

PITTCON 2014 TECHNICAL PROGRAM

SUNDAY, MARCH 2, 2014

AFTERNOON

Sunday Afternoon

THE WALLACE H. COULTER PLENARY LECTURE Session 10

The Wallace H. Coulter Plenary Lecture

Sunday Afternoon, Grand Ballroom S100a

4:45 (10-1) **Quantitative Proteomics in Biology, Chemistry and Medicine**
STEVEN A CARR, Broad Institute of MIT and Harvard

SYMPOSIUM Session 30

ACS DAC: Analytical Advances in Clinical Diagnostics

arranged by Barbara Bojko, University of Waterloo

Sunday Afternoon, Room S401a

Barbara Bojko, University of Waterloo, Presiding

1:30 **Introductory Remarks -** Barbara Bojko

1:35 (30-1) **Solid Phase Microextraction and Clinical Medicine - What is the Next Step?**
MARCIN WASOWICZ, Toronto General Hospital/University of Toronto

2:10 (30-2) **Title Not Provided at Time of Printing**

2:45 (30-3) **Population Based Omics** JONAS BERGQUIST, Uppsala University

3:20 **Recess**

3:35 (30-4) **Searching for Metabolite Biomarkers of Neurological Disorders Using LC-MS Based Metabolomics** LIANG LI, University of Alberta

4:10 (30-5) **Solid Phase Microextraction – Multipurpose Tool for Clinical Analysis** BARBARA BOJKO, University of Waterloo, Janusz Pawliszyn

SYMPOSIUM Session 40

ALMA: Attracting, Developing and Maintaining a Lab's Greatest Asset, Its Staff

arranged by Dennis Swijter, IFF R&D

Sunday Afternoon, Room S401bc

Dennis Swijter, IFF R&D, Presiding

1:30 **Introductory Remarks -** Dennis Swijter

1:35 (40-1) **Title Not Provided at Time of Printing**

2:10 (40-2) **Staffing Considerations for the Unique Career Path of Core Laboratory Support**
ERIC MARTIN, Harvard Center for Nanoscale Systems

2:45 (40-3) **Development and Application of Competencies via Functional Teams** JAMES J SCOBBO, SABIC

3:20 **Recess**

3:35 (40-4) **High Performing and Happy: Team Development in a Research and Development Analytical Testing Lab** STEPHANIE A MABRY, Afton Chemical Corporation

4:10 (40-5) **Attracting, Developing and Maintaining a Lab's Greatest Asset, Its Staff – A Public Utility Perspective** NIRMELA ARSEM, EBMUD

SYMPOSIUM

Session 50

Controlled Nanopores for Chemical Separations and Sensing

arranged by Takashi Ito, Kansas State University and Lane A Baker, Indiana University

Sunday Afternoon, Room S401d

Takashi Ito, Kansas State University, Presiding

1:30 **Introductory Remarks -** Takashi Ito and Lane A Baker

1:35 (50-1) **Cylindrical Domain Alignment and Molecular Diffusion in Block Copolymer Films Studied with Single Molecule Tracking** TAKASHI ITO, Kansas State University, Khanh-Hoa Tran-Ba, Daniel A Higgins

2:10 (50-2) **Electroanalytical Opportunities of Nanoscale Liquid-Liquid Interfaces Formed in Nanopores** DAMIEN ARRIGAN, Curtin University

2:45 (50-3) **Block Polymer Routes to Nanoporous Materials** MARC HILLMYER, University of Minnesota

3:20 **Recess**

3:35 (50-4) **Separation of Ions Using Electrical Potentials in Nanoporous Membranes** MERLIN BRUENING, Michigan State University, Jason Armstrong, Yaroshchuk Andriy

4:10 (50-5) **Nanoscale Squeezing in Tunable Nanochannels Linearize DNA and Chromatin** SHUICHI TAKAYAMA, University of Michigan

SYMPOSIUM

Session 60

NSF Centers for Advancing Instrument Development and Analytical Research

arranged by Alan G Marshall, Florida State University and Zeev Rosenzweig, University of Maryland Baltimore County

Sunday Afternoon, Room S402a

Zeev Rosenzweig, University of Maryland Baltimore County, Presiding

1:30 **Introductory Remarks -** Alan G Marshall and Zeev Rosenzweig

1:35 (60-1) **Advancing Chemical Measurement and Imaging in Centers** ZEEV ROSENZWEIG, University of Maryland Baltimore County

2:10 (60-2) **A Center Approach for Creating and Studying Real World Chemical Complexity in the Laboratory in the NSF Center for Aerosol Impacts on Climate and the Environment** KIMBERLY A PRATHER, University of California, San Diego, Vicki Grassian

2:45 (60-3) **Chemistry at the Space-Time Limit** ERIC O POTMA, University of California, Irvine

3:20 **Recess**

3:35 (60-4) **Analytical Chemistry at Center for the Physics of Living Cells** TAEKJIP HA, University of Illinois at Urbana-Champaign

4:10 (60-5) **NSF National High Field Fourier Transform Ion Cyclotron Resonance User Facility: Instrumentation, Science Drivers, Structure, and Operation** ALAN G MARSHALL, Florida State University, Greg T Blakney, Nathan K Kaiser, Amy M McKenna, Ryan P Rodgers, Chad R Weisbrod, Nicolas L Young

SYMPOSIUM

Session 70

Quantitative Microfluidic Molecular and Cellular Analysis Towards Systems Biology

arranged by Yong Zeng and Susan Lunte, University of Kansas

Sunday Afternoon, Room S402b

Yong Zeng, University of Kansas, Presiding

1:30 **Introductory Remarks -** Yong Zeng and Susan Lunte

1:35 (70-1) **Arrayed Nanoscale Cell Stimulation and Analysis** DINO DI CARLO, University of California, Los Angeles

2:10 (70-2) **Nanowell-Based Technology for Single-Cell Analysis** J CHRISTOPHER LOVE, Koch Institute at MIT

2:45 (70-3) **On-Chip Diagnostic System for Circulating Tumor Cells** HAKHO LEE, Massachusetts General Hospital, Jae-hoon Chung, Huilin Shao, Ralph Weissleder

3:20 **Recess**

3:35 (70-4) **Single Molecule Protein and Nucleic Acid Assays for Single Cell Analysis** DAVID R WALT, Tufts University, Mael Manesse, Stephanie M Schubert, Barrett Duan

4:10 (70-5) **Quantitative Biomedical Analyses Enabled by Microfluidic Molecular Biotechnology** YONG ZENG, University of Kansas

SYMPOSIUM Session 80

The Science and Impact of Transformative Technologies on Forensic Science

arranged by David R Walt, Tufts University and Christian Hassell, FBI Laboratory

Sunday Afternoon, Room S404bc

David R Walt, Tufts University, Presiding

1:30		Introductory Remarks - David R Walt and Christian Hassell
1:35	(80-1)	Balancing Analytical Rigor and Expediency in Forensics CHRISTIAN HASSELL, FBI Laboratory
2:10	(80-2)	Ambient Ionization and Miniature Mass Spectrometers in Forensic Science ROBERT G COOKS, Purdue University, Ryan Espy, Pu Wei, Christopher Pulliam, Zheng Ouyang
2:45	(80-3)	Advancements in Explosives Detection Technology ERIC HOUSER, Department of Homeland Security
3:20		Recess
3:35	(80-4)	Science and Impact of Illumina Technology on Forensic Genomics CYDNE HOLT, Illumina, Joseph Varlaro, Kathryn Stephens
4:10	(80-5)	Statistical Aspects of the Forensic Identification Source Problem CHRISTOPHER P SAUNDERS, South Dakota State University, JoAnn Buscaglia, Joshua R Dettman

WORKSHOPS Session 90

CACA: How to be Successful in Your Career

arranged by Xiang Zhang, University of Louisville and Michael Ye, Supelco/Sigma-Aldrich

Sunday Afternoon, Room S404a

Michael Ye, Supelco/Sigma-Aldrich, Presiding

1:30		Introductory Remarks - Michael Ye
1:35	(90-1)	How Pittcon Helped Me to Build Up My Career PERRY G WANG, US FDA
2:05	(90-2)	Working in Research and Development at a Global Company XIAODONG LIU, Thermo Fisher Scientific
2:35		Recess
2:50	(90-3)	How to Turn Your Dreams into Reality - A Personal Experience TAO JIANG, Mallinckrodt Pharmaceuticals
3:20	(90-4)	How to Face Challenges at Different Stages of Our Career – Lessons Learned YAN-BO YANG, BioPharmaDev, Inc.
3:50		Open Discussion

ORGANIZED CONTRIBUTED SESSIONS Session 100

Infrared Spectroscopy (Well Beyond) the Diffraction Limit

arranged by Ellen V Misco, Analytical Answers, Inc. and Peter Griffiths, University of Idaho

Sunday Afternoon, Room S404d

Ellen V Misco, Analytical Answers, Inc., Presiding

1:30	(100-1)	Expanding Applications for AFM-Based Infrared Nanospectroscopy CRAIG B PRATER, Anasys Instruments, Kevin Kjoller, Qichi Hu, Michael Lo, Curtis Marcott
1:50	(100-2)	Introducing Nano-FTIR – Imaging and Spectroscopy at 10nm Spatial Resolution ANDREAS HUBER, Neaspec GmbH
2:10	(100-3)	High-Resolution Mid-Infrared Micro-Spectroscopic Imaging with a Broadly Tunable Quantum Cascade Laser ROHIT BHARGAVA, University of Illinois Urbana-Champaign, Kevin Yeh
2:30	(100-4)	Characterization of Materials Using AFM-Based Nanomechanical, Nanothermal, and Nanoscale Infrared Spectroscopy and Imaging CURTIS MARCOTT, Light Light Solutions, Michael Lo, Qichi Hu, Eoghan Dillon, Kevin Kjoller
2:50		Recess

3:05	(100-5)	Surface-Enhanced Photothermal Induced Resonance (SE-PTIR): A New Method for Imaging Near Field Hot Spots and Dark Plasmonic Modes ANDREA CENTRONE, National Institute of Standards and Technology
3:25	(100-6)	Title Not Provided at Time of Printing
3:45	(100-7)	Infrared Nanoimaging and Nano-FTIR Spectroscopy - From Nanoscale Chemical Identification of Polymers to Real-Space Imaging of Graphene Plasmons RAINER HILLENBRAND, CIC nanoGUNE
4:05	(100-8)	Structure and Morphology in Triaxial Electrospun Fibers BRUCE CHASE, University of Delaware, John Rabolt, Wenwen Liu

ORGANIZED CONTRIBUTED SESSIONS Session 110

Orthogonal and Risk-Based Sensing Systems for Homeland Security Applications

arranged by Samar K Guharay, MITRE and Eric Houser, Department of Homeland Security Science & Technology

Sunday Afternoon, Room S405a

Samar K Guharay, MITRE, Presiding

1:30	(110-1)	Task-Specific Information and Compression Imaging MARK NEIFELD, University of Arizona
1:50	(110-2)	Adaptive Management of Multi-Modality Screening LAWRENCE CARIN, Duke University
2:10	(110-3)	Data Fusion Methodologies for Information Exploitation and Situational Awareness PRAMOD K VARSHNEY, Syracuse University
2:30	(110-4)	Risk-Aware Model-Based Planning and Execution DAVID C WANG, Massachusetts Institute of Technology, Masahiro Ono, Brian C Williams
2:50		Recess
3:05	(110-5)	Orthogonal Sensing Framework SAMAR K GUHARAY, MITRE
3:25	(110-6)	Measurement Bounds for Sparse Signal Ensembles via Graphical Models MARCO F DUARTE, University of Massachusetts Amherst
3:45	(110-7)	Automatic Detection of Unknown Explosive Materials RICHARD ROBEHR BIJJANI, Quanttus
4:05	(110-8)	Orthogonal Detection of Explosive Particulate Residues Using LWIR Hyperspectral Micro Imaging and Fluorescence Quenching Methods MARK FISHER, FLIR Systems, Eugene L Miller, Adam Bingham, Ed Knobbe, Igor Novoselov

ORGANIZED CONTRIBUTED SESSIONS Session 120

Specialty Gas (Half Session)

arranged by Tracey Jacksier, Air Liquide and Jorge Perez, CIC Photonics

Sunday Afternoon, Room S405b

Tracey Jacksier, Air Liquide, Presiding

1:30	(120-1)	Validation Strategy Accuracy Profile for Interferences Analysis in Low Levels ANGELIQUE GUILLOTEAU, Air Liquide
1:50	(120-2)	Setting the Foundation for Zero Gas Standards ANNARITA BALDAN, VSL B.V., Stefan Persijn, Gerard Nieuwenkamp, Janneke van Wijk
2:10	(120-3)	Direct Sensing of Trace Oxygen Using Continuous-Wave Cavity Ring-Down Spectroscopy FLORIAN ADLER, Tiger Optics, LLC
2:30	(120-4)	UHP Ammonia Analysis ALEX LOWE, Peak Laboratories, LLC

PITTCON 2014 TECHNICAL PROGRAM

Sunday Afternoon

ORAL SESSIONS Session 130

A 'Sampling' of Data Analysis and Manipulation

Sunday Afternoon, Room S501a

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| 1:30 | (130-1) | Enhancing Two-Dimensional Peak Detection in Fast On-Line LC x LC-UV Data through Incorporation of a Spectroscopic Dimension ROBERT C ALLEN, University of Minnesota, Marcelo R Filgueira, Peter W Carr |
| 1:50 | (130-2) | Auto-Generated Live Biotransformation Schemes Via User-Assisted Metabolite Scouting and Extraction from LC/MS Data GRAHAM A MCGIBBON, ACD/Labs, Inc., Andrey Paramonov, Vitaly Lashin, Dmitry Mityushev, Richard Lee, Kiril Lanevskij, Andrius Sazonovas, Pranas Japertas |
| 2:10 | (130-3) | Seeing the Forest for the Trees - High Resolution Data Correlation of Chemical and Physiological Signals from the Intensive Care Unit SUSAN A MULCAHY, Imperial College London, Martyn G Boutelle |
| 2:30 | (130-4) | The Brain-Instrument Interface BILL ANDERSON, Hampden Sydney College, Arley Morelock, Taylor Redmond |
| 2:50 | Recess | |
| 3:05 | (130-5) | Equilibrium Distribution Sampling Device for Preparation of Calibration Mixtures for Gas Chromatography-Mass Spectrometry XIAOFENG XIE, Brigham Young University, H Dennis Tolley, Milton L Lee |
| 3:25 | (130-6) | Insight into the Extraction Mechanism of Polymeric Ionic Liquid Sorbent Coatings in Solid-Phase Microextraction WILLIAM T COLE, The University of Toledo, Tien D Ho, Jared L Anderson |
| 3:45 | (130-7) | The Importance of a Dry Extract for Alternative Chromatographic Carrier Gas Use ZOE GROSSER, Horizon Technology, Michael Flournoy, Jeffery Fentress, Ralph Rabish |
| 4:05 | (130-8) | Synthesis and Characterization of Hydrophobic Magnetic Ionic Liquids OMPRAKASH NACHAM, The University of Toledo, Honglian Yu, Jared L Anderson |

ORAL SESSIONS Session 140

Bioanalytical Applications of Electrochemistry

Sunday Afternoon, Room S501bc

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| 1:30 | (140-1) | Development of a New Waveform for Improved Determination of Carbohydrates Using High Performance Anion Exchange with Pulsed Amperometric Detection JUN CHENG, Thermo Fisher Scientific, Petr Jandik, Yan Liu, Christopher Pohl |
| 1:50 | (140-2) | Understanding and Advancing Dicyano-Ferriprotoporphyrin for Selective H₂S Detection JASON BENNETT, Penn State Erie, The Behrend College |
| 2:10 | (140-3) | A New Microfluidic Platform for Real-Time Viability Assessment of Human Organs SALLY GOWERS, Imperial College London, Isabelle Samper, Claire Authesserre, Michelle Rogers, Karim Hamaoui, Vassilios Papalois, Daniel Casanova, George Hanna, Ara Darzi, Martyn G Boutelle |
| 2:30 | (140-4) | Theoretical Investigation of Generator-Collector Microwell Arrays for Improving Electroanalytical Selectivity - Application to Selective Dopamine Detection in Presence of Ascorbic Acid ALEXANDER OLEINICK, ENS-CNRS-UPMC, Feng Zhu, Jiawei Yan, Bingwei Mao, Irina Svir, Christian A Amatore |
| 2:50 | Recess | |
| 3:05 | (140-5) | Label-Free Impedimetric Immunosensor Based on Signal Amplification Strategy of PS-b-PAA Film and Biotin-Streptavidin Conjunction for Determination of Alpha Fetoprotein CHENGYIN WANG, Yangzhou University |
| 3:25 | (140-6) | Development of Bio Film Based Electrocatalytic Systems Active Towards Oxygen Reduction PAWEŁ J KULESZA, University of Warsaw |
| 3:45 | (140-7) | On the Use of Amperometry for the Real Time Assessment of Drug-Release Profile from Therapeutic Nanoparticles MOHAMMADREZA MALEKAHMADI, Shahrekord University of Medical Science, Aliasghar Ensafi, Esmaeil Heydari |
| 4:05 | (140-8) | Assessment of Genotoxicity of Catecholics Using Impedimetric DNA-Biosensor ALIASGHAR ENSAFI, Isfahan University of Technology, Maryam Amini |

ORAL SESSIONS Session 150

Bioanalytical Imaging (Half Session)

Sunday Afternoon, Room S502a

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| 1:30 | (150-1) | Automated Quantitative Analysis of Lipid Accumulation and Hydrolysis in Living Macrophages with Label-Free Imaging WEI-WEN CHEN, IAMS, Academia Sinica, Chen-Hao Chien |
| 1:50 | (150-2) | A Targeted, Self-Delivered and Photocontrolled Molecular Beacon for mRNA Detection in Living Cells LIPING QIU, University of Florida |
| 2:10 | (150-3) | Measurement of Intracellular Reactive Oxygen Species in Islets of Langerhans Using Fluorescence Microscopy XUE WANG, Florida State University, Michael G Roper |
| 2:30 | (150-4) | Surface Plasmon Resonance Imaging for Biofilm Studies PEGAH N ABADIAN, Northeastern University, Edgar D Goluch |

ORAL SESSIONS Session 160

Bioanalytical Microfluidics

Sunday Afternoon, Room S501d

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| 1:30 | (160-1) | High-Density Electrode Array for Spatiotemporal Imaging of Live Tissue Slices JOHN B WYDALLIS, Colorado State University, Charles S Henry, Tom Chen, Stuart Robert, Rachel M Feeny |
| 1:50 | (160-2) | Tracking Adhesion of Individual Bacteria to Surfaces in a Microfluidic Environment JOSHUA D BAKER, Indiana University, Seth M Madren, Adrien Ducret, David T Kysela, Yves V Brun, Stephen C Jacobson |
| 2:10 | (160-3) | Synchronization of Islets of Langerhans Using a Microfluidic Feedback System RAGHURAM DHUMPA, Florida State University, Tuan M Truong, Xue Wang, Richard Bertram, Michael G Roper |
| 2:30 | (160-4) | A Simple Aqueous Additive that Imparts Biocompatibility to Perfluorocarbon Surfactants for Droplet-Based DNA Amplification and Protein Sensing CHRISTOPHER J EASLEY, Auburn University |
| 2:50 | Recess | |
| 3:05 | (160-5) | 3D-Printed Fluidic Device with Integrated Removable Nafion-Coated Electrodes for the Detection of Oxygen in Blood JAYDA ERKAL, Michigan State University, Dana Spence |
| 3:25 | (160-6) | Development of a Microfluidic Device Assay for Isoforms of a Serum Protein Cancer Biomarker Using a Novel Antibody JAYSON PAGADUAN, Brigham Young University, Madison Ramsden, Sean Derenthal, Kim O'Neill, Adam T Woolley |
| 3:45 | (160-7) | Microfluidic Study of Cancer Drug Response Under Normal and Hypoxic Conditions GRISHMA KHANAL, Texas Tech University, Dimitri Pappas |
| 4:05 | (160-8) | Flow-Valve Microfluidic Devices for Simple, Detectorless and Label-Free Quantitation of Proteins and Nucleic Acids DEBOLINA CHATTERJEE, Brigham Young University, Jayson Pagaduan, Adam T Woolley |

ORAL SESSIONS Session 170

Biomedical Imaging (Half Session)

Sunday Afternoon, Room S502a

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| 3:05 | (170-1) | Using 2-Photon Microscopy of Brain Tissue During Microdialysis Probe Insertion ANDREA JAQUINS-GERSTL, University of Pittsburgh, Kozai DY Takashi, Tracy Cui, Adrian C Michael |
| 3:25 | (170-2) | Interaction Between Nanoparticles and Lipid Membrane Studied with Three-Dimensional Single Particle Tracking LUYANG ZHAO, North Carolina State University, Gufeng Wang |
| 3:45 | (170-3) | Near-Infrared Imaging in Living Cells with Yb³⁺ nanoMOFs KRISTY GOGICK, University of Pittsburgh, Alexandra Foucault-Collet, Kiley A White, Sandrine Villette, Agnes Pallier, Guillaume Collet, Tao Li, Steven J Geib, Nathaniel L Rosi, Stephane Petoud |

ORAL SESSIONS Session 180

Fluorescence/Luminescence: Bio and Nano

Sunday Afternoon, Room S502b

- 1:30 (180-1) Investigating Molecule-Surface Interactions with Stimulated Emission Depletion (STED)-Based Microscopy FANG CHEN, North Carolina State University, Bhanu Neupane, Gufeng Wang
- 1:50 (180-2) Rhodamine B Conjugated Core-Shell Nanocomposite Cell Labels MEICONG DONG, Texas Tech University, Dimitri Pappas, Yu Tian
- 2:10 (180-3) Characterization of Solute Distribution Following Drug Administration by Iontophoresis DOUGLAS C KIRKPATRICK, University of North Carolina, Martin Edwards, R Mark Wightman
- 2:30 (180-4) Tracking Surfactant-Assisted Wetting of Hydrophobic Nanoporous Silica with Confocal Fluorescence Imaging RACHEL L SEURER, University of Iowa
- 2:50 Recess
- 3:05 (180-5) Ensemble and Single Molecule Fluorescence Studies of Molecular Diffusion in One-Dimensional Microdomains of Cylinder-Forming Polystyrene-Poly(ethylene oxide) Diblock Copolymer Films KHANH-HOA TRAN-BA, Kansas State University, Daniel A Higgins, Takashi Ito
- 3:25 (180-6) High Signal Gain of Intracellular mRNA Imaging Using DNA Circuit Amplifier CUICHEN WU, University of Florida, Da Han, Weihong Tan
- 3:45 (180-7) Luminescence Quenching by Photoinduced Charge Transfer between Metal Complexes in Peptide Nucleic Acids XING YIN, University of Pittsburgh, Jing Kong, Arnie De Leon, Yongle Li, Emil Wierzbinski, Catalina Achim, David Waldeck
- 4:05 (180-8) *In Situ* Monitoring of CdSe/ZnS Quantum Dot Growth During Microwave Synthesis ANDREW ZANE, The Ohio State University, Prabir Dutta, James Waldman, Debbie Knight, Christie McCracken

ORAL SESSIONS Session 190

Gas Chromatography: Analytical Methods, Theoretical Considerations

Sunday Afternoon, Room S503a

- 1:30 (190-1) Uncertainty of Blood Alcohol Concentration (BAC) Results as Related to Instrumental Conditions: Optimization and Robustness of BAC Analysis Parameters HALEIGH BOSWELL, The Pennsylvania State University, Frank Dorman
- 1:50 (190-2) Development of a Modernized Capillary Gas Chromatography Assay Test for Fatty Alcohol Monographs in the National Formulary and Food Chemicals Codex CLAIRE N CHISOLM, US Pharmacopeia, Eduardo Lim, Fatkhulla K Tadjimukhamedov, Karen V Gilbert, Natalia Kouznetsova
- 2:10 (190-3) Comparison of Headspace Sampling and Polymer Precipitation for Determination of Residual Solvents in Polymer Films RACHA SEEMAMAHANOO, Brewer Science Inc., Darin Collins, Thomas Brown
- 2:30 (190-4) Measurement of Gaseous Impurities in Hydrogen Fuel RANDALL BRAMSTON-COOK, Lotus Consulting, Randall Bramston-Cook
- 2:50 Recess
- 3:05 (190-5) Partition Coefficient in Static Headspace Single Drop Micro Extraction of Aromatic Hydrocarbons from Water Using Ionic Liquids RAMKUMAR DHANDA-PANI, Seton Hall University, Nicholas H Snow, Chopra Shilpi
- 3:25 (190-6) Thermodynamic Modeling of Gas Chromatographic Retention Times – A Round Robin Trial JAMES J HARYNUK, University of Alberta, Teague M McGinitie, Heshmatollah Ebrahimjafabadi, Alessandro Casilli, Jean-Marie D Dimandja, Frank Dorman, Philip J Marriott
- 3:45 (190-7) A Novel Wall Coated Open Tubular Column for Analysis of Sulfur Compounds Using SCD GARY LEE, Agilent Technologies, Yun Zou, Allen K Vickers, Kenneth G Lynam
- 4:05 (190-8) Enhancing Separation Performance of Microfabricated Gas Chromatography Using Temperature Gradients ANZI WANG, Brigham Young University, Aaron R Hawkins, H Dennis Tolley, Milton L Lee

ORAL SESSIONS Session 200

Methods for Metabolomics, Lipidomics, and Proteomics

Sunday Afternoon, Room S503b

- 1:30 (200-1) A Discovery Tool for Metabolomics — GCxGC-High Resolution Time-of-Flight Mass Spectrometry DAVID E ALONSO, Leco Corporation, Jeff Patrick, John Heim, Joe Binkley
- 1:50 (200-2) Comprehensive Analysis of Dokha Tobacco Blends by GCxGC High Resolution Time-of-Flight Mass Spectrometry DANIEL HANDYSIDES, Loma Linda University, David E Alonso, Jeff Patrick, John Rorabek, Joe Binkley
- 2:10 (200-3) Untargeted Analysis of Human Urine Using Fast Online Comprehensive Two Dimensional Liquid Chromatography (LC x LC) BRIAN B BARNES, University of Minnesota, Peter W Carr
- 2:30 (200-4) In Vivo Solid-Phase Microextraction Sampling for Chemical Exploration of Underwater Ecosystems VINCENT BESSONNEAU, University of Waterloo, Barbara Bojko, Janusz Pawliszyn
- 2:50 Recess
- 3:05 (200-5) Feature Selection for Chemometric Treatment of Metabolomics Data – A Comparative Study JAMES J HARYNUK, University of Alberta, A Paulina de la Mata, Nikolai A Sinkov, Aiko Barsch, Ana Dominguez-Vidal
- 3:25 (200-6) Development of a High Throughput Integrated, Multi-Disciplinary “Omics” Platform to Support Basic Research Into Disease Understanding and Patient Stratification ROBERT S PLUMB, Imperial College London
- 3:45 (200-7) Lipidomic Profiling Using Sub-2µm Particle CO₂ Based Supercritical Chromatography Mass Spectrometry GIORGIS ISAAC, Waters Corporation, Michael D Jones, James Langridge
- 4:05 (200-8) Comprehensive Qualitative and Quantitative Proteomics Analysis of Single *Xenopus Laevis* Embryos at Early Stages of Development LIANGLIANG SUN, University of Notre Dame, Michelle M Bertke, Matthew M Champion, Paul W Huber, Guijie Zhu, Norman J Dovichi

ORAL SESSIONS Session 210

Novel Teaching Strategies for Analytical Chemistry (Half Session)

Sunday Afternoon, Room S504a

- 1:30 (210-1) The Use of Online Response Systems for Content Review in Analytical Chemistry JAMES P GRINIAS, University of North Carolina at Chapel Hill, James W Jorgenson
- 1:50 (210-2) Pittcon as a Curriculum BILL ANDERSON, Hampden Sydney College, Herbert J Sipe
- 2:10 (210-3) Analytical Method Transfer (AMT): Development of Laboratory Experiments and Related POGIL Activities KIMBERLY CHICHESTER, St. John Fisher College, Irene Kimaru, Kristina Lantzky, Fang Zhao, Marina Koether
- 2:30 (210-4) Application of Recent Developments in Commercial HPLC Technology to Teach Liquid Chromatography in Large-Enrollment Undergraduate Laboratories CHRISTOPHER P PALMER, University of Montana, Adams R Earle, Holly Thompson

ORAL SESSIONS Session 220

Nuclear Power Plant Chemical Analysis (Half Session)

Sunday Afternoon, Room S504a

- 3:05 (220-1) Determination of Polyacrylic Acid and Trace Anions in Nuclear Power Plant Pressurized Water Reactors CHEN YONGJING, Thermo Fisher Scientific, Brian De Borba, Jeffrey Rohrer
- 3:25 (220-2) Graded Spectroscopic Approaches to Monitoring Plutonium Reprocessing ROBERT LASCOLA, Savannah River National Laboratory, Edward A Kyser, Patrick E O'Rourke
- 3:45 (220-3) Quantification of Radioactive Strontium-90 Using ICP-QMS with On-Line Serial Separation and its Application to Radioactive Contamination Survey YOSHITAKA TAKAGAI, Fukushima University, Makoto Furukawa, Kameo Yutaka, Kiwamu Tanaka, Katz Suzuki
- 4:05 (220-4) Capillary Ion Chromatographic Determination of Trace-Level Anions in Nuclear Power Plant Waters YAN LIU, Thermo Fisher Scientific, Victor Barreto, Christopher Pohl

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS Session 230

Polymer and Plastic Material Characterization (Half Session)

