring – A Case Study on Emulsion Polymerization Reaction** YI-CHIEH CHEN, University of Strathclyde, David Foo, Suresh N Thannadil |
| 11:05 | (2400-8) | **Trace Ionic Contaminants Determination in Complex Sample Matrix Brine and Caustic Soda in the Chlor-Alkali Process by Ion Exchange Chromatography** SANKAR BABU VR, Metrohm India Limited, Manigandan Parthasarathy |

**ORAL SESSION** **Session 2410**

*Biological and Biomedical Analysis*

**Thursday Morning, Room 241**
Amy Stading, University of Minnesota, Presiding

| | | |
|---|---|---|
| 8:30 | (2410-1) | **Characterization and Applications for In Vitro-Microdialysis: a Sampling Platform for Fast Analysis of Non-Electroactive Analytes in Cell Culture** AMY STADING, University of Minnesota, Michael Bowser |
| 8:50 | (2410-2) | **Analysis of Organosulfur Biosignatures in Mars-Analog Terrestrial Sedimentary Facies** MARIA F MORA, Jet Propulsion Laboratory, Caltech, Michael L Tuite, Adam Hoffmann, Peter A Willis, Kenneth Williford |
| 9:10 | (2410-3) | **Real-Time Study of Spatiotemporal Perturbation of a Drosophila Embryo's Living Environment with Microfluidics** ZEQING BAI, Zhejiang University, Min Wang, Hongcun Bao, Xiaohang Yang |
| 9:30 | (2410-4) | **Analysis of Adenosine and Its Metabolites Using Microchip Electrophoresis with Amperometric Detection** SHAMAL M GUNAWARDHANA, University of Kansas, Susan M Lunte |
| 9:50 | | **Recess** |
| 10:05 | (2410-5) | **Continuous Renal Function Monitoring during Pre-Transplant Organ Perfusion** ROBERT M LEARNEY, Imperial College London, Fabio S D'Andrea, Martyn G Boutelle |
| 10:25 | (2410-6) | **Microfluidic Biosensors for the Analysis of Circulating Leukemic Cells: Detection of Minimum Residual Disease for Acute Myeloid Leukemia as a Case Example** JOSHUA M JACKSON, University of North Carolina at Chapel Hill, Steven A Soper |
| 10:45 | (2410-7) | **Investigating Blood Storage Solutions Using 3D-Printed, Parallel Fluidic Channels** RUIPENG MU, Michigan State University, Dana M Spence |
| 11:05 | (2410-8) | **Exposomic Analyses for Chemical, Biochemical and Epigenetic Differences in Children with Autism and Control Children in a Double-Blind Study Evaluating New Methods Assessment** HM SKIP KINGSTON, Duquesne University |

**ORAL SESSION** **Session 2420**

*Data Manipulation and Laboratory Informatics*

**Thursday Morning, Room 252**
Stuart J Chalk, University of North Florida, Presiding

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|---|---|---|
| 8:30 | (2420-1) | **Integration, Visualization and Decisions for ICP-MS** JEROEN DE HAAS, PerkinElmer Informatics |
| 8:50 | (2420-2) | **Real-Time Living Cells Analysis Based on Single Plasmonic Nanoparticles** ZHEN GU, East China Normal University, Rui Gao, Yi-Tao Long, Pingang He |
| 9:10 | (2420-3) | **An Innovative Software Platform for the Visualization of Routine Analytical Data** DAVID L HARDY, Advanced Chemistry Development (ACD/Labs), Patrick Wheeler |
| 9:30 | (2420-4) | **Data Fusion, Visualization and Analytics to Improve Understanding of Equipment Reliability from Analysis of In-Service Fluids** JAMES ADAMS, PerkinElmer, David Hilligoss, Robert Packer, David Wooton |
| 9:50 | | **Recess** |
| 10:05 | (2420-5) | **Dealing with the Complex Challenge of Managing Diverse Analytical Chemistry Data Online** ANTONY J WILLIAMS, Royal Society of Chemistry, Valery Tkachenko, Alexey Pshenichnov, Ken Karapetyan |
| 10:25 | (2420-6) | **The Eureka Research Workbench: Laboratory Integration and Data Management** STUART J CHALK, University of North Florida |
| 10:45 | (2420-7) | **Evolution of Laboratory Informatics and Supporting Standards** JAMES B POWERS, ASTM / Bridge Associates International |
| 11:05 | (2420-8) | **Bringing the Quality Laboratory into the Enterprise** JEROEN DE HAAS, PerkinElmer Informatics |

# TECHNICAL PROGRAM

**ORAL SESSION** **Session 2430**

*Electrochemical Sensors for Bio-Analysis*

**Thursday Morning, Room 253**
Jason A Bennett, Penn State Erie, The Behrend College, Presiding

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|---|---|---|
| 8:30 | (2430-1) | **Fundamental Investigations of Ferriprotoporphyrin Electropolymerization and Electrochemical Reduction of Graphene Oxide for the Purpose of $H_2S$ Detection** JASON A BENNETT, Penn State Erie, The Behrend College |
| 8:50 | (2430-2) | **Origin of High Sensitivity and Selectivity Test Strips that Enables Reliable Measurement of Tear Glucose Levels** KYOUNG HA CHA, University of Michigan, Anant S Balijepalli, Bruce E Cohan |
| 9:10 | (2430-3) | **Paper Electrochemical Device for Detection of Antibodies in Whole Blood by Target-Induced Dynamic Switching** JOSEPHINE C CUNNINGHAM, University of Texas, Richard M Crooks |
| 9:30 | (2430-4) | **Construction of Disposable Carbon-Based Electrochemical Cells by Using Electronic Craft Cutter for Sensor and Biosensor Applications** RONALDO C FARIA, Universidade Federal de Sergipe, Diego Martucci, Andre S Afonso, Carolina V Uliana |
| 9:50 | | **Recess** |
| 10:05 | (2430-5) | **Electrochemical Microfluidic Immunoarrays for Assessment of Non-Aggressive vs. Aggressive Forms of Prostate Cancer Using Panels of Protein Biomarkers** COLLEEN E KRAUSE, University of Connecticut, Brunah A Otieno, Gregory W Bishop, James F Rusling |
| 10:25 | (2430-6) | **Detection of Biofilm Colonization Using Flexible Electrochemical Pyruvate Biosensor** KUN XIANG, SUNY-Binghamton, Omowunmi A Sadik, Karin Sauer, James N Turner |
| 10:45 | (2430-7) | **Application of Flat Ion Selective Electrode for Determining Ion C oncentration in Biological Samples** HISASHI YAMANOUCHI, HORIBA, Ltd |
| 11:05 | (2430-8) | **Electrochemical Investigation of Peptide Bond Formation on Electrode Surface** WUJIAN MIAO, The University of Southern Mississippi, Yiliyasi Wusimanjiang, Jacob Gersh |

**ORAL SESSION** **Session 2440**

*Environment - Water Purification (Half Session)*

**Thursday Morning, Room 254**
Brittany J Majors, Westminster College, Presiding

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|---|---|---|
| 8:30 | (2440-1) | **Nanostructured Poly (amic) Acid Bio-Membranes for One-Step Filtration-Disinfection of Drinking Water** IDRIS YAZGAN, SUNY-Binghamton, Nian Du, Robert Congdon, Veronica Okello, Omowunmi A Sadik |
| 8:50 | (2440-2) | **Akaganeite (β-FeOOH) Promoted Heterogeneous-Homogeneous Catalytic Ozonation of 4-Chlorophenol** OLALEKAN SIYANBOLA FATOKI, Cape Peninsula University of Technology, Ochuko Oputu, Beatrice O Opeolu, Kudzanai Nyamayaro, Veruscha Fester |
| 9:10 | (2440-3) | **Evaluating Regeneration Methods on Water Treatment Media Applied to a Real World Setting** BRITTANY J MAJORS, Westminster College, Tatiana Eliseeva, Caleb Smathers, Gregory Hallahan |
| 9:30 | (2440-4) | **Simultaneous Removal of N-Nitrosamine Precursor and Ammonia with Zeolites by Simulated Water Treatment Process** RUNMIAO XUE, Missouri University of Science and Technology, Honglan Shi, Ma Yinfa, Craig Adams, Todd Eichholz |

**ORAL SESSION** **Session 2450**

*Food Research: USDA/ARS in New Orleans (Half Session)*
arranged by Peter J Bechtel, US Department of Agriculture

**Thursday Morning, Room 255**
Peter J Bechtel, US Department of Agriculture, Presiding

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|---|---|---|
| 8:30 | (2450-1) | **Instrumental Analysis of the Musty Muddy Off-Flavors in Aquaculture Products** CASEY GRIMM, USDA-ARS-SRRC |
| 8:50 | (2450-2) | **Comparison of SPE and LC-MS Methods for the Separation, Identification, and Quantification of Catfish Carotenoids** JOHN M BLAND, USDA, ARS, SRRC, Peter J Bechtel |
| 9:10 | (2450-3) | **Anthocyanin Composition and Glucose Uptake Activity of Purple Rice Bran** STEPHEN M BOUE, USDA, SRRC, John C Beaulieu, Kim W Daigle, Steven W Lloyd, Casey Grimm |
| 9:30 | (2450-4) | **Structure, Function and IgE Epitopes of the Peanut Panallergen Ara h 8** BARRY K HURLBURT, USDA-ARS-SRRC, Lesa Offermann, Jane K McBride, Soheila Maleki, Alexandra Santos, Gideon Lack, Maksymilian Chruszcz |