Sunday Afternoon, Room S504bc

- 1:30 (230-1) **Nanoscale Dynamic Mechanical Spectroscopy of Polymer Blends and Composites** EOGHAN DILLON, Anasys Instruments, Michael Lo, Kevin Kjoller, Craig B Prater
- 1:50 (230-2) **Role of Interstitial Fraction on the Protein Binding Capacity of C-CP Fiber Columns** ZHENGXIN WANG, Clemson University
- 2:10 (230-3) **Investigating the Molecular Effects of Short Wave UV Light Treatments on the Surface and Bulk of Bis-2-Ethylhexyl Phthalate Plasticized PVC** JEANNE M HANKETT, University of Michigan, Alexander Welle, Zhan Chen
- 2:30 (230-4) **Two-Dimensional Chromatography Applied to Compounding Extrusion** STEPHAN MOYSES, Sabic

ORAL SESSIONS Session 240

Sensors: Bioanalytical

Sunday Afternoon, Room S504d

- 1:30 (240-1) **Tuning the Plasmonic Properties of Gold Nanohole Arrays Towards Biosensing** MAXIME COUTURE, Université de Montréal, Hugo-Pierre Poirier-Richard, Jean-François Masson
- 1:50 (240-2) **Enhancement of Heterogeneous Assays Using Fluorescent Magnetic Liposomes** KATIE EDWARDS, Cornell University, Antje Baeumner
- 2:10 (240-3) **Room Temperature and Open Air DNA Detection by RAFT Polymerization and Its Kinetic Studies** KANGSHU ZHAN, North Carolina State University, Lin He
- 2:30 (240-4) **A Sandwich Biosensor Using Dual Aptamers Developed by Immobilization-Free Screening** MAN BOCK GU, Korea University, Jee-Woong Park, Su Jin Lee
- 2:50 **Recess**
- 3:05 (240-5) **Reconstruction of Color of Miniature Optode-Based Sensing Wells from Under Semi-Transparent Layers with Absorption and Scattering Properties Modeling the Skin** MIKLOS GRATZL, Case Western Reserve University, Slavko Rebec
- 3:25 (240-6) **Development of Electrochemical Sensors for Detection of Ultralow Levels of MicroRNAs** MAHMOUD LABIB, University of Ottawa, Maxim V Barazovski
- 3:45 (240-7) **Use of Magnetically Modulated Optical Nanoprobes (MagMOONs) as Sensors in Proteolysis Detection** KHANHVAN T NGUYEN, Clemson University, Jeffrey N Anker
- 4:05 (240-8) **Ionic Liquid Polymerized Photonic Crystal Gas Sensors** NATASHA L SMITH, University of Pittsburgh, Zhenmin Hong, Sanford A Asher

ORAL SESSIONS Session 250

Separation Sciences: Bioanalytical and Pharmaceutical

Sunday Afternoon, Room S505a

- 1:30 (250-1) **New Approaches to High Selective SPME for Coupling with HPLC** ZILIN CHEN, Wuhan University, Wenpeng Zhang
- 1:50 (250-2) **Assessment of Capillary-Channeled Polymer (C-CP) Films Employed for Protein Separations Prior to Analysis by MALDI-MS** BENJAMIN T MANARD, Clemson University, R Kenneth Marcus
- 2:10 (250-3) **Toward Transmembrane Protein (TMP) -Functionalized, Biomimetic Stationary Phases for Ligand Screening** JINYAN WANG, The University of Arizona, Elyssia S Gallagher, Kendall E Sandy, Craig A Aspinwall
- 2:30 (250-4) **Displacement Separations in SFC for Analytical and Prep Scale (Chiral and Non-Chiral)** JOHN WHELAN, Waters Corporation
- 2:50 **Recess**
- 3:05 (250-5) **Method Development for Chiral Separations Using Analytical Scale Supercritical Fluid Chromatography** THOMAS SWANN, Waters Corporation, Kenneth J Fountain, Christopher J Hudalla, Jacob N Fairchild, Mark Baynham

- 3:25 (250-6) **Modification of Capillary-Channeled Polymer (C-CP) Fibers with Functionalized Lipids for the Separation and Extraction of Biomolecules** ABBY SCHADOCK-HEWITT, Clemson University, R Kenneth Marcus
- 3:45 (250-7) **Flow Rate Dependence on Chiral Selectivity and Resolution in SFC: Conventional Wisdom is Not Always the Best Advice** J PRESTON, Phenomenex, Michael McCoy, William Farrell, Sky Countryman
- 4:05 (250-8) **Separation Orthogonality in HPLC Method Development** WILLIAM JOHN LONG, Agilent Technologies, Anne Mack, Xiaoli Wang, Jason Link, Maureen Joseph

ORAL SESSIONS Session 260

Separation Sciences: Materials Science and Others (Half Session)

Sunday Afternoon, Room S504bc

- 3:05 (260-1) **Dynamically-Tunable Nanoporous Gold Membranes for Size- and Charge-Selective Separations** DANIEL A MCCURRY, University of Illinois at Urbana-Champaign, Ryan C Bailey
- 3:25 (260-2) **Modification of Monolithic Structures with Carbon Based Nanoparticles for Liquid Chromatography** LISANDRA SANTIAGO-CAPELES, University at Buffalo - SUNY, Zuqin Xue, John C Vinci, Luis A Colon
- 3:45 (260-3) **The Development of Aptamers Against Mitochondria via Immunomagnetic Enrichment** THANE TAYLOR, University of Minnesota: Twin Cities, Edgar A Arriaga, Michael T Bowser
- 4:05 (260-4) **SFC Modifier and Combined Stream Injection Modes, and Sample Diluent Effects** STEVEN ZULLI, Waters Corporation, Jonathan L Jones, Ziqiang Wang

ORAL SESSIONS Session 270

Trace Metals by Atomic Emission Sources (Half Session)

Sunday Afternoon, Room S505b

- 1:30 (270-1) **Compensating for Noise and Enhancing Signals in Solution-Cathode Glow Discharge Spectrometry** MICHAEL R WEBB, University of North Carolina Wilmington, Allison M King, Todd A Doroski
- 1:50 (270-2) **Determination of Metal Concentrations in Nanocatalysts and in Metallo-Enzymes Using Microplasma-on-a-Chip Optical Emission Spectrometry** VASSILI KARANASSIOS, University of Waterloo, O J Nguon, M J Gauthier, D J Lee
- 2:10 (270-3) **Trace Metal Analysis in Pharmaceutical Formulations** PHILIP SALMON, Liverpool John Moores University, Philip Riby
- 2:30 (270-4) **Online Pre-Reduction of As(V) by Thioglycolic Acid for Inorganic Arsenic Speciation by In-Situ Flow Injection Hydride Generation-Tungsten Coil Electrothermal-Atomic Absorption Spectrometry** NJAW NJE, Middle East Technical University, Osman Y Ataman

SUNDAY POSTER SESSION

Session 280

Sunday posters will be on display from 3:30 PM to 7:30 PM with authors present from 5:30 PM to 7:30 PM. Location of Sunday posters is the Grand Ballroom S100bc.

New Developments in Analytical Instrumentation and Software

Sunday Afternoon

- (280-1 P) **Accelerated Evaporation Sample Deposition with Concentrated Multiple Reflection ATR Spectroscopy** JOSEPH P LUCANIA, Harrick Scientific Products, Inc., Ali Kocak
- (280-2 P) **A Refined Dual Technique FTIR Liquid Cell for ATR and Transmission Spectroscopic Analyses** JOSEPH P LUCANIA, Harrick Scientific Products, Inc., Ali Kocak
- (280-3 P) **GAED Reveals Differences Between Used and Unused Activated Carbon from Drinking Water Plants** H GEORGE NOWICKI, PACS Inc., Henry Nowicki
- (280-4 P) **Determining the Provenance of Albanian Artifacts Using Solution-Based ICP-MS and Laser-Ablation ICP-MS** TIMOTHY WARD, Millsaps College, Fabio Ntagwabira, Faustina Mwambutsa, Michael Galaty, Jiyun Gu
- (280-5 P) **Analysis of Methylxanthines as Biomarkers in Pottery Sherds to Identify Ancient Practices** TIMOTHY WARD, Millsaps College, Diane Ward, James Klugh, Syed Ali, Laura Kebert, Jiyun Gu
- (280-6 P) **Measuring Heterogeneous Rate Constants and Energy of Activation with Photomicroscopy** WALTER J BOWYER, Hobart and William Smith Colleges, Kathryn E Bezbatchenko, Megan A Musa, Troy J Robinson
- (280-7 P) **Air Pollution Observations in Chicago from 2002-2012** KATRINA BINAKU, Loyola University Chicago, Martina Schmeling
- (280-8 P) **Ion Exclusion Chromatography of Heparin and Other Glycosaminoglycans** NEIL D DANIELSON, Miami University, Fotouh R Mansour
- (280-9 P) **100% Efficient, ESI, Millisecond, Mass Spectrometry Sample Introduction and MALDI Deposition Using the Same Device** DREW SAUTER, nanoLiter LLC
- (280-10 P) **Saliva as a Matrix for Establishing the Exposure of Drugs as Alternative to Plasma Using MEPS as Sampling Technique** MOHAMED ABDEL-REHIM, Stockholm University
- (280-11 P) **Challenging GC-MS Applications Achieved with Cold EI** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon
- (280-12 P) **Investigation of Chemical Contaminants in Soils Following Superstorm Sandy** AMY C MANDIGO, Marist College, Dana J DiScenza, Neil Fitzgerald, Alison R Keimowitz
- (280-13 P) **Capture and Detection of Lead Using Co-shell Magnetic Nano-Materials** AMOS MUGWERU, Rowan University, Andrew Shore
- (280-14 P) **Development of Core Shell Particle with Large Pores for Separation of Peptides and Proteins** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tuskamoto
- (280-15 P) **Catalytic Combustion Ionization Technology and the Selective Detection of Alkane and Alkene Constituents of Complex Petroleum Samples** PAUL L PATTERSON, Detector Engineering & Technology
- (280-16 P) **Isolation and Characterization of Gurmarin from the Leaves of the Gymnema Sylvestre** PATRICIA L LANG, Ball State University, Geoff B Hutchinson

MONDAY, MARCH 3, 2014
MORNING

AWARDS

Session 290

Chromatography Forum of the Delaware Valley Dal Nogare Award

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

Monday Morning, Room S401a

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

- 8:30 **Introductory Remarks - Mary Ellen McNally**
- 8:35 **Presentation of the 2014 Chromatography Forum of the Delaware Valley Dal Nogare Award to Mary J Wirth, Purdue University, by Mary Ellen McNally, El DuPont de Nemours and Company**
- 8:40 (290-1) **Title Not Provided at Time of Printing**
- 9:15 (290-2) **Packing Capillary LC Columns with Sub-2 Micron Particles** JAMES W JORGENSON, University of North Carolina at Chapel Hill, Justin Godinho, Edward Franklin, James P Grinias
- 9:50 (290-3) **Super-Resolution Spectroscopy Reveals Molecular-Scale Detail in Ion-Exchange Protein Separations** CHRISTY LANDES, Rice University
- 10:25 **Recess**
- 10:40 (290-4) **The Changing Relationship Between the Column and the Instrument in Modern HPLC/UHPLC** RONALD E MAJORS, Advanstar/LCGC
- 11:15 (290-5) **Fluorescence Imaging of Single-Molecule Retention Trajectories in Reversed-Phase Chromatographic Particles** JOEL M HARRIS, University of Utah, Justin T Cooper, Eric M Peterson

AWARDS

Session 300

Pittsburgh Conference Achievement Award

arranged by Joseph Grabowski, The Pittsburgh Conference

Monday Morning, Room S401bc

Joseph Grabowski, The Pittsburgh Conference, Presiding

- 8:30 **Introductory Remarks - Joseph Grabowski**
- 8:35 **Presentation of the 2014 Pittsburgh Conference Achievement Award to Benjamin A Garcia, University of Pennsylvania School of Medicine, by Heather L Juzwa, Chair, Society for Analytical Chemists of Pittsburgh**
- 8:40 (300-1) **In Vivo Histone Post-Translational Modification Dynamics** BENJAMIN A GARCIA, University of Pennsylvania School of Medicine
- 9:15 (300-2) **Phosphoproteomics and Cancer** SCOTT A GERBER, Geisel School of Medicine at Dartmouth
- 9:50 (300-3) **Characterization of Proteins by Ultraviolet Photodissociation Mass Spectrometry** JENNY BRODBELT, University of Texas at Austin
- 10:25 **Recess**
- 10:40 (300-4) **Biomimetic Reagents Empower Mass Spectrometric Glycan and Glycoprotein Structure Determination** JESSE L BEAUCHAMP, California Institute of Technology
- 11:15 (300-5) **Surface Induced Dissociation/Ion Mobility for Characterization of Protein/Protein and Protein/RNS (DNA) Complexes** VICKI H WYSOCKI, Ohio State University

PITTCON 2014 TECHNICAL PROGRAM

Monday Morning

SYMPOSIUM Session 310

Accurate Mass Analysis of Environmental Compounds with Both LC and GC/Q-TOF-MS

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

Monday Morning, Room S402a

Earl Michael Thurman, University of Colorado, Presiding

8:30		Introductory Remarks - Earl Michael Thurman and Imma Ferrer
8:35	(310-1)	Overview of LC/MS Techniques and Mass Spectral Fragmentation Applied to Environmental Analysis MICHAL HOLCAPEK, University of Pardubice, Robert Jirasko, Miroslav Lisa
9:10	(310-2)	Application of TOF Mass Spectrometry and Sample Profiling Techniques to Water Analysis SYLVAIN MEREL, University of Arizona, Tarun Anumol, Shane Snyder
9:45	(310-3)	High Resolution Mass Spectrometry (LC/Q-TOF-MS) for the Identification of Contaminants in Water IMMA FERRER, University of Colorado
10:20		Recess
10:35	(310-4)	Use of Soft Ionization and GC-QTOF/MS for Structure Elucidation of Emerging Contaminants VIORICA LOPEZ-AVILA, Agilent Technologies, Patrick Roach, Randall Urdahl
11:10	(310-5)	Accurate Mass Tools to Identify Hydroxy Radical Products of UV Oxidation of Pharmaceuticals EARL MICHAEL THURMAN, University of Colorado

SYMPOSIUM Session 320

Applied Nonlinear Spectroscopy

arranged by Megan C Thielges, Indiana University

Monday Morning, Room S402b

Megan C Thielges, Indiana University, Presiding

8:30		Introductory Remarks - Megan C Thielges
8:35	(320-1)	Liquid Crystal Isotropic Phase Dynamics - 2D IR Vibrational Echo Experiments on Natural Abundance ¹³CN and Extended Lifetime Probes MICHAEL D FAYER, Stanford University, Kathleen P Sokolowsky
9:10	(320-2)	Title Not Provided at Time of Printing
9:45	(320-3)	Applications of Single-Beam Nonlinear Spectroscopy Using Shaped Ultra-Broad-Bandwidth Lasers MARCOS DANTUS, Michigan State University
10:20		Recess
10:35	(320-4)	Two-Dimensional Infrared Spectroscopy of DNA ANDREI TOKMAKOFF, University of Chicago
11:10	(320-5)	Characterization of Protein Dynamics and Conformational Heterogeneity with Two-Dimensional Infrared Spectroscopy MEGAN C THIELGES, Indiana University

SYMPOSIUM Session 330

Molecular Analysis of Human Disease

arranged by Michael A Johnson, University of Kansas

Monday Morning, Room S404a

Michael A Johnson, University of Kansas, Presiding

8:30		Introductory Remarks - Michael A Johnson
8:35	(330-1)	Biomarker Identification for the Tracking of Infectious Disease States KIM D JANDA, The Scripps Research Institute
9:10	(330-2)	Single Molecule Arrays for Early Disease Detection DAVID R WALT, Tufts University, Danlu Wu, Stephanie M Schubert, Shazia Baig, Soyeon Hwang, Trinh Dinh
9:45	(330-3)	Microchip Electrophoresis of Serum N-Glycans for Cancer Profiling STEPHEN C JACOBSON, Indiana University, Indranil Mitra, Christa M Snyder, William R Alley, Milos V Novotny
10:20		Recess
10:35	(330-4)	Circulating Tumor Cell Sub-populations: Tools for Quantitative Expression Analysis of Rare Cells STEVEN A SOPER, University of North Carolina
11:10	(330-5)	Altered Mechanisms of Dopamine Regulation in Huntington's Disease MICHAEL A JOHNSON, University of Kansas, Sam Kaplan, Rachel Gehringer, Andrea N Ortiz, Ryan Limbocker

SYMPOSIUM Session 340

New Wave of Gas Chromatography

arranged by Milton L Lee, Brigham Young University

Monday Morning, Room S404bc

Milton L Lee, Brigham Young University, Presiding

8:30		Introductory Remarks - Milton L Lee
8:35	(340-1)	Changing Faces of Gas Chromatography MILTON L LEE, Brigham Young University
9:10	(340-2)	Resistively Heated Gas Chromatography STANLEY D STEARNS, Valco Instruments, Huamin Cai
9:45	(340-3)	Advances in Instrumentation and Data Analysis Methods to Improve Peak Capacity in GC – TOFMS and GC x GC – TOFMS ROBERT E SYNOVEC, University of Washington
10:20		Recess
10:35	(340-4)	A Microfabricated Comprehensive Two-Dimensional Gas Chromatograph (μGC x μGC) EDWARD T ZELLERS, University of Michigan
11:10	(340-5)	Properties of Thermal Gradient GC Separations H DENNIS TOLLEY, Brigham Young University, Samuel E Tolley, Anzi Wang, Matthew C Asplund, Milton L Lee

SYMPOSIUM Session 350

SAS: Mass Cytometry: An In-Depth View of Cell Heterogeneity and Signaling

arranged by Scott Tanner, DVS Sciences Inc

Monday Morning, Room S404d

Scott Tanner, DVS Sciences Inc, Presiding

8:30		Introductory Remarks - Scott Tanner
8:35	(350-1)	Expanding the Capabilities of Mass Cytometry SCOTT D TANNER, DVS Sciences Inc, Alexander Loboda, Bandura R Dmitry, Vladimir I Baranov, Olga I Ornaty
9:10	(350-2)	Mass Cytometry Reveals Cellular Heterogeneity Within and Across Autoimmune Diseases ALICE LONG, Benaroya Research Institute, Ian Frank, Jane Buckner
9:45	(350-3)	Revealing the Cellular Organization of Human Cancers with Mass Cytometry ERIN F SIMONDS, University of California, San Francisco
10:20		Recess
10:35	(350-4)	Single Cell Systems Biology of Signaling Networks in Human Disease Using Mass Cytometry JONATHAN M IRISH, Vanderbilt University
11:10	(350-5)	Highly Multiplexed Tissue Imaging of Tumors and their Microenvironment by Mass Cytometry CHARLOTTE GIESEN, University of Zurich, Hao Wang, Zsuzsanna Varga, Bodo Hattendorf, Peter Wild, Detlef Günther, Bernd Bodenmiller

SYMPOSIUM Session 360

SEAC: Electroanalysis in Unusual and Extreme Environments

arranged by Shelley Minter, University of Utah

Monday Morning, Room S405a

Shelley Minter, University of Utah, Presiding

8:30		Introductory Remarks - Shelley Minter
8:35	(360-1)	Microelectrode Detection of Cholesterol Efflux from the Human Buccal Mucosa JIM BURGESS, Case Western Reserve University, Xiaochun Yu
9:10	(360-2)	In-Situ Electrochemical Analysis of Martian Soil: Implications for Mars and Earth SAM KOUNAVES, Tufts University
9:45	(360-3)	Bioelectrocatalysis for Electroanalysis in Aqueous Waste Streams SHELLEY MINTEER, University of Utah
10:20		Recess
10:35	(360-4)	Fast-Metal Voltammetry for Real-Time Environmental Trace Metal Analysis PARASTOO HASHEMI, Wayne State University, Shawn McElmurry, Yuanyuan Yang, Pavithra Pathirathna
11:10	(360-5)	Electrochemical Readout of Cellular Physiometry for Organs-on-a-Chip DAVID E CLIFFEL, Vanderbilt University, Jennifer R McKenzie, Danielle W Kimmel, Andrew Cognata

SYMPOSIUM

Session 370

Surface-Enhanced Infrared Absorption: Mechanism and Applications

arranged by Peter R Griffiths, Griffiths Consulting LLC

Monday Morning, Room S405b

Peter R Griffiths, Griffiths Consulting LLC, Presiding

8:30		Introductory Remarks - Peter R Griffiths
8:35	(370-1)	Surface-Enhanced Infrared Absorption: What Causes Band Distortion? PETER R GRIFFITHS, Griffiths Consulting LLC
9:10	(370-2)	Title Not Provided at Time of Printing
9:45	(370-3)	Surface-Enhanced Infrared Absorption Spectroscopy to Probe Biomembranes JOACHIM HEBERLE, Freie Universitaet Berlin, Kenichi Ataka
10:20		Recess
10:35	(370-4)	Application of SEIRAS to Mechanistic Studies of Electrocatalytic Reactions Related to Fuel Cells MASATOSHI OSAWA, Hokkaido University
11:10	(370-5)	Infrared Chemical Sensors Based on Functionalized Nanostructures JYISY YANG, National Chung-Hsing University

ORGANIZED CONTRIBUTED SESSIONS

Session 380

Ionophore-Based Chemical Sensors I

arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

Monday Morning, Room S503a

Philippe Buhlmann, University of Minnesota, Presiding

8:30	(380-1)	New Concepts for Ion Sensing with Ionophores ERIC BAKKER, University of Geneva, Xiaojiang Xie, Guenter Mistlberger
8:50	(380-2)	Novel Synthetic Receptors for Selective Protein Recognition RÓBERT E GYURCSÁNYI, Budapest University of Technology and Economics, Júlia Bognár, Gergely Lautner, Júlia Szűcs, Tamás Mészáros, Viola Horváth, Gyula Jágerszki
9:10	(380-3)	Calibration-Free Coulometric Analysis of Nitrate in Natural Waters Using Tubular Membrane Ion-Selective Electrodes ROLAND DE MARCO, University of the Sunshine Coast, Manzar Sohail, Eric Bakker
9:30	(380-4)	Detection of Biomolecular Recognition Using Bio-Transistors YUJI MIYAHARA, Tokyo Medical and Dental University, Akira Matsumoto, Tatsuro Goda, Yasuhiro Maeda, Miyuki Tabata, Mai Sanjoh
9:50		Recess
10:05	(380-5)	Simple Voltammetric Method for the Determination of the Partition and Diffusion Coefficients in Solvent Polymeric Membranes ERNO LINDNER, The University of Memphis, James Sheppard, Francine Kivlehan, Bradford Pendley, Edward Chaum
10:25	(380-6)	Differential Linear Scan Microvoltammetry for Measurements in Biological Environments MIKLOS GRATZL, Case Western Reserve University, Disha Sheth
10:45	(380-7)	Use of Electrically Neutral Axial Ligands to Control the Selectivity of Ion-Selective Electrode Membranes Doped with Metalloporphyrin Ionophores PHILIPPE BUHLMANN, University of Minnesota, Koichi Nishimura, Xu Zou
11:05	(380-8)	New Sulfate Ionophores Based on Tris-Squaramide Receptors YU QIN, Nanjing University, Yueling Liu

ORGANIZED CONTRIBUTED SESSIONS

Session 390

PAI-NET: Ultrasensitive Analytical Technologies for Biology and Chemistry

arranged by Kazuma Mawatari, The University of Tokyo and Kenji Kojima, PAI-NET

Monday Morning, Room S502b

Kazuma Mawatari, The University of Tokyo, Presiding

8:30	(390-1)	Nanowire Devices for Bimolecular Analysis TAKAO YASUI, Nagoya University, Takeshi Yanagida, Noritada Kaji, Tomoji Kawai, Yoshinobu Baba
8:50	(390-2)	Microfluidic Devices for Protein Crystal Structure Analysis MASAYA MIYAZAKI, AIST
9:10	(390-3)	Development of Fully Automated Measuring System of Inter-Molecular Dynamic Interaction for Medical Diagnosis and Food Inspection HIDENORI WATANABE, USHIO INC., Kinichi Morita, Satoshi Matsuzawa, Masaki Miura, Takanori Jogi, Shigeki Matsumoto, Tsukasa Matsuo, Tetsuya Kitagawa
9:30	(390-4)	Fabrication of Functional Nanoparticles Using Microfluidic Devices MANABU TOKESHI, Hokkaido University
9:50		Recess
10:05	(390-5)	Development of Next Generation Amino Acid Analyzer Using LC/MS with a Derivatization Reagent HIROO YOSHIDA, Ajinomoto Co., Inc.
10:25	(390-6)	Watching and Manipulating Biomolecules One at a Time RYOTA LINO, The University of Tokyo
10:45	(390-7)	Study on Nanofluidic-Based Separation System for Actinides and Lanthanides TAKEHIKO TSUKAHARA, Tokyo Institute of Technology
11:05	(390-8)	Ultrasensitive Immunoassay Methods Using Nanofluidic Technology KAZUMA MAWATARI, The University of Tokyo

ORGANIZED CONTRIBUTED SESSIONS

Session 400

Spectroscopy for Everyone – Smaller, Cheaper, in the Field

arranged by Richard A Crocombe, Thermo Fisher Scientific and Mark A Drury, Physical Sciences, Inc

Monday Morning, Room S503b

Richard A Crocombe, Thermo Fisher Scientific, Presiding

8:30	(400-1)	Title Not Provided at Time of Printing
8:50	(400-2)	Bringing High Field NMR Methods onto the Lab Bench with a Compact NMR Spectrometer ANDREW COY, Magritek
9:10	(400-3)	Open Source Collaboration and a "Big Data" Approach To Household Spectral Analysis JEFFREY WARREN, Public Lab
9:30	(400-4)	Handheld NIR Analyzers for "In-field" Analysis IGOR NAZAROV, Thermo Fisher Scientific
9:50		Recess
10:05	(400-5)	MEMS Based Mass Spectrometer and Applications PETER EDWARDS, Microsaic Systems
10:25	(400-6)	Broadband Static Fiber Interferometry and FT-Spectrometry – More Information with More Convenience at More Locations DOMINIC MURPHY, Pie Photonics
10:45	(400-7)	A Micro-GC Based Chemical Analysis System PATRICK R LEWIS, Defiant Technologies, Douglas Adkins
11:05	(400-8)	Progress Toward Chip-Scale Integrated-Optic TDLAS Gas Sensors MICHAEL FRISH, Physical Sciences Inc., Matthew C Laderer

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS Session 410

Air Sampling for Environmental Applications (Half Session)

Monday Morning, Room S501a

8:30	(410-1)	Passive Sampling Approaches for Environmental Pollution Monitoring PAULINA BIERNACKA, University of Waterloo, Tadeusz Gorecki, Todd McAlary, Groenevelt Hester
8:50	(410-2)	Field Portable High Flow Air Sampling System for GC-MS XIAOFENG XIE, Brigham Young University, Daniel H Maynes, H Dennis Tolley, Milton L Lee
9:10	(410-3)	Time-Weighted Average Sampling of Volatile Airborne Organic Compounds by Needle Trap Devices (NTD) SABA ASL HARIRI, University of Waterloo, Janusz Pawliszyn
9:30	(410-4)	Pollutant Source Attribution Using Wireless Air Quality Networks JOHN R SAFFELL, Alphasense Ltd, Roderic L Jones, Paul H Kaye

ORAL SESSIONS Session 420

Bioanalytical Electrochemistry: Assorted Applications and Methods

Monday Morning, Room S501bc

8:30	(420-1)	High Throughput Assay of Secretory Granule Catecholamine Content Based on Electrochemical Cytometry NICHOLAS D LAUDE, University of Arizona, Richard F Vreeland, Michael L Heien
8:50	(420-2)	Design of New Method for Study of Embryonic Stem Cells LAUREN M BROWNING, Old Dominion University, Feng Ding, Tao Huang, X Nancy Xu
9:10	(420-3)	Amperometric Nitric Oxide Sensors with Enhanced Selectivity Over Carbon Monoxide for Potential Monitoring of NO in Exhaled Nasal Breath ZHENG ZHENG, University of Michigan, Gary C Jensen, Mark E Meyerhoff
9:30	(420-4)	Carbon Nanotube Fibers for Neurotransmitter Detection ALEXANDER G ZESTOS, University of Virginia, B Jill Venton
9:50		Recess
10:05	(420-5)	Voltammetric and Computational Evidence for Two Neurochemical Serotonin Uptake Mechanisms In Vivo KEVIN M WOOD, Wayne State University, Janet Best, Reed C Michael, Parastoo Hashemi
10:25	(420-6)	The Combination of Resistance and Spectroscopic Measurements for Analytical Measurements with Metallic Nanostructures FRANCIS P ZAMBORINI, University of Louisville, Nidhi Shah, Aiqin Fang
10:45	(420-7)	High-Resolution Scanning Electrochemical Microscopy (SECM) Studies of Dissimilarity Metal Reduction Pathways of <i>Shewanella Oneidensis</i> DAVID CRISOSTOMO, Vanderbilt University, Gongping Chen, Evan A Gizzie, Sean J Elliott, David E Cliffl
11:05	(420-8)	A Label-Free Impedimetric Immunosensor for Detection of 1-Aminohydantoin Residue in Food Samples Based on Sol-Gel Embedding Antibody YANG GONG-JUN, China Pharmaceutical University

ORAL SESSIONS Session 430

Capillary and Micro-Free-Flow Electrophoresis

Monday Morning, Room S501d

8:30	(430-1)	Nano-Liquid Chromatography Coupled with Micro Free-flow Electrophoresis for Multi-Dimensional Separations of Peptides MATTHEW L GEIGER, University of Minnesota
8:50	(430-2)	Development of a Multi-Dimensional Liquid Chromatography-Capillary Electrophoresis-Electrospray Ionization Separation Platform WILL BLACK, University of North Carolina at Chapel Hill, J S Mellors, J Michael Ramsey
9:10	(430-3)	Fungal Biomarker Identification with Phospholipid Nanogel in Microfluidic Devices TYLER DAVIS, West Virginia University, Lisa A Holland, Brandon C Durney
9:30	(430-4)	Multichannel Chip for High Throughput Capillary Isoelectric Focusing Analysis with Concentration Gradient Detection Based on Schlieren Optics ATEFEH SADAT ZARABADI, University of Waterloo, Janusz Pawliszyn
9:50		Recess

10:05	(430-5)	CE-MS Determination of Morphine and Its Isobaric Glucuronide Metabolites THERESA A SWANSON, Wake Forest University, Christa L Colyer, Gregory McIntire, Erin Strickland, Jennifer Hitchcock
10:25	(430-6)	Extraction of Phenolic Compounds Using a Surfactant-Based Ionic Liquid PAUL MAGUT, Louisiana State University, Fangzhi Huang, Paula Berton, Chengfei Lu, Noureen Siraj, Chun Wang, Isiah M Warner
10:45	(430-7)	Coupling Micro Free-Flow Electrophoresis with Desorption Electrospray Ionization Mass Spectrometry (DESI-MS) for Proteomic Analysis SARAH K ANCI-AUX, University of Minnesota, Michael T Bowser

ORAL SESSIONS Session 440

Environmental: Analysis of Pollutant (Half Session)

Monday Morning, Room S501a

10:05	(440-1)	A Multilayer Paper Analytical Device for Measuring Toxic Metals in Air Pollution DAVID M CATE, Colorado State University, John Volckens, Charles S Henry
10:25	(440-2)	Photolytic Conversatin Correction for Ambient NO Measurements THOMAS A MCKARNS, Eco Physics, Inc., Matthias Kutter
10:45	(440-3)	Composite Adsorption SERPIL EDEBALI, Selcuk University
11:05	(440-4)	On-Site and Sub-ppb VOC Analysis in a Semiconductor Clean-Room Using μGC CHIA-JUNG LU, National Taiwan Normal University, Rih-Sheng Jian, Lung-Yu Sung, Chih-Chia Wang, Chun-Yen Kuo, Wei-Cheng Tian

ORAL SESSIONS Session 450

GC/MS Analysis of Fuels

Monday Morning, Room S502a

8:30	(450-1)	Comparison of Pyrolysis Products of Prairie Cordgrass at Different Temperatures By Accelerated Solvent Extraction and GC-MS ERIC A BOAKYE, South Dakota State University, Douglas Raynie
8:50	(450-2)	Liquid Extraction and Thermodesorption to Quantify Volatile Organic Compounds by Gas Chromatography Associated to a Mass Spectrometer – GC-MS ONY RABETSIMAMANGA, GDF SUEZ - CRIGEN, Jean-Philippe Leininger
9:10	(450-3)	Measurement of Volatile Siloxanes, Toxic Organic and Sulfur Compounds in Biomethane by GCMS and Pulsed Flame Photometric Detection EDWARD BRAMSTON-COOK, Lotus Consulting, Randall Bramston-Cook
9:30	(450-4)	Calibration Standards for Measurement of Volatile Siloxanes and Toxic Organics in Biomethane Using Permeation Tubes RANDALL BRAMSTON-COOK, Lotus Consulting, Edward Bramston-Cook, Stanley D Stearns, Santos Puente
9:50		Recess
10:05	(450-5)	Utilization of GCxGC-TOFMS to Compare Results from Two Types of Orthogonal Column Phase Selectivity for Detailed Characterization of Crude Oil JOHN HEIM, Leco Corporation, Joe Binkley, Clecio F Klitzke, Jeff Patrick
10:25	(450-6)	Characterization and Quantification of Oxidation Byproducts including Copper Species in Natural Ester Based Dielectric Fluids RADHESHYAM PANTA, Missouri University of Science and Technology, Racha Seemamahanoop, Shubhender Kapila
10:45	(450-7)	PLOT Column Technology Development Enhances Operation with Integrated Particle Trapping GARY LEE, Agilent Technologies, Yun Zou, Kenneth G Lynam

ORAL SESSIONS Session 460

LC: Column Technology

Monday Morning, Room S504a

- 8:30 (460-1) **Characterization and Optimization of Organic Monolith Morphology for Improved Chromatographic Performance** PANKAJ AGGARWAL, Brigham Young University, H Dennis Tolley, John S Lawson, Dean R Wheeler, Brian Mazzeo, Milton L Lee
- 8:50 (460-2) **Sub-2 μ m Macroporous Silica Particles for Capillary UHPLC** JAMES P GRINIAS, University of North Carolina at Chapel Hill, Justin Godinho, Amanda K P Mann, Benjamin F Mann, Sara E Skrabalak, Milos V Novotny, James W Jorgenson
- 9:10 (460-3) **Preparation of Organo-Silica Hybrid Monolithic Columns and Characterization of Their Performance in Capillary Liquid Chromatography** ZUZANA ZAJICKOVA, Barry University, Denae Britsch, Deepa Gharbharan, Anna-Marie Weed, Frantisek Svec
- 9:30 (460-4) **Nanodiamonds/Silica Microsphere Composites as Stationary Phases for High-Performance Liquid Chromatography** ZUQIN XUE, University at Buffalo - SUNY, Luis A Colon
- 9:50 **Recess**
- 10:05 (460-5) **Preparation and Characterization of a Lauryl Acrylate Porous Polymer Monolithic Stationary Phase via HPLC** CHARLISA R DANIELS, Trinity University, Nicholas J Kuklinski, Michelle M Bushey
- 10:25 (460-6) **Analyte Diffusion Behavior on a Lauryl Acrylate Porous Polymer Monolith Stationary Phase** KELLY A HEWES, Trinity University, Xuanli Deng, Brady W Iba, Rohit Sampat, Charlisa R Daniels, Michelle M Bushey
- 10:45 (460-7) **Development of a C60-Fullerene Bonded Open-Tubular Capillary Using a Photo/thermal Active Agent for Liquid Chromatographic Separations** TAKUYA KUBO, Kyoto University, Murakami Yoshiki, Koji Otsuka
- 11:05 (460-8) **Synthesis and Characterization of 1.1 Micron Superficially Porous Particles for Biological Separations** JAMES W TREADWAY, University of North Carolina at Chapel Hill, James W Jorgenson

ORAL SESSIONS Session 470

LC: Pharmaceutical Analysis

Monday Morning, Room S504bc

- 8:30 (470-1) **Reverse Phase Chromatography of Proteins Using Submicron Silica Particles in Stainless Steel Columns** OYELEYE A ALABI, Purdue University, Mary J Wirth
- 8:50 (470-2) **Super/Subcritical Fluid Chromatography Chiral Separations with Cyclofructan Based Stationary Phases** ZACHARY S BREITBACH, The University of Texas at Arlington, Jonathan Smuts, Daniel W Armstrong
- 9:10 (470-3) **Size Exclusion Chromatography of Polysaccharides with Reverse Phase Liquid Chromatography** YAN HE, Pfizer, Michale Jones
- 9:30 (470-4) **RPLC of Small Molecules Using Sub-0.5 μ m Particles** NATALYA KHANINA, Purdue University, Mary J Wirth
- 9:50 **Recess**
- 10:05 (470-5) **UHPLC Analysis of Therapeutic Protein Charge Heterogeneity by Ion Exchange Chromatography Using Sub-2 Micrometer Non-Porous Particles** XIANG CAO, Purdue University, Robert Birdsall, Zhaorui Zhang
- 10:25 (470-6) **1.3 μ m Core-Shell Particles for Fast, Ultra-High Resolution Separations** A CARL SANCHEZ, Phenomenex, Mike Chitty, Tivadar Farkas
- 10:45 (470-7) **Characterization of Fullerene-Modified Silica as a Complement to Existing Alkyl Bonded and Graphite-Like Phases for Liquid Chromatography** DWIGHT STOLL, Gustavus Adolphus College, Tuan Tran, John Danforth, Paul Young, Ian Gibbs-Hall, Jon Thompson

ORAL SESSIONS Session 480

Nanotechnology: Sensors and Electrochemistry

Monday Morning, Room S504d

- 8:30 (480-1) **Chemical Sensing with Silicon Nanowires in a Vertical Array with a Porous Electrode** CHRISTOPHER R FIELD, U.S. Naval Research Laboratory, Junghoon Yeom, Daniel Ratchford, Christopher Chervin, Susan Rose-Pehrsson, Pehr Pehrsson
- 8:50 (480-2) **Investigation of Varying Modes and Degrees of Nanoconfinement Studied by Fluorescence Correlation Spectroscopy** DANE A GRISMER, University of Notre Dame, Sneha Polisetti, Lawrence Zaino, Paul W Bohn
- 9:10 (480-3) **Fluorescence Correlation Spectroscopy in Nanofluidic Channels: Effects of Confinement and Macromolecular Crowding on Molecular Transport** SNEHA POLISETTI, University of Notre Dame, Dane A Grismer, Paul W Bohn
- 9:30 (480-4) **Hybrid Nanostructured Carbon - Metal Oxide Supports for Electrocatalytic Oxidation of Fuels** IWONA A RUTKOWSKA, University of Warsaw, Pawel J Kulesza
- 9:50 **Recess**
- 10:05 (480-5) **Single-Nanoparticle Electrocatalysis on Nanoscale Electrodes** STEPHEN J PERCIVAL, University of Washington, Noah E Vartanian, Bo Zhang
- 10:25 (480-6) **Electrochemical Studies of Catalyst Free Carbon Nanotube Electrodes and Its Potential Applications in Eu3+ and Dopamine Detections** TINGTING WANG, University of Cincinnati, Bill L Riehl, Jaime Correa, William R Heineman
- 10:45 (480-7) **Electron Transfer in < 2 nm Au Nanoclusters** TESSA M CARDUCCI, University of North Carolina at Chapel Hill
- 11:05 (480-8) **Effect of Synthesis Method and Electrode Material on the Oxidation Potential of Metal Nanoparticles** RAFAEL MASITAS, University of Louisville, Irina Khachian, Bryan Bill, Francis P Zamborini

ORAL SESSIONS Session 490

Pharmaceutical: GC, LC/MS, Raman Spectrometry, Capillary Electrophoresis and Separation Sciences

Monday Morning, Room S505a

- 8:30 (490-1) **FID Method for the Control of the GTI, 4-chlorobutanol - Overcoming High Accuracy Bias in a Drug Substance and Dealing with Difficult Matrices in the Drug Products** MOHAN KANTHASAMY, Bristol Myers Squibb, John Castoro, Emma Quirk
- 8:50 (490-2) **Electrochemiluminescent Microchip and LC-MS/MS for Organ-Specific Reactive Metabolite Profiling** DHANUKA P WASALATHANTHRI, University of Connecticut, Dandan Li, Zhifang Zheng, Dharamainder Choudhary, Ingela Jansson, John B Schenkman, James F Rusling
- 9:10 (490-3) **Excipient Compatibility and Degradation Studies of a Small Molecule Pharmaceutical Compound by HPLC and Mass Spectrometry** JANE LI, Genentech, Christine Gu, Hong Lin, Stefanie Gee, Priscilla Mantik, Pete Yehl, Nik Chetwyn
- 9:30 (490-4) **The New Reality Show - Can HPLC Keep Up With Fast LCMS?** ROBERT J CLASSON, Shimadzu Scientific Instruments, Jonathan Edwardsen, Rachel Lieberman, Christopher Gilles, William Hedgepeth
- 9:50 **Recess**
- 10:05 (490-5) **Transmission Raman Spectroscopy - A Practical Alternative Method to Content Uniformity by HPLC** DARREN ANDREWS, Cobalt Light Systems, Andrew Owen, Matthew Bloomfield, Pavel Matousek
- 10:25 (490-6) **Analysis of Heparin Impurities Using Capillary Electrophoresis** CHRISTA A CURRIE, College of Mount St Joseph
- 10:45 (490-7) **Investigations on Prep Supercritical Fluid Chromatography Concentrating on Overall System Performance and Its Correlation to CO2 Recycling Operation and Efficiency** JOHN WHELAN, Waters Corporation, John Baugher
- 11:05 (490-8) **Raw Materials Identification of Incoming Pharmaceutical Goods through Unopened Non-Transparent Containers** DARREN ANDREWS, Cobalt Light Systems, Andrew Owen, Matthew Bloomfield, Pavel Matousek

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS

Session 500

Sampling and Sample Preparation for the Food Sciences

Monday Morning, Room S505B

- 8:30 (500-1) **Comparison of Green Solvents During Chemical Extraction by Diffusion Studies** SHANMUGAPRIYA DHARMAJAN, South Dakota State University
- 8:50 (500-2) **Extraction of Caffeine from Tea and Water Using QuEChERS with Gas Chromatography/Mass Spectrometry Detection** MICHELLE L SCHMIDT, Seton Hall University, Nicholas H Snow
- 9:10 (500-3) **An Automated Technique for the Solid Phase Extraction and Analysis of Multiple Organochlorine Pesticide Residues from Wine** JIM C FENSTER, Horizon Technology, Marc Hamel, Vinson Leung, Brian LaBrecque
- 9:30 (500-4) **Headspace Versus Direct Immersion Solid Phase Microextraction (SPME): Investigation of Inter-Analyte Displacement Phenomena and Consideration for Food Matrices** EMANUELA GIONFRIDDO, University of Waterloo, Érica A Souza Silva, Janusz Pawliszyn
- 9:50 **Recess**
- 10:05 (500-5) **Investigating Selective Displacement Phenomena in SPME Solid Coatings** EMANUELA GIONFRIDDO, University of Waterloo, Érica A Souza Silva, Janusz Pawliszyn
- 10:25 (500-6) **Analytical Pyrolysis: Optimizing Pyrolysis Conditions** HELENA JOENSSON, PyroLab
- 10:45 (500-7) **Benefits of Dynamic Headspace Enrichment for Enhanced Volatile Fraction Characterization of White Wine by GCxGC-TOFMS** DANIELA CAVAGNINO, DAN Instruments SpA, Alessandra Mantegazza, Antonella Siviero, Georg Weingart, Fulvio Mattivi
- 11:05 (500-8) **Advanced System for the Analysis of Bioactive Compounds in Natural Products: Integrating Sample Preparation and Chromatography** MAURICIO A ROSTAGNO, University of Campinas, M Angela A Meireles

POSTER SESSION

Session 510

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Electrochemistry: Methods and Applications

Monday Morning

- (510-1 P) **The Use of Microelectrode Voltammetry to Determine n-octanol / Water Distribution Ratio of Electroactive Species** TIAGO L FERREIRA, Universidade Federal de São Paulo, Jéssica S Silva, Gabriel G Faura
- (510-2 P) **The Detection of Non-Electroactive Species via Fast Scan Cyclic Voltammetry in Conjunction with Photoprotection and Deprotection** THOMAS FIELD, University of Kansas, Michael A Johnson, Richard Givens, Julie Peterson
- (510-3 P) **Organic Semiconductors for Rapid Electrochemical Measurement of Neurotransmission** ADAM R MEIER, University of Arizona, Richard F Vreeland, Michael L Heien
- (510-4 P) **Quantitative Measurements of Vesicular Transmitters with Electrochemical Cytometry** XIANCHAN LI, Chalmers University of Technology, Jelena Lorvic, Alar Ainla, Andrew G Ewing
- (510-5 P) **Surface-Enhanced Light Absorption and Photoelectrochemistry Using Metallic Nanostructures** JUE WANG, The University of Alabama, Shanlin Pan
- (510-6 P) **Electrochemical Fabrication of SERS-Active Metal Nanostructures for In-Situ Examination of Electrochemical Reactions** JONGWON KIM, Chungbuk National University, Suhee Choi, Miri Ahn, Jeong Hwakyeung
- (510-7 P) **Direct Electrochemistry of Horseradish Peroxidase Based on Hierarchical Porous Calcium Phosphate Microspheres** QIN XU, Yangzhou University, Longyun Jin, Xiao-Ya Hu
- (510-8 P) **In-Situ Imaging of Ion Battery Reactive Heterogeneity by Scanning Electrochemical Microscopy with an Amperometric Ion-Responsive Electrode** ZACHARY J BARTON, University of Illinois at Urbana-Champaign, Joaquin Rodriguez-Lopez
- (510-9 P) **Atmospheric Corrosion Study of Metals in an Industrial Environment of Ahmedabad** SUNILKUMAR PUNAMBHAI PAREKH, CU Shah Science College
- (510-10 P) **Hydrogen Peroxide Detection by Ion Chromatography and Electrochemical Detection** SHEETAL BHARDWAJ, Thermo Fisher Scientific, Rong Lin, Kannan Srinivasan, Christopher Pohl
- (510-11 P) **Detection of Thiols by o-Quinone Nanocomposite Modified Electrodes** AMILA M DEVASURENDRA, University of Toledo, Tianxia Zhu, Jon Kirchoff
- (510-12 P) **Electrochemical Detection and Quantification of Quercetin in some Tropical Fruits and Vegetables** WESLEY O OKIEI, University of Lagos, Modupe Mabel Ogunlesi, Boluwatife Awonaibe

- (510-13 P) **Optimizing the Electrochemical Proximity Assay for Effective Multiplexed Quantitation of Proteins** SUBRAMANIAM SOMASUNDARAM, Auburn University, Li Zhang, Xiangpeng Li, Curtis Shannon, Christopher J Easley
- (510-14 P) **Selective Detection of Pyocyanin in Biological Samples Using Disposable Electrochemical Sensors** THADDAEUS A WEBSTER, Northeastern University, Edgar D Goluch
- (510-15 P) **Cystine, an Essential Determinant of Protein Tertiary Structure, is Also a Target for Electrochemical Manipulation** IAN N ACWORTH, Thermo Fisher Scientific, Qi Zhang, Bruce Bailey

POSTER SESSION

Session 520

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Fluorescence/Luminescence/UV-VIS Bio and Nano

Monday Morning

- (520-1 P) **Laser Excited Time-Resolved Shpol'skii Spectroscopy for the Analysis of High-molecular Weight Polycyclic Aromatic Hydrocarbon Isomers** BASSAM ALFARHANI, University of Central Florida, Walter B Wilson, Cristina B Bisson, Andres D Campiglia
- (520-2 P) **A Turn-On Fluorescent Genosensor for the Detection of MicroRNA in Prostate Cancer Patient** AMILY FANG-JU JOU, National Taiwan University, Ja-an Annie Ho
- (520-3 P) **A Preliminary Investigation of the Effects of Metal Ions on the Fluorescence of Known Iron (II) Chelators: Analytical Utility for Determination of Iron** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Brittany E Playso
- (520-4 P) **Construction of Novel Luminescence Pairs Based on the Basic Peptides of HPV Capsid Proteins/Polyoxometalate and the In-vitro Receptor Screening for Virus Attachment on Cell Surface** YUQING WU, Jilin University
- (520-5 P) **Cetyltrimethylammonium Bromide/ Imidazolium Bromide Tetradecane Synergistic Sensitized Spectrofluorimetry for Speciation of Cr (VI)/Cr (III)** ZHU XIASHI, Yangzhou University, Wang Wenjun
- (520-6 P) **Analytical Pipetting of Serum** JOHN THOMAS BRADSHAW, Artel, Leah Flumerfelt, Richard H Curtis, Rachel Parshley
- (520-7 P) **The Development of Polymerization and Fluorescence Spectroscopic Methods for Ratio-metric Fluorescent Ion Indicators** DEANNA M SILVA, University of New Hampshire, John Csoros, Justin Massing, Roy Planalp, Shawn Burdette, W Rudolf Seitz
- (520-8 P) **Plasmonic Assembly Turning on Fluorescence in Surface Plasmon-Coupled Emission for Biosensing** YAO-QUN LI, Xiamen University, Shuo-Hui Cao, Wei-Peng Cai, Qian Liu, Kai-Xin Xie, Yu-Hua Weng, Si-Xin Huo
- (520-9 P) **A Study of Absolute Quantum Efficiency Measurement System** OSAWA YOSHIHIRO, Otsuka Electronics Co., Ltd
- (520-10 P) **Solvent-Solute Interactions for P-Phenylenediamine and Its Methylated Derivative** MUHAMMAD ZAHID, University of Agriculture Faisalabad, Asim Mansha, Guenter Gramppe, Patrice Jacques, Sadia Asim, Haq N Bhatti
- (520-11 P) **Low-Temperature Synchronous Fluorescence Spectroscopy with Fiber Optic Probes for the Analysis of High Molecular Weight Polycyclic Aromatic Hydrocarbons** ANTHONY F MOORE, University of Central Florida, Fernando Barbosa, Andres D Campiglia
- (520-12 P) **Rapid Testing of Bacterial Endotoxins in Water Using Bioluminescence** SATOSHI ARAKAWA, DKK TOA Corporation, Satoshi Yawata, Kenichi Noda, Akio Kuroda, Hiromitsu Hachiya
- (520-13 P) **Construction of Transcription-Type Imprinted Polymers Using Immobilized Proteins for Selective Fluorescence Detection of Target Proteins** TAKAHIRO KUWATA, Kobe University, Satoshi Yoshizawa, Yukiya Kitayama, Tooru Ooya, Toshifumi Takeuchi
- (520-14 P) **Fluorimetric Nanosensors for Ion Detection** KATARZYNA KŁUCIŃSKA, Warsaw University, Anna Kisiel, Krzysztof Maksymiuk, Agata Michalska
- (520-15 P) **Self-Assembled Synthesis of Water-Soluble Anthracenophane and Its Functionality** RY-OHEI MIYAKE, Kobe University, Yukiya Kitayama, Tooru Ooya, Toshifumi Takeuchi
- (520-16 P) **Synthesis and Characterization of Amphiphilic Porphyrin-Based Nanoparticles as Sensor Materials** MASAKO MORIISHI, Kobe University, Yukiya Kitayama, Tooru Ooya, Takeuchi Toshifumi
- (520-17 P) **Novel Coelenterazine Derivatives for Bioluminescence Applications** RYO NISHIHARA, Keio University, Emi Hoshino, Hideyuki Suzuki, Moritoshi Sato, Tsuyoshi Saitoh, Shigeru Nishiyama, Naoko Iwasawa, Daniel Citterio, Koji Suzuki
- (520-18 P) **Single Molecule Assays for Early Breast Cancer Detection** STEPHANIE M SCHUBERT, Tufts University, Shazia Baig, David R Walt
- (520-19 P) **Polymeric Ion-Selective Microspheres Based on Upconverting Nanoparticles** LIANGXIA XIE, Nanjing University, Yu Qin

- (520-20 P) **SDS Concentration by Microtiter Plate Assay as a Basis for Alternative Detergent Quantitation** JANET BERGSMAN, Abbott Laboratories, Kevin R Rupprecht, Jeffrey Fishpauqh
- (520-21 P) **Synthesis of Poly(methacryloyloxyethyl phosphorylcholine)-Grafted Au Nanoparticles for C-Reactive Protein Sensing** YUKIYA KITAYAMA, Kobe University, Toshifumi Takeuchi

POSTER SESSION Session 530

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Fuels, Energy and Petrochemicals Analyses

Monday Morning

- (530-1 P) **New Applications Using a GC BID Detector** ZHUANGZHI "MAX" WANG, Shimadzu Scientific Instruments, Clifford M Taylor, Nicole M Lock, Laura Chambers, Richard R Whitney
- (530-2 P) **Continuous Monitoring and Calorific Power Calculation of Natural Gas with Standalone Micro-GC Full MEMS based** FILIPPO BARAVELLI, Pollution, Carlo Bruno
- (530-3 P) **Electrochemistry of Fuels: A Perspective on the Analysis of Contaminants** LEONARDO L OKUMURA, Federal University of Vicosa, Adelir A Saczk, Marcelo F de Oliveira
- (530-4 P) **Correlation of True Boiling Point Distillation Data of Upgraded Crude Oils with High Temperature Simulated Distillation** LAURA OLIVIA ALEMAN-VAZQUEZ, Instituto Mexicano del Petróleo, Jose-Luis Cano-Dominguez, Jose Luis Garcia-Gutierrez
- (530-5 P) **Isomer Distribution Analysis for Improved Hydrocarbon Mixtures Characterization** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon
- (530-6 P) **Decomposition of Aromatic Amines in a Jet Fuel Surrogate** DAVID W JOHNSON, University of Dayton, Matthew Rohaly
- (530-7 P) **Cyanide Analysis of Wastewater Samples from Fluid Catalytic Cracking (FCC) and Hydrocracking Operations** WILLIAM C LIPPS, Xylem/OI Analytical, Libby A Badgett, Gary Engelhart
- (530-8 P) **Contamination Robust Minimalistic EI Ion Source Design** MATTHIAS FEINDT, Hamburg University of Technology, Andreas Behn, Gerhard Matz, Sven Krause
- (530-9 P) **Analysis of Fracking Flowback Water from the Marcellus Shale Using In-line Conductivity, Automated Dilution, and Ion Chromatography** CARL FISHER, Thermo Fisher Scientific, Linda Lopez
- (530-10 P) **High Temperature Potentiometric Oxygen Sensors for Optimizing Combustion Processes** MAX R MULLEN, The Ohio State University
- (530-11 P) **Preparation of Nitrogen-Doped Porous Carbon Nanofibers and Their Textual Effect on Their Oxygen Reduction Performance** JONG-SUNG YU, Korea University, Dae-Soo Yang, Kizhakke Palleeri Rajesh
- (530-12 P) **Investigation of Nanoporous Copper Catalyst for CO₂ Electroreduction** JOSHUA BILLY, The Ohio State University, Jared B Steed, Anne Co
- (530-13 P) **Comprehensive Ion Analysis of Various Water Matrices in Hydraulic Fracturing Process** JAY GANDHI, Metrohm USA, Anne Shearrow, Jay Sheffer
- (530-14 P) **Pushing the Temperature Threshold for Potentiometric Based NO_x Sensors** MAX R MULLEN, The Ohio State University
- (530-15 P) **Investigation of High-Temperature Petroleum Applications in GCxGC-TOFMS** CORY S FIX, Leco Corporation, Joe Binkley, Jeff Patrick
- (530-16 P) **Combustion Ion Chromatography- Improved Sensitivity via Automated In-Line Sample Pre-Concentration** SHELDON BERNARD, Thermo Fisher Scientific
- (530-17 P) **CIC – Combustion Ion Chromatography – Old Wine in a New Bottle** JAY GANDHI, Metrohm USA, Anne Shearrow, Jay Sheffer

POSTER SESSION Session 540

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Microscopy

Monday Morning

- (540-1 P) **Insertion and Orientation Studies of Inward Rectifier K⁺ (Kir) Channels Using Confocal Single Molecule Fluorescence Microscopy** YU TIAN, University of Arizona, Mark T Agasid, Christopher A Baker, Kristina Orosz, Vanessa R Sousa, Xuemin Wang, Craig A Aspinwall, S Scott Saavedra
- (540-2 P) **Study of Claudin Interaction with Scanning Ion Conductance Microscopy (SICM)** LUSHAN ZHOU, Indiana University, Yi Zhou, Chiao-Chen Chen

POSTER SESSION Session 550

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Nanotechnology: Fluorescence, Extraction, Electrophoresis and Electrochemistry

Monday Morning

- (550-1 P) **Quantum Dot Enabled Immunoassay for Multiplex Detection of Atherosclerosis Biomarkers** KRISTEN S WILLIAMS, University of New Orleans, Matthew A Tarr
- (550-2 P) **Controllable Assembly of Spherical Gold Nanoparticles into One-Dimensional (1-D) Nanochains via Utilization of a Zwitterionic Surfactant and Associated Cloud Point Extraction Step** HUE THI TRAN, Fukushima University, Yoshitaka Takagai, Willie L Hinze
- (550-3 P) **Electrochemical Biosensing Systems Based on the Entrapment of Glucose Oxidase in Polymer Film** HILAL INCEBAY, Nevsehir University, Onur Sengoz, Bahri Yuksel, Ahmet Okudan, Zafer Yazicigil, Esra Biliçi, Yasemin Oztekin
- (550-4 P) **Development of an Electrochemical Sensing System** YASEMIN OZTEKIN, Selcuk University, Mihriban Aydin
- (550-5 P) **Separation of Carbon Nanodots by Size-Exclusion High Performance Liquid Chromatography** KARINA M TIRADO GONZALEZ, University at Buffalo - SUNY, Zuqin Xue, Luis A Colon

POSTER SESSION Session 560

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Nanotechnology: Lab-On-A-Chip, Imaging, and Spectroscopy

Monday Morning

- (560-1 P) **Three-Dimensional Silver Nanostructure for SERS Sensing** RYOHEI HARA, Laboratory of Advanced Science and Technology, Utsumi Yuichi
- (560-2 P) **Topographic Characterization of Nanostructures on Curved Polymer Surfaces** NIKOLAJ A FEIDENHANS'L, DTU Nanotech, Rafael J Taboryski, Jan C Petersen
- (560-3 P) **Nanoscale Chemical Imaging of Membrane Receptors by Tip Enhanced Raman Spectroscopy** HAO WANG, University of Notre Dame, Zachary D Schultz
- (560-4 P) **Antireflective Silicon Nanocones Arrays in Small Molecules Analysis** NAN LU (LYU), Jilin University
- (560-5 P) **Analytical Evidence of Ligand-Controlled Stabilization of Semiconductor Nanoclusters Surface Occupied Orbitals** MEGHAN TEUNIS, Indiana University - Purdue University Indianapolis, Sukanta Dolai, Rajesh Sardar
- (560-6 P) **Dye-Loaded Nanocapsules Immobilized in a Hydrogel Matrix: Development of Flow-Through Optical pH Sensors** ALEXANDER MACLIN, University of Memphis, Mariya Kim, Chris Brown, Eugene Pinkhassik, Erno Lindner
- (560-7 P) **Patterned Superhydrophobic/philic Substrates as a Universal Platform for Various Surface-Enhanced Spectroscopic Techniques** HIROYUKI TAKEI, Tokyo University
- (560-8 P) **Quantitative Evaluation of Stored Blood for Use in Transfusion Medicine with 3D-Printed Fluidic Devices** CHEN CHENGPENG, Michigan State University, Wang Yimeng, Dana Spence
- (560-9 P) **Self-Pumping Microfluidic Systems Using Degassed Poly(dimethylsiloxane) Pumps** RACHEL M FEENY, Colorado State University, Charles S Henry
- (560-10 P) **Microfluidic Assays for Long-Term Perfusion Culture and Chemical Monitoring of Living Cells** SHUSHENG LU, University of Michigan, Robert Kennedy