**ORAL SESSION** **Session 2460**

*Food Sciences*

**Thursday Morning, Room 256**
Justin Lang, PerkinElmer, Presiding

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| 8:30 | (2460-1) | **Sodium NMR as a Rapid Screen for Sodium Content in Food** DONALD A BOUCHARD, Anasazi Instruments, Fred O Garces |
| 8:50 | (2460-2) | **Assessing Frying Oil Degradation with FT-NIR Spectroscopy** DEAN ROBERTS, Bruker, Dagmar Behmer |
| 9:10 | (2460-3) | **Liquid Chromatography Quadruple Time-of-Flight Mass Spectrometry (LC-Q TOF-MS) as a Forensic Tool for Troubleshooting Potency Loss of Cyanocobalamin and Cholecalciferol in Multi-Vitamin Tablets** ZAHRA MINA FAKHARY, Pharmavite LLC, Seong-Jae Yoo |
| 9:30 | (2460-4) | **Application of Quality by Design (QbD) to the Development of Analytical Methods in Vitamin Supplement Product** PUNAM PATEL, Pharmavite LLC, Seong-Jae Yoo |
| 9:50 | | **Recess** |
| 10:05 | (2460-5) | **Isotope Spiking LC-QTOF Method for Determining Micro-Vitamins (Folic Acid, Biotin and Vitamin B12) in Dietary Supplements** PUNAM PATEL, Pharmavite LLC, Satish Annigeri, Zahra Mina Fakhary, Chan Jones, Jim Brooks, Seong-Jae Yoo |
| 10:25 | (2460-6) | **Profiling of Aroma Components in Wine with GC/MS/ MS with Full Spectrum Information** SHARANYA REDDY, PerkinElmer, Thomas Dillon, David J Scott, Adam J Patkin |
| 10:45 | (2460-7) | **Malaysian Baccaurea Angulata Fruit Attenuates Atherosclerosis in Hypercholesterolemic Rabbit** IDRIS A AHMED, International Islamic University Malaysia |
| 11:05 | (2460-8) | **Exploring the Oxidative and Thermal Stability of Edible Oils by Thermogravimetric Analysis, Differential Scanning Calorimetry, and Fourier Transform Infrared Spectroscopy** JUSTIN LANG, PerkinElmer, Jason Smith |

**ORAL SESSION** **Session 2470**

*GC Optimization*

**Thursday Morning, Room 257**
Reginald J Bartram, Airgas, Presiding

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|---|---|---|
| 8:30 | (2470-1) | **Improvement of Comprehensive Two-Dimensional Gas Chromatography Separations Through Injection Port Backflushing** MATTHEW K EDWARDS, University of Waterloo, Tadeusz Górecki |
| 8:50 | (2470-2) | **Improvements to Thermodynamic-Based Predictions of GC Separations** JAMES J HARYNUK, University of Alberta, Keisean Stevenson |
| 9:10 | (2470-3) | **The Stability of $H_2S$ Calibration Mixtures During Cylinder Depletion** JUN SONOBE, Air Liquide Laboratories, Yuko Kitamaki, Takuya Shimosaka, Megumi Isaji, Tracey Jacksier |
| 9:30 | (2470-4) | **Optical GC Detection System – Never Calibrate Again** MARTIN L SPARTZ, Prism Analytical Technologies, Inc., Anthony S Bonanno, Stacey E Beyer, Alice E Delia |
| 9:50 | | **Recess** |
| 10:05 | (2470-5) | **The Proper Installation of Gas Lines for Chromatographic Equipment Can Improve Your Sensitivity, Column Life, and Increase the Safety of Handling Gases in the Lab** REGINALD J BARTRAM, Airgas |
| 10:25 | (2470-6) | **Recycle Gas Chromatography with Thermal Gradient Program for Sample Re-Focus** STANLEY STEARNS, VICI Valco Instruments Co. Inc., Martin Brisbin, Huamin Cai |
| 10:45 | (2470-7) | **Application of an Integrated Computer Modeling Program to Gas Chromatographic Method Development** REBECCA STEVENS, Restek, Linx Waclaski, Kristi Sellers, Jaap Dezeeuw |
| 11:05 | (2470-8) | **Advancements in Micro Gas Chromatography (GC) - Fast Analysis of C1 to C8 Hydrocarbons for Mud Logging Applications Within 2 Minutes Using a Temperature Programmable Micro GC Fusion** DEBBIE HUTT, INFICON |



***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

**ORAL SESSION** **Session 2480**

*Liquid Chromatography - General Interest (Half Session)*

**Thursday Morning, Room 270**
Jason A Anspach, Phenomenex, Presiding

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|---|---|---|
| 8:30 | (2480-1) | **Core-Shell Materials in 1.0 mm I.D. Columns** JASON A ANSPACH, Phenomenex, Gareth Friedlander, Mark Brown, Lawrence Y Loo, Tivadar Farkas |
| 8:50 | (2480-2) | **Getting Chiral Separations Into the Ultra-High Efficiency Game with Superficially Porous Particles** ZACHARY S BREITBACH, University of Texas at Arlington, Daniel A Spudeit, Darshankumar C Patel, M Farooq Wahab, Maressa D Dolzan, Daniel W Armstrong |
| 9:10 | (2480-3) | **Effect of Mobile Phase on Selectivity in Hydrophilic Interaction Liquid Chromatography** CHAD D IVERSON, University of Alberta, Xinyun Gu, Charles A Lucy |
| 9:30 | (2480-4) | **Surface Bubble-Modulated Liquid Chromatography: A New Approach for Manipulating Chromatographic Retention** MASAMI SHIBUKAWA, Saitama University, Keisuke Nakamura, Shingo Saito |

**ORAL SESSION** **Session 2490**

*Magnetic Resonance*

**Thursday Morning, Room 271**
Guangxin Lin, SABIC Innovative Plastics, Presiding

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|---|---|---|
| 8:30 | (2490-1) | **NMR Study of Guanosine Monophosphate Liquid Crystalline Phases** WYATT P STEVENS, Rensselaer Polytechnic Institute, Linda B McGown, Scott A McCallum |
| 8:50 | (2490-2) | **Development of a Sequential Injection Method for Online Reaction Monitoring by Low-Field Nuclear Magnetic Resonance Spectroscopy** MARIE E NIDER, University of Wisconsin Milwaukee, Kelsey A Holbert, Joseph H Aldstadt |
| 9:10 | (2490-3) | **Comparison of Amide Proton Exchange in Chondroitin Sulfate Oligosaccharides** ANDREW GREEN, University of California Riverside, Cynthia K Larive |
| 9:30 | (2490-4) | **Withdrawn** |
| 9:50 | | **Recess** |
| 10:05 | (2490-5) | **Multinuclear (1H, 13C, 31P) and Multidimensional (1D and 2D) NMR (Nuclear Magnetic Resonance) Spectroscopy on Composition and Chain Microstructure of Copolymers** GUANGXIN LIN, SABIC Innovative Plastics |
| 10:25 | (2490-6) | **Illicit Drug Analysis Using Benchtop NMR** DEAN ANTIC, Thermo Fisher Scientific, Mark Dixon, Tristan Rawling, Mark Tahtouh |

**ORAL SESSION** **Session 2500**

*Microfluidics and CE*

**Thursday Morning, Room 272**
Deirdre Manion-Fischer, University of Minnesota, Presiding

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|---|---|---|
| 8:30 | (2500-1) | **Minimizing Band Spreading in Microfluidic Systems** FRED SENFTLEBER, Jacksonville University |
| 8:50 | (2500-2) | **A Lateral Flow Immunoassay for αm-Fetoprotein Based on Nitrogen-Doped Graphene Quantum Dots** YUANYUAN WU, Oregon State University, Sumate Pengpumkiat, Vincent T Remcho |
| 9:10 | (2500-3) | **A Microfluidic Device to Measure Entrainment of Insulin Secretion from Islets of Langerhans** LIAN YI, Florida State University, Michael G Roper |
| 9:30 | (2500-4) | **Microfluidic Chip-Based DNA Separation in Two Dimensions: Length and Sequence** JIA ZHAO, Rensselaer Polytechnic Institute, Linda B McGown |
| 9:50 | | **Recess** |
| 10:05 | (2500-5) | **Microfluidic Surface-Enhanced Raman Scattering (SERS) Chips and Special Analyser** SHUPING XU, Jilin University, Weiqing Xu, Yijia Geng, Lei Chen, Haibo Li, Gang Chen, Yuyang Wang, Shaoyan Wang, Wenran Gao |
| 10:25 | (2500-6) | **Background-Free, Multiple-Reflection Microfluidic Infrared Spectroscopy for Low-Volume, High-Sensitivity Infrared Analysis** ANN M WOYS, Pike Technologies, Kent Gundlach |
| 10:45 | (2500-7) | **DNA-Aptamer Assay Via Capillary Electrophoresis** CASSANDRA CRIHFIELD, West Virginia University, Srikanth Gattu, Letha Sooter, Lisa A Holland |
| 11:05 | (2500-8) | **Monitoring Mitophagy by Capillary Electrophoresis with Laser Induced Fluorescence Detection** DEIRDRE MANION-FISCHER, University of Minnesota, Edgar A Arriaga |

**ORAL SESSION** **Session 2510**

*Sampling and Sample Prep of Bioanalytical Samples*

**Thursday Morning, Room 273**
Denise Wilkins, Bechtel Bettis, Inc., Presiding

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|---|---|---|
| 8:30 | (2510-1) | **Laser Ablation Vacuum Capture of Biological Material** FABRIZIO DONNARUMMA, Louisiana State University, Kermit K Murray |
| 8:50 | (2510-2) | **A Novel, Synthetic Simplified Liquid Extraction (SLE) Sorbent that Alleviates the Downfalls of Traditional SLE** STUART KUSHON, Phenomenex, Yibo Guo, Jessica Detsch, Art Dixon, Mark Herrmann |
| 9:10 | (2510-3) | **Selective Extraction of DNA Using Magnetic Ionic Liquids** JARED L ANDERSON, The University of Toledo, Kevin D Clark, Omprakash Nacham, Honglian Yu, Melissa M Yamsek |
| 9:30 | (2510-4) | **Development of HF-LPME Techniques for High Throughput Analysis of Log D, Permeability and Protein Binding of Drugs** JAMES J BAO, Tianjin University, Guirong Bori, Xiaojing Liu, Youxin Li |
| 9:50 | | **Recess** |
| 10:05 | (2510-5) | **Advantages of Saliva Sampling in Bioanalysis Using Micro Extraction by Packed Sorbent (MEPS) and Dried Saliva Spot (DSS) in LC/MS/MS** MOHAMED ABDEL-REHIM, Stockholm University |
| 10:25 | (2510-6) | **Ultrafast Desorption of Intact Proteins to Viruses by Impulsive Vibrational Excitation for Rapid High Throughput Biodiagnosis** LING REN, Max Planck Institute for the Structure and Dynamics of Matter, Rudolph Reimer, Cornelia Heinze, Carola Schneider, Dennis Eggert, Pavel Truschow, Nils-Owe Hansen, Wesley D Robertson, RJ Dwayne Miller |

**ORAL SESSION** **Session 2520**

*Using Light for Bio-Analysis*

**Thursday Morning, Room 275**
Allen J Sharkins, The Pittsburgh Conference, Presiding

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|---|---|---|
| 8:30 | (2520-1) | **Paper-Based Chemiluminescent Biosensing Platforms for Cotinine and Dichlorvos Detection** WEI LIU, Shaanxi Normal University, Christopher L Cassano, Juan Kou, Z Hugh Fan, Baoxin Li, Zhujun Zhang |
| 8:50 | (2520-2) | **Turn-On Two-Photon Fluorescence Sensor for Intracellular Imaging of Glutathione Using $MnO_2$-Nanosheet-Modified Two-Photon Nanoparticles** HONGMIN MENG, Hunan University |
| 9:10 | (2520-3) | **In Vivo Study of Nanoparticles on Embryonic Neurological Development** MARTHA S JOHNSON, Old Dominion University, Preeyaporn Songkiatisk, Pavan Cherukuri, Nicole Gonda, Lauren M Browning, X Nancy Xu |
| 9:30 | (2520-4) | **Optimized Plasmonic Nanopipettes Toward Cells Secretion Monitoring** FELIX LUSSIER, University of Montreal, Jean-François Masson |
| 9:50 | | **Recess** |
| 10:05 | (2520-5) | **Anhydrobiotic Lipid Vesicles for On-Demand SPRi Analysis of Supported Bilayer Membrane Systems** SAMUEL S HINMAN, University of California Riverside, Thomas Wilkop, Quan Cheng |
| 10:25 | (2520-6) | **Biochemical Gas Sensor (Bio-Sniffer) for Detection of Formaldehyde from Food Sample** KOJI TOMA, Tokyo Medical and Dental University, Ming Ye, Shinichi Sawada, Takahiro Arakawa, Hiroyuki Kudo, Kazunari Akiyoshi, Kohji Mitsubayashi |
| 10:45 | (2520-7) | **Discrimination of Proteins Using GUMBOS Sensor Arrays** WADUGE INDIKA S GALPOTHDENIYA, Louisiana State University, Isiah M Warner |
| 11:05 | (2520-8) | **Determination of Enzymatic Inhibitors with Extended Linearity Using of Integrated Michaelis-Menten Equation** AZIZ AMINE, Univeristé Hassan II, FSTM |

# TECHNICAL PROGRAM

**POSTER SESSION** **Session 2530**

**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 morning posters is on the Exposition Floor, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Bioanalytical Samples Using Separation Techniques*

**Thursday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(2530-1 P) **Removal of Cadmium (II), Cobalt (II) and Nickel (II) from Aqueous Solution Using Corncob Waste** CHIONYEDUA T ONWORDI, Lagos State University, Chinedu H Okwuolise, Olawale L Osifeko, Bukunola K Oguntade, Adedoja D Wusu

(2530-2 P) **Imaging Glycosphingolipid Distribution in C57BL/6NJ Mouse Brain Tissue via-MALDI-TOFMS** JENNIFER ARCEO, University of Notre Dame, Norman J Dovichi

(2530-3 P) **Analysis of Underivatized Steroids Using Cold EI GC/MS** ADAM J PATKIN, PerkinElmer, Ruben Garnica, Andrew N Tyler, Sharanya Reddy

(2530-4 P) **Analysis of Subtle Changes in Biological Systems Through Use of High Resolution, High Accuracy Vanquish UHPLC Generated Libraries with a Q-Exactive HF Mass Spectrometer** DAVID A SARRACINO, Thermo Fisher Scientific BRIMS Center, Marc Plante, Keely Murphy, Ian N Acworth, Jason Neil

(2530-5 P) **High Fructose Feeding Induces Copper Deficiency: A Fecal Metabolomics Study** XINMIN YIN, University of Louisville, Xiaoli Wei, Ming Song, Craig McClain

(2530-6 P) **Design and Optimization of a Liquid Chromatography Method for Quantification of Specific Active Thiol-Molecule Reducing Agents in Protein Matrices** SAM DIEP, Abbott Laboratories, Tracey Rae, Ewa Lang, Jeffrey Fishpaugh

(2530-7 P) **Improved Peptide Mapping Methods** JEFFREY A KAKALEY, YMC America, Inc., Ernest J Sobkow

(2530-8 P) **Withdrawn**

(2530-9 P) **In Vivo Monitoring of Branched Chain Amino Acid Dynamics Using Online Microdialysis-Capillary Electrophoresis** MEGAN WEISENBERGER, University of Minnesota, Michael Bowser

(2530-10 P) **An Integrated Platform of LC-MS, HPAEC-PAD, and Bioinformatics for the Carbohydrate Profiling of Therapeutic Glycoproteins** ANDREA GRAY, University of Maryland Baltimore County, Shaunak Uplekar, Joshua Wilhide, William R LaCourse, Govind Rao

(2530-11 P) **Analysis of Polysorbate 80 in Protein Formulations Using 2D LCMS** WILLIAM HEDGEPETH, Shimadzu Scientific Instruments, Kenichiro Tanaka, Keiko Yamabe

(2530-12 P) **Using Fluorescence and Mass Spectrometry to Determine Glycation Sites of Human Serum Albumin** WEIXI LIU, University of Rhode Island, Menashi A Cohenford, Leslie Frost, Joel A Dain

(2530-13 P) **Differentiation of Heparin and Heparin-Like Glycosaminoglycans (GAGs) via Peroxide-Z Based Digestion with LC-MS and CE-UV Detection** HONGLI LI, US Food and Drug Administration, Samanthi Wickramasekara, Peter Nemes, Rahul Kaushal

(2530-14 P) **An Improved Chromatographic Method for Arsenic Speciation in Urine** KENNETH NEUBAUER, PerkinElmer, Wilhad M Reuter, Charles Schneider

(2530-15 P) **A Kinetic Study of the Maillard Reaction by On-Line Monitoring with Sequential Injection-Nuclear Magnetic Resonance Spectroscopy** KELSEY A HOLBERT, University of Wisconsin Milwaukee, Marie E Nider, Joseph H Aldstadt

(2530-16 P) **An Automated Dual Stage Solid Phase Extraction Procedure for 15 F2t-isoprostane (8-iso Prostaglandin2a) from BSA as Lipid Markers of Oxidative Stress** MARTIN CHERRIER, Biotage, Elena Gairloch, Victor Vandell, Frank Kero

(2530-17 P) **Chemometric Analysis of MALDI Mass Spectrometric Images of Three-Dimensional Cell Culture Systems** RICHARD B KEITHLEY, Roanoke College, Eric M Weaver, Amanda B Hummon

(2530-18 P) **Effects of SDS and DTT in Protein Determination Using the 660 nm Protein Assay** HUI XIE, Abbott Laboratories, Ewa Lang, Jeffrey Fishpaugh, Carol Ramsay

(2530-19 P) **Coupling Advanced Detection Techniques to Size Exclusion Chromatography** XIAOLI WANG, Agilent Technologies, Andrew Coffey, Linda Lloyd

(2530-20 P) **Evaluation of Porous Layer Thickness of Core Shell Particle for Separation of Proteins** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tsukamoto, Shun Kojima

(2530-21 P) **Determination of the Constituents of the Essential Oil from Fleurya Aestuans, A Uterotonic Plant by GC-MS** MODUPE MABEL OGUNLESI, University of Lagos, Tobi C Aleshinloye, Edith U Ofor

(2530-22 P) **Development of On-Column Detection with Dual Au/Hg Electrodes for Capillary Electrophoresis** NHAN TO, University of Kansas, Craig E Lunte

**POSTER SESSION** **Session 2540**

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### *Food Sciences*

**Thursday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(2540-1 P) **Determination of Nitrite Using Captopril by UV Spectrophotometry and Flow Injection Analysis** JONATHAN P SCAFFIDI, Miami University, Mya A Porche, Zhaowei Guo, Youxin Li, Neil D Danielson

(2540-2 P) **Determination of Sulfur-Containing Species in Scotch Whiskeys Using Gas Chromatography With Pulsed-Flame Photometric Detection** J GARRETT SLATON, Xylem/OI Analytical, Cynthia Elmore

(2540-3 P) **Only One Platform to Approach Different Sample Preparation for the Food Quality Characterization** ILARIA FERRANTE, Dani Instruments SpA, Daniele Recenti, Roberta Lariccia, Chiara Abate

(2540-4 P) **Microstructure Changes in Orange and Mango Peels after Essential Oil and Pectin Extraction Using Conventional Heating and Microwave** RICARDO DURAN-BARON, Universidad Popular del Cesar, Aida L Villa, Guillermo Salamanca Grosso

(2540-5 P) **Determination of Hexanal in Foods Utilizing Dynamic Headspace GC/MS** ROGER BARDSLEY, Teledyne Tekmar, Tammy Rellar, Thomas Hartlein, Kristina Mason, Jacob A Rebholz, Tyler Trent

(2540-6 P) **Optimization of Solid Phase Micro Extraction of Aroma Compounds in Wine** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor

(2540-7 P) **An Examination of Automated Sampling Techniques of Whiskey Samples** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor

(2540-8 P) **Advanced Alternative to SPME GCMS Sample Preparation Using Vacuum Assisted Porous Cartridge Micro Extraction (VA-PCME)** THOMAS X ROBINSON, Entech Instruments, Inc., Daniel B Cardin

(2540-9 P) **Study of Magnetic-Bead Systems to Remove Peanut Allergens** SI-YIN CHUNG, USDA, Shawndrika Reed

(2540-10 P) **Use of Red Chili Pepper as Natural Antioxidant for Improving the Oxidative Stability of Edible Oil** STEFANO CASIRAGHI, Velp Scientifica SRL, Stefania Corti, Claudia Mancinelli

(2540-11 P) **Monitoring Basmati Rice Sensory Quality Thanks to An Electronic Nose** JEAN-CHRISTOPHE MIFSUD, Alpha MOS, Herve Lechat, Fatma Ayouni, Valerie Vabre, Andrew Cowell, Marion Bonnefille