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 570

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Ongoing Enhancements to Chromatographic Methods

Monday Morning

- (570-1 P) **Analysis of Multiple Pesticides by Supercritical Fluid Chromatography/Tandem Mass Spectrometry with a Sub-2 Micron Particle Column - A Feasibility Study** JINCHUAN YANG, Waters Corporation, Brian Tyler, Jennifer Burgess, Joe Romano
- (570-2 P) **Trace Level Pesticide Analysis by Gas Chromatography Using Liners with a Novel Deactivation Chemistry** LINX K WACLASKI, Restek, Scott Adams, Brian Jones, Jack Cochran
- (570-3 P) **Analysis of Additives in Lubricants Using Thermal Sampling Techniques** KAREN SAM, CDS Analytical, Thomas Wampler, Gary Deger, Steve Wesson, Ben Peters
- (570-4 P) **Tetraaryl Phosphonium-Based Ionic Liquids as High Thermal Stability Stationary Phases for Gas Chromatography** ALI NAJAFI, The University of Toledo, Cody G Cassidy, James H Davis, Jared L Anderson
- (570-5 P) **How to Recognize and Eliminate Ghost Peaks in Gas Chromatography** JAAP DEZEEUW, Restek
- (570-6 P) **Applications for Variable Geometry Columns in GC and GC-MS** WILLIAM H STEINECKER, VGC Chromatography, Gilbert E Pacey
- (570-7 P) **Decrease GC Run Time with a New Column Phase Geometry** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, William H Steinecker
- (570-8 P) **Optimizing Resolution in Reversed-Phase UPLC Methods Development with Automatic pH Selection** APARNA CHAVALI, Waters Corporation, Thomas E Wheat, Patricia R McConville
- (570-9 P) **HILIC Mode and Stationary Phase for Alternative UHPLC Analyses** WILLIAM JOHN LONG, Agilent Technologies, Anne Mack

POSTER SESSION

Session 580

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Teaching Methods

Monday Morning

- (580-1 P) **Environmental Education Using Acid Rain in Sapporo, Northern Japan, During 2006-2013** MASAHIKO KAN, Hokkaido University
- (580-2 P) **Do Apps Really Help Students Learn Chemistry** ENRIQUE ARCE-MEDINA, ESQIE
- (580-3 P) **Rapid Determination of Ten Colorants in Lipstick Samples by Ultra High Performance Liquid Chromatography Coupled with Triple Quadrupole Mass Spectrometry Utilizing Transitions from Doubly Charged Precursor Ions** ZHONG QISHENG, Shimadzu (China) Co., Ltd., Ye Ying
- (580-4 P) **Lessons from the First-Time Flip: Tips, Observations and Assessment from the Implementation of the Inverted-Classroom Model in a General Chemistry Course** JARED S BAKER, Elmira College
- (580-5 P) **Microcontrollers in the Analytical Chemistry Teaching Lab** GARY A MABBOTT, University of St. Thomas
- (580-6 P) **Use of Passive Air Sampler for Cultivating Sense of Environmental Forensics in Practice of Environmental Education** YOSHIKA SEKINE, Tokai University, Ayano Azuma, Yuki Nagaoka, Butsugan Michio
- (580-7 P) **Using Technology to Flip an Undergraduate Analytical Chemistry Course** NEIL FITZGERALD, Marist College, Luisa Li

MONDAY, MARCH 3, 2014 AFTERNOON

AWARDS

Session 590

SEAC - Charles N Reilley and Young Investigators Award

arranged by Mark Ratner, Northwestern University

Monday Afternoon, Room S402a

Mark Ratner, Northwestern University, Presiding

- 1:30 **Introductory Remarks - Mark Ratner**
- 1:35 **Presentation of the 2014 SEAC - Charles N Reilley Award to Joseph Hupp, Northwestern University, by Mark Ratner, Northwestern University**
- 1:40 (590-1) **Interfaces for Photoelectrochemical Energy Conversion** JOSEPH HUPP, Northwestern University
- 2:15 (590-2) **Photoelectrochemical Investigation of Outersphere Redox Shuttles in Dye Sensitized Solar Cells** THOMAS HAMANN, Michigan State University
- 2:50 (590-3) **Title Not Provided at Time of Printing**
- 3:25 **Recess**
- 3:40 **Presentation of the 2014 SEAC - Young Investigators Award to Stephen Maldonado, University of Michigan, by Mark Ratner, Northwestern University**
- 3:45 (590-4) **New Ideas for Liquid Metal Electrodes** STEPHEN MALDONADO, University of Michigan
- 4:20 (590-5) **Spectroelectrochemical Studies of Energy Materials Interphases and Interfaces** KEITH STEVENSON, The University of Texas at Austin

SYMPOSIUM

Session 600

Advanced Mass Spectrometry for Food Safety and Cosmetics – Challenges and Validation

arranged by Perry G Wang, U.S. Food and Drug Administration and Xiaogang Chu, China Academy of Inspection and Quarantine

Monday Afternoon, Room S402b

Perry G Wang, U.S. Food and Drug Administration, Presiding

Xiaogang Chu, China Academy of Inspection and Quarantine, Presiding

- 1:30 **Introductory Remarks - Perry G Wang and Xiaogang Chu**
- 1:35 (600-1) **Advanced Mass Spectrometry for Food Safety and Cosmetics - Challenges and Validation** PERRY G WANG, US FDA, Wanlong Zhou, Alexander J Krynistky
- 2:10 (600-2) **Study to Monitor Chemical Contaminants in Foods** STEVEN LEHOTAY, USDA Agricultural Research Service
- 2:45 (600-3) **On-Site Screening for Plasticizers, Maleic Acid, Melamine, and Residual Pesticides in Tainted Foods via Mobile Ambient Mass Spectrometry (MAMS)** JENTAIE SHIEA, National Sun Yat-Sen University, Min-Zong Huang, Sy-Chyi Cheng, Christopher Shiea
- 3:20 **Recess**
- 3:35 (600-4) **Mass Spectrometry: Shifting the Landscape of Allergen Analysis** BERT POPPING, Eurofins, Carmen Diaz-Amigo
- 4:10 (600-5) **Ultra-High Performance Liquid Chromatography Electrospray Ionization Q-Orbitrap Mass Spectrometry for Analysis of Pesticide and/or Antibiotic Residues in Food: Method Development and Validation** JIAN WANG, Canadian Food Inspection Agency

SYMPOSIUM Session 610

Advances in Diamond Based Sensing and Analysis

arranged by Julie V MacPherson, University of Warwick

Monday Afternoon, Room S404a

Julie V MacPherson, University of Warwick, Presiding

1:30		Introductory Remarks - Julie V MacPherson
1:35	(610-1)	Recent Development on Electrochemical Application of Boron-Doped Diamond Electrodes YASUAKI EINAGA, Keio University
2:10	(610-2)	Nanoscale Magnetic Imaging Using Diamond RONALD WALSWORTH, Harvard University
2:45	(610-3)	Title Not Provided at Time of Printing
3:20		Recess
3:35	(610-4)	Diamond Microelectrodes for Neurochemical Studies in Human Tissues GREG M SWAIN, Michigan State University, Marion France, James J Galligan
4:10	(610-5)	Electrochemical X-Ray Fluorescence (EC-XRF): A New Technique for Heavy Metal Detection at Sub-ppb Levels JULIE V MACPHERSON, University of Warwick, Laura Hutton, Mark E Newton

SYMPOSIUM Session 620

Advances in Raman Spectroscopy

arranged by Sanford A Asher, University of Pittsburgh

Monday Afternoon, Room S404bc

Sanford A Asher, University of Pittsburgh, Presiding

1:30		Introductory Remarks - Sanford A Asher
1:35	(620-1)	Using Deep-UV Resonance Raman Spectroscopy to Monitor Protein-Lipid Interactions RENEE D JIJU, University of Missouri Columbia, Jian Xiong, Michael K Eagleburger, Anahita Zare, Mia C Brown, Jason W Cooley
2:10	(620-2)	Low-Wavenumber Stokes and Anti-Stokes Raman Microscopy for Pharmaceutical Tablet Characterization MICHAEL J PELLETIER, Pfizer, Shawn M Mehrens, Christine C Pelletier
2:45	(620-3)	Ultrafast Plasmonics: Surface-Enhanced Femtosecond Stimulated Raman Spectroscopy RICHARD P VAN DUYN, Northwestern University
3:20		Recess
3:35	(620-4)	Raman Spectroscopic Detection of Life Signatures on the ExoMars Mission: The Role of Terrestrial Extremophiles in Hot and Cold Deserts HOWELL GWYNNE MORT EDWARDS, University of Leicester, Ian B Hutchinson, Richard Ingle, Lewis Dartnell, Liam V Harris, Melissa McHugh
4:10	(620-5)	Raman Characterization of Critical Biological Reactions in Dilute Aqueous Solutions, in Single Crystals and in Living Cells PAUL CAREY, Case Western Reserve University, Ioanna Antonopoulos, Tao Che, Hossein Heidari Torkabadi

SYMPOSIUM Session 630

Applications of Capillary Electrophoresis in Vaccine, Virus, and Biological Particles

arranged by Richard Rianto Rustandi, Merck Co

Monday Afternoon, Room S404d

Richard Rianto Rustandi, Merck Co, Presiding

1:30		Introductory Remarks - Richard Rianto Rustandi
1:35	(630-1)	Capillary Electrophoresis as a Tool to Trace the Internalization of a Virus into a Cell ERNST KENDLER, University of Vienna
2:10	(630-2)	A New Approach to Capillary Based Western Analysis in Vaccine Development MELISSA HAMM, Merck
2:45	(630-3)	Measurement of Individual Mitochondrial Membrane Potential by Capillary Electrophoresis EDGAR A ARRIAGA, University of Minnesota, Gregory Wolken
3:20		Recess
3:35	(630-4)	Design of a Capillary Electrophoresis Charge Heterogeneity Method K STEVEN COOK, Pfizer, Michael R Schlittler, Michele R Bailey-Piathek, Michael Jones
4:10	(630-5)	Capillary Electrophoresis in Vaccine Development RICHARD RIANTO RUSTANDI, Merck Co, Melissa Hamm, Feng Wang, Sha Ha

SYMPOSIUM Session 640

Cancer Nanotechnology - Enabling Development of New Diagnostics and Therapeutics

arranged by Piotr Grodzinski, National Cancer Institute and Chad A Mirkin, Northwestern University

Monday Afternoon, Room S401a

Piotr Grodzinski, National Cancer Institute, Presiding

1:30		Introductory Remarks - Piotr Grodzinski and Chad A Mirkin
1:35	(640-1)	Spherical Nucleic Acids (SNAs): Novel Therapeutic Agents for Cancer Treatment CHAD A MIRKIN, Northwestern University
2:10	(640-2)	Novel Nanobiotechnology Approaches to Enhance Cancer Therapy JOSEPH M DESIMONE, University of North Carolina at Chapel Hill
2:45	(640-3)	Paclitaxel-Loaded Expansile Nanoparticles for the Detection and Treatment of Intraperitoneal Mesothelioma MARK GRINSTAFF, Boston University
3:20		Recess
3:35	(640-4)	Title Not Provided at Time of Printing
4:10	(640-5)	Translational Nanotechnology for Oncology MARTIN POMPER, Johns Hopkins University

SYMPOSIUM Session 650

Capillary Liquid Chromatography - A Powerful Tool in Analytical Chemistry

arranged by Stephen G Weber, University of Pittsburgh

Monday Afternoon, Room S405a

Stephen G Weber, University of Pittsburgh, Presiding

1:30		Introductory Remarks - Stephen G Weber
1:35	(650-1)	Nanoparticle Modified Monolithic Columns LUIS A COLON, University at Buffalo - SUNY, Lisandra Santiago-Capeles, Zuqin Xue
2:10	(650-2)	High Resolution Separations by Capillary UHPLC JAMES W JORGENSON, University of North Carolina at Chapel Hill, Kaitlin Fague, Justin Godinho, Jordan Stobaugh, Edward Franklin
2:45	(650-3)	Prospects for Organic Monoliths in Capillary Liquid Chromatography MILTON L LEE, Brigham Young University, Pankaj Aggarwal, Kun Liu, John S Lawson, H Dennis Tolley
3:20		Recess
3:35	(650-4)	Monolithic Capillary Columns: Novel Approaches to Tuning Porosity and Pore Surface Chemistry FRANTISEK SVEC, Lawrence Berkeley National Laboratory
4:10	(650-5)	Increasing Capillary HPLC Speed STEPHEN G WEBER, University of Pittsburgh, Jing Zhang, Stephen R Groskreutz

SYMPOSIUM Session 660

Ion Mobility Separations in Proteomics and Structural Biology

arranged by Alexandre A Shvartsburg, Pacific Northwest National Laboratory

Monday Afternoon, Room S405b

Alexandre A Shvartsburg, Pacific Northwest National Laboratory, Presiding

1:30		Introductory Remarks - Alexandre A Shvartsburg
1:35	(660-1)	Searching for Conformationally-Selective Small Molecule Therapeutics Using Ion Mobility-Mass Spectrometry BRANDONT RUOTOLO, University of Michigan, Jessica Rabuck, Shuai Niu
2:10	(660-2)	Zoom Mode Ion Mobility Spectrometry MICHAEL A EWING, Indiana University, Steven M Zucker, Matthew S Glover, David E Clemmer
2:45	(660-3)	Ion Mobility-Mass Spectrometry as a Tool in Structural Biology CHRISTIAN BLEIHOLDER, Florida State University
3:20		Recess
3:35	(660-4)	High-Resolution Differential Ion Mobility Spectrometry from Amino Acid Isotopomers to Larger Protein Conformers ALEXANDRE A SHVARTSBERG, Pacific Northwest National Laboratory
4:10	(660-5)	Using High Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS) to Improve Protein Discovery by Mass Spectrometry KRISTIAN E SWEARINGEN, Institute for Systems Biology, Michael R Hoopmann, Scott E Lindner, Robert L Moritz

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM

Session 670

Miniature Mass Spectrometers

arranged by R Graham Cooks and Zheng Ouyang, Purdue University

Monday Afternoon, Room S504d

Zheng Ouyang, Purdue University, Presiding

1:30		Introductory Remarks - R Graham Cooks and Zheng Ouyang
1:35	(670-1)	Mobile and Miniature Mass Spectrometers for Marine and Space Applications TIMOTHY SHORT, SRI International, Friso H van Amerom, Strawn K Toler, Andres M Cardenas-Valencia, Ashish Chaudhary, Michelle L Cardenas, Ryan J Bell, Patrick A Roman
2:10	(670-2)	Vacuum Systems for Mini MS PAUL H SORENSEN, Creare Inc., Robert J Kline-Schoder
2:45	(670-3)	Design and Development of Mass Spectrometry Devices for Point-of-Care Diagnosis ZHENG OUYANG, Purdue University, Chien-Hsun Chen, Linfan Li, Yue Ren, Robert G Cooks
3:20		Recess
3:35	(670-4)	Microengineered Mass Spectrometers for Liquid Chromatography and Other Flow Applications STEVEN WRIGHT, Microsaic Systems
4:10	(670-5)	Mass Spectrometry for Security Applications DENNIS JOSEPH BARKET, JR., FLIR, Mitch Wells

SYMPOSIUM

Session 680

Semiconducting Sensors for Biodiagnostics and Food Safety

arranged by Radislav A Potyrailo, GE Global Research and Vladimir M Mirsky, Lausitz University of Applied Sciences

Monday Afternoon, Room S401d

Radislav A Potyrailo, GE Global Research, Presiding

1:30		Introductory Remarks - Radislav A Potyrailo and Vladimir M Mirsky
1:35	(680-1)	Carbon Nanotubes Chemiresistors for Biological and Agricultural Applications TIMOTHY M SWAGER, Massachusetts Institute of Technology
2:10	(680-2)	A Novel Real Time Carbon Dioxide Analyzer for Health and Environmental Applications: Sensor Calibration and Validation ERICA FORZANI, Arizona State University, Di Zhao
2:45	(680-3)	Integrated Electrochemical Chemotransistors as Chemosensors with Adjustable Affinity VLADIMIR M MIRSKY, Brandenburg University of Technology
3:20		Recess
3:35	(680-4)	Bio-Nano Hybrids for Chemical Detection AT CHARLIE JOHNSON, University of Pennsylvania
4:10	(680-5)	Electronic and Optical Multivariable Transducers for Enhanced Chemical and Biological Sensing RADISLAV A POTYRAILO, GE Global Research

SYMPOSIUM

Session 690

The Twenty-Fifth James L Waters Symposium: MALDI-TOF

arranged by William R Sharpe, The Pittsburgh Conference

Monday Afternoon, Room S401bc

William R Sharpe, The Pittsburgh Conference, Presiding

1:30		Introductory Remarks - William R Sharpe
1:35	(690-1)	Peptide and Protein Mass Spectrometry Before MALDI and ESI, the Pioneering Period PETER ROEPSTORFF, University of Southern Denmark
2:10	(690-2)	Title Not Provided at Time of Printing
2:45	(690-3)	Development of TOF-MS from Intellectual Curiosity to Practical Technique MARVIN L VESTAL, SimulTOF Systems
3:20		Recess
3:35	(690-4)	MALDI Imaging Mass Spectrometry: A Next Generation Molecular Mapping Technology for Biological and Clinical Research RICHARD M CAPIROLI, Vanderbilt University
4:10	(690-5)	Using High Throughput Mass Spectrometric Immunoassay (MSIA) in Biomarker Development RANDALL W NELSON, The Biodesign Institute

WORKSHOPS

Session 700

Technological Advances in Ultra High Performance Liquid Chromatography

arranged by Jason Anspach and Michael David McGinley, Phenomenex

Monday Afternoon, Room S503b

Jason Anspach, Phenomenex, Presiding

1:30		Introductory Remarks - Jason Anspach and Michael David McGinley
1:35	(700-1)	Advantages of UHPLC in the Micro-LC Format REMCO VAN SOEST, Eksigent, part of AB SCIEX, Khaled Mriziq, Don W Arnold
2:05	(700-2)	Applications of Sub-2-μm Solid-Core Particle Columns KENNETH J FOUNTAIN, Waters Corporation, Jonathan E Turner, Bonnie Alden, Pamela Iraneta
2:35	(700-3)	Accelerating Biochemical Structure Analysis Through the Use of Superficially Porous Particle Technologies for Liquid Chromatography BARRY EDWARD BOYES, Advanced Materials Technologies, Inc., Tim Langlois, Stephanie Schuster, Joseph Kirkland, Joseph J DeStefano
3:05		Recess
3:20	(700-4)	Core-shell Contributions to Particle Miniaturization in Ultra-High Performance Liquid Chromatography JASON ANSPACH, Phenomenex, A Carl Sanchez, Gareth Friedlander, Tivadar Farkas
3:50	(700-5)	New UHPLC Column Technologies for a Wide Variety of Applications XIAOLI WANG, Agilent Technologies, Wu Chen, Jason Link, James Martosella, Maureen Joseph, William Barber
4:20	(700-6)	A Decade of Smaller Particles, Higher Pressures, and Faster Separations: The Current and Future Status of UHPLC in Pharmaceutical Method Development TODD D MALONEY, Eli Lilly and Company

ORGANIZED CONTRIBUTED SESSIONS

Session 710

Ionophore-Based Chemical Sensors II

arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

Monday Afternoon, Room S503a

Philippe Buhlmann, University of Minnesota, Presiding

1:30	(710-1)	Electrochemistry in Paper GEORGE M WHITESIDES, Harvard University
1:50	(710-2)	Inkjet-Printed Paper-Based Colorimetric Sensor Array for the Discrimination of Volatile Amines DANIEL CITTERIO, Keio University, Tamaki Soga, Yusuke Jimbo, Koji Suzuki
2:10	(710-3)	Characterization and Applications of Reversible Pulstrode Polyion Sensors as Detectors in Flow Injection Analysis ANDREA K BELL-VLASOV, University of Michigan, Joanna Zajda, Ayman Eldourghamy, Mark E Meyerhoff
2:30	(710-4)	Nanomaterials in Ion-Selective Sensors ELIZABETH (LISA) A HALL, University of Cambridge, Jamie D Walters
2:50		Recess
3:05	(710-5)	Voltammetric Ion-Selective Electrodes for Ultratrace Analysis SHIGERU AMEMIYA, University of Pittsburgh
3:25	(710-6)	Electrochemical Sensors for Developing Biodegradable Implants WILLIAM R HEINEMAN, University of Cincinnati, Julia Kuhlmann, Xuefei Guo, Amos Doepke, Tingting Wang, Kolade Ojo, Robert T Voorhees, Sarah K Pixley, Shongyun Dong, Vesselin N Shanov, Frank Witte
3:45	(710-7)	Ultra-Small, Quantum Dot Based Nano-optodes for Imaging Physiological Potassium HEATHER A CLARK, Northeastern University, Timothy Ruckh
4:05	(710-8)	Tailoring Ion-Transport Through Polyacrylate Membranes AGATA MICHALSKA, University of Warsaw, Anna Kisiel, Emilia Woznica, Maksymik Krzysztof

ORGANIZED CONTRIBUTED SESSIONS

Session 720

Spectrochemical Analysis of Biological Systems - A Perspective from New and Established Investigators

arranged by Sean M Burrows, Oregon State University

Monday Afternoon, Room S504a

Sean M Burrows, Oregon State University, Presiding

1:30	(720-1)	Developing miRNA Biosensors to Use in Two-Photon Applications	SEAN M BURROWS, Oregon State University
1:50	(720-2)	Bioanalytical Applications of Surface-enhanced Raman Spectroscopy and Localized Surface Plasmon Resonance Imaging	BHAVYA SHARMA, Northwestern University, Richard P Van Duyne
2:10	(720-3)	Spectrochemistry at the Single Molecule Level: RNA Silencing, DNA Nanorobots and DNA Rafts	NILS G WALTER, University of Michigan
2:30	(720-4)	Examination of UV-Excited Fluorescence and Resonance Raman Spectroscopy for Determination of DNA/ Protein Ratios	JONATHAN SCAFFIDI, Miami University, Benoit Lauly
2:50		Recess	
3:05	(720-5)	Developing a Diverse Toolkit for Detecting and Treating Epithelial Ovarian Cancer	REBECCA WHELAN, Oberlin College
3:25	(720-6)	Plasmonic Nanostars: A New Generation of Nano-Platform for Molecular Medical Theranostics	TUAN VO-DINH, Duke University
3:45	(720-7)	Fluorescence as a Tool to Probe Biochemical Response in Ischemic and Reperfused Cell Systems	DIMITRI PAPPAS, Texas Tech University
4:05	(720-8)	Quantitative Bio-Detection Using SERS	AMANDA J HAES, University of Iowa

ORAL SESSIONS

Session 730

Biomedical Samples and Sensors

Monday Afternoon, Room S501a

1:30	(730-1)	Protein Expression Profiling of Signal Transduction Pathways in Cancerous Tissues Using Microring Resonator Arrays	JAMES H WADE, University of Illinois at Urbana-Champaign, Ryan C Bailey
1:50	(730-2)	Real-Time PTR-TOF Measurements of Breath Biomarkers Reveal Dependency on Breathing Patterns	PRITAM SUKUL, University Medicine of Rostock, Phillip Trefz, Jochen K Schubert, Wolfram Miekisch
2:10	(730-3)	Investigation of Solid Phase Micro Extraction as an Alternative to Dried Blood Spot	CRAIG R AURAND, Supelco/Sigma-Aldrich, Robert E Shirey, David S Bell, Leonard M Sidisky
2:30	(730-4)	Accurate pH Measurement with pH Sensors on the Basis of an Ionic Liquid Salt Bridge	MANABU SHIBATA, HORIBA, Ltd., Kazuhiro Miyamura, Makoto Kato, Yasukazu Iwamoto, Satoshi Nomura
2:50		Recess	
3:05	(730-5)	Up-Regulating Quorum Sensing Molecules for Early Detection of Bacterial Infections Electrochemically	HUNTER J SISMAET, Northeastern University, Thaddaeus A Webster, Edgar D Goluch
3:25	(730-6)	Large Scale Fabrication of Polymer Multilevel Nano-Microfluidic Lab-on-Chip (LoC) Systems for Electrochemical Sensing	MARCO MATTEUCCI, DTU Nanotech, Simon Larsen, Garau Alessandro, Rafael J Taboryski
3:45	(730-7)	Optical Detection of Hepatitis Virus Proteins Using Waveguide-Mode Sensors	ASHIBA HIROKI, AIST, Fujimaki Makoto, Awazu Koichi, Tanaka Mutsuo, Yamamoto Mami, Tanaka Torahiko, Makishima Makoto

ORAL SESSIONS

Session 740

Drug Discovery

Monday Afternoon, Room S501bc

1:30	(740-1)	Analysis of Phenethylamine Street Drugs for Psychoactive Compounds and Impurities	MAURA K MCGONIGAL, The Pennsylvania State University, Frank Dorman, Philip Smith
1:50	(740-2)	<i>In-Silico, In-Vitro</i> and <i>In-Vivo</i> Evaluation of the Physicochemical, ADME and Biopharmaceutical Properties of Potential Anticancer Compound Rottlerin: Application of IVIVE and PBPK Modeling in Prospective Prediction of Oral Pharmacokinetics in Humans	ATUL S RATHORE, CARPS, Bharati Vidyapeeth University, Pune, Sameer S Ketkar, Asjad I Visnagri, Abhijit A Pujari, Atulkumar D Rajage, Sathiyarayanan Lohidasan, Kakasaheb R Mahadik
2:10	(740-3)	Formulation and Characterization of Solid Dispersion Incorporated Topical Gel of Tolnaftate: An Antifungal Drug	MOHAMMAD AJAZUDDIN, Rungta College of Pharmacy Science and Research
2:30	(740-4)	On-Line Nanopore Optical Interferometry Mass Spectrometry for Screening and Quantifying Small Molecule-Protein and Protein-Protein Interactions	IAIN CAMPUZANO, Amgen, Inc., Schnier D Paul, Michelsen Klaus
2:50		Recess	
3:05	(740-5)	Accelerating Drug Discovery Using Capillary Electrophoresis as a Pre-Screening Tool for High-Throughput Analysis	KATHRYN RILEY, Wake Forest University, Christa L Colyer
3:25	(740-6)	Analysis of Marijuana Street Samples for Simultaneous Potency and Pesticide Fingerprinting Using a Deans Switch with GC-FID and GCxGC-ECD	LINDSAY MITCHELL, The Pennsylvania State University, Emily Ly, Amanda Leffler, Julie Kowalski, Jack Cochran, Frank Dorman
3:45	(740-7)	Software for Semi-Automated Prediction and LC/MS Based Identification of Drug Related Metabolites	GRAHAM A MCGIBBON, ACD/Labs, Inc., Pranas Japertas, Rytis Kubilius, Kiril Lanevskij, Andrius Sazonovas, Kolovanov A Eduard, Andrey Paramonov, Vitaly Lashin

ORAL SESSIONS

Session 750

Electrochemical Sensors for Bioanalysis

Monday Afternoon, Room S501d

1:30	(750-1)	Optimization of a Dual Electrochemical Microsensor for Real-Time, Simultaneous NO/CO Measurements in Living Rat Brain	YEJIN HA, Ewha Woman's University, Aream Jo, Minah Suh, Youngmi Lee
1:50	(750-2)	Portable, Low-Cost, and Ultra-Sensitive Glucometer for Quantification of Tear Glucose Concentrations	ANANT S BALJEPALLI, University of Michigan, Kyoung H Cha, Bruce E Cohan, Mark E Meyerhoff
2:10	(750-3)	Measuring the Role of Norepinephrine in Cerebral Hemodynamics with Fast Scan Cyclic Voltammetry	ELIZABETH S BUCHER, University of North Carolina at Chapel Hill, Laura Kim, Megan E Fox, Nathan T Rodeberg, Anna M Belle, R Mark Wightman
2:30	(750-4)	Reference Electrodes with Salt Bridges Contained in Nanoporous Glass: An Underappreciated Source of Error	MARAL PS MOUSAVI, University of Minnesota, Philippe Buhlmann
2:50		Recess	
3:05	(750-5)	Biocompatibility Strategies for Intravenous Continuous Glucose Monitoring Sensors	ALEXANDER K WOLF, University of Michigan, Gary C Jensen, Mark E Meyerhoff
3:25	(750-6)	Development of an Electrochemical Microsensor for Simultaneous Detection of Oxygen, Nitric Oxide, and Carbon Monoxide in Living Tissue	JISEON NAH, Ewha Woman's University, Sim Jeongeun, Suh Minah, Lee Youngmi
3:45	(750-7)	Quantitative Detection of Fucoidan Using Polyion-Sensitive Electrochemical Sensors	KELLY A MOWERY, Eastern University, Ji Min Kim, Mary-Frances Barr, Loc Nguyen
4:05	(750-8)	Flow-Injection Analysis-Electrochemiluminescence for Determination of Proline	SUHAM T AMEEN, Tkrit University