(2540-12 P) **Scale-Up of Subcritical Water Extraction of Polyphenolic Compounds from Fruit Waste Material** ROLF SCHLAKE, Applied Separations, Al Kaziunas, Jerry King

(2540-13 P) **Analysis of Electronic Cigarette Liquid and Vapor** JASON S HERRINGTON, Restek, Amanda Rigdon, Steve Kozel, Jaap De Zeeuw, Rebecca Stevens, Linx Waclaski, Colton Myers

(2540-14 P) **Optimization of Type of Culture, Ripening Time, Temperature and Salt Concentration in a Model Cheese Using Response Surface Methodology: Determination of Proteolysis in Cheese by Chromatographic Methods** ALI A HAYALOGLU, Inonu Univeristy, Didem Sahingil

(2540-15 P) **Determination of Phenolic Compounds in Honeys and Their Antioxidant Capacities** SALIHA SAHIN, Uludag University, Cevdet Demir, Aycan Tosunoglu, Mesut Ertan Gunes

(2540-16 P) **Ash and Mineral Composition of Corbicular Bee Pollen from Cliserie System at Highland Mountains in Boyaca, Columbia** GUILLERMO SALAMANCA-GROSSO, Universidad del Tolima, July A Hernández-López, Claudina M Reyes-Villalba

(2540-17 P) **Transmittance Spectra Color and Chromatic Properties of Edible Oils and Changes Induced by Thermal Treatment** GUILLERMO SALAMANCA-GROSSO, Universidad del Tolima, Mónica P Osorio-Tangarife, N Arias-Rodriguez

## POSTER SESSION — Session 2550

**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 morning posters is on the Exposition Floor, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Liquid Chromatography - General Interest*

**Thursday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(2550-1 P) **Small Scale Purification of Constituents from Complex Natural Product Extracts Using sub-2-µm Chromatography** ANDREW J AUBIN, Waters Corporation, Jo-Ann M Jablonski, Wendy Harrop

(2550-2 P) **How Scalable are the Dispersion Processes in Real Columns Packed with Solid Core Material?** TONY EDGE, Thermo Fisher Scientific, Luisa Pereira, Monica Dolci

(2550-3 P) **Can Core-Shell Silica Boost Efficiency of Macrocyclic Oligosaccharide Based HILIC Phases?** ZACHARY S BREITBACH, University of Texas at Arlington, Choyce A Weatherly, Maressa D Dolzan, Daniel A Spudeit

(2550-4 P) **Retention Behavior of Aromatic Compounds When Using a Fluorophenyl HPLC Stationary Phase Under Highly Aqueous Mobile Phase Conditions** BRITTANY GEORGE, Ursinus College, Eric Williamsen

(2550-5 P) **Evaluation of Monodisperse Silica for High Performance Liquid Chromatography Using Van Deemter Plot** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tuskamoto, Shun Kojima

(2550-6 P) **Surface Bubble Modulated Liquid Chromatography: Retention Mechanism and Manipulation of the Retention Selectivity** KEISUKE NAKAMURA, Saitama University, Masami Shibukawa, Shingo Saito

(2550-7 P) **Novel Comprehensive Two-Dimensional LC and Related Application for Complex Samples** DAISUKE NAKAYAMA, Shimadzu Corporation, Tetsuo Iida, Yoshiyuki Watabe, Junichi Masuda, Yoshihiro Hayakawa, Tadayuki Yamaguchi

(2550-8 P) **Comparison of the Retention Behavior of Fluorinated and Traditional, Hydrocarbon HPLC Stationary Phases Using Linear Solvation Energy Relationships (LSER), Cluster Analysis, and k-k Plots** PETER WILLARD, Ursinus College, Eric Williamsen

(2550-9 P) **Evaluation of Six Core Shell C18 Columns Based on Separation Behavior, Stability and Physical Property** NORIKAZU NAGAE, ChromaNik Technologies Inc., Shun Kojima, Tomoyasu Tuskamoto

(2550-10 P) **In Situ Powder Preparation and Sorption Behavior of Molecularly Imprinted Polymer Using Polymer Anion and Metal Cation** SUNG HYO CHOUGH, Chonnam National University, Yeon Ju Cho, Ji Hoon Lee, Hye Ryeong Park

(2550-11 P) **Sorption Characters of Molecularly Imprinted Materials Using the Polymerization Between Sol-Gel Particles of TEOS/3-(trimethoxysilyl)propyl Methacrylate and Mixture of MMA/AA** SUNG HYO CHOUGH, Chonnam National University, Ji Hoon Lee, Yeon Ju Cho, Hye Ryeong Park

(2550-12 P) **Derivatization of Hydrazine for Quantification at Sub-ppm Level Using Traditional Chromatographies - A Study Using LC and GC-FID** JUSTIN SHEARER, Dow AgroSciences, Ashleigh Frank, Jim Knobelsdorf, Christopher Waid

## POSTER SESSION — Session 2560

**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 morning posters is on the Exposition Floor, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Thermal Analysis*

**Thursday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(2560-1 P) **Investigating Unknown Polymer Mixtures By DSC Using New "Identify" Software** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Alexander Schindler

(2560-2 P) **Designing a TGA for Hyphenated Techniques** KEVIN P MENARD, PerkinElmer, Justin Lang, Bruce Cassel

(2560-3 P) **TGA/IST16/GC/MS Coupling: An Advanced Technique for LLDPE Structure Interpretation** RONAN COZIC, SRA Instruments, Tiffany Marre, Axel Bart, Alain Delauzun, Xavier Cardot, Olivier Boyron, Christophe Boisson

## POSTER SESSION — Session 2570

**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 morning posters is on the Exposition Floor, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *Toxicology*

**Thursday Morning, Exposition Floor, Hall F, Aisles 3900-4500**

(2570-1 P) **GC-MS/MS Analyses of Biological Samples in Support of Developmental Toxic Effects on Whole-Body Exposure to Sarin in Rats** JEFFREY MCGUIRE, Edgewood Chemical Biological Center

(2570-2 P) **Development of Quartz Crystal Microbalance (QCM) Based Sensor for Melamine Detection with Melamine Imprinted Membranes** ŞEYDA CEYLAN, Aksaray University, Mehmet Odabaşı, Lokman Uzun

(2570-3 P) **Rapid Differentiation of Isobaric Drugs Using a Novel Direct Sample Analysis Source, CID, and High Accuracy TOF Mass Spectrometry** ROBERT J SEWARD, PerkinElmer, Joanne Mather, Andrew N Tyler

(2570-4 P) **A Reduced Workflow Solution for the Analysis of GHB in Human Hair Samples via an Automated Bead Mill as a Precursor to High Resolution GC-TOF and GCxGC-TOF** DAVID E ALONSO, LECO Corporation, Brittany Watt, Joe E Binkley, Jeffrey S Patrick, Frank Kero, Victor Vandell, Elena Gairloch, Martin Cherrier, Karen Scott

(2570-5 P) **Blood Alcohol Determination Using Static Headspace Analysis with Optimized Sample Throughput** ANNE JUREK, EST Analytical, Lindsey Pyron, Kelly Cravenor

## POSTER SESSION — Session 2575

**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 morning posters is on the Exposition Floor, Hall F, Aisles 3900-4500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.**

### *UV/VIS Spectroscopic Techniques and Related Methods*

**Thursday Morning, Room Exposition Floor, Hall F, Aisles 3900-4500**

(2575-1 P) **Colorimetric Glucose Biosensor Based on Bi-Enzyme System** HAKAN CIFTCI, Kirikkale University, Erol Alver, Aysegul U Metin, Ugur Tamer

(2575-2 P) **Assessment of the Stability of Pain-Relieving Components in Children's Nonsteroidal Anti-Inflammatory Drugs by Multivariate Spectrometric and Chemometric Methods** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Joshua M Blaker

(2575-3 P) **Investigating the Measurement of Water Hardness of Abandoned Mine Drainage: More Than Just Calcium and Magnesium** MARK THOMAS STAUFFER, University of Pittsburgh Greensburg, Jeremiah C Jamrom

(2575-4 P) **Comparative Studies of Effects of Acid Rains on Aquatic Plants by Beam Deflection and Absorbance Spectroscopy Methods** XING-ZHENG WU, Fukuoka Institute of Technology, Liangjiao Nie, Tomomi Inoue Inoue

(2575-5 P) **Studies of Chromium-6 Concentrations in Drinking Water Samples Coming From Three Different Sources of Water: Ground, Surface and Well Waters** ANDREA M TEMPLE, Indiana University Southeast, Nicholas A Long, Brian M Young, Thomas B Jorgensen, Jessica E Wiggington, Patty L Ranaivo

(2575-6 P) **Investigation of Various Properties of Intrinsic and Extrinsic $MgO_2$ Nanomaterials Doped with Neodymium** ASHWANI SHARMA, MD University, Rohtak, Narender Bhudhiraja

(2575-7 P) **Dimensional Analysis of Nanoscale Structures Using Visual Appearance** NIKOLAJ A FEIDENHANS'L, Technical University of Denmark, Morten H Madsen, Poul-Erik Hansen, Rafael Taboryski, Jan C Petersen

(2575-8 P) **Withdrawn**

(2575-9 P) **Withdrawn**

(2575-10 P) **Understanding of pH-Induced Transition of α-Lactalbumin by Using Multispectroscopy** YEONJU PARK, Kangwon National University, Yeseul Kim, Bogusława Czanik-Matusewicz, Young Mee Jung

# TECHNICAL PROGRAM

# THURSDAY, MARCH 12, 2015
# AFTERNOON

**SYMPOSIUM** **Session 2580**

***ACS Separations Sciences Subdivision - New Voices in Separation Science: Up and Coming Scientists from Industry, Government and Academia***
arranged by Karen W Phinney, National Institute of Standards and Technology (NIST)