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS

Session 760

Environmental Analysis of Metals in Water

Monday Afternoon, Room S502a

- 1:30 (760-1) **Pb Electrodeposition in the Field and Analysis in the Lab by ICP-AES for Taking Part of the to the Sample and the Pb-Cu Rule Verification-Applications** VASSILI KARANASSIOS, University of Waterloo, J McEnaney, B Lai
- 1:50 (760-2) **Simultaneous Atomic Absorption and Atomic Fluorescence Spectrophotometry for Mercury Determination in Water Samples** SUMEDH P PHATAK, Milestone
- 2:10 (760-3) **Mercury Speciation in Water and Digested Biological Samples by Selective On-Line Pre-Concentration and Liquid Chromatography Cold Vapour-AFS** CHRISTOPHE-CORNELIUS BROMBACH, University of Aberdeen, Eva Krupp, Jorg Feldmann, Bin Chen, Warren T Corns, Peter B Stockwell
- 2:30 (760-4) **In Situ Control of Local pH Using a Boron Doped Diamond Ring-Disc Electrode: Optimizing Heavy Metal Detection in Neutral Solutions** TANIA L READ, University of Warwick, Eleni Bitziou, Maxim B Joseph, Mark E Newton, Julie V Macpherson
- 2:50 **Recess**
- 3:05 (760-5) **Development of Highly Stable Solid Phase Reagent Strips for the Detection of Magnesium Hardness** BALAJI TATINENI, Industrial Test Systems, Ashley Calhoun, Ivars Jaunakais
- 3:25 (760-6) **Manganese Speciation in Drinking Water** WILLIAM HARTLEY, Liverpool John Moores University, Philip Riby, Derek Clucas
- 3:45 (760-7) **Real-Time Electrochemical Detection of Arsenic** HM THUSHANI M SIRIWARDHANE, Wayne State University, Parastoo Hashemi
- 4:05 (760-8) **Covalent Modification of Carbon Fiber Microelectrodes (CFMs) for Selective Voltammetric Detection of Trace Metals** YUANYUAN YANG, Wayne State University, Ahmad A Ibrahim, Jennifer L Stockdill, Parastoo Hashemi

ORAL SESSIONS

Session 770

Nanotechnology: Spectroscopy, Microscopy, and Imaging

Monday Afternoon, Room S502b

- 1:30 (770-1) **Study of Charge-Dependent Efflux Function of Multidrug Membrane Transporters in Single Live Cells** LAUREN M BROWNING, Old Dominion University, Kerry J Lee, Prakash D Nallathamby, Pavan Cherukuri, Epifanio Perez, X Nancy Xu
- 1:50 (770-2) **Characterization of the Effects of Biomolecular Surface Structures on the Properties of Peptide-Capped Nanoparticles** MARC R KNECHT, University of Miami, Dennis B Pacardo, Ryan Coppage, Beverly D Briggs, Joseph M Slocik, Rajesh R Naik
- 2:10 (770-3) **Optimizing the Efficiency of Plasmonic Based Molecular Sensors by Controlling the Surface Ligand Chemistry** GAYATRIBAHEN K JOSHI, Indiana University - Purdue University Indianapolis, Karl Blodgett, Rajesh Sardar
- 2:30 (770-4) **Superhydrophobic Surfaces with High Stability and Varying Degree of Nanostructure Regularity** SIMON LARSEN, Technical University of Denmark, Emil Søgaard, Nis Andersen, Rafael J Taboryski
- 2:50 **Recess**
- 3:05 (770-5) **Exposure of Gold Nanoparticles to Wood Frogs** LUCAS B THOMPSON, Gettysburg College, Andrea J Sitton, Gerardo L F Carfagno, Peter P Fong
- 3:25 (770-6) **Self Assembly Behavior of Polystyrene Nanoparticles in High Ionic Strength Media at Various Interfaces: In Situ Study Based on Stimulated Emission Depletion Microscopy** BHANU NEUPANE, North Carolina State University, Gufeng Wang
- 3:45 (770-7) **Solvent-Induced Manipulation of Ultra-Small CdSe Nanocrystals Core Electronic Energy** RAJESH SARDAR, Indiana University - Purdue University Indianapolis, Katie N Lawrence
- 4:05 (770-8) **Ultrasensitive Assays for Study of Nanotoxicity and Nanomedicine** X NANCY XU, Old Dominion University, Lauren M Browning, Kerry J Lee, Prakash D Nallathamby

ORAL SESSIONS

Session 780

Neurochemical Applications of Electrochemistry

Monday Afternoon, Room S503a

- 1:30 (780-1) **Modified Voltammetric Waveform for Robust In Vivo Histamine Detection** SRIMAL A SAMARANAYAKE, Wayne State University, Kevin M Wood, Parastoo Hashemi
- 1:50 (780-2) **Thin Composite Films for Selective Voltammetric Neurotransmitter Measurements** RICHARD F VREELAND, University of Arizona, Christopher W Atcherley, Levi B Lazarus, Michael L Heien
- 2:10 (780-3) **Chemical Analysis Using Sub-Micron Carbon-Fiber Microelectrodes Etched with a Microwave-Generated Plasma** KATE L PARENT, University of Arizona, Christopher W Atcherley, Michael L Heien
- 2:30 (780-4) **Development of a Micro-Optrode for Electrochemical Detection** PETER RUGGLES, University of Kansas, Michael A Johnson, Sam Kaplan
- 2:50 **Recess**
- 3:05 (780-5) **Localized Flow Measurements Using Microfabricated Electrochemical Sensors** LINDSAY WALTON, University of North Carolina at Chapel Hill, Martin Edwards, Gregory McCarty, R Mark Wightman
- 3:25 (780-6) **Direct Measurement of Diffusion of Neurotransmitters in the Brain Using Fast-Scan Controlled-Adsorption Voltammetry** CHRISTOPHER W ATCHERLEY, University of Arizona, Kevin M Wood, Nicholas D Laude, Kate I Parent, Parastoo Hashemi, Michael L Heien
- 3:45 (780-7) **Comparison of Novel Metal and Novel Carbon Based Electrodes for Use in Online Microfluidic Neurochemical Detectors for Microdialysis** TONGHATHAI PHAIRATANA, Imperial College London, Martyn G Boutele
- 4:05 (780-8) **In Vivo Electrochemical Measurements of Blue Light Channelrhodopsin Stimulated Octopamine Release in Drosophila Melanogaster Larvae** SOODABEH MAJDI, Chalmers University of Technology, Carina Berglund, David Krantz, Andrew G Ewing

ORAL SESSIONS

Session 790

Separation Sciences: General Interest, Food Science and Fuels, Energy and Petrochemical

Monday Afternoon, Room S504bc

- 1:30 (790-1) **Deep Eutectic Solvents for Lignocellulosic Biomass Processing** GANESH DEGAM, South Dakota State University, Douglas Raynie
- 1:50 (790-2) **Thermodynamic Studies of Retention on a Lauryl Acrylate Porous Polymer Monolith** BRADY W IBA, Trinity University, Si Ying Li, Monette N Cardona, Charlisha R Daniels, Michelle M Bushey
- 2:10 (790-3) **Supercritical Carbon Dioxide Extraction of Essential Oil from Chrysothamnus Nauseosus (Rabbit Brush) and Rhus Aromatica (Skunk Brush)** JOHN KIRATU, South Dakota State University, Douglas Raynie
- 2:30 (790-4) **A New Universal Detector for Chromatography: Refractive Index-based Detection Using Microring Resonator Arrays for Gradient Separations** JAMES H WADE, University of Illinois at Urbana-Champaign, Ryan C Bailey
- 2:50 **Recess**
- 3:05 (790-5) **The Science Behind a New Generation of SFC Stationary Phases** JACOB N FAIRCHILD, Waters Corporation, Darryl W Brousmiche, Michael F Morris, Luke T Nye, Cheryl A Boissel, Jason F Hill
- 3:25 (790-6) **Investigating Triple Detection Combined with Ultra Performance Convergence Chromatography for Profiling of Natural Products** PAULA HONG, Waters Corporation, Patricia R McConville
- 3:45 (790-7) **Supercritical Carbon Dioxide Bleaching of Distiller's Dried Grain with Solubles** GEORGE GACHUMI, South Dakota State University, Douglas Raynie

POSTER SESSION

Session 800

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

ACS DAC Poster Session

Monday Afternoon

- (800-1 P) **Development of Paper-Based Colorimetric Assays for Metal Ions Using Gold Nanoparticles** CONNOR J NEUVILLE, Creighton University, Kalani A Parker, Jennifer L Lambrecht, Asia A Inagaki, Erin M Gross
- (800-2 P) **Investigation of Carbon Paste Microelectrodes for Electrochemiluminescent Detection of Biogenic Amines on a Microfluidic Chip** EMILY R LOWRY, Creighton University, Leah V Schaffer, Erin M Gross, John B Wydallis, Meghan M Mensack, Rachel M Feeny, Charles S Henry
- (800-3 P) **Development of a Carbon Paste Microfluidic Biosensor with Electrogenerated Chemiluminescence Detection** ERIN M GROSS, Creighton University, Laura R Anderson, Nicholas R Stukel, Sarah E Roszart, Sarah R Wirth, John B Wydallis, Meghan M Mensack, Charles S Henry
- (800-4 P) **Analysis of Human Scent for Potential Forensic Use** DOUGLAS BEUSSMAN, St. Olaf College, Bifan Chen
- (800-5 P) **Tetrahymena Thermophila Proteomics Using MALDI-TOF/TOF Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Paul Benz
- (800-6 P) **Characterization of Protein Dynamics and Conformational Heterogeneity with Linear and 2D Infrared Spectroscopy** JAMES SPEARMAN, Indiana University
- (800-7 P) **Synthesis and Characterization of Multifunctional Polymeric Nanoparticles for Targeted Sonodynamic Therapy** FEI YAN, North Carolina Central University, Michelle S Smith, Yam Shrestha

POSTER SESSION

Session 810

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Gas Chromatography

Monday Afternoon

- (810-1 P) **Gas Chromatography** OMOLARA AGBEKE BAMGBOYE, Lagos State University, Hassan O Adebisin, Modinat O Osundiya
- (810-2 P) **Method Development for Analysis of Pesticides Using Nano Stationary Phase (NSP) Columns Equipped with GC-ECD and GC-MS** KRISHNAT NAIKWADI, J & K Scientific Inc., John MacInnis, Kelsey Aucoin, Allen Britten
- (810-3 P) **Implementation of Analysis Method by Simdis Haig Temperature Technique, to Characterize the Extra-Heavy Crude Oil from Wells Located in the Gulf of Mexico** PATRICIA ESTRADA ORTIZ, Instituto Mexicano del Petroleo
- (810-4 P) **Analysis for Organochlorine Pesticides and Polycyclic Aromatic Hydrocarbons Residues in Water Samples of Lagos Lagoon, Nigeria** ADEYEMI D KEHINDE, University of Lagos
- (810-5 P) **Carrier Gas Selection for Capillary GC: There is More Than One Right Answer** LEE N POLITE, Axion Analytical Labs, Inc., Jackson H O'Donnell, Nikolas L Polite, Dennis L Polite, Mary Beth Smith
- (810-6 P) **Development of a New Gas Chromatographic Column Set for the Analysis of Blood Alcohol Concentration** AMANDA RIGDON, Restek Corporation, Kristi Sellers, Jarl Snider, Rick Morehead, Gary Stidsen
- (810-7 P) **Application of Ionic Liquid GC Columns for the Analysis of Aromatic Mixtures** RICHARD E PAULS, Axion Analytical Labs, Inc., Mary Beth Smith, Robert W McCoy, Lee N Polite
- (810-8 P) **Near Real-Time Process Control Using Micro Gas Chromatography - Fast, On-Line Ethane, Propane and Butane Analysis** REMKO VAN LOON, Agilent Technologies, Coen Duvekot
- (810-9 P) **New Developments in Fast Portable Micro Gas Chromatography - Application Benefits by Using Column Temperature Programming** REMKO VAN LOON, Agilent Technologies, Coen Duvekot
- (810-10 P) **Characterizing the Performance of Surface Modifications that Enhance Sensitivity, Reliability, Reproducibility and Accuracy of Analytical Instruments** GARY BARONE, SilcoTek Corporation, David Smith
- (810-11 P) **CH4 Balance Argon Study Using a Micro GC** ASHLEY ELLIS, Matheson Gas

POSTER SESSION

Session 820

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High-Throughput Chemical Analysis

Monday Afternoon

- (820-1 P) **Amperometric Folic Acid Quantification Using a Supramolecular Tetraruthenated Nickel Porphyrin μ -oxo Matrix Modified Electrode Associated to Batch Injection Analysis** LUIS MARCOS C FERREIRA, Universidade de Sao Paulo, Mauro Sérgio F Santos, Lucio Angnes
- (820-2 P) **Accurate Determination of Moisture Content of Soft Contact Lenses by Near-Infrared (NIR) Spectroscopy** KEITH FREEL, Metrohm USA, Hari Narayanan
- (820-3 P) **Superficially Porous Particles: Considerations of Particle Size** STEPHANIE A SCHUSTER, Advanced Materials Technology, Inc., Barry Edward Boyes, Joseph J DeStefano, Robert S Bichlmeir, William L Johnson
- (820-4 P) **Method Development for the Analysis of Impurities in Silicon Tetrachloride Using Gas Chromatography** SRIKANTH KAVURI, Matheson
- (820-5 P) **Solid Matrix Assisted LDI (SMALDI) - MS and UTLIC Using Tunable Nanoporous Silica** RESHMA SINGH, University of Alberta, Zhen Wang, Abebaw B Jemere, Michael Brett, Jed Harrison
- (820-6 P) **New Applications and Fine Tuning Tips for a GC Inert Flow Path** KENNETH G LYNAM, Agilent Technologies, Lindy Miller
- (820-7 P) **A Broadly Tunable Surface Plasmon-Coupled Wavelength Filter for Wide-Field Visible and Near Infrared Hyperspectral Imaging** AJAYKUMAR ZALAVADIA, Cleveland State University, John F Turner

POSTER SESSION

Session 830

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Magnetic Resonance

Monday Afternoon

- (830-1 P) **Droplet Size Distribution, NMR VS Microscopy** GABRIELA SEKOSAN, Bunge NA, Tiffanie West, Kathryn Reihel
- (830-2 P) **High-Performance Quantitative 1H-NMR is an Important Tool for the Certification of Organic Certified Reference Materials (CRM), Providing Traceability and Low Measurement Uncertainty** ALEX RUECK, Sigma-Aldrich, Christine Hellriegel, Robert Sauermoser, Jueg Wuethrich, Michael Weber
- (830-3 P) **Probing Micelle Structure and Aggregation in Bile Salts** NICHOLAS J DOYLE, Bucknell University, Thomas H Mann, David Rovnyak, Timothy G Strein

POSTER SESSION

Session 840

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Pharmaceutical: LC and Data Analysis

Monday Afternoon

- (840-1 P) **High Purification Performance Using Column Length Scale-Up to Increase Automated Preparative HPLC Purification Capacity, Resolution, and Throughput** TONI HOFFHINE, Gilson, Inc., Luke Roenneburg, Marc Jacob, Michael D McGinley
- (840-2 P) **Validated Stability-Indicating HPLC-DAD Method for the Simultaneous Determination of Diclofenac Sodium and Lidocaine Hydrochloride in Presence of Four of Their Related Substances and Potential Impurities** TAREK S BELAL, University of Alexandria, Mona Bedair, Azza Gazy, Karin M Guirguis
- (840-3 P) **Evolution of UHPLC Column and Instrument Designs** RICHARD A HENRY, Supelco/Sigma-Aldrich, David S Bell, Hugh M Cramer, Gaurang Parmar
- (840-4 P) **Determination of Lithium in Pharmaceutical Products by HPLC Analysis with CAD Detection** LULU DAI, Genentech, Kelly Zhang, Larry Wigman, Nik Chetwyn

PITTCON 2014 TECHNICAL PROGRAM

- (840-5 P) **Pharmaceutical Applications of Sub-2- μ m, Solid-Core Particle Columns** KENNETH BERTHELETTE, Waters Corporation, Mia Summers, Kenneth J Fountain
- (840-6 P) **Greater Loading Capacity and Resolution for Improved Process-Scale Peptide Purification** RENO T NGUYEN, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, Melissa Wilcox
- (840-7 P) **High-Purity Purification Method for Eicosapentaenoic Acid Ethyl Ester (EPA-EE) by a Newly Developed Reversed-Phase Packing Materials** TAKASHI SATO, YMC Co., Ltd., Ernest J Sobkow, Noriko Shoji, Takatomo Takai, Naohiro Kuriyama
- (840-8 P) **Determination of Enantiomerization Energy Barriers of Penta-Helicene Analogs by Dynamic Liquid Chromatography** MILAN K DISSANAYAKE, University of Texas at Arlington, Zachary S Breitbach, Peter Kroll, Sachin Handa, LeGrande Slaughter, Daniel W Armstrong
- (840-9 P) **Packaging Selection for Stability Studies and Bulk Storage of Hygroscopic Compounds** YANING MA, Pfizer, Brent Maranzano, Yong Zhou, Elise Clement, Laura Douglass, Robert Timpano, Julie Lippke, George Reid
- (840-10 P) **Peak Deconvolution Analysis with Photo Diode Array Detector** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Yasuhiro Mito, Minori Nakashima, Yusuke Osaka, Junichi Masuda, Okiyuki Kunihiro, Masami Tomita
- (840-11 P) **Efficient Methods Development Combining Simultaneous Mass and UV Detection with Flexible Software for Mobile Phase Formulation** PAULA HONG, Waters Corporation, Patricia R McConville
- (840-12 P) **Optimized Gradient and Isocratic Semi-Preparative HPLC Purification Profiles of Large and Small Molecules Using Semi-Automated Continuous Serial Large Volume Fraction Collection From High Capacity Column Loading** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Tony Pleva, Greg Robinson, Michael D McGinley
- (840-13 P) **HPLC Method Development and Validation for USP Norfloxacin Monograph Modernization** ASHRAF Z KHAN, US Pharmacopeia, Shane Tan, Natalia Kouznetsova

POSTER SESSION

Session 850

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Pharmaceutical: LC, Separation Sciences, Sensors and Data Analysis

Monday Afternoon

- (850-1 P) **Scale-Up Determination of Column Diameter and Load Capacity for Automated HPLC Purification Without Sacrificing Performance or Productivity** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Michael D McGinley, Marc Jacob
- (850-2 P) **Analysis of Phospholipids in Natural Samples by Normal Phase HPLC and Corona Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian N Acworth, David Thomas, Qi Zhang
- (850-3 P) **Analysis of Polyphenols in Bark Extract of Stryphnodendron Adstringens (Mart.) Coville (Fabaceae) by 1D and 2D Liquid Chromatography** CRISTINA D VIANNA-SOARES, University of Minnesota, Andre M Nascimento, Rachel O Castilho, Peter W Carr
- (850-4 P) **Efficient and Cost-Effective Method for Analysis and Purification of Enantiomers Using a New Chiral Stationary Phases Consisting of Polysaccharide Derivatives** TAKASHI SATO, YMC Co., Ltd., Ernest J Sobkow, Noriko Shoji, Takatomo Takai, Naohiro Kuriyama
- (850-5 P) **A High Capacity 150Å Reversed-Phase Silica Gel for the Purification of Oligonucleotides** RENO T NGUYEN, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, Melissa Wilcox
- (850-6 P) **Enantiomeric Separation of Chiral Phosphates and Sulfonates Using Barium Complexed Cyclofructan Stationary Phases** ZACHARY S BREITBACH, The University of Texas at Arlington, Jonathan Smuts, Daniel W Armstrong
- (850-7 P) **Exploring Unique Chemically Modified Carbohydrate Based Chiral Stationary Phases to Improve Chiral Separations** MATTHEW PRZYBYCIEL, ES Industries, David Kohler
- (850-8 P) **Taste Masking Optimization of an Active Principle Using Taste Assessment by Electronic Tongue Instrument** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marion Bonnefille, Herve Lechat, Fatma Ayouni, Valerie Vabre
- (850-9 P) **Extending the Linear Dynamic Range of Photo Diode Array Detector** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Yasuhiro Mito, Minori Nakashima, Yusuke Osaka, Junichi Masuda, Okiyuki Kunihiro, Masami Tomita

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Undergraduate Students Only Poster Session

Monday Afternoon

- (860-1 P) **Probing Adsorption of Molecular Dyes to ZnO Nanoparticles Using Second Harmonic Generation Spectroscopy** AMANI AL-NOSSIFF, Ball State University, Kevin Shane, Chris Nelson, Mahamud Subir
- (860-2 P) **Determination of Removal Efficiency of Organic Pollutants by Magnetic Particles Using Surface Selective Laser Spectroscopy** CORY A DIEMLER, Ball State University, Amani Al-Nossiff, Mahamud Subir
- (860-3 P) **Correlating Enzymatic Turnover with Post-translational Modification of Cysteine Dioxygenase** ANDREW G ROTH, Calvin College, David E Benson, Taylor R Hegg
- (860-4 P) **Separation and Chemometric Analysis of FAMES in Biodiesel Blends** MARIEL E FLOOD, College of the Holy Cross, Mary P Connolly, Amber M Hupp
- (860-5 P) **Classification of Feedstock Source in Biodiesel-Diesel Blends** MARY P CONNOLLY, College of the Holy Cross, Mariel E Flood, Amber M Hupp
- (860-6 P) **Toward the Development of a Portable Device for the Analytical Characterization of Whiskey Samples** HILLARY ANDALUZ AGUILAR, Elmira College, Jared S Baker
- (860-7 P) **Employing Capillary Electrophoresis as a Characterization Tool for the Post-Synthetic Treatment of Acetic Acid-Derived Carbon Nanoparticles** MORGAN J KRAMER, Elmira College, Jared S Baker
- (860-8 P) **Systematic Investigation of Benthic Macroinvertebrates as Biomonitoring for Petroleum-Hydrocarbon Pollution** TYLER MYERS, Elmira College, Jared S Baker
- (860-9 P) **Characterizing and Quantifying Binding Interactions of Photoactive Cr(III) Diimine Systems with DNA** WILLIAM D NETTERVILLE, Furman University, Margaret A Caulkins, Morgan M Sprinkle, Noel A Kane-Maguire, Wheeler K Sandra, John F Wheeler
- (860-10 P) **Investigation of the DNA Interaction of Novel Photoactive Diimine Complexes of Cr(III) Using LC-MS** FREDERICK D DAVID, Furman University, Andrew G Kantor, Noel A Kane-Maguire, Sandra K Wheeler, John F Wheeler
- (860-11 P) **Analysis of Cr(III)-Based DNA Photocleavage Agents Using CGE, PCR and Gel Electrophoresis** YASMÍN R ALVAREZ-GARCÍA, Furman University, Sarah M Duff, Xing Wei, Christopher D Stachurski, Kane-Maguire A Noel, Sandra K Wheeler, John F Wheeler
- (860-12 P) **Characterization and Uptake Studies of Polycationic Biocides in Multipurpose Contact Lens Solution Using Ultra Performance Liquid Chromatography and Mass Spectrometry** XING WEI, Furman University, Vikram N Samant, Frederick D David, Jonathan M Wheeler, Brandon L Thompson, Kenneth S Phillips, Sandy K Wheeler, John F Wheeler
- (860-13 P) **Optical Detection of pH with Gold Nanorod-Infused Hydrogels** LUCAS B THOMPSON, Gettysburg College, Andrea J Sitton
- (860-14 P) **Quantifying the Partitioning of Hydrophobic Solutes into the Surfactant Bilayer on Gold Nanoparticles** LUCAS B THOMPSON, Gettysburg College, Ida M DiMucci, Bryan V Stokes-Cawley
- (860-15 P) **Electrodeposition of Nanoparticles at Nano-Liquid/Liquid Interfaces** GARRETT HOEPEKER, University of Illinois at Urbana-Champaign, Mei Shen, Joaquin Rodriguez-Lopez
- (860-16 P) **Study of Organic Redox Couples for Flow Batteries Under High Mass-Transfer Conditions Using Microelectrodes** TIMOTHY T LICHTENSTEIN, University of Illinois at Urbana-Champaign, Charles Diesendruck, Nagarjuna Gavvalapalli, Jeffrey S Moore, Joaquin Rodriguez-Lopez
- (860-17 P) **Wetting C18-Modified Nanoporous Silica Particles with β -Cyclodextrin** BINBIN LIN, University of Iowa, Angie S Morris, M Lei Geng
- (860-18 P) **Fate of Haloacetic Acids in Bulk Sodium Hypochlorite Solutions** JOHN W DECKER, University of Memphis, Christina M Henson, Gary L Emmert, Paul S Simone
- (860-19 P) **Rapid, On-Site Analysis of Trihalomethanes and Haloacetic Acids in Drinking Water Using Standard Addition and a Portable Kit Automated by Flow Injection Analysis** ROBYN A SNOW, University of Memphis, Aaron W Brown, Thomas E Watts, Paul S Simone, Gary L Emmert
- (860-20 P) **Monitoring Chemical Methylation of Peptides with LC-MS/MS and Microchip Electrophoresis** KRISTINA HERRERA, Murray State University, R Daniel Johnson
- (860-21 P) **Bioinformatic Analysis of SELEX-Derived High-Throughput Sequencing Data** JAMIE A SHALLCROSS, Oberlin College, Rebecca Whelan

TUESDAY, MARCH 4, 2014 MORNING

- (860-22 P) **Capillary Electrophoresis-Based Selection of Nucleic Acid Aptamers for Ovarian Cancer Biomarker HE4** RACHEL EATON, Oberlin College, Brian Uhm, Christina Perez-Tineo, Rebecca Whelan
- (860-23 P) **First Principles Study of CO₂ Reduction on Cu/M Bimetallic Surfaces** ALYSSA M SHERRY, The Ohio State University, Anne Co, Aravind Asthagiri
- (860-24 P) **Ambient Ionization Mass Spectrometry for Simultaneous Detection of Organic and Inorganic Components of Gunshot Residue (GSR) and Explosives** JENNIFER SPEER, The University of Tampa, Brian Sanchez, Hilary Brown, Kenyon Evans-Nguyen
- (860-25 P) **A Mass Spectrometer for Elemental Analysis Based on Fieldable Technologies** HILARY BROWN, The University of Tampa, Jennifer Speer, Kenyon Evans-Nguyen, John F Gerling
- (860-26 P) **Effect of pH on Physical and Chemical Properties of Undecylenic and Undecanoic Amino Acid Based Surfactants** FERESHTEH BILLIOT, Texas A&M University, Eugene Billiot, Kevin Morris, Jonathan Turner, Mareila Vasquez, Mark Olson
- (860-27 P) **Micro Raman Ink Layer Mapping Applied to Questioned Document Examination** GARY H NAISBITT, Utah Valley University, Andy V Pham, Amelia B Wilde, Dara Kosanke
- (860-28 P) **Synthesis, Characterization and Application of Gold Nanoparticles as Colorimetric Probe for Melamine Detection in Milk Products and Pet Foods** SEID ADEM, Washburn University, Teresa Chui, Keith Wagers
- (860-29 P) **One-Step Solvent-Free Synthesis and Grafting of Diazonium Ions onto Electrode Surfaces** GARRHETT G VIA, Wittenberg University, Benjamin P Hagen, Kristin K Cline
- (860-30 P) **Determining the Weight Percent of Dye in Peeps** MIRANDA S SCARBOROUGH, Maryville University, Thomas Spudich
- (860-31 P) **Construction and Characterization of a Micro-Fluorescence Spectrometer** MIRANDA S SCARBOROUGH, Maryville University, Ethan J Vaughan, Thomas Spudich
- (860-32 P) **The Development and Characterization of a Tactical Light Emission System** MYLES JERRETT, Maryville University, Jeremy D Weter, Ethan J Vaughan, Thomas Spudich
- (860-33 P) **The Development and Characterization of a Micro-Vis Spectrophotometer with Wireless Communication Connection** JEREMY D WETER, Maryville University, Matthew T Baker, Ethan J Vaughan, Thomas Spudich
- (860-34 P) **Preconcentration and Detection of Breast Cancer Metastasis Biomarkers Using Molecular Beacons** JOSEPH WIDMER, Kalamazoo College, Erik Guetschow, Will Black, Amy Ong, Jennifer R Furchak
- (860-35 P) **Multiplex Detection of Metastatic Breast Tissue Biomarkers by Fluorescence Spectroscopy** JAKOB HILLENBERG, Kalamazoo College, Erik Guetschow, Will Black, Jennifer R Furchak
- (860-36 P) **Optimization of Dye Sensitized Solar Cells** EDGAR CRESPO, Saint Xavier University
- (860-37 P) **Characterizing the Surface Topography of Carboxylic Acid/Alcohol Self-Assembled Monolayers on Gold Electrodes** FRANK N YOUNBI, Saint Francis University, Rose A Clark
- (860-38 P) **Synthesis and FTIR Analysis of Coordination Complexes of 2,3-Butadione with Cu(II) and Co(II)** CHELSIE BINDA, Seton Hill University, Holli Gonder, Mia Gunawa