**Thursday Afternoon, Room 238**
Karen W Phinney, National Institute of Standards and Technology (NIST), Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Karen W Phinney** |
| 1:35 | (2580-1) | **Reducing Data Redundancy in GC×GC–MS for Using the Unique Ion Filter** JAMES J HARYNUK, University of Alberta, Lawrence A Adutwum |
| 2:10 | (2580-2) | **Liquid Chromatography Research at the National Institute of Standards and Technology (NIST)** CATHERINE RIMMER, National Institute of Standards and Technology, Melissa M Phillips, Benjamin Place, Stephen A Wise, Lane C Sander |
| 2:45 | (2580-3) | **Development of an Analytical Toolbox for Characterization of Protein and Polysaccharide-Conjugate Vaccine Antigens based on Traditional and Novel Column Technologies** NATHAN LACHER, Pfizer Inc. |
| 3:20 | | **Recess** |
| 3:35 | (2580-4) | **A Combined Separations Approach to Mapping Allergen Protein Chemistries in Thermally Processed Foods** CHRISTINE H PARKER, US Food and Drug Administration, Mark M Ross |
| 4:10 | (2580-5) | **Reverse Fill/Flush Flow Modulated GC×GC Coupled with Vacuum UV Detection: A Step towards Making Class Separation and Quantification a Routine?** W CHRISTOPHER SIEGLER, The Dow Chemical Company, Anna Sandlin, Bill Winniford, Jeremy Reyes, Kefu Sun, James Griffith, Phillip Walsh, Dale Harrison |

**SYMPOSIUM** **Session 2590**

***Biological TERS: Instrumentation Development and Applications***
arranged by Igor Lednev, University at Albany, SUNY and Volker Deckert, Friedrich-Schiller-Universitaet

**Thursday Afternoon, Room 239**
Igor Lednev, University at Albany, SUNY, Presiding

| | | |
|---|---|---|
| 1:30 | | **Introductory Remarks - Igor Lednev and Volker Deckert** |
| 1:35 | (2590-1) | **Exploiting Quantum and Coherent Plasmonic Effects for Surface Enhanced Spectroscopies** PETER NORDLANDER, Rice University |
| 2:10 | (2590-2) | **Refractive Index Monitoring at the Nanoscale** ANDREAS P RUEDIGER, INRS-EMT, Mischa Nicklaus, Julien Plathier |
| 2:45 | (2590-3) | **Vibrational Coupling and Dynamics from Low-Temperature Tip-Enhanced Raman Spectroscopy** MARKUS B RASCHKE, University of Colorado |
| 3:20 | | **Recess** |
| 3:35 | (2590-4) | **New Directions in Ultra-High Vacuum Tip-Enhanced Raman Spectroscopy** NAN JIANG, Northwestern University |
| 4:10 | (2590-5) | **Tip-Enhanced Raman Spectroscopic Imaging of Amyloid Fibrils** VALENTIN SEREDA, University at Albany, SUNY, Igor K Lednev |

**SYMPOSIUM** **Session 2600**

***Chemical Noise***
arranged by Paul Bohn, University of Notre Dame

**Thursday Afternoon, Room 242**
Paul Bohn, University of Notre Dame, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Paul Bohn** |
| 1:35 | (2600-1) | **Electronic Noise of the α-Hemolysin Latch Sensing Zone Reflects the Stability of DNA Duplexes Confined Within a Nanopore** HENRY S WHITE, University of Utah, Robert P Johnson, Aaron M Fleming, Qian Jin, Cynthia J Burrows |
| 2:10 | (2600-2) | **Diffusion and Trapping of Single Particles in Pores with Combined Pressure and Dynamic Voltage** ZUZANNA S SIWY, University of California Irvine, Matthew Schiel |
| 2:45 | (2600-3) | **Stochastic Signals in Electrochemical Nanofluidic Devices** SERGE G LEMAY, University of Twente |
| 3:20 | | **Recess** |
| 3:35 | (2600-4) | **Effect of Chromatographic Sampling Width on Chemical Noise, Sensitivity, and Detection-Stage Requirements in Hyphenated Analytical Systems** CHRISTIE G ENKE, University of New Mexico, Alexander Gundlach-Graham |
| 4:10 | (2600-5) | **Spontaneous Restructuring and Chemical Noise at Au-Ag-Au Atomic Scale Junctions** PAUL BOHN, University of Notre Dame, Tai-Wei Hwang |

**SYMPOSIUM** **Session 2610**

***Emerging Trends in Plasma Spectrochemistry***
arranged by Gary M Hieftje, Indiana University

**Thursday Afternoon, Room 260**
Gary M Hieftje, Indiana University, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Gary M Hieftje** |
| 1:35 | (2610-1) | **Atmospheric Sample Introduction Systems for ICP-MS and Laser Ablation-ICP-MS** DETLEF GUENTHER, ETH Zurich, Daniel Tabersky, Alexander G Gundlach, Kohei Nishiguchi |
| 2:10 | (2610-2) | **Distance of Flight Mass Spectrometry: A New Approach for Inductively-Coupled Plasma Mass Spectrometry** STEVEN J RAY, Indiana University, Elise Dennis, Christie G Enke, Andrew J Schwartz, Charles Barinaga, David W Koppenaal, Gary M Hieftje |
| 2:45 | (2610-3) | **Elemental and Isotope Analysis by LIBS and LAMIS** RICHARD E RUSSO, Lawrence Berkeley National Laboratory |
| 3:20 | | **Recess** |
| 3:35 | (2610-4) | **Atomic Spectrometry in Inaccessible Places** S MICHAEL ANGEL, University of South Carolina, Joseph Bonvallet, Patrick D Barnett, Nirmal Lamsal |
| 4:10 | (2610-5) | **The Expanding Role of Glow Discharges in Analytical Science** GARY M HIEFTJE, Indiana University, Steven J Ray, Andrew J Schwartz, Kevin P Pfeuffer, Andrew P Storey, Jacob T Shelley |

**SYMPOSIUM** **Session 2620**

***Integrating Genomic and Proteomic Analytical Information***
arranged by Daniel Drell and Paul Bayer, US Dept of Energy

**Thursday Afternoon, Room 261**
Daniel Drell, US Dept of Energy, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Daniel Drell and Paul Bayer** |
| 1:35 | (2620-1) | **Comparative Metagenomes and Carbon Cycling in Biofuel Soils** KIRSTEN HOFMOCKEL, Iowa State University, Adina Howe, Ryan J Williams |
| 2:10 | (2620-2) | **Integrated *MetaOmics* of Cyanobacteria: Building a Knowledge Framework for an Enhanced Understanding of the Global Carbon and Nitrogen Cycle** MATTHIAS HESS, Washington State University |
| 2:45 | (2620-3) | **Genomic and Proteomic Insights into the Ancient Antiviral Functions of Sirtuins** ILEANA CRISTEA, Princeton University |
| 3:20 | | **Recess** |
| 3:35 | (2620-4) | **Targeted High-Throughput Quantitative Glycomics: Using Ion-Trap Based Mass Spectrometry for the Detection of Congenital Muscular Dystrophy** LANCE WELLS, University of Georgia, CCRC |
| 4:10 | (2620-5) | **Integration of Genomic and Proteomic Approaches for Characterization of the Activities and Functions of Microbial Isolates and Communities** ROBERT HETTICH, Oak Ridge National Lab, Ritin Sharma, Karuna Chourey, Zhou Li, Chongle Pan, Rich Giannone |



***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

**SYMPOSIUM** **Session 2630**

***Microfluidics Meets Cell Analysis***
arranged by Jose A Silva, UNICAMP and Susan M Lunte, University of Kansas

**Thursday Afternoon, Room 262**
Jose A Silva, UNICAMP, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Jose A Silva and Susan M Lunte** |
| 1:35 | (2630-1) | **Death by Oxygen: Analysis of Drug Resistance in Hypoxic Tumor Cells** DIMITRI PAPPAS, Texas Tech University |
| 2:10 | (2630-2) | **Dielectrophoretic Self Assembly of Cells in Microdevices** PRASHANTA DUTTA, Washington State University |
| 2:45 | (2630-3) | **Isolation, Manipulation, and Analysis of Single Cells** DANIEL T CHIU, University of Washington, Robbyn K Anand, Alison M Thompson |
| 3:20 | | **Recess** |
| 3:35 | (2630-4) | **Electrochemical Detection in Microchip Electrophoresis: Application to the Determination of Nitrogen Reactive Species in Cells and Its Monitoring** JOSE A SILVA, UNICAMP, Dulan B Gunasekara, Richard P Campos, Diogenes Meneses, Fabiane Caxico, Susan M Lunte |
| 4:10 | (2630-5) | **Rapid Single Cell Analysis on Integrated Microfluidic Devices** CHRISTOPHER T CULBERTSON, Kansas State University |

**SYMPOSIUM** **Session 2640**

***Statistics and Data Analysis for Forensic Decision-Making***
arranged by Stephen L Morgan, University of South Carolina

**Thursday Afternoon, Room 263**
Stephen L Morgan, University of South Carolina, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Stephen L Morgan** |
| 1:35 | (2640-1) | **Evaluation of Statistical Measures for Forensic Fiber Comparisons: Databases and Intra- and Inter-laboratory Comparisons** STEPHEN L MORGAN, University of South Carolina, Nathan Fuenffinger, David L Birt, Edward G Bartick |
| 2:10 | (2640-2) | **Statistical Approaches to Decision Making in Fire Debris Analysis** MICHAEL E SIGMAN, University of Central Florida, Mary R Williams |
| 2:45 | (2640-3) | **Comparative/Compositional Bullet Lead Analyses (CBLA): An Autopsy** CLIFFORD SPIEGELMAN, Texas A&M University, William A Tobin |
| 3:20 | | **Recess** |
| 3:35 | (2640-4) | **Statistical Method for the Mass Spectral Comparison of Controlled Substances** RUTH SMITH, Michigan State University, Melissa A Bodnar-Willard, Victoria L McGuffin |
| 4:10 | (2640-5) | **Class-Conditional Feature Modeling for Ignitable Liquid Classification with Substantial Substrate Contribution in Fire Debris Analysis** MARTIN LOPATKA, University of Amsterdam, Michael E Sigman, Gabriel Vivo-Truyols, Marjan J Sjerps, Mary R Williams |

**SYMPOSIUM** **Session 2650**

***Using Analytical Solutions to Target Emerging Issues in Drinking Water Safety***
arranged by Lauren Weinrich, American Water

**Thursday Afternoon, Room 264**
Lauren Weinrich, American Water, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Lauren Weinrich** |
| 1:35 | (2650-1) | **Method Development Using Luminescence for Biodegradable Organic Carbon Measurements in Drinking Water** LAUREN WEINRICH, American Water |
| 2:10 | (2650-2) | **Evaluation of Emerging and Unregulated Drinking Water Contaminants and the Impact of Operations at American Water Facilities** RUTH MARFIL-VEGA, American Water, Zia Bukhari, Lauren Weinrich, William Johnson, Mark LeChevallier |
| 2:45 | (2650-3) | **Monitoring and Optimizing Drinking Water Treatment Processes with Simultaneous Absorbance and Fluorescence Excitation-Emission Mapping** ADAM M GILMORE, Horiba |
| 3:20 | | **Recess** |
| 3:35 | (2650-4) | **Emerging Issues Regarding the Impact of Polymer Pipes, Coatings, and Liners on Water Quality** ANDREW J WHELTON, Purdue University |
| 4:10 | (2650-5) | **Louisiana Response to Detection of Naegleria Fowleri in Two Drinking Water Supplies** JAKE CAUSEY, Louisiana Department of Health and Hospitals, Jimmy Guidry |

**WORKSHOP** **Session 2660**

***Chemical Safety Challenges and Solutions for the Lab***
arranged by Helen Gillespie, Technology Networks

**Thursday Afternoon, Room 269**
Helen Gillespie, Technology Networks, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Helen Gillespie** |
| 1:35 | (2660-1) | **How Chemical Safety Regulations are Changing Laboratory Processes** HELEN GILLESPIE, Technology Networks |
| 2:05 | (2660-2) | **The Blueprint for Successful Chemical Management at Yale's West Campus** CHRISTOPHER INCARVITO, Yale University |
| 2:35 | (2660-3) | **Best Practices in Laboratory Chemical Inventory Management** BRIAN STAFFORD, Accelrys/BIOVIA |
| 3:05 | | **Recess** |
| 3:20 | (2660-4) | **How to Create a More Effective Lab Safety Program** JAMES A KAUFMAN, Laboratory Safety Institute |
| 3:50 | | **Open Discussion** |

**WORKSHOP** **Session 2670**

***The Analytical Information Markup Language: Ten Years from Jungle to Savanna***
arranged by Stuart J Chalk, University of North Florida

**Thursday Afternoon, Room 274**
Stuart J Chalk, University of North Florida, Presiding

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|---|---|---|
| 1:30 | | **Introductory Remarks - Stuart J Chalk** |
| 1:35 | (2670-1) | **Integrating AnIML Files in Electronic Laboratory Notebooks** STUART J CHALK, University of North Florida |
| 2:05 | (2670-2) | **The AnIML Data Standard on Mobile and in the Cloud** BURKHARD SCHAEFER, BSSN Software GmbH |
| 2:35 | (2670-3) | **Increasing Public Access to Government Research Data and Use of Open Data Standards** ANAND MUDAMBI, US EPA |
| 3:05 | | **Recess** |
| 3:20 | (2670-4) | **Evaluation of Standards for Data and Metadata in Analytical Chemistry** DANA E VANDERWALL, Allotrope Foundation |
| 3:50 | (2670-5) | **AnIML via SiLA - A Perfect Fit?!** DEVON JOHNSTON, Sila Standard, Niklaus Graber |

**ORGANIZED CONTRIBUTED SESSION** **Session 2680**

***New Developments in Ion Chromatography***
arranged by Kannan Srinivasan, Thermo Fisher Scientific

**Thursday Afternoon, Room 265**
Kannan Srinivasan, Thermo Fisher Scientific, Presiding

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|---|---|---|
| 1:30 | (2680-1) | **Advances in Trace Analysis in Ion Chromatography** HERB WAGNER, EPA Contractor |
| 1:50 | (2680-2) | **An Investigation into Ion Chromatographic Methods for the Determination of Low-Level Perchlorate in Drinking Water** VIRGINIA L BURKEL, NSF International, Daren Schaller, Michael Harvey |
| 2:10 | (2680-3) | **Improved Methodology for Ion Profiling in Aquarium Water** WILLIAM R LACOURSE, University of Maryland Baltimore County, Magaret E LaCourse, Kim Gaeta, Jill Arnold, Joshua Wilhide |
| 2:30 | (2680-4) | **Fronting, Tailing and Non-Gaussian Peaks: How Can We Predict the Peak Shapes in Ion Chromatography?** M FAROOQ WAHAB, University of Texas at Arlington, Jordan K Anderson, Christopher A Pohl, Charles A Lucy |
| 2:50 | | **Recess** |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

# TECHNICAL PROGRAM

| | | |
|---|---|---|
| 3:05 | (2680-5) | **Recent Developments in Stationary Phases for Ion Chromatography** CHRISTOPHER A POHL, Thermo Fisher Scientific |
| 3:25 | (2680-6) | **Admittance Detection in High Impedance Systems - Design and Applications** PURNENDU K DASGUPTA, University of Texas at Arlington, Min Zhang, Brian Stamos |
| 3:45 | (2680-7) | **Recent Developments in Suppressor Technology in Ion Chromatography** KANNAN SRINIVASAN, Thermo Fisher Scientific, Rong Lin, Sheetal Bhardwaj, Christopher A Pohl |

**ORGANIZED CONTRIBUTED SESSION** **Session 2690**

***Supercritical Fluid Chromatography: Advances and Applications in Pharmaceutical Analysis***

arranged by Gregory Webster, AbbVie

**Thursday Afternoon, Room 266**

Gregory Webster, AbbVie, Presiding

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|---|---|---|
| 1:30 | (2690-1) | **An Overview of Supercritical Fluid Chromatography Mass Spectrometry (SFC-MS) in the Pharmaceutical Industry** LAILA KOTT, Takeda Pharmaceutical International Co. |
| 1:50 | (2690-2) | **Comparison of Core Shell and Porous Silica Bonded Phases for SFC** JEFFREY W CALDWELL, Princeton Chromatography, Inc., Walton B Caldwell |
| 2:10 | (2690-3) | **Method Validation and Transferability on Advanced Analytical SFC Instruments: Update of Chiral SFC Implementation in Regulated Laboratories** YUN HUANG, Pfizer Inc., Frank Riley, Mark Hardink, Duc Vuong, Karen Alsante |
| 2:30 | (2690-4) | **Application of SFC in Process Analytical Chemistry** YANQUN ZHAO, AbbVie Inc |
| 2:50 | | **Recess** |
| 3:05 | (2690-5) | **SFC Technology and Applications for Supporting Early Drug Discovery Programs** KANAKA HETTIARACHCHI, Theravance Biopharma, Qifeng Xue |
| 3:25 | (2690-6) | **Chiral Method Development in SFC with Laser Polarimeter Detection** GARY W YANIK, PDR-Separations |
| 3:45 | (2690-7) | **Translating Chiral Separations Between SFC, NP, and RP: How to Switch from One Mode to Another** J P PRESTON, Phenomenex, Julissa Fernandez, Michael McCoy, William Farrell |
| 4:05 | (2690-8) | **Scaling Up – The Transition from Analytical to Preparative SFC Separations** GEOFFREY B COX, PIC Solution Inc |

**ORAL SESSION** **Session 2700**

***Chemical Methods and High-Throughput Chemical Analysis***

**Thursday Afternoon, Room 240**

Sarah J Reinholt, Cornell University, Presiding

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|---|---|---|
| 1:30 | (2700-1) | **Detection and Identification of Human Metabolites Using Ion Mobility Spectrometry** WOLFGANG VAUTZ, ISAS, Sascha Liedtke |
| 1:50 | (2700-2) | **Use of Gradient Dilution to Detect and Correct for Matrix Interferences in Inductively Coupled Plasma–Mass Spectrometry** YAN CHEUNG, Indiana University, Andrew J Schwartz, Steven J Ray, Gary M Hieftje |
| 2:10 | (2700-3) | **Development of a Screening Model and a High Throughput Method for Discovering Echinocandin Anti-Fungal Drug Candidates by Capillary Electrophoresis with Laser Induced Fluorescence Detection** CHAOHUI SUN, Tianjin University, James J Bao, Youxin Li, Shuhai Jiang, Raymond Yao |
| 2:30 | (2700-4) | **High-Throughput Microplate-Based Microcolumn Device for the Selection o f Aptamers, Characterization of the Selection Process, and Other Chromatographic Processes** SARAH J REINHOLT, Cornell University, Kylan Szeto, Abdullah Ozer, Jaime J Benitez, Fabiana M Duarte, John M Pagano, Li Yao, John T Lis, Harold G Craighead |
| 2:50 | | **Recess** |
| 3:05 | (2700-5) | **Optical Gating of Membrane Permeability: Microtiter Plates with Photo-Controlled Well Floors** LINDSEY R SEQUEIRA, Oregon State University, Vincent T Remcho |
| 3:25 | (2700-6) | **Reducing Labor Costs and Increasing Precision** TRACY DOMBEK, Research Triangle Institute, Brice Lopez, Eva Hardison |
| 3:45 | (2700-7) | **Extending Selected Ion Flow Tube Mass Spectrometry (SIFT-MS) to Detection of Semi-Volatiles on Surfaces** VAUGHAN S LANGFORD, Syft Technologies, Daniel B Milligan, Barry J Prince, Yan Li, John D Gray, Murray J McEwan |
| 4:05 | (2700-8) | **Reducing Helium Use in Flowing Atmospheric-Pressure Afterglow—Mass Spectrometry** ANDREW P STOREY, Indiana University, Steven J Ray, Offer M Zeiri, Kevin P Pfeuffer, Gary M Hieftje |