AWARDS

Session 870

Pittsburgh Analytical Chemistry Award

arranged by Annette S Wilson, University of Pittsburgh

Tuesday Morning, Room S401bc

Annette S Wilson, University of Pittsburgh, Presiding

- 8:30 **Introductory Remarks - Annette S Wilson**
- 8:35 **Presentation of the 2014 Pittsburgh Analytical Chemistry Award to Richard M Crooks, University of Texas at Austin, by Heather L Juzwa, Chair, Society for Analytical Chemists of Pittsburgh**
- 8:40 (870-1) **Fundamentals and Applications of Bipolar Electrodes** RICHARD M CROOKS, University of Texas at Austin, Kyle N Knust, Robbyn K Anand, Ulrich Tallarek, Dzmitry Hlushkou
- 9:15 (870-2) **Detection of Short-Lived Electrode Reaction Intermediates with the Scanning Electrochemical Microscope – Sn(+3) and Others** ALLEN J BARD, University of Texas at Austin, Jinho Chang, Fahe Cao
- 9:50 (870-3) **Autonomous Bio/chemical Analytical Microsystems for Space Science: Development of the O/OREOS Nanosatellite and Results from Orbit** ANTONIO J RICCO, NASA Ames Research Center, Pascale Ehrenfreund, Dave Squires, Wayne Nicholson, Richard Quinn, Andrew Mattioda, Amanda Cook, Nathan Bramall, Chris Kitts
- 10:25 **Recess**
- 10:40 (870-4) **New Ways to Measure Density** GEORGE M WHITESIDES, Harvard University
- 11:15 (870-5) **A Chemist's Approach to Nanofabrication: Towards a "Desktop Fab"** CHAD A MIRKIN, Northwestern University

SYMPOSIUM

Session 890

ACS DAC: Advances In Our Understanding of Complex Aerosols at the Individual Particle Level

arranged by Kimberly A Prather, University of California, San Diego and Vicki Grassian, University of Iowa

Tuesday Morning, Room S401a

Kimberly A Prather, University of California, San Diego, Presiding

Vicki Grassian, University of Iowa, Presiding

- 8:30 **Introductory Remarks - Kimberly A Prather and Vicki Grassian**
- 8:35 (890-1) **Challenges in Measuring the Chemical Complexity of Individual Atmospheric Particles** KIMBERLY A PRATHER, University of California, San Diego
- 9:10 (890-2) **Heterogeneous Reactivity of Mineral Dust and Sea Spray Aerosol Particles Using Micro-Raman Spectroscopy and Other Single Particle Methods** VICKI GRASSIAN, University of Iowa
- 9:45 (890-3) **Probing Phase Transitions within Individual Particles** ALLAN BERTRAM, University of British Columbia, Yuan You, Renbaum-Wolff Lindsay, Mackenzie Smith, Scot Martin
- 10:20 **Recess**
- 10:35 (890-4) **Chemical Microscopy of Individual Submicrometer Particles** ALEXEI V TIVANSKI, University of Iowa
- 11:10 (890-5) **Single Particle Variability in Heterogeneous Reaction Kinetics as Determined by X-Ray Microscopy and Mass Spectrometry** TIMOTHY BERTRAM, University of California, San Diego, Olivia Ryder, Kimberly A Prather, Andrew Ault

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM

Session 900

Advanced Surface and Materials Analysis by XPS, Spectroscopic Ellipsometry, Nano- and ToF-SIMS, RBS, and Helium Ion Microscopy - The Power of These Techniques Individually and Combined

arranged by Matthew R Linford, Brigham Young University

Tuesday Morning, Room S402b

Matthew R Linford, Brigham Young University, Presiding

8:30		Introductory Remarks - Matthew R Linford
8:35	(900-1)	Application of Combined X-ray Photoelectron Spectroscopy (XPS) and Processing Capabilities in Surface Characterization of Novel Catalysis, Nanostructured, and Battery Electrode Surface Films MARK H ENGELHARD, Pacific Northwest National Laboratory, Donald R Baer, Wu Xu, Scott A Lea, Suntharampillia Thevuthasan
9:10	(900-2)	Rutherford Backscattering and Helium Ion Microscopy as Powerful Probes for Both In-Depth and High Resolution Surface Characterization of Materials and Thin Films VAITHIYALINGAM SHUTTHANANDAN, Pacific Northwest National Laboratory
9:45	(900-3)	Material Characterization by Spectroscopic Ellipsometry: Exploiting the Optical Response of Matter NIKOLAS PODRAZA, University of Toledo
10:20		Recess
10:35	(900-4)	Secondary Ion Mass Spectrometry: From Depth Profiling to Nanoscale Chemical Imaging ZIHUA ZHU, Pacific Northwest National Laboratory
11:10	(900-5)	The Blind Men and the Elephant as Metaphor for the Multi-Technique Analysis of Surfaces and Materials MATTHEW R LINFORD, Brigham Young University

SYMPOSIUM

Session 910

Analysis of Microbiome Contributions to the Human Biomarker Metabolome

arranged by Joachim Dieter Pleil, US EPA and Wolfram Miekisch, Medical University Rostock

Tuesday Morning, Room S404a

Joachim Dieter Pleil, US EPA, Presiding

8:30		Introductory Remarks - Joachim Dieter Pleil and Wolfram Miekisch
8:35	(910-1)	The Airway Microbiome in Cigarette Smoking Induced Chronic Obstructive Pulmonary Disease (COPD) MATTHEW C WOLFGANG, University of North Carolina at Chapel Hill
9:10	(910-2)	Real-Time Gas Analysis as Powerful Tool to Study the Volatile Metabolome JENS HERBIG, IONICON Analytik, Rene Gutmann, Klaus Winkler, Markus Luchner, Gerald Striedner
9:45	(910-3)	A Critical Review on the Comparison of Volatiles in Breath, Urine, Blood, Milk, Saliva, Skin and a Comparison of Volatiles in Stool from Healthy and Diseased Human Volunteers NORMAN M RATCLIFFE, University of the West of England
10:20		Recess
10:35	(910-4)	Rapid (<30 sec.) Detection of Bacterial Pathogens Using Breath JANE E HILL, Dartmouth College, Heather D Bean, Jaime Jimenez, Jiangjiang Zhu
11:10	(910-5)	Contributions to the Human Exposome from Inhalation and Ingestion JONATHAN BEAUCHAMP, Fraunhofer IVV, Andrea Buettner, Maria Wagenstaller, Frauke Kirsch

SYMPOSIUM

Session 920

Applications of Live Cell RNA Detection

arranged by Chad A Mirkin, Northwestern University and David Giljohann, AuraSense LLC

Tuesday Morning, Room S405b

David Giljohann, AuraSense LLC, Presiding

8:30		Introductory Remarks - Chad A Mirkin and David Giljohann
8:35	(920-1)	Live Cell RNA Expression Detection in Single Cells DON WELDON, EMD Millipore, Grace Johnston, Yuko Williams, Alex Ko
9:10	(920-2)	Detection of Circulating Tumor Cells Using NanoFlare Sensors DAVID GILJOHANN, AuraSense LLC, Tiffany Halo
9:45	(920-3)	Studying Tumor Cell Heterogeneity and Cancer Stem Cell Subpopulations MARY J HENDRIX, Lurie Children's Research Center, Gina T Kirsammer, Elisabeth A Seftor, Katharine M Hardy, Richard E Seftor
10:20		Recess
10:35	(920-4)	Cancer Stem Cell Isolation Using Nanoparticle Based mRNA Detection STEVE MCCLELLAN, USA Mitchell Cancer Institute, Jaroslav Slamecka, Hollis De Laney, Alex Ketchum, Lee Thompson, Rodney Rocconi, Michael Finan, Laurie Owen
11:10	(920-5)	Advanced Molecular Probes for Intracellular mRNA Monitoring WEIHONG TAN, University of Florida

SYMPOSIUM

Session 930

Design and Application of Smart Materials for Chemical Sensing and Analysis

arranged by Joel M Harris, University of Utah

Tuesday Morning, Room S404bc

Joel M Harris, University of Utah, Presiding

8:30		Introductory Remarks - Joel M Harris
8:35	(930-1)	Chemical Sensing Platforms Based on Tailored Nanoporous Xerogels FRANK V BRIGHT, University at Buffalo - SUNY
9:10	(930-2)	Responsive 2D Crystalline Colloidal Array Materials SANFORD A ASHER, University of Pittsburgh, Jian-Tao Zhang, Luling Wang
9:45	(930-3)	Fluorescent and Photoacoustic Based Nanosensors for In Vitro and In Vivo Chemical Analysis RAOUL KOPELMAN, University of Michigan
10:20		Recess
10:35	(930-4)	Electrospun Fiber-Modified Nitric Oxide-Releasing Glucose Biosensors: Improving Tissue Integration and Analytical Performance MARK SCHOENFISCH, University of North Carolina at Chapel Hill
11:10	(930-5)	Particles Designed for 10⁵-fold Preconcentration and Confocal Raman Microscopy Detection in Femtoliter Volumes JOEL M HARRIS, University of Utah, Jay P Kitt, Christopher Hardcastle, Jonathan Schaefer

SYMPOSIUM

Session 940

Imaging Mass Spectrometry of Biological Tissues and Cell Cultures

arranged by Amanda B Hummon, University of Notre Dame

Tuesday Morning, Room S404d

Amanda B Hummon, University of Notre Dame, Presiding

8:30		Introductory Remarks - Amanda B Hummon
8:35	(940-1)	Desorption Electrospray Ionization Mass Spectrometry Imaging of Biological Tissues and Cell Cultures ROBERT G COOKS, Purdue University, Christina Ferreira, Alan Jarmusch, Valentina Pirro
9:10	(940-2)	MALDI Mass Spectral Imaging and Profiling of Signaling Molecules in Biological Tissues LINGJUN LI, University of Wisconsin-Madison, Chuanzi Ouyang, Bingming Chen, Hui Ye, Erin Gemperline, Zichuan Zhang, Shan Jiang
9:45	(940-3)	High-Resolution Imaging of the Cholesterol and Sphingolipid Distribution in the Plasma Membrane with Secondary Ion Mass Spectrometry MARY L KRAFT, University of Illinois at Urbana-Champaign
10:20		Recess
10:35	(940-4)	Silver Assisted LDI for High Spatial Resolution Imaging MS of Olefins from Thin Tissue Sections: Application to Atherosclerosis PIERRE CHAURAND, University of Montreal
11:10	(940-5)	Imaging Mass Spectrometry of 3D Cell Cultures AMANDA B HUMMON, University of Notre Dame, Haohang Li, Eric Weaver, Xin Liu, Dorothy Ahlf

SYMPOSIUM Session 950

Integrated Microfluidics

arranged by R Scott Martin, Saint Louis University

Tuesday Morning, Room S405a

R Scott Martin, Saint Louis University, Presiding

8:30		Introductory Remarks - R Scott Martin
8:35	(950-1)	Integrated Microfluidic Devices for Studying Adhesion and Aging of Individual Bacteria STEPHEN C JACOBSON, Indiana University, Seth M Madren, Joshua D Baker, David T Kysela, Yves V Brun
9:10	(950-2)	Micro-Chromatin Immunocapture (μChIC): A Platform for Automated Detection of Protein-Nucleic Acid Interactions in Small Cell Samples RYAN C BAILEY, University of Illinois at Urbana-Champaign, Joshua D Tice, Mallika Modak, Jeong Heon Lee, Tamas Ordog
9:45	(950-3)	3D-Printed Microfluidic Devices: Initial Results, Thoughts, and Potential DANA SPENCE, Michigan State University, Sarah Y Lockwood, Jayda Erkal, Chengpeng Chen, Bethany Gross
10:20		Recess
10:35	(950-4)	Microfluidic Paper-based Analytical Devices for Personal Exposure Assessment CHARLES S HENRY, Colorado State University
11:10	(950-5)	Polystyrene-Based Microfluidic Devices with Integrated Electrodes for Monitoring Cellular Systems R SCOTT MARTIN, Saint Louis University

SYMPOSIUM Session 960

JAIMA: The State-of-the-Art Technologies that Support Safety and Security in Future (I)

arranged by Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Morning, Room S505b

Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

Takeshi Kawamoto, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

8:30		Introductory Remarks - Shigehiko Hattori
8:35	(960-1)	Terahertz Technology for Safety and Security in Daily Life MASANORI HANGYO, Osaka University
9:10	(960-2)	MeV Gamma Imaging by Fully Reconstructing Compton Scattering TORU TANIMORI, Kyoto University
9:45	(960-3)	Title Not Provided at Time of Printing
10:20		Recess
10:35	(960-4)	Title Not Provided at Time of Printing
11:10	(960-5)	Title Not Provided at Time of Printing

SYMPOSIUM Session 970

Liquid Chromatography in Microfluidics: A Workhorse Tool is Going Small Scale

arranged by Adam T Woolley, Brigham Young University

Tuesday Morning, Room S503a

Adam T Woolley, Brigham Young University, Presiding

8:30		Introductory Remarks - Adam T Woolley
8:35	(970-1)	Solid-Phase Extraction of Proteins and Nucleic Acids: Programmable Microfluidics Using Molded Supports STEVEN A SOPER, University of North Carolina
9:10	(970-2)	Development of and Applications for a Ceramic Microfluidic UHPLC System JAMES MURPHY, Waters Corporation, Steven Cohen
9:45	(970-3)	Integrated Solid-Phase Extraction, Fluorescence Labeling, and Electrophoretic Separation in Microfluidic Systems ADAM T WOOLLEY, Brigham Young University, Pamela N Nge, Jayson Pagaduan, Rui Yang, Mukul Sonker
10:20		Recess
10:35	(970-4)	Electrochromatography on Monolith in Thermoplastic Microchip: A Robust and Easy-To-Use Technology KARINE FAURE, Université Lyon 1, Gérard Crétier, Yoann Ladner, Josiane Saade
11:10	(970-5)	Separation and Analysis of Proteins and Metabolites in Microchip Devices JED HARRISON, University of Alberta

ORGANIZED CONTRIBUTED SESSIONS Session 980

SEAC: The First Student Session in Electroanalysis

arranged by Johna Leddy, University of Iowa and Stephen Maldonado, University of Michigan

Tuesday Morning, Room S503b

Johna Leddy, University of Iowa, Presiding

8:30	(980-1)	Electron Transfer/Ion Transfer Mode of Scanning Electrochemical Microscopy (SECM): A New Tool for Imaging and Kinetic Studies YIXIAN WANG, Biodesign Institute at Arizona State University
8:50	(980-2)	Factors Affecting Activity and Durability of Low-Index Pt-Based Materials During Formic Acid Oxidation MATTHEW FAYETTE, Cornell University, Nikolay Dimitrov, Nutariya Jeerapat, Natasa Vasiljevic
9:10	(980-3)	A Kinetic Evaluation of NADH Oxidation at Nitrogen-Doped Carbon Nanotubes and Detection of Dehydrogenase Turnover JACOB M GORAN, University of Texas at Austin, Carlos A Favela, Keith Stevenson
9:30	(980-4)	Application of Ion-Selective Electrodes Based on Fluorous Matrixes for Sensing of Environmental Contaminants LI CHEN, United Science, Chunze Lai, Philippe Buhlmann, Jon Thompson
9:50		Recess
10:05	(980-5)	Cyclic Voltammetry of Lanthanides at Boron-Doped Diamond Electrodes KRYSTI L KNOCHE, University of Iowa, Johna Leddy
10:25	(980-6)	In Situ Spectroelectrochemical Investigation of the Reactive Aqueous Electrodeposition of Crystalline III-V Semiconductor Thin Films ELI FAHRENKRUG, University of Michigan, Stephen Maldonado
10:45	(980-7)	Photoelectrochemistry Tools for Characterization of Emerging Solar Materials: GaAs Thin-Films Deposited by Close-Spaced Vapor Transport ANDREW J RITENOUR, University of Oregon, Shannon W Boettcher, Jason W Boucher, Ann L Greenaway
11:05	(980-8)	Electrocatalyst Screening with Bipolar Electrochemistry STEPHEN E FOSDICK, University of Texas at Austin, Richard M Crooks

ORAL SESSIONS Session 990

Analysis of Bioagents and Explosives

Tuesday Morning, Room S501a

8:30	(990-1)	Trace Chemical Profiling of Laboratory Grown and Naturally Cultivated Pathogens ELIZABETH A LAPATOVICH, Virginia Commonwealth University, Cristina E Stanciu
8:50	(990-2)	Chemical Profiling of Forensically Relevant Bacterial Threat Agents with Direct Analysis in Real-Time Mass Spectrometry (DART-MS) MIKAELA ROMANELLI, Virginia Commonwealth University, Kristin Asal, Joseph Turner, Christopher Ehrhardt
9:10	(990-3)	Measurements of Bioagents at Military Facilities by Using a Field Portable SERS Assay WAYNE SMITH, Real-Time Analyzers, Inc., Hermes Huang, Stuart Farquharson
9:30	(990-4)	Cell Surface Fatty Acid Methyl Ester (FAME) Analysis of <i>Bacillus</i> Spores CRISTINA E STANCIU, Virginia Commonwealth University, Christopher Ehrhardt, Donald Jessup, Elizabeth A Lapatovich, Jessica Goss
9:50		Recess
10:05	(990-5)	Cluster Analysis of Smokeless Powders and Classification by Discriminant Analysis DANA-MARIE K DENNIS, University of Central Florida, Erin Waddell, Mary R Williams, Michael Sigman
10:25	(990-6)	Chemical Profiling of Trichloroisocyanuric Acid (TCCA) Based Explosives for Forensic Attribution ALICIA M ZIMMERMANN, Virginia Commonwealth University, Christopher Ehrhardt
10:45	(990-7)	STARR: Shortwave-Infrared Targeted Agile Raman Robot for the Identification and Confirmation of Emplaced Explosives NATHANIEL R GOMER, ChemImage Corporation, Charles W Gardner
11:05	(990-8)	Auto-sampling Explosives Trace Detection Systems Using Mass Spectrometry YUICHIRO HASHIMOTO, Hitachi, Ltd., Hisashi Nagano, Yasuaki Takada, Hideo Kashima, Masakazu Sugaya, Koichi Terada, Minoru Sakairi

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS

Session 1000

Environmental Analysis of Non-Metals in Water (Half Session)

Tuesday Morning, Room S501bc

- 8:30 (1000-1) **Environmental Forensics of Wastewater Samples for Determination of Emerging Contaminants** ADRIENNE BROCKMAN, Pennsylvania State University, Frank Dorman, Jack Cochran, Michelle Misselwitz
- 8:50 (1000-2) **Microengineered Tools for Cell-Based Detection of Environmental Water Toxicants** SARA TALAEI, Ecole Polytechnique Federal de Lausanne, Yusaku Fujii, Frederic Truffer, Sher Ahmed, Peter D van der Wal, Nico F de Rooij
- 9:10 (1000-3) **Determination of Total Nitrogen and Phosphorus in Environmental Waters by Using Alkaline Persulfate Digestion and Ion Chromatography with Suppressed Conductivity Detection** BRIAN DE BORBA, Thermo Fisher Scientific, Kassandra Oates, Jeffrey Rohrer, Richard Jack
- 9:30 (1000-4) **Determination of UV Filter and Biocide Compounds in Surface Water Samples Using High Throughput Solid Phase Microextraction System Coupled with Liquid Chromatography–Tandem Mass Spectrometry** FARDIN AHMADI, University of Waterloo, Janusz Pawliszyn, Chris Sparham

ORAL SESSIONS

Session 1010

Food and Consumer Products Quality: Analysis Enhancements (Half Session)

Tuesday Morning, Room S501d

- 8:30 (1010-1) **Novel NMR Technology to Assess Food Quality and Authenticity** MARKUS NORBERT LINK, Bruker BioSpin GmbH, Manfred Spraul, Hartmut Schaefer, Birk Schuetz, Fang Fang
- 8:50 (1010-2) **Development and Characterization of Sugar-Based Deep Eutectics** SAMPSON ASARE, South Dakota State University
- 9:10 (1010-3) **Single Reaction Chamber Microwave Digestion Studies and Optimized Performance of High Organic Matrices for ICP-OES/ICP-MS Analysis** DAVID GUNN, Milestone
- 9:30 (1010-4) **Development and Validation of Dietary Supplement Procedures to Satisfy Section 21CFR111.320 cGMPs** J PRESTON, Phenomenex, Zeshan Aqeel, Steve Baugh, Sky Countryman, Petra Erlandson

ORAL SESSIONS

Session 1020

Imaging: Advances and Applications (Half Session)

Tuesday Morning, Room S502a

- 8:30 (1020-1) **PHOTON for Super-Resolution Imaging of Efflux Functions of Single Membrane Transporters in Single Live Cells** X NANCY XU, Old Dominion University, Kerry J Lee, Tao Huang, Prakash D Nallathamby, Feng Ding
- 8:50 (1020-2) **Molecular Imaging of Bacterial Biofilms by Confocal Raman Microscopy** RACHEL N MASYUKO, University Of Notre Dame, Sarah Melton, Jennifer Morrell-Falvey, Mitchel Doktycz, Paul W Bohn
- 9:10 (1020-3) **Multiplexed Imaging of Inelastically Scattered Light Using a Digital Micro-Mirror Device** RAJESH MORAMPUDI, Cleveland State University, John F Turner
- 9:30 (1020-4) **Radial and Linear Concentration Gradients in Cellulose Paper** VEEREN DEWOOLKARVC, Virginia Commonwealth University, Maryanne Collinson, Kari Norquist

ORAL SESSIONS

Session 1030

Liquid Chromatography/Mass Spectrometry: Bioanalytical and 'Omics Applications

Tuesday Morning, Room S502b

- 8:30 (1030-1) **Ultra-Sensitive Simultaneous LC-MS/MS Quantification of Human Insulin, Glargine, Lispro, Aspart, Detemir and Glulisine in Human Plasma Using 2D-LC and a Novel High Efficiency Column** ERIN CHAMBERS, Waters Corporation, Kenneth J Fountain
- 8:50 (1030-2) **Trace Level Neuropeptide Detection by Capillary LC-MS** YING ZHOU, University of Michigan, Robert Kennedy
- 9:10 (1030-3) **96-Blade SPME Coating Evaluation for Bacterial Metabolomics Studies** FATEMEH MOUSAVI, University of Waterloo, Janusz Pawliszyn
- 9:30 (1030-4) **Nano-LC-MS of Intact Proteins with High Efficiency and Good Repeatability Using Sub-0.5 µm Particles** ZHEN WU, Purdue University, Mary J Wirth
- 9:50 **Recess**
- 10:05 (1030-5) **Utilization of Fluorous Maleimide in Separation and Identification of Thiol Metabolites** CAROLINE ESCH, Saint Louis University, James L Edwards
- 10:25 (1030-6) **Bioanalysis of Teriparatide Using a Prototype 150 µm ID Micro-Fluidic Device** ERIN CHAMBERS, Waters Corporation, Mary E Lame, Kenneth J Fountain

ORAL SESSIONS

Session 1040

Microfluidics: Bioanalytical

Tuesday Morning, Room S504a

- 8:30 (1040-1) **Development of a Microfluidic Segmented Flow Based Viscosity Sensor** MICHAEL F DELAMARRE, University of Illinois at Chicago
- 8:50 (1040-2) **Thin-Film Microfabricated Nanofluidic Arrays for Size-Selective Protein Fractionation** SURESH KUMAR, Brigham Young University, Jie Xuan, H Dennis Tolley, Milton L Lee, Aaron R Hawkins, Adam T Woolley
- 9:10 (1040-3) **Chip-western Blotting for Multiplexed Operation** SHI JIN, University of Michigan, Robert Kennedy
- 9:30 (1040-4) **Fluorescent Linear DNA Sequencing by Use of Shear Flow Stretching in Mass Produced Polymer Devices** PETER F ØSTERGAARD, DTU Nanotech, Rodolphe Marie, Rafael J Taboryski
- 9:50 **Recess**
- 10:05 (1040-5) **Integrating Microfabrication with Nanoscale Self-Assembly for Membrane Receptor-Based Biomimetic Sensors** CHRISTOPHER A BAKER, University of Arizona, Leonard K Bright, Craig A Aspinwall
- 10:25 (1040-6) **On-Line Microdialysis-Microchip Electrophoresis with Electrochemical Detection for the Study of the L-DOPA Metabolic Pathway** RACHEL A SAYLOR, University of Kansas, Susan M Lunte
- 10:45 (1040-7) **Optimization of a Method Using Microchip Electrophoresis with Electrochemical Detection for the Analysis of Reactive Nitrogen Species in Macrophage Cells** JOSEPH M SIEGEL, University of Kansas, Dulan B Gunasekara, Christopher T Culbertson, Susan M Lunte
- 11:05 (1040-8) **Frequency Encoded Florescence for the Reduction of Optical Complexity in Microfluidic Devices** ADRIAN M SCHRELL, Florida State University, Michael G Roper

ORAL SESSIONS Session 1050

Pharmaceutical: LC

Tuesday Morning, Room S504bc

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| 8:30 | (1050-1) | Ion Chromatography Assays for Ions in Adenosine – Possible Replacement for Color-Based Assays LIPIKA BASUMALLICK, Thermo Fisher Scientific, Jeffrey Rohrer |
| 8:50 | (1050-2) | Determination of Morpholine in Linezolid by Ion Chromatography YONGJING CHEN, Thermo Fisher Scientific, Brian De borba, Jeffrey Rohrer |
| 9:10 | (1050-3) | A Platform HPLC Method for Pharmaceutical Counter Ion Analysis XIAODONG LIU, Thermo Fisher Scientific, Mark Tracy, Christopher Pohl |
| 9:30 | (1050-4) | Development of an Assay for Besylate in Amlodipine Besylate by Ion Chromatography and a Second Assay to Simultaneously Determine Amlodipine and Besylate by HPLC BRIAN DE BORBA, Thermo Fisher Scientific, Jeffrey Rohrer |
| 9:50 | Recess | |
| 10:05 | (1050-5) | Identification and Quantification of 22 Common Anions in Pharmaceuticals in a Single Run Using HPIC with Suppressed Conductivity and Charge Detection HUA YANG, Thermo Fisher Scientific, Linda Lopez |
| 10:25 | (1050-6) | A Rapid Novel Gel Filtration Solution for Determining Protein Aggregation MICHAEL D MCGINLEY, Phenomenex, Ismail Rustamov, Shengbin Zhang |
| 10:45 | (1050-7) | Separation of Nucleotides by Hydrophilic Interaction Chromatography (HILIC) Using the FRULIC-N Column ZACHARY S BREITBACH, The University of Texas at Arlington, Nilusha L Padivitage, Milan K Dissanayake, Daniel W Armstrong |
| 11:05 | (1050-8) | Coupling Efficiency and Selectivity for Unparalleled Resolving Power to Meet Today's Chromatographic Challenges LAWRENCE Y LOO, Phenomenex, Thuylinh Tran, Mike Chitty, Art Dixon, Ismail Rustamov, Stuart Kushon, Anna Carpenter |

ORAL SESSIONS Session 1060

Raman SERS and Imaging

Tuesday Morning, Room S504d

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| 8:30 | (1060-1) | Surface-Enhanced Raman Correlation Spectroscopy STEVEN ASIALA, University of Notre Dame, Zachary D Schultz |
| 8:50 | (1060-2) | Fabrication and Optimization of Aptamer Conjugated Silver Dendrites for SERS Detection of the Pesticide Acetamidiprid SHINTARO PANG, University of Massachusetts Amherst, Lili He |
| 9:10 | (1060-3) | Direct Measurement of Electric Fields Generated by Plasmonic Excitation JAMES M MARR, University of Notre Dame, Zachary D Schultz |
| 9:30 | (1060-4) | Ultra Low Cu²⁺ Ion Detection by 4-Mercaptobenzoic Acid Functionalized Silver Nanoparticles with SERS NARAYANA MUDALIGE S SIRIMUTHU, University of Strathclyde, Samuel B Mabbott, David Thompson, Karen Faulds, Duncan Graham |
| 9:50 | Recess | |
| 10:05 | (1060-5) | Nanodendrite Structure as a Platform for SERS-Based Sensor HOEIL CHUNG, Hanyang University, Saetbyeol Kim, Soyoung Yoo |
| 10:25 | (1060-6) | Surface-Enhanced Raman Scattering of Biological Materials: A Performance Evaluation from Protein Detection to Cancer Diagnosis MUSTAFA CULHA, Yeditepe University |
| 10:45 | (1060-7) | A Non-Destructive Optical Method for the Simultaneous Determination of Physical and Chemical Properties of Biomaterials JONATHAN R DAMSEL, Cleveland State University, John F Turner |
| 11:05 | (1060-8) | Raman Polarization Spectroscopy and AOTF Chemical Imaging of Poly-L-lactide Bioplastics VENKATA N K RAO BOBBA, Cleveland State University, John F Turner |

ORAL SESSIONS Session 1070

Sample Preparation: Environmental Water Analysis

Tuesday Morning, Room S505a

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|-------|---------------|--|
| 8:30 | (1070-1) | Extraction of Ultra-Trace Level Concentrations of Organic Acids Using Fabric Phase Sorptive Extraction with HPLC-UV Analysis ABUZAR KABIR, Florida International University, Rodolfo Mesa, Linda Maiben, Kenneth G Furton |
| 8:50 | (1070-2) | New Method US EPA 625 with Solid Phase Extraction for Challenging Wastewaters DAVID GALLAGHER, Horizon Technology, Michael Ebitson, Zoe Grosser |
| 9:10 | (1070-3) | Ultraviolet Photoinitiated On-Fiber Copolymerization of Ionic Liquid Sorbent Coatings for Headspace and Direct Immersion Solid-Phase Microextraction TIEN D HO, The University of Toledo, Honglian Yu, William T Cole, Jared L Anderson |
| 9:30 | (1070-4) | On-Line Preconcentration of Haloacetic Acids for Analysis by Post-Column Reaction-Ion Chromatography with Nicotinamide Fluorescence in Drinking Water CHRISTINA M HENSON, The University of Memphis, Patricia Ranaivo, Gary L Emmert, Paul S Simone |
| 9:50 | Recess | |
| 10:05 | (1070-5) | A Simple Preconcentration Protocol for Semi-Automated Analysis of Total Trihalomethanes and Total Haloacetic Acids in Drinking Water THOMAS E WATTS, University of Memphis, Yin Yee Choo, Paul S Simone, Gary L Emmert |
| 10:25 | (1070-6) | Evaluation of Fiber/Water Partition Coefficient and Ultra Trace Analysis of Steroids Using Solid Phase Microextraction (SPME) with GC-MS-MS SHILPI CHOPRA, Seton Hall University, Ramkumar Dhandapani, Nicholas H Snow |
| 10:45 | (1070-7) | A Solid Phase Microextraction Coating Based on Ionic Liquid Sol-Gel Technique for Determination of Benzene, Toluene, Ethylbenzene and o-xylene in Water Samples Using Gas Chromatography Flame Ionization Detector ALI SARAFRAZ YAZDI, Ferdowsi University of Mashhad |
| 11:05 | (1070-8) | Thin-Film Microextraction Coupled to LC-ESI-MS/MS for Determination of Quaternary Ammonium Compounds in Water Samples EZEL BOYACI, University of Waterloo, Janusz Pawliszyn, Chris Sparham |