**ORAL SESSION** **Session 2710**

***Electrochemical Microfluidics for Bio-Analysis***

**Thursday Afternoon, Room 241**

Jin-Woo Choi, Louisiana State University, Presiding

| | | |
|---|---|---|
| 1:30 | (2710-1) | **The Buffer Monitor: A Lab-on-Chip Approach to Quantifying Buffer Capacity of Whole Blood** SAHIR I GANDHI, Imperial College London, Pyry Helkkula, Peter Knox, Martyn G Boutelle, Danny O'Hare |
| 1:50 | (2710-2) | **Direct Electrochemistry of Magnetic Nanoparticles and Upon Conjugation with Redox Proteins** SADAGOPAN KRISHNAN, Oklahoma State University, Gayan Premaratne, Charuksha Walgama, Ryan Matlock, Rajasekhar Reddy Nerimetla, Monette McKinnell, Trey Sunday |
| 2:10 | (2710-3) | **Multianalyte Microphysiometry Investigation of Virulence Differences Between Group B Streptococcus Strains** DANIELLE W KIMMEL, Vanderbilt University, Lisa M Rogers, David Aronoff, David E Cliffel |
| 2:30 | (2710-4) | **Fast Scan Cyclic Voltammetry (FSCV) Detection of Endogenous Octopamine in *Drosophila Mlanogaster* Larva** POOJAN PYAKUREL, University of Virginia |
| 2:50 | | **Recess** |
| 3:05 | (2710-5) | **Withdrawn** |
| 3:25 | (2710-6) | **Development of a Novel Microfluidic Biosensor System for Real-Time Subcutaneous Monitoring of Cyclists During Exercise** SALLY GOWERS, Imperial College London, Vincenzo F Curto, Salzitsa Anastasova-Ivanova, Pankaj Vadgama, Guang-Zhong Yang, Martyn G Boutelle |
| 3:45 | (2710-7) | **Redox Chemistry of Nanoceria Using Impedance Spectroscopy** ANDREW R LAKE, State University of New York at Binghamton, Soumen Das, Sudipta Seal, Omowunmi A Sadik |
| 4:05 | (2710-8) | **Anesthetics Differentially Affect Dopamine Dynamics Within the Nucleus Accumbens** KATE L PARENT, University of Arizona, Christopher W Atcherley, Dong W Lu, Jennifer Xie, Frank Porreca, Michael L Heien |

**ORAL SESSION** **Session 2720**

***Electrophoresis for Bio-Analysis (Half Session)***

**Thursday Afternoon, Room 252**

Vishal Sahore, Brigham Young University, Presiding

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|---|---|---|
| 1:30 | (2720-1) | **Low Voltage Origami Paper-Based Electrophoretic Devices (*o*PEpDs) for Rapid Protein Separation Applications** LONG LUO, University of Texas at Austin, Xiang Li, Richard M Crooks |
| 1:50 | (2720-2) | **On-Chip Fluorescent Labeling of Preterm Birth Biomarkers and Their Electrophoretic Separation** KAITLYN BROWER, Brigham Young University, Adam T Woolley, Sonker Mukul |
| 2:10 | (2720-3) | **Microfluidic Assays for Long-Term Perfusion Culture and Chemical Monitoring of Living Cells** SHUSHENG LU, University of Michigan, Robert T Kennedy |
| 2:30 | (2720-4) | **Pressure Actuated Microfluidic Devices for Electrophoretic Separations: Toward Pre-Term Birth Biomarker Analysis** VISHAL SAHORE, Brigham Young University, Suresh Kumar, Chad I Rogers, Adam T Woolley |

**ORAL SESSION** **Session 2730**

*Environment - Metals Determination*

**Thursday Afternoon, Room 253**
Yin Yee (Cynthia) Choo, Southeast Missouri State University, Presiding

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|---|---|---|
| 1:30 | (2730-1) | **Anodic Stripping Voltammetric Determination of Cd and Pb with Nanocarbon Film Electrode Fabricated by Unbalanced Magnetron Sputtering** YANAGISAWA HIROYUKI, AIST/Tsukuba, Kurita Ryoji, Tomoyuki Kamata, Kato Dai, Nakazato Tetsuya, Torimura Masaki, Niwa Osamu |
| 1:50 | (2730-2) | **Anodic Stripping Voltammetry of Cadmium After a Ligandless Cloud Point Extraction** CORY A RUSINEK, University of Cincinnati, Adam Bange, William R Heineman, Ian Papautsky |
| 2:10 | (2730-3) | **Overcoming the Challenges of Hydraulic Fracking Fluid Analysis by Optical Emission Spectroscopy** ERICA M CAHOON, PerkinElmer, Dan Jones, Tony Palermo, Laura Thompson |
| 2:30 | (2730-4) | **Toxicity of Silver Nanoparticles in the Environment: $Ag^+$ Binding to Natural Organic Matter as Studied with Ion-Selective Electrodes** MARAL PS MOUSAVI, University of Minnesota, Ian L Gunsolus, Carlos E Pérez De Jesús, Christy L Haynes , Philippe Bühlmann |
| 2:50 | | **Recess** |
| 3:05 | (2730-5) | **Natural Organic Matter Effects on Silver Nanoparticle Stability and Dissolution** IAN L GUNSOLUS, University of Minnesota, Maral PS Mousavi, Kadir Hussein, Philippe Buhlmann, Christy L Haynes |
| 3:25 | (2730-6) | **Single Particle ICP-MS (SP-ICP-MS) for the Detection of Metal-Based Nanoparticles in Environmental Matrices** CHADY STEPHAN, PerkinElmer, Aaron Hineman |
| 3:45 | (2730-7) | **The Determination of Iron and Manganese in Discolored Drinking Water by ICP-OES** PHILIP G RIBY, Liverpool John Moores University, Rugaya G Sanin, Sharon Moore, Mark Wainwright |
| 4:05 | (2730-8) | **Study of Toxic Metals Pollution in Impacted Soils in Akwa Ibom State, Nigeria Using *Eudrilus Eugeniae* and *Pachybolus Ligulatus* as Bio-Indicators** IMAOBONG I UDOUSORO, University of Uyo, Ini U Umoren, Eneojo S Shaibu |

**ORAL SESSION** **Session 2735**

*Food Safety - Vibrational Spectroscopic Applications*

**Thursday Afternoon, Room 271**
Presider TBD

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| 1:30 | (2735-1) | **Detection of 10 to 100 Pathogen Cells per Gram of Food in 4 Hours by SERS** CHETAN SHENDE, Real-Time Analyzers, Inc., Stuart Farquharson |
| 1:50 | (2735-2) | **SERS Based Aptasensor for Sub-Femtomolar Level Toxin Detection** UGUR TAMER, Gazi University, Merve Eryilmaz, Adem Zengin, Tuncer Caykara, Ismail H Boyaci |
| 2:10 | (2735-3) | **Stand-off Raman Detection of Contamination in Food** ANUP SHARMA, Alabama A&M University, Carlton Farley, Aschalew Kassu |
| 2:30 | (2735-4) | **Dynamic Interactions of Acrylamide with Thiols of Biological Importance** GRACE-ANNE BENT, The University of the West Indies, Paul Maragh, Tara Dasgupta, Richard A Fairman, Lebert Grierson |
| 2:50 | | **Recess** |
| 3:05 | (2735-5) | **Chemical Imaging of Insect Fragment Residue to Assess Stored Grain Infestation** DAVID L WETZEL, Kansas State University, Tyler R Nickoley, Mark D Boatwright |

**ORAL SESSIONS** **Session 2740**

*HPLC for Bio-Analysis*

**Thursday Afternoon, Room 254**
Paul Haupt-Renaud, Clemson University, Presiding

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|---|---|---|
| 1:30 | (2740-1) | **Implementation of Novel Lipid Tethered Ligands on PS-DVB Stationary Phases for Affinity Chromatography** PAUL HAUPT-RENAUD, Clemson University, R Kenneth Marcus, Abby Schdock-Hewitt |
| 1:50 | (2740-2) | **Polyethylenimine Modified Polyethylene Terephthalate Capillary-Channeled Polymer (C-CP) Fibers for Protein Separations by Anion Exchange Chromatography** LIUWEI JIANG, Clemson University, R Kenneth Marcus |
| 2:10 | (2740-3) | **Evaluation of D-Amino Acids in Rat Brain Tissue by Achiral-Chiral Heart-Cutting Two Dimensional Liquid Chromatography** CURRAN PARPIA, University of Texas at Arlington, Daniel W Armstrong |
| 2:30 | (2740-4) | **Analysis of Free Drug Fractions and Drug-Protein Interactions Using Ultrafast Affinity Extraction and Affinity Microcolumns** XIWEI ZHENG, University of Nebraska-Lincoln, Maria Podariu, Ryan Matsuda, Zhao Li, Michelle Yoo, David S Hage |
| 2:50 | | **Recess** |
| 3:05 | (2740-5) | **Modification of Polyethylene Terephthalate Capillary-Channeled Polymer (C-CP) Fiber Stationary Phase for Affinity Separations** LIUWEI JIANG, Clemson University, R Kenneth Marcus |
| 3:25 | (2740-6) | **Reversed Phase Separation of Proteins Prior to ESI-MS Analysis via Capillary-Channeled Polymer (C-CP) Fiber Microbore-Columns** MARISSA A PIERSON, Clemson University, R Kenneth Marcus |
| 3:45 | (2740-7) | **Detection of Reactive Aldehyde Biomarkers of Oxidative Stress in Animals with Liquid Chromatography and Fluorescence Detection** MICHAEL L HOGARD, University of Kansas, Craig E Lunte |
| 4:05 | (2740-8) | **Quantification of Alkaloids in Goldenseal (Hydrastis Canadensis) by LC-MS/MS Using Selected Reaction Monitoring (SRM)** PHUONG MAI LE, National Research Council Canada, Anthony Windust, Garnet McRae |

**ORAL SESSION** **Session 2745**

*Laboratory Informatics (Half Session)*

**Thursday Afternoon, Room 272**
Presider TBD

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|---|---|---|
| 1:30 | (2745-1) | **We are a Data Industry: Let's Act Like One** JANET CHEETHAM, Allotrope Foundation |
| 1:50 | (2745-2) | **A Disruptive Technology Platform for Configurable LIMS** MUKUNTH VENKATESAN, Agaram Technologies, Gandhi Murugesan Kuppuswamy |
| 2:10 | (2745-3) | **The EPA's Enhanced Electronic Data Exchange and Evaluation System: A New Tool for Electronic Data Validation and Management** SARA GOEHL, US EPA |