POSTER SESSION Session 1080

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Agriculture

Tuesday Morning

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| (1080-1 P) | Nitrogen Determination in Soils and Plants by Flash Combustion Using Argon as Carrier Gas GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Walter Galotta |
| (1080-2 P) | Characterization of Flavored Tobacco with GCxGC-TOFMS and GCxGC-HR-TOFMS ELIZABETH HUMSTON-FULMER, Leco Corporation, Joe Binkley, Jeff Patrick, David E Alonso |
| (1080-3 P) | Determination of Rare Earth Elements in Tea Leaves by ICP-AES with Ultrasonic Aerosol Generator FENG XU, Shimadzu (China) Co., Ltd. |
| (1080-4 P) | Prediction of the Starch Content and Ethanol Yields of 44 Inbred Varieties of Sorghum Grain Using Near-Infrared (NIR) Spectroscopy SHIH-FANG CHEN, University of Illinois, Junhui Li, Song Li, Vijay Singh, Patrick J Brown, Mary-Grace C Danao |
| (1080-5 P) | Visible-Near Infrared Spectroscopy of Freeze Dried Chicken Filets at Varying Postmortem Times SAMANTHA HAWKINS, USDA-ARS, Brian Bowker |
| (1080-6 P) | Biodegradation of Polyalthia Longifolia Litter for Production of Value Added Product HARSHANG V PANDYA, MG Science Institute, Prakruti R Kapadia, Mrugesh D Shukla, Vijaya R Nadagauda, Hyacinth N Highland |
| (1080-7 P) | New Sorbent on Agro-Industrial Waste and Its Potential Use in 17 Beta-Estradiol and 17 Alpha-Ethinylestradiol Removal SUZIMARA ROVANI, Federal University of Rio Grande do Sul (UFRGS), Andreia N Fernandes, Eder C Lima, Renato C Veses |
| (1080-8 P) | Reduced Sample Preparation for Fumigants Residues Analysis in Fresh Food and Grains DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero |

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 1090

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Clinical Chemistry and Toxicology

Tuesday Morning

- (1090-1 P) **Ultra-Fast Analysis of Metabolites in Serum in Under 3 Minutes Using Fast-GC/MS/MS** SHUICHI KAWANA, Shimadzu Corporation, Yukihiko Kudo, Haruhiko Miyagawa, Kenji Hara, Laura Chambers, Zhuangzhi "Max" Wang
- (1090-2 P) **Target and Non-target Analysis of Metabolites in Urine Using Scan/MRM and GC/MS/MS** SHUICHI KAWANA, Shimadzu Corporation, Kenichi Obayashi, Katsuhiro Nakagawa, Yuki Hasegawa, Seiji Yamaguchi, Laura Chambers, Zhuangzhi "Max" Wang
- (1090-3 P) **A Comparison of Sample Preparation Approaches for the LC/MS/MS Analysis of EtS and EtG in Urine** MIKE CHANG, Agilent Technologies, Derick Lucas, Trisa Robarge, Irina Dioumaeva, Angelica Riemann
- (1090-4 P) **Multi Sensor System for Breath Analysis** MATTHIAS FEINDT, Hamburg University of Technology, Joern Frank, Hendrik Fischer, Andreas Behn, Helge Fielitz, Gerhard Matz
- (1090-5 P) **Pilot Clinical Trial of an Optode-Array-Based Point-of-Care Metabolic Tester Slide** MIKLOS GRATZL, Case Western Reserve University, Punkaj Ahuja, Jeffrey Ustin
- (1090-6 P) **Analysis of Blood Alcohol Content by Headspace** ZHUANGZHI "MAX" WANG, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Laura Chambers, Clifford M Taylor
- (1090-7 P) **Analysis of Drugs of Abuse in the EI and NCI Modes** LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Zhuangzhi "Max" Wang, Clifford M Taylor
- (1090-8 P) **Quantitative Analysis of Opioids Using a Triple-Quadrupole GC/MS/MS** LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Zhuangzhi "Max" Wang, Clifford M Taylor
- (1090-9 P) **Matrix Specific Sample Preparation Strategies for Opioid Analysis** JONATHAN DANACEAU, Waters Corporation, Erin Chambers, Kenneth J Fountain
- (1090-10 P) **Analysis of Gabapentin and Pregabalin in Saliva by Ultra-High Performance Liquid Chromatography Tandem Mass Spectrometry** CONGYING GU, Veritas Laboratories, LLC, Jun He, Marion Lee, Patrick Rainey, Cynara Davis, Beth Bowen
- (1090-11 P) **An Evaluation of Biphenyl Chemistry to Aid in High-Throughput Bioanalytical LC-MS/MS Analyses** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Shun-Hsin Liang, Chris Denicola
- (1090-12 P) **Dried Spots Technique for Quantitative Determination of Pain Management Drugs in Human Oral Fluid Using Liquid Chromatography-Tandem Mass Spectrometry** JUN HE, Veritas Laboratories, LLC, Congying Gu, Patrick Rainey, Marion Lee, Beth Bowen, Cynara Davis
- (1090-13 P) **Analysis of Herbal Remedy Using Various Analytical Techniques to Identify Any Potential Toxic Compounds** HANG P NGUYEN, St. John Fisher College, Irene Kimaru
- (1090-14 P) **Simultaneous Determination of 17 Drugs of Abuse and Organophosphorus Pesticides in Human Blood by GPC/GC/MS** SUN QIAN, Shimadzu (China) Co., Ltd., Dong Hengtao
- (1090-15 P) **Quantitative Analysis of the Most Commonly Used Pain Medications in Urine Using a Reliable Sample Preparation Technique in Combination with an API 5000 LC-MS-MS** J PRESTON, Phenomenex, Shahana Huq, Seyed Sadjadi, Jeff Layne
- (1090-16 P) **Enhanced Resolution and Matrix Interference Reduction for the Analysis of Vitamin D Metabolites** CRAIG R AURAND, Supelco/Sigma-Aldrich, David S Bell, Hugh M Cramer
- (1090-17 P) **Selectivity Enhancement of Anions by Kinetic Control Using Pulsed Chronopotentiometry with Asymmetric Cellulose Triacetate Membrane Electrode** KEBEDE L GEMENE, Northern Kentucky University, Jeremy Meyers
- (1090-18 P) **Determination of Clinically Relevant Compounds Using Isocratic HPLC and Electrochemical Detection with Boron Doped Diamond Electrode** BRUCE BAILEY, Thermo Fisher Scientific, Ian N Acworth, Marc Plante, Qi Zhang, David Thomas

POSTER SESSION

Session 1100

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Food Science: Analytical Methods

Tuesday Morning

- (1100-1 P) **A Novel Method for Quantification of Aspartame Using Surface Enhanced Raman Spectroscopy** GÜLİZAR GÖRKEM, Hacettepe University, Akif G Bozkurt, Mehmet Söforoğlu, Ismail H Boyacı, Ugur Tamer
- (1100-2 P) **A Novel Automated Liquid/Liquid Extraction Technique for the Determination of Caffeine in Coffee** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, Doug Meece
- (1100-3 P) **Analysis of Caffeine and Taurine in Commercial Energy Beverages** JENNIFER MARTIN, St. John Fisher College, Kimberly Chichester
- (1100-4 P) **Analysis of Emulsifiers in Foods by High Pressure Liquid Chromatography and Corona Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian N Acworth, Qi Zhang, David Thomas
- (1100-5 P) **Fast Analysis of β -ecdysone in Brazilian Ginseng (*Pfaffia glomerata*) Extracts by High-Performance Liquid Chromatography Using a Fused-Core Column** MAURICIO A ROSTAGNO, University of Campinas, Isabel CN Debieu, Renata Vardanega, Gislaïne N Faria, Gerardo F Barbero, M Angela A Meireles
- (1100-6 P) **Ultrasound-Assisted Extraction of Curcuminoids from *Curcuma longa*** MAURICIO A ROSTAGNO, University of Campinas, J Felipe Osorio-Tobón, Pedro IN Carvalho, M Angela A Meireles
- (1100-7 P) **Fast Analysis of FAMES Using Automated Sample Preparation and GC-FID** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marie-Laure Vicenty, Julien Boye, Marion Bonnefille
- (1100-8 P) **Discrimination of Meat Species Using Raman Spectroscopy and Principal Component Analysis** REYHAN SELIN UYSAL, Hacettepe University
- (1100-9 P) **Voltammetric Determination of Lactose** TSUNGHSUEH WU, University of Wisconsin-Platteville, Jennifer Yoder
- (1100-10 P) **Determination of the Availability of Fluorinated Grease Proofing Agents Using *In Vitro* Gastrointestinal Digestion** WENDY YOUNG, FDA Center for Food Safety and Applied Nutrition, Gregory Noonan, William Roth, Timothy H Begley
- (1100-11 P) **Analysis of Selected Xanthenes in Mangosteen Pericarp Using Accelerated Solvent Extraction and Ultra High Performance Liquid Chromatography** QI ZHANG, Thermo Fisher Scientific, Ian N Acworth, Bruce Bailey, Marc Plante, David Thomas

POSTER SESSION

Session 1110

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

FTIR/Raman/NIR Applications

Tuesday Morning

- (1110-1 P) **Spectroelectrochemistry Using Polystyrene Microfluidic Devices** MATTHEW BAILEY, University of Notre Dame, Asmira Selimovic, Amber Pentecost, R Scott Martin, Zachary D Schultz
- (1110-2 P) **Using Time Resolved FT-IR-ATR to Study Biofuel Diffusion in Flexible Coated Fabrics** JAMES M SLOAN, U.S. Army Research Laboratory
- (1110-3 P) **Modification of Gold Nanoparticles for Analysis of Edible Food Oil** MICHAEL J DRIVER, University of Massachusetts Amherst
- (1110-4 P) **Surface-Enhanced Raman Spectroscopy Platforms for Studying Electrodeposition and Surface Chemistry of Nanostructured Semiconductors** JUNSI GU, University of Michigan, Stephen Maldonado
- (1110-5 P) **Probing the Orientation of 2,3-Dichloro-5,8-dimethoxy-1,4-naphthoquinone on Gold Nano-rods by SERS** MARAIZU UKAEGBU, Howard University, Charles Hosten, Oladapo Bakare, Alberto Vivoni, Nkechi Enwerem
- (1110-6 P) **Plasmon Enhancements Using Coherent Anti-Stokes Raman Scattering** KAREN A ANTONIO, University of Notre Dame, Lawrence O Itela, Zachary D Schultz
- (1110-7 P) **The Role of Different Structural Motifs in the Photophysics of Second Generation Protein Stains Explaining the Feeble Quantum Yield of Epicocconone** SOUMIT CHATTERJEE, Macquarie University, Peter Karuso, Anindya Datta

TUESDAY, MARCH 4, 2014

AFTERNOON

AWARDS Session 1140

Pittsburgh Spectroscopy Award

arranged by Sanford A Asher, University of Pittsburgh

Tuesday Afternoon, Room S401bc

Sanford A Asher, University of Pittsburgh, Presiding

1:30	Introductory Remarks - Sanford A Asher
1:35	Presentation of the 2014 Pittsburgh Spectroscopy Award to Geraldine L Richmond, University of Oregon, by Manuel R Miller, Chairman, Spectroscopy Society of Pittsburgh
1:40	(1140-1) Line 'Em All Up: Macromolecular and Nanoparticle Assembly at Oil/Water Interfaces GERALDINE RICHMOND, University of Oregon
2:15	(1140-2) What Can a Retired Industrial Spectroscopist Do? Collaborate! BRUCE CHASE, University of Delaware
2:50	(1140-3) Lipids (and Water) in Mixed Lipid Aggregates: Temperature Effects SHARON L NEAL, University of Delaware
3:25	Recess
3:40	(1140-4) Enhancing Molecular Structural Information in Nonlinear Vibrational Spectroscopy DENNIS K HORE, University of Victoria
4:15	(1140-5) Title Not Provided at Time of Printing

SYMPOSIUM Session 1150

Clinical Analysis: The Next Frontier in Mass Spectrometry

arranged by Timothy J Garrett, University of Florida

Tuesday Afternoon, Room S402a

Timothy J Garrett, University of Florida, Presiding

1:30	Introductory Remarks - Timothy J Garrett
1:35	(1150-1) Innovations in Mass Spectrometry for Clinical Analysis RICHARD A YOST, University of Florida, Timothy J Garrett, Alan Rockwood
2:10	(1150-2) Title Not Provided at Time of Printing
2:45	(1150-3) Imaging Metabolites and Metabolic Pathways in Cancer LIAM MCDONNELL, Leiden University Medical Center
3:20	Recess
3:35	(1150-4) MALDI-TOF in Clinical Microbiological Analysis PREETI PANCHOLI, The Ohio State University Medical Center
4:10	(1150-5) Challenges of Newborn Screening: Past, Present and Future CHERYL L GARGANTA, Tufts Medical Center

(1110-8 P) Direct Analysis of Pure Nitrous Oxide (N₂O) Using "Infra Red" Analyzers ANUJ KUMAR, Air Liquide, Janet Graehling

(1110-9 P) Single Molecule Spectroscopy Studies of Polarity Gradients Prepared by Infusion-Withdrawal Dip-Coating DIPAK GIRI, Kansas State University, Daniel A Higgins, Chelsea Hanks

(1110-10 P) Single Molecule Counting in Nanopores YAN HU, University of Iowa

(1110-11 P) A New Combination of Raman and IMS Detection for the Fast Identification of Explosives ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer, Hainer Wackerbarth

POSTER SESSION Session 1120

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

New Products at Pittcon 2014

Tuesday Morning

(1120-1 P) Dual Channel Blood Alcohol Analyzer Meets Need for High-Throughput Analysis JESSICA L WESTLAND, Agilent Technologies, Philip L Wylie

(1120-2 P) Advances in Micro Gas Chromatography (GC) - Applying Temperature Programming in a Micro GC to Achieve Fast, Accurate, and On-Site Analysis of Fixed Gases and Light Hydrocarbons DEBBIE HUTT, INFICON

(1120-3 P) New SimDist Software and Applications ZHUANGZHI "MAX" WANG, Shimadzu Scientific Instruments, Clifford M Taylor, Nicole M Lock, Laura Chambers, Richard R Whitney

(1120-4 P) Preliminary Performance Study on a New Continuous Flow Automated Chemistry Analyzer WILLIAM C LIPPS, Xylem/OI Analytical, Libby A Badgett, Gary Engelhart

(1120-5 P) Comparison of Performance of Innovative Nano Stationary Phase (NSP) and Conventional Stationary Phase GC Capillary Columns for Environmental Applications KRISHNAT NAIKWADI, J & K Scientific Inc., John MacInnis, Allen Britten

(1120-6 P) Fast and Accurate Analysis of Refinery Gas using Micro GC with Column Temperature Programming REMKO VAN LOON, Agilent Technologies

(1120-7 P) Thermogravimetry of Oil Samples with a New Photoionization Time-of-Flight Mass Spectrometer ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer, Mohamad Saraji-Bozorgzad, Matthias Bente von Frowein, Ralf Zimmermann, Sven Ehler

(1120-8 P) Performance Characteristics of Core-Shell U/HPLC Columns for the Rapid Separation of Peptides and Proteins HILLEL BRANDES, Supelco/Sigma-Aldrich, David S Bell, Kevin Ray, Roy Eksteen

(1120-9 P) HPLC Method Development Guidelines Using Solid-Core Particle Technologies GAURANG PARMAR, Supelco/Sigma-Aldrich, David S Bell, Richard A Henry, Carmen T Santasania, Wayne K Way, Hugh M Cramer

POSTER SESSION Session 1130

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Physical Measurements

Tuesday Morning

(1130-1 P) A Numerical Evaluation of Iterative Solvers for the Solution of Static Light Scattering Problems HIROSUKE SUGASAWA, HORIBA, Ltd., Makoto Umezawa, Jeffrey Bodycomb

(1130-2 P) Real-Time SPR-Imaging of Adsorption of Single Nanoparticles to Different Surfaces VLADIMIR M MIRSKY, Brandenburg University of Technology, Shavkat Nizamov

(1130-3 P) The Influence of Ca²⁺ and Mg²⁺ on the Interfacial Water Structure and Acid-Base Chemistry of the Silica/Water Interface MD DELWAR H SIKDER, University of Alberta, Md Shafiqul Azam, Julianne M Gibbs-Davis

Tuesday Morning

Tuesday Afternoon

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM Session 1160

Current Challenges and New Analytical Techniques in Doping Detection

arranged by Janusz Pawliszyn, University of Waterloo

Tuesday Afternoon, Room S402b

Janusz Pawliszyn, University of Waterloo, Presiding

1:30		Introductory Remarks - Janusz Pawliszyn
1:35	(1160-1)	Ultrasensitive and Chiral Analysis of Performance Enhancing Drugs (PEDs): Stimulants and Steroids DANIEL W ARMSTRONG, University of Texas at Arlington
2:10	(1160-2)	Introduction of Solid Phase Microextraction as a Powerful Tool for High-Throughput Sample Preparation in Laboratory Analysis of Prohibited Substances EZEL BOYACI, University of Waterloo, Krzysztof Gorynski, Angel Rodriguez-Lafuente, Barbara Bojko, Janusz Pawliszyn
2:45	(1160-3)	Current State of Anti-Doping Analysis –Techniques, Trends and Challenges VINOD NAIR, Sports Medicine Research and Testing Laboratory
3:20		Recess
3:35	(1160-4)	What are the Challenges of Doping Control in Horses and How Latest Technologies Help to Fight Against the Battle COLTON H F WONG, Texas A&M University
4:10	(1160-5)	Direct Immersion Solid-Phase Microextraction as Bioanalytical Tool for Analysis of Human Saliva VINCENT BESSONNEAU, University of Waterloo, Barbara Bojko, Janusz Pawliszyn

SYMPOSIUM Session 1170

Current Status and Trends in the Analysis and Quality Control of Small Molecules, Biologics and Bio-Similars

arranged by Arindam Roy, Novartis

Tuesday Afternoon, Room S401a

Arindam Roy, Novartis, Presiding

1:30		Introductory Remarks - Arindam Roy
1:35	(1170-1)	Analytical QbD: Method Inception to Methods Transfer ROSARIO LOBRUTTO, TEVA Pharmaceuticals
2:10	(1170-2)	Current Practices of LC Method Development, Validation, Transfer and Impurity Analysis for Small Molecules ARINDAM ROY, Novartis, Anthony Wilken, Chad Wieseler, Luis Collazo, Joseph Henry
2:45	(1170-3)	UHPLC for Bioanalytical Analysis of Monoclonal Antibodies DELL FARNAN, Genentech, A Member of the Roche Group
3:20		Recess
3:35	(1170-4)	Analytical Strategies in Biosimilar Development HANSJOERG TOLL, Sandoz Biopharmaceuticals
4:10	(1170-5)	Characterization of Molecular Isoforms in Protein Therapeutics by Electrophoresis, Liquid Chromatography, and Mass Spectrometry LI TAO, Bristol-Myers Squibb

SYMPOSIUM Session 1180

Engineered Antibody-Mimics with Increased Affinity and Selectivity

arranged by Radislav A Potyrailo, GE Global Research and Rajesh Naik, Air Force Research Laboratory

Tuesday Afternoon, Room S401d

Radislav A Potyrailo, GE Global Research, Presiding

1:30		Introductory Remarks - Radislav A Potyrailo and Rajesh Naik
1:35	(1180-1)	DNA Logic Circuits for Biomedical Applications WEIHONG TAN, University of Florida
2:10	(1180-2)	DNA Aptamer Generation by Genetic Alphabet Expansion ICHIRO HIRAO, RIKEN CLST
2:45	(1180-3)	Peptide-Based Biological Recognition Elements for Sensing Applications RAJESH NAIK, Air Force Research Laboratory
3:20		Recess
3:35	(1180-4)	Epitope Targeted Synthetic Protein Capture Agents JAMES HEATH, Caltech
4:10	(1180-5)	Selective and Reversible Biodetection in Complex Matrices – Synergistic Roles of Biology and Electronics RADISLAV A POTYRAILO, GE Global Research, Nandini Nagraj, Tony Murray, Zhexiong Tang, Li Zhu

The author list is available at www.pittcon.org

SYMPOSIUM Session 1190

JAIMA: The State-of-the-Art Technologies that Support Safety and Security in Future (II)

arranged by Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Afternoon, Room S505b

Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding
Masanori Hangyo, Osaka University, Presiding

1:30		Introductory Remarks - Norio Teramae
1:35	(1190-1)	Analysis of Pesticides in Food Matrices Using a Triple-Quadrupole GC/MS/MS LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Clifford M Taylor, Haruhiko Miyagawa
2:10	(1190-2)	Introduction of the Latest Application of SEM/TEM to Material Sciences for Safety and Security MAMI KONOMI, Hitachi High-Technologies Corporation, Syunya Watanabe, Yukari Dan, Yasushi Kuroda, Eiko Nakazawa, Hisayuki Takasu, Junzo Azuma
2:45	(1190-3)	Microspectroscopy for Trace Analysis in Forensic Science SERGEY MAMEDOV, Horiba Scientific
3:20		Recess
3:35	(1190-4)	X-Ray Analytical Technologies for Nano Particle and Ensuring Safety and Security KAZUKI ITO, Rigaku
4:10	(1190-5)	Title Not Provided at Time of Printing

SYMPOSIUM Session 1200

Nanoscale Compounds for Biological Imaging and Bioanalytical Analysis

arranged by Stephane Petoud, CNRS

Tuesday Afternoon, Room S404a

Stephane Petoud, CNRS, Presiding

1:30		Introductory Remarks - Stephane Petoud
1:35	(1200-1)	Imaging Using Porous Silicon-based Nanoparticles MICHAEL J SAILOR, University of California San Diego
2:10	(1200-2)	Applications of Carbon Nanotubes for Theranostics ALEXANDER STAR, University of Pittsburgh
2:45	(1200-3)	Ln³⁺ Based Nanoparticles and NIR Quantum Dots for Optical and Magnetic Bioimaging FRANK CJM VAN VEGGEL, University of Victoria
3:20		Recess
3:35	(1200-4)	Real-Time, In Situ Methods to Measure Kinetics of Cargo Release From Nanoparticles ADAH ALMUTAIRI, University of California, San Diego, Cathryn McFearin, Mathieu L Viger, Minnie Chan, Sheng Wangzhong, Eric Schopf
4:10	(1200-5)	Near-Infrared Imaging in Living Cells with Lanthanides: Phenylene Yb³⁺ Nano-MOFs STEPHANE PETOUD, CNRS - Center for Molecular Biophysics, Alexandra Foucault-Collet, Kristy Gogick, Kiley A White, Sandrine Villette, Agnes Pallier, Tao Li, Nathaniel L Rosi

SYMPOSIUM Session 1210

New Directions in Water Characterization and Monitoring

arranged by Janusz Pawliszyn, University of Waterloo and Chris Le, University of Alberta

Tuesday Afternoon, Room S404bc

Chris Le, University of Alberta, Presiding

1:30		Introductory Remarks - Chris Le
1:35	(1210-1)	Analytical and Toxicological Characterization of Emerging Disinfection Byproducts in Drinking Water XING-FANG LI, University of Alberta, Minghuo Wu, Wei Wang, Yichao Qian
2:10	(1210-2)	New Analytical Capabilities of Differential Ion Mobility (FAIMS) in Water Analysis by Mass Spectrometry WOJCIECH GABRYELSKI, University of Guelph
2:45	(1210-3)	Monitoring of Organic Pollutants in Sea Water at the Eight Harbor Entrances of Pearl River with SPME Rapid On-Site Sampling Technique GANGFENG OUYANG, Sun Yat-Sen University
3:20		Recess
3:35	(1210-4)	Recent Advances in Solid-Phase Microextraction for Drinking Water and Wastewater Analysis ANGEL RODRIGUEZ-LAFUENTE, University of Waterloo, Janusz Pawliszyn
4:10	(1210-5)	Characterizing Arsenic Speciation and Health Effects CHRIS LE, University of Alberta, Qingqing Liu, Xiufen Lu, Chenming Cao, Hanyong Peng, Aleksandra Popowich, Xuan Sun

SYMPOSIUM

Session 1220

Royal Society of Chemistry Session

arranged by May Copsey, Royal Society of Chemistry

Tuesday Afternoon, Room S404d

May Copsey, Royal Society of Chemistry, Presiding

1:30		Introductory Remarks - May Copsey
1:35	(1220-1)	Multiplexed and Sensitive Molecular Diagnostics Using SERRS KAREN FAULDS, University of Strathclyde, Mhairi Harper, Kirsten Gracie, Kristy McKeating, Jennifer A Dougan, Duncan Graham
2:10	(1220-2)	SERS in Practice W E SMITH, Strathclyde University
2:45	(1220-3)	Detection of Drugs and Drug Metabolites Using SERS ROY GOODACRE, University of Manchester, Omar Alharbi, Graham Kenyon, Samuel B Mabbott, Yun Xu, Elon Correa, David Cowcher
3:20		Recess
3:35	(1220-4)	Nanoparticle Labeling Strategies as Tools for the Early Diagnosis of Infectious Disease MARC D PORTER, University of Utah
4:10	(1220-5)	Nanoparticle Based Analysis of Biomolecules, Cells and Tissue DUNCAN GRAHAM, University of Strathclyde, Sarah McAughtrie, Derek Craig, Anna Robson, Jonathan Simpson, Karen Faulds

SYMPOSIUM

Session 1230

Targeting Protein-Protein Interactions

arranged by Steven J Metallo, Georgetown University

Tuesday Afternoon, Room S405a

Steven J Metallo, Georgetown University, Presiding

1:30		Introductory Remarks - Steven J Metallo
1:35	(1230-1)	Protein-Protein Interactions Exploited Through Small Molecules in <i>Plasmodium Falciparum</i> JÜRGEN BOSCH, Johns Hopkins University
2:10	(1230-2)	Title Not Provided at Time of Printing
2:45	(1230-3)	Title Not Provided at Time of Printing
3:20		Recess
3:35	(1230-4)	Inhibiting Protein-Protein Interactions ADRIAN WHITTY, Boston University
4:10	(1230-5)	Specificity and Promiscuity in Small Molecule Binding to Intrinsically Disordered Protein Regions STEVEN J METALLO, Georgetown University

SYMPOSIUM

Session 1240

Top-Down Mass Spectrometry of Proteins Relevant to Human Health Research

arranged by Joseph A Loo, University of California, Los Angeles

Tuesday Afternoon, Room S405b

Joseph A Loo, University of California, Los Angeles, Presiding

1:30		Introductory Remarks - Joseph A Loo
1:35	(1240-1)	Elucidating Structures of Protein Assemblies by Top-Down Native Mass Spectrometry JOSEPH A LOO, University of California, Los Angeles, Huilin Li, Jiang Zhang, Piriya Wongkongkathep
2:10	(1240-2)	Top Down Proteomics Reveals Epigenetic Modifications Underpinning Tamoxifen Resistance in Breast Cancer LJILJANA PASA-TOLIC, Pacific Northwest National Laboratory, Zhaorui Zhang, Si Wu, Nikola Tolic, Rui Zhao, Arzu Umar, Maurice Jansen, Xiaowen Liu, Pavel Pevzner, Rosalie K Chu, David L Stenoien
2:45	(1240-3)	Top-down Mass Spectrometry Enabled Cardiac Proteomics for Understanding Heart Failure YING GE, University of Wisconsin-Madison
3:20		Recess
3:35	(1240-4)	Ultra High Resolution Top Down Mass Spectrometry for the Study of Proteins Involved in Gene Regulation NICOLAS L YOUNG, Florida State University
4:10	(1240-5)	Improving Coverage of the Human Proteome via Whole Protein Mass Spectrometry NEIL KELLEHER, Northwestern University

WORKSHOPS

Session 1250

Advances in Protein and Peptide Separations

arranged by Michael D McGinley, Phenomenex

Tuesday Afternoon, Room S504a

Michael D McGinley, Phenomenex, Presiding

1:30		Introductory Remarks - Michael D McGinley
1:35	(1250-1)	Applying Protein Characteristics in Development of Aggregation Assays Using GFC MICHAEL D MCGINLEY, Phenomenex, Rustamov Ismail, Shengbin Zhang
2:05	(1250-2)	Analytical Challenges Facing the Characterization of Targeted Monoclonal Antibody-Based Therapies CARL GERARD KOLVENBACH, Amgen, Inc.
2:35	(1250-3)	Title Not Provided at Time of Printing
3:05		Recess
3:20	(1250-4)	New UHPLC Method to Monitor Fc Oxidation in Monoclonal Antibody Therapeutics JUSTIN JEONG, Genentech, Inc., Dan Hewitt, Bing Zhang, Braydon Burgess, Thomas Verniere, Taylor Y Zhang
3:50	(1250-5)	Automating Protein Sample Preparation KEVIN MEYER, Perfinity Biosciences

ORGANIZED CONTRIBUTED SESSIONS

Session 1260

High Throughput Analysis for Food Safety and Cosmetics

arranged by Perry G Wang, U.S. Food and Drug Administration and Mark F Vitha, Drake University

Tuesday Afternoon, Room S504bc

Mark F Vitha, Drake University, Presiding

1:30	(1260-1)	High Throughput Techniques for Food Analysis MARK F VITHA, Drake University
1:50	(1260-2)	Title Not Provided at Time of Printing
2:10	(1260-3)	Antibiotic Residue Detection by LC/MS/MS in Food ANGELA CARLSON, SGS North America
2:30	(1260-4)	Impact of Chronic Ethanol Consumption on Metabolite Profiles of Liver in Mice: A Time Course Study XIANG ZHANG, University of Louisville, Zhanxiang Zhou
2:50		Recess
3:05	(1260-5)	Title Not Provided at Time of Printing
3:25	(1260-6)	Micro Flow LC and its Application on Food Safety Analysis JAMES CHANG, Thermo Fisher Scientific
3:45	(1260-7)	Improving Identification of Pesticides Using Atmospheric Pressure Gas Chromatography Coupled with Mass Spectrometry KELLY DORWEILER, General Mills/Medallion Laboratories

ORGANIZED CONTRIBUTED SESSIONS

Session 1270

QbD Based Development of Analytical Methods for Product Characterization, Release, and Stability Studies - Present Status, Lessons Learned, and the Future

arranged by Shreekant V Karmarkar, Baxter Healthcare and Richard Verseput, S-Matrix Corporation

Tuesday Afternoon, Room S504d

Shreekant V Karmarkar, Baxter Healthcare, Presiding

1:30	(1270-1)	Utilizing Design of Experiments (DOE) for Method Robustness Optimization DAN PRUDHOMME, Gilead
1:50	(1270-2)	Application of Quality by Design (QbD) to the Development and Validation of Analytical Methods YUEER SHI, Bristol-Myers Squibb
2:10	(1270-3)	Use of a Software as a Platform Neutral Tool in the Validation and Development of Analytical Methods for Quantitative NMR, HPLC and GC/MS TIM ECKERLEY, Cambridge Isotope Laboratories, Kris Dziejewicz
2:30	(1270-4)	Leveraging Predictive Software Tools for HPLC Method Development in Pharmaceutical R&D EMILY E JAMESON, Vertex Pharmaceuticals
2:50		Recess
3:05	(1270-5)	Title Not Provided at Time of Printing
3:25	(1270-6)	Lessons Learned from QbD Based Analytical Method Development SHREEKANT KARMARKAR, Baxter Healthcare, Robert Garber
3:45	(1270-7)	Pursuing the "Perfect" HPLC Method Using Quality by Design JOSEPH A TURPIN, Eli Lilly and Company
4:05	(1270-8)	QbD-Aligned Development of a UHPLC-Based High Throughput SEC Method Using Fusion AE Software MISAL BALL, Millennium: The Takeda Oncology Company

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS

Session 1280

Bioanalytical Spectroscopy

Tuesday Afternoon, Room S501bc

- 1:30 (1280-1) **Development and Optimization of a Closed Tube SERS-Based Assay for the Multiplex Detection of Fungal Infections** SAMUEL B MABBOTT, University of Strathclyde, David Thompson, Narayana Mudalige S Sirimuthu, Graeme McNay, Karen Faulds, Duncan Graham
- 1:50 (1280-2) **Metal Enhanced Fluorescence on Gold Microhole Arrays Towards a Dual Detection of a PSA Immunoassay** RICHARD HUGO-PIERRE, Université de Montréal, Julien Breault-Turcot, Jean-François Masson
- 2:10 (1280-3) **Ultrasensitive Detection of Dyes and Proteins by Surface-Enhanced Raman Spectroscopy (SERS) in Capillary Electrophoresis (CE)** PIERRE NEGRI, University of Notre Dame, Zachary D Schultz
- 2:30 (1280-4) **High-Throughput Cell Assay to Characterize GPCR-Ion Channel Fusion Proteins** MARIA F MENDOZA, University of Arizona, Leonard K Bright, S Scott Saavedra, Craig A Aspinwall
- 2:50 **Recess**
- 3:05 (1280-5) **NIR Dyes As Substrates: New Approach to Determine Enzymatic Activity** GABOR PATONAY, Georgia State University, Maged M Henry, Garfield Beckford, Andy Levitz, Holly Ellis
- 3:25 (1280-6) **Extracellular, Membrane and Intracellular Proteins that Alter Receptor Cell Membrane Diffusion and Clustering** EMILY SMITH, Iowa State University, Neha Arora, Dipak Mainali, Aleem Syed, Jacob Petrich
- 3:45 (1280-7) **Diffusion Characteristics of Polymerizable Lipids Bilayers** KRISTINA OROZ, University of Arizona, Boying Liang, Benjamin A Heitz, S Scott Saavedra
- 4:05 (1280-8) **Peptide-Mediated Ratiometric Sensing of pH Regulation in Trypanosoma Brucei Glycosomes** SHENG LIN, Clemson University, Kenneth A Christensen, Meredith T Morris, James C Morris

ORAL SESSIONS

Session 1290

Capillary Electrophoresis: New Approaches for Bioanalytical Applications

Tuesday Afternoon, Room S501d

- 1:30 (1290-1) **Surface Coating Method for Controlling Electroosmotic Flow for CE-ESI-MS** NICHOLAS BATZ, University of North Carolina at Chapel Hill, J S Mellors, J Michael Ramsey
- 1:50 (1290-2) **Tunable DNA Sieving With Thermally Responsive Nanogels** BRANDON C DURNERY, West Virginia University, Lisa A Holland
- 2:10 (1290-3) **Carrier-Mediated Electromembrane Extraction Combined with Capillary Electrophoresis for Sensitive Determination of Arsenic Species in Drinking Water** DOO SOO CHUNG, Seoul National University, Hongfei Zhang, Xingnan Sun
- 2:30 (1290-4) **Strategies for Improving Analytical Performance of Microscale Electrophoresis** KOJI OTSUKA, Kyoto University, Yudai Fukushima, Koichi Kanemori, Toyohiro Naito, Takuya Kubo
- 2:50 **Recess**
- 3:05 (1290-5) **Bile Salt Micelle Chiral Guest-Host Interactions Probed by MEKC and ¹H NMR** CLAIRE OUIMET, Bucknell University, Kendall E Sandy, Timothy G Strein, David Rovnyak
- 3:25 (1290-6) **Capillary Electrophoretic Separations with Post Capillary Droplet Segmentation and Sample Capture** CHRISTOPHER R HARRISON, San Diego State University, Shih H Lin
- 3:45 (1290-7) **Understanding In-Line Mixing and Stacking Dynamics with EMMA Using the Jaffe Reaction** TIMOTHY G STREIN, Bucknell University, Adam R Meier, Maria D Jones
- 4:05 (1290-8) **CIEF-ESI-MS/MS and RPLC-ESI-MS/MS for Quantitative Proteomic Analysis of Differentiating PC12 Cells by 8-Plex iTRAQ** GUJIE ZHU, University of Notre Dame, Liangliang Sun, Richard Keithley, Norman J Dovichi

ORAL SESSIONS

Session 1300

Clinical Chemistry and Toxicology (Half Session)

Tuesday Afternoon, Room S501a

- 1:30 (1300-1) **Illicit Drug Detection in the Saliva of Impaired Drivers** CHETAN SHENDE, Real-Time Analyzers, Inc., Hermes Huang, Stuart Farquharson
- 1:50 (1300-2) **Development of a Universal Method for the Quantification of Organic Toxins from Environmental, Biological, and Food Samples** ANDREW J BOGGESS, Duquesne University, HM Skip Kingston
- 2:10 (1300-3) **Numerical Modeling of Solid Phase Micro-Extraction (SPME) for Kinetic Analysis in Matrix and Matrix-Free Solution** NAZMUL ALAM, University of Waterloo, Luis Ricardez Sandoval, Janusz Pawliszyn
- 2:30 (1300-4) **Electronics System for Multimodal Monitoring of Brain Injury Patients** CHU WANG, Imperial College London, Kostas Papadimitriou, Michelle Rogers, Chi Leng Leong, Toby Jeffcote, Emmanuel M Drakakis, Martyn G Boutelle

ORAL SESSIONS

Session 1310

Environmental Analysis of PAHs (Half-Session)

Tuesday Afternoon, Room S501a

- 3:05 (1310-1) **Environmental Forensic Investigation of Polycyclic Aromatic Hydrocarbons: Determination and Apportionment of Possible Sources** ASHLEY GATES, Pennsylvania State University, Jack Cochran, Melinda Pham, Frank Dorman
- 3:25 (1310-2) **Application of Polymeric Ionic Liquid/ Multi-Walled Carbon Nanotube-Based Sorbent Coatings for the Determination of Polycyclic Aromatic Hydrocarbons Using Solid-Phase Microextraction** CHENG ZHANG, The University of Toledo, Jared L Anderson
- 3:45 (1310-3) **Alkyl Polycyclic Aromatic Hydrocarbons Emissions in Diesel/Biodiesel Exhaust** SERGIO M CORREA, State University of Rio de Janeiro, Carina S Casal

ORAL SESSIONS

Session 1320

Forensic Analysis

Tuesday Afternoon, Room S502a

- 1:30 (1320-1) **Characterization of Complex Botanicals by Comprehensive High Performance Time of Flight Mass Spectrometry** JOHN RORABEK, Andrews University, David E Alonso, Joe Binkley
- 1:50 (1320-2) **Magic Mushroom Secrets Revealed — Analysis by GC x GC High Resolution Time-of-Flight Mass Spectrometry** DAVID E ALONSO, Leco Corporation, John Rorabek, Joe Binkley
- 2:10 (1320-3) **Investigating the Molecules of "Death"** RACHEL RENEE BOWER, The Pennsylvania State University, Dan G Sykes
- 2:30 (1320-4) **Methamphetamine/Pseudoephedrine Detection with a Portable MEMS GC/SAW System** LEE TU, Defiant Technologies, Patrick R Lewis, Douglas Adkins, Robert Sanchez, Gary Fuehrer, George Dulleck, Jacy Gansz
- 2:50 **Recess**
- 3:05 (1320-5) **Versatile Analytical Strategies for Forensic Chemical Profiling of Explosives** ARIAN C VAN ASTEN, Netherlands Forensic Institute, Hanneke Brust, Mattijs Koeberg, Antoine van der Heijden, Peter Schoenmakers
- 3:25 (1320-6) **Comparison of Simulated and Casework Arson Debris for the Training of Chemometric Models** JAMES J HARYNUK, University of Alberta, Xiao Qin Lee, Lawrence A Adutwum, P Mark L Sandercock
- 3:45 (1320-7) **Error Rates for Classification of Fire Debris as Positive or Negative for Ignitable Liquid Residue** MICHAEL SIGMAN, University of Central Florida, Erin Waddell, Mary R Williams, Jessica Frisch-Daiello
- 4:05 (1320-8) **Colorimetric Wax Toner Paper-Based Device for Field Explosive Testing** THIAGO PAIXAO, Universidade de Sao Paulo, Maiara Salles, Eric da Costa, William de Araujo, Gabriel Meloni

ORAL SESSIONS

Session 1330

Liquid Chromatography/Mass Spectrometry: Pharmaceutical and Environmental Applications

Tuesday Afternoon, Room S502b

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|------|---------------|---|
| 1:30 | (1330-1) | Information Rich Orthogonal Detection to Provide More Complete Characterization of an USP Assay APARNA CHAVALI, Waters Corporation, Thomas E Wheat, Patricia R McConville |
| 1:50 | (1330-2) | Determination of Sulfite in Food Products Using Liquid Chromatography-Mass Spectrometry KATHERINE S ROBBINS, US FDA/CFSAN, Shaun A MacMahon, Lowri DeJager, Timothy H Begley |
| 2:10 | (1330-3) | A Proposed Alternative USP Method for the Determination of Glutathione Impurities by LC-MS-MS NICOLAS J HOUSER, RTC/Sigma-Aldrich, Andy Ommen, Carmen T Santasania |
| 2:30 | (1330-4) | Automated Multimodal Chromatographic Method Development Integrating Complementary Optical and Mass Spectral Detection DANIEL ROOT, Waters Corporation, Thomas E Wheat, Patricia R McConville |
| 2:50 | Recess | |
| 3:05 | (1330-5) | Orthogonal Detection Techniques for the Identification and Confirmation of Impurities Using an USP Chromatographic Method APARNA CHAVALI, Waters Corporation, Thomas E Wheat, Patricia R McConville |
| 3:25 | (1330-6) | Improving Stereoisomer Analysis of 1,3-DMAA and 1,4-DMAA in Geranium Plants Using a Chiral Derivatizing Agent with HPLC-MS/MS Detection HEATHER FLEMING, University of Memphis, Patricia Ranaivo, Paul S Simone |
| 3:45 | (1330-7) | Development and Evaluation of a Chromatographic System Combining UV and MS Detection Used in Separation Development THOMAS E WHEAT, Waters Corporation, Aparna Chavali, Paula Hong, Daniel Root, Patricia R McConville |

ORAL SESSIONS

Session 1340

Microfluidics: Cells, Bacteria, Viruses

Tuesday Afternoon, Room S503a

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|------|---------------|---|
| 1:30 | (1340-1) | Generation of a Chemical Gradient Across an Array of 256 Cell Cultures in a Single Chip HIMALI J SOMAWEERA, Texas Tech University, Dimitri Pappas, Akif Ibragimov |
| 1:50 | (1340-2) | A Chiral Microchip Electrophoresis-Mass Spectrometric Platform for Studying Stereochemical Preference in Cells YIMING LIU, Jackson State University, Xiangtan Li |
| 2:10 | (1340-3) | Immune Cell Capture by Negative Dielectrophoretic Attraction to an Ion Enrichment Zone Generated by a Bipolar Electrode ROBBYN KIMBERLY PERDUE-ANAND, University of Washington, Daniel T Chiu, Eleanor S Johnson |
| 2:30 | (1340-4) | A Microfluidic Localized, Multiple Cell Culture Array Using Vacuum Actuated Cell Seeding: Integrated Anticancer Drug Testing YAN GAO, Texas Tech University, Dimitri Pappas, Peng Li |
| 2:50 | Recess | |
| 3:05 | (1340-5) | Nanofluidic Circuits for Resistive-Pulse Sensing of Virus Capsids with an Improved Signal-to-Noise Ratio ANDREW R KNELLER, Indiana University, Zachary D Harms, Daniel G Haywood, Stephen C Jacobson, Lisa Selzer, Adam Zlotnick |
| 3:25 | (1340-6) | Multiplexed Microfluidic Enzyme Assays for Detection of Metabolic Products from Living Cells COLLEEN DUGAN, University of Michigan, Ormond MacDougald, Robert Kennedy |
| 3:45 | (1340-7) | Functionalized Electrospun Nanofibers for the Concentration and Detection of Pathogenic E.Coli LAUREN MATLOCK-COLANGELO, Cornell University, Christine L Pitner, Olesja Bauer, Margaret W Frey, Antje Baeumner |
| 4:05 | (1340-8) | Electrical Lysis of Adhered Cells on a Reusable Transparent 3D Printed Fluidic Device Via Removable Electrodes for In Vitro Thrombus Formation BETHANY GROSS, Michigan State University, Dana Spence |

ORAL SESSIONS

Session 1350

Neurochemistry: Dopamine and Serotonin

Tuesday Afternoon, Room S503b

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|------|---------------|--|
| 1:30 | (1350-1) | Electrochemical Measurements to Study Mechanisms of Neurodegeneration and Neurotoxicity SAM KAPLAN, University of Kansas, Ryan Limbocker, Maxwell Newby, Michael A Johnson |
| 1:50 | (1350-2) | Evoked Dopamine Overflow in the 6-OHDA-Lesioned Rat Striatum ZHAN SHU, University of Pittsburgh, Amy Rupert, Michael Zigmond, Adrian C Michael |
| 2:10 | (1350-3) | Optogenetic Control of Serotonin Release in Drosophila NING XIAO, University of Virginia, B Jill Venton |
| 2:30 | (1350-4) | Disruption of Protein-Protein Interactions at the N-Terminus of the Dopamine Transporter: Effects on Dopamine Clearance MITCH TAYLOR, University of Pittsburgh, Kathleen M Salerno, Gonzalo E Torres, Adrian C Michael |
| 2:50 | Recess | |
| 3:05 | (1350-5) | Simultaneously Monitoring the Effects of Levodopa Treatment on Dopamine and H2O2 Dynamics In Vivo with Fast-Scan Cyclic Voltammetry LINGJIAO QI, North Carolina State University, Leslie A Sombers |
| 3:25 | (1350-6) | Measurement of Stimulated Dopamine Exocytosis and Electrochemical Imaging of Differentiated PC12 Cells via Scanning Electrochemical Microscopy-Atomic Force Microscopy KIRSTIN C MORTON, Indiana University, Maksymilian A Derylo, Lane A Baker |
| 3:45 | (1350-7) | A Novel Kinetic Model of Voltammetric Dopamine Measurements in the CNS SETH H WALTERS, University of Pittsburgh, Adrian C Michael |
| 4:05 | (1350-8) | Lingering Neurochemical Effects of Acute Escitalopram: An In-Vivo Voltammetric Serotonin Study in Mice DAVID E CEPEDA, Wayne State University, Parastoo Hashemi |

ORAL SESSIONS

Session 1360

Separation Science: Novel Approaches to Improve Chromatographic Analysis

Tuesday Afternoon, Room S505a

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|------|---------------|--|
| 1:30 | (1360-1) | Evaluation of Enhanced Fluidity Mobile Phases in Hydrophilic Interaction and Ion Exchange Separations MARTIN J BERES, The Ohio State University, Susan V Olesik |
| 1:50 | (1360-2) | The Next Generation of Hydrolytically Stable Packing Materials: Organic/Inorganic Hybrids MATTHIAS IDE, Ghent University, Frédéric Lynen, Pascal Van Der Voort |
| 2:10 | (1360-3) | Evaluation and Applications of a HILIC/Cation Exchange/Anion Exchange Trimodal Column XIAODONG LIU, Thermo Fisher Scientific, Mark Tracy, Christopher Pohl |
| 2:30 | (1360-4) | Considerations for Choosing a Different Carrier Gas in Gas Chromatography JAAP DEZEEUW, Restek |
| 2:50 | Recess | |
| 3:05 | (1360-5) | Analyses of Fat-Soluble Vitamins, Carotenoids and Lipids by Supercritical Fluid Chromatography with Sub-2µm Particle Columns JINCHUAN YANG, Waters Corporation, Giorgis Isaac, Rui Chen, Joe Romano |
| 3:25 | (1360-6) | Continuing Investigation of Polyionic Ionic Liquid Stationary Phases for Capillary GC LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Greg A Baney, James L Desorcie, Daniel Shollenberger, Gustavo Serrano |
| 3:45 | (1360-7) | Pyrolysis-GC/MS Used to Study Dyes in Textile Fibers KAREN SAM, CDS Analytical, Thomas Wampler, Steve Wesson, Ben Peters, Gary Deger |

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 1370

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Drug Discovery

Tuesday Afternoon

- (1370-1 P) **Fraction Collection Using Sub 2 μ m UHPLC Separations: Challenges and Solutions** ANDREW AUBIN, Waters Corporation, Jo-Ann Jablonski, Wendy Harrop
- (1370-2 P) **Isolation of a Bioactive Compound from Tillandsia recurvata Plant Extract Using Supercritical Fluid Extraction and Mass Directed Preparative Liquid and Supercritical Fluid Chromatography** JOHN P MCCAULEY, Waters Corporation, Jo-Ann Jablonski, Jacquelyn Runco, Yun Alelyunas, Rui Chen
- (1370-3 P) **Antifungal Fractions Isolated from the Root-Bark Essential Oil of Morinda Lucida (L)** SUNDAY O OKOH, University of Lagos, Taiwo Olayinka
- (1370-4 P) **Analysis of Drugs: Single Fast Approach for the Determination of Most Common Drugs and their Metabolites Using GC-TOF-MS** ILARIA FERRANTE, DANI Instruments, Chiara Abate
- (1370-5 P) **GC/MS Constituents and Physico-Chemical Properties of Crude and Refined Azadirachta Indica Seed Oils** SUNDAY O OKOH, University of Lagos, Aroke S Ahmed
- (1370-6 P) **Study of Novel Pyrrole Derivatives** TARUN PATEL, MR Science College
- (1370-7 P) **Synthesis and Biological Screening of Novel Heterocyclic Compounds** AMIT PATEL, Shri M, R Science College
- (1370-8 P) **Synthesis and Characterization of Some Novel Chalcone Compounds having Benzyloxydibromo Resacetophenone Moiety** SANJAYKUMAR S SHAH, Pilvai College, Kirtikumar Goswami

POSTER SESSION

Session 1380

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Environmental Analysis of Toxic and Persistent Compounds

Tuesday Afternoon

- (1380-1 P) **Exploring the Applicability of Cryogenic Modulation with GC-HRT for the Analysis of Persistent Organic Pollutants** JONATHAN BYER, Leco Corporation, David E Alonso, Joe Binkley, Jeff Patrick
- (1380-2 P) **GC-PID for In-Situ Soil Investigation** JOERN FRANK, Hamburg University of Technology, Hendrik Fischer, Ivaylo Radev, Axel Baermann, Gerhard Matz
- (1380-3 P) **The Use of RP-HPLC Technique for Determining Polycyclic Aromatic Hydrocarbons (PAH's) in Marine and Seaside Sediments Collected from the Gulf of Mexico** ANTONIO ROJAS, Mexican Petroleum Institute, Berenice A Nolasco, Zoraya Carbajal, Gerardo Zavala, Alma Martinez, Camilo Ponce
- (1380-4 P) **Single Column Analysis of PBDEs, Including BDE 209** KORY KELLY, Phenomenex
- (1380-5 P) **Selective and Sensitive Detection and Quantification of Stockholm Convention POPs Including Dioxins, Using Atmospheric Pressure Gas Chromatography MS/MS** DOUGLAS STEVENS, Waters Corporation, Kenneth J Rosnack, Kendon Graham, Jody Dunstan, Michael McCullagh, Bert van Bavel, Ingrid Ericson Jogsten, Jessika Hagberg
- (1380-6 P) **Analysis of Pesticides in Baby Food Using a Triple-Quadruple GC/MS/MS** LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Zhuangzhi "Max" Wang, Clifford M Taylor
- (1380-7 P) **Determination of Paraquat and Diquat in Environmental Samples Using a Sub-2- μ m, Solid-core Particle HILIC Column** KENNETH J FOUNTAIN, Waters Corporation, Jeremy C Shia, Michael S Young
- (1380-8 P) **Development and Evaluation of Novel NSP-EUPAH GC Column for EU and EPA Priority PAH** KRISHNAT NAIKWADI, J & K Scientific Inc., Allen Britten

POSTER SESSION

Session 1390

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Environmental: Air Analysis

Tuesday Afternoon

- (1390-1 P) **Ease of Use and Low Detection Limits of a New Dry Sampler for Determination of Vapor Phase and Particulate Isocyanate Derivatives** OLGA I SHIMELIS, Supelco/Sigma-Aldrich, Emily Barrey, Michael Halpenny, Jamie Brown
- (1390-2 P) **Multivariate Statistical Analysis of Chicago Air Pollution and Meteorological Data** KATRINA BINAKU, Loyola University Chicago, Martina Schmeling, Tim O'Brien, Tinamarie Fosco
- (1390-3 P) **Development of an Airborne Proton-Transfer-Reaction Time-of-Flight Mass Spectrometry (PTR-TOFMS) Instrument for Atmospheric Research** GERNOT HANEL, IONICON Analytik GmbH., Alfons Jordan, Armin Wisthaler, Markus Mueller, Tomas Mikoviny, Jim H Crawford, Eugen Hartungen, Christian Lindinger, Lukas Maerk, Jens Herbig, Simone Juerschik, Philipp Sulzer, Tilmann D Maerk
- (1390-4 P) **Monitoring Odorous Sulfur Compounds by Thermal Desorption (TD)-GC-MS** NICOLA M WATSON, Markes International, Stephen Davies, Peter Grosshans
- (1390-5 P) **Recoveries of 65 VOCs Over a 30 Day Period in Dry and Humid Conditions in Two Silicon-Lined Canister Types** JASON S HERRINGTON, Restek, Gary Stidsen, Jack Cochran, Chris English, Joe Konschnik, Steve Kozel
- (1390-6 P) **Detection of Combustion Effluents in Atmospheric Particulate Matter 2.5 (PM_{2.5})** SHIORI OTA, Tokai University, Yoshika Sekine, Naoko Hirayu, Junji Yoshitake, Hikaru Sakuramoto
- (1390-7 P) **Atmospheric Concentrations of PBDEs and BFRs in the Canadian Great Lakes Basin** NICK ALEXANDROU, Air Quality Processes Research Section, Kenneth Brice, Hayley Hung, Ky Su, Richard Park, Cecilia McKittrick, Ronald Noronha, Margaret Baroi, Josh Rosen, Stephen Brodie, Nicholas Lanigan
- (1390-8 P) **Method Development for Determination of Trace Concentrations of Aldehydes and Carboxylic Acids in Particulate Matter** JANA ROUSOVA, University of North Dakota, Manikyala Chintapalli, Jana Stavova, Alena Kubatova, Josef Beranek

POSTER SESSION

Session 1400

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Environmental: Water

Tuesday Afternoon

- (1400-1 P) **Potential Contamination of Fluoroquinolones in Water-Bodies During the Production of Broiler Chicken** LEILA A FIGUEIREDO, Universidade de Sao Paulo, Denis H Silva, Jeane G Francisco, Sergio H Monteiro, Thais F Campion, Rodrigo F Pimpinato, Carlos A Dorelli, Valdemar L Tornisielo
- (1400-2 P) **Cyanide Analysis of Aqueous Samples Containing Elevated Levels of Surfactants** WILLIAM C LIPPS, Xylem/OI Analytical, Libby A Badgett, Gary Engelhart
- (1400-3 P) **Determination of Geosmin and 2-Methylisoborneol in Environmental Matrices by Dynamic Headspace/P&T-Time of Flight GC/MS** ILARIA FERRANTE, DANI Instruments, Roberta Lariccia
- (1400-4 P) **Analysis of Micro Nutrients (Anions and Cations) in Water by Ion Chromatography** JAY GANDHI, Metrohm USA, Anne Shearrow
- (1400-5 P) **Screening Environmental Samples for a Diverse Range of Compound Classes and Structures with Accurate Mass LC-MS and an Integrated Scientific Information System** KENNETH J ROSNACK, Waters Corporation, Gareth Cleland, Lauren Mullin, Claude Mallet, Jennifer Burgess
- (1400-6 P) **Revisiting the Indirect Colorimetric Determination of Sulfate Using a Barium/Chromate Reagent and a Barium/Sulfonazo III Chelate: Application to Abandoned Mine Drainage** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg
- (1400-7 P) **Determination of 16 Environmental Protection Agency Polycyclic Aromatic Hydrocarbons in Water Samples via Solid-phase Nanoextraction and Gas Chromatography - Mass Spectrometry** WALTER B WILSON, University of Central Florida, Udienna Hewitt, Mattheu Miller, Andres D Campiglia
- (1400-8 P) **Gold Nanorods Functionalized Substrates for Surface Plasmon Resonance Detection of Mercury in Flow Injection Analysis** KHANG TRIEU, University of Central Florida, Emily Heider, Andres D Campiglia

- (1400-9 P) **Improved Efficiencies In TOC Wastewater Analysis for Standard Method 5310B and EPA Method 415** KRISTINA M MASON, Teledyne Tekmar, Tammy Rellar, Roger Bardsley, Joy Osborne
- (1400-10 P) **Analysis of Surface and Wastewaters for Phase II Metabolites via Tandem Mass Spectrometry** MATTHEW REICHERT, Loyola University Chicago, Deepika Panawennage, Gergana Georgieva, M Paul Chiarelli
- (1400-11 P) **A Single Calibration Method for Water And Soil Samples Performing EPA Method 8260** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, Doug Meece
- (1400-12 P) **Determination of Inorganic Mercury in Petroleum Production Water by Photochemical Vapor Generation Coupled to ICP OES** BARBARA B FRANCISCO, UFF, Anderson A Araujo, Ricardo A Cassella, Patricia Grinberg
- (1400-13 P) **Multimodal Cartridges for Automated Solid Phase Extraction of Emerging Contaminants in Drinking Water** WILLIAM R JONES, Horizon Technology, Alicia J Cannon, Brian LaBrecque, Robert S Johnson
- (1400-14 P) **Development of Visual Analysis for Fluoride Ion with ON-OFF Color Change Reaction by the Assistance of Image Processing Technology** ATSUSHI MANAKA, Toyama National College of Technology, Shukuro Igarashi, Tihoro Sakagami, Yu Sato
- (1400-15 P) **Measurement of Fluoride Ions in Drinking Water and Environmental Samples at Normal pH of Sample by Pulsed Chronopotentiometry with Ion-Selective Electrodes** JEREMY MEYERS, Northern Kentucky University, Kebede L Gemene
- (1400-16 P) **Utility of Charge Detector in Ion Chromatography Applications** MRINAL K SENGUPTA, Thermo Fisher Scientific, Sheetal Bhardwaj, Kannan Srinivasan, Christopher