**ORAL SESSION** **Session 2750**

*Laboratory Management (Half Session)*

**Thursday Afternoon, Room 255**
Jinesh Jain, URS Corporation, Presiding

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| 1:30 | (2750-1) | **Safe Energy-Efficient Chemistry Labs – Challenging the Assumptions** GREG MUTH, Wilson Architects |
| 1:50 | (2750-2) | **Helium Conservation and Emerging Technologies** DALE ASHWORTH, VICI Valco, Stanley Stearns, Huamin Cai |
| 2:10 | (2750-3) | **The Impact of Enterprise Manufacturing Intelligence for Manufacturers and LIMs** LOUIS HALVORSEN, Northwest Analytical Inc. |

**ORAL SESSION** **Session 2760**

*New Chromatography Stationary Phases*

**Thursday Afternoon, Room 256**
John Stephens, The Pittsburgh Conference, Presiding

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|---|---|---|
| 1:30 | (2760-1) | **Scanning Probe Microscopy Studies of a Laurel Acrylate Porous Polymer Monolith** JOEL ADABLAH, Trinity University, Tian Tian, Michelle M Bushey |
| 1:50 | (2760-2) | **Utilization of an Electrospun Silica Nanoparticle/Polyvinlypyrrolidone Nanofiber Mat as a Planar Electrochromatography Stationary Phase** MICHAEL BEILKE, The Ohio State University, Susan V Olesik |
| 2:10 | (2760-3) | **Analyte Diffusion on Lauryl Acrylate Porous Polymer Monolith Stationary Phase in Capillary Electrochromatography** POOJA BALLAMPALLY, Trinity University, Rohit Sampat, Charlisa Daniels, Tian Tian, Michelle M Bushey |
| 2:30 | (2760-4) | **Atomic Layer Deposition of Aluminum-Free Silica onto Patterned Carbon Nanotube Forests in the Preparation of Microfabricated Thin-Layer Chromatography Plates** CODY V CUSHMAN, Brigham Young University, Supriya S Kanyal, Matthew R Linford, David S Jensen, Andrew E Dadson |
| 2:50 | | **Recess** |

***Author and presider lists as of January 15, 2015, are available at www.pittcon.org***

# TECHNICAL PROGRAM

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| 3:05 | (2760-5) | **Wafer Level Fabrication and Performance Characterization of Nanoscale Pillar Arrays for Planar Chromatography** MICHAEL SEPANIAK, University of Tennessee, Teresa Kirchner, Nahla Hatab, Jennefer Charlton, Rachel Strickhouser, Nicholay Lavrik |
| 3:25 | (2760-6) | **Tailored Electroosmotic Flow Through Nanoporous Gold Membranes for Dynamic Selective Separations** DANIEL A MCCURRY, University of Illinois at Urbana-Champaign, Ryan C Bailey, Meifeng Lin |
| 3:45 | (2760-7) | **Thermodynamic Studies of Lauryl Acrylate Porous Polymer Monoliths as Stationary Phase for Capillary Electrochromatography (CEC)** TIAN TIAN, Trinity University, Brady Iba, Charlisa Daniels, Nick Kuklinski, Michelle M Bushey |
| 4:05 | (2760-8) | **Polyionic Ionic Liquid GC Stationary Phase Evaluations** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Greg A Baney, James L Desorcie, Gustavo Serrano, Daniel Shollenberger |

**ORAL SESSION** **Session 2770**

*Pharmaceutical Chromatography*

**Thursday Afternoon, Room 257**
Martha Knight, CC Biotech LLC, Presiding

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|---|---|---|
| 1:30 | (2770-1) | **The Determination and Quantification of Water and Alcohols in Drug Tablets, Syrups and Excipients** LILLIAN FRINK, University of Texas at Arlington, Daniel W Armstrong |
| 1:50 | (2770-2) | **Quantification of Residual Solvents in Antibody Drug Conjugates Using Gas Chromatography** COLIN D MEDLEY, Genentech, Yi Li, Jacob Kay |
| 2:10 | (2770-3) | **Analytical Method Development and Robustness Evaluation for Gas Chromatographic Analysis of Piperazine Designer Drugs** KATHLEEN K LUO, The Pennsylvania State University, Frank Dorman |
| 2:30 | (2770-4) | **High Mass Throughput in Natural Product Separation** MARTHA KNIGHT, CC Biotech LLC, Thomas M Finn, Cuiping Chen, William Folk |
| 2:50 | | **Recess** |
| 3:05 | (2770-5) | **Screening of Aromatase and Neuraminidase Inhibitors from Chinese Medicine by Capillary Electrophoresis and Enzyme Microreactor** ZILIN CHEN, Wuhan University |
| 3:25 | (2770-6) | **Development of Novel Chiral Selectors Suitable for Fast Turn-Around Analysis** YOUXIN LI, Tianjin University, Feifei Jia, Yuxiao Wang, Qinggang Liang, James J Bao |
| 3:45 | (2770-7) | **Synthesis and Applications of Novel Cyclodextrins Polymers as Chiral Selectors** FEIFEI JIA, Tianjin University, Youxin Li, James J Bao |
| 4:05 | (2770-8) | **Development of the Interface Between Wide-Bore Electrophoresis and Mass Spectrometry** MENGNA ZHANG, Tianjin University, Guanzhong Luo, Youxin Li, James J Bao |

**ORAL SESSION** **Session 2780**

*Sampling and Sample Prep of Environmental Samples*

**Thursday Afternoon, Room 267**
Maria K Ferguson, PA Dept of Environmental Protection, Presiding

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|---|---|---|
| 1:30 | (2780-1) | **The Application of Solid Phase Microextraction to Non-Routine Environmental Testing** KATHERINE K STENERSON, Supelco/Sigma-Aldrich, Olga I Shimelis, Michael Ye, Daniel Vitkuske |
| 1:50 | (2780-2) | **Solvent Emission Reduction in the Modern Environmental Laboratory** ZOE GROSSER, Horizon Technology, Inc., Lindsay Holcroft, William Jones |
| 2:10 | (2780-3) | **Permeation Passive Sampler for Long-Term Sampling of Volatile Organic Compounds from Air** TADEUSZ GÓRECKI, University of Waterloo, Paulina Biernacka, Todd McAlary, Hester Groenevelt |
| 2:30 | (2780-4) | **A Non-Ionic Surfactant-Mediated Sol-Gel Coating for Solid-Phase Microextraction of Benzene, Toluene, Ethylbenzene and O-Xylene in Water Samples Using Gas Chromatography-Flame Ionization Detector** ALI SARAFRAZ YAZDI, Ferdowsi University of Mashhad |
| 2:50 | | **Recess** |
| 3:05 | (2780-5) | **High Capacity SPME with Increased Mechanical Robustness: Sensitive, Reliable, Automatable** ANDREAS KREMSER, University of Duisburg-Essen, Maik A Jochmann, Torsten C Schmidt |

**ORAL SESSION** **Session 2790**

*Sensors - Electrochemical Platforms (Half Session)*

**Thursday Afternoon, Room 268**
Xu Wu, University of North Dakota, Presiding

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| 1:30 | (2790-1) | **Development of a Dual Electrochemical Microsensor for Simultaneous Detection of NO/$Ca^{2+}$ in Living Tissue** YEE SEUL KIM, Ewha Women University, Jeongeun Sim, Minah Suh, Youngmi Lee |
| 1:50 | (2790-2) | **Small Scale ATP Measurements Using a New Biological Nanopore-Based Sensor Supported on Glass Nanopore (GNP) Membranes** FLORIKA C MACAZO, University of Maryland Baltimore County, Ryan J White |
| 2:10 | (2790-3) | **Detection of Total Antioxidant Concentrations Using a Nanocarbon Paste Electrode** DENISE LOWINSOHN, University in Juiz de Fora, Richard Compton, Patricia Lee |
| 2:30 | (2790-4) | **One-Pot Synthesis of Reduced Graphene Oxide/Metal (Oxide) Nanocomposites Using Glucose and Its Electrocatalytic Application** XU WU, University of North Dakota, Yuqian Xing, David Pierce, Julia Xiaojun Zhao |

**ORAL SESSION** **Session 2800**

*Thermal Analysis*

**Thursday Afternoon, Room 270**
Ekkehard Post, Netzsch, Presiding

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| 1:30 | (2800-1) | **Evolved Gas Analysis for Petrochemical Products Using a Newly Developed TG–Fast-GC–SPI/EI–HRTOFMS System** SEBASTIAN WOHLFAHRT, Helmholtz Center Munich, Michael Fischer, Janos Varga, Mohammad Reza Saraji-Bozorgzad, Georg Matuschek, Thomas Denner, Ralf Zimmermann |
| 1:50 | (2800-2) | **Evolved Gas Analysis (EGA) in TG and DSC with Single Photon Ionization Mass Spectrometry (SPI-MS): Molecular Organic Signatures from Pyrolysis of Soft and Hard Wood, Coal, Crude Oil and ABS** MOHAMMAD REZA SARAJI-BOZORGZAD, Photonion GmbH, Thorsten Streibel, Andreas Walte, Thomas Denner, Ralf Zimmermann |
| 2:10 | (2800-3) | **PTFE - A Fascinating Polymer Investigated by DSC, DMA, and TGA-FTIR-MS** BOB FIDLER, NETZSCH Instruments N.A. LLC, Ekkehard Post, Markus Meyer |
| 2:30 | (2800-4) | **Pyrolysis of Wood and Wood Pellets Investigated by TG-GC-MS** EKKEHARD POST, NETZSCH Instruments N.A. LLC, Bob Fidler |
| 2:50 | | **Recess** |
| 3:05 | (2800-5) | **Multidimensional Evolved Gas Analysis of Semiluxury Natural Foods by STA-GCxEI/SPI-TOF MS** MICHAEL FISCHER, Helmholtz Center Munich, Sebastian Wohlfahrt, Janos Varga, Georg Matuschek, Mohammad Reza Saraji-Bozorgzad, Thomas Denner, Ralf Zimmermann |
| 3:25 | (2800-6) | **Characterization of Nanomaterials with Thermal Analysis and Molecular Spectroscopy** JUN WANG, PerkinElmer, Chady Stephan |
| 3:45 | (2800-7) | **Probing Micelle Aggregation in Bile Salts Using Isothermal Titration Calorimetry** SHAUNA ANDERSON, Bucknell University, Timothy G Strein, David Rovnyak |



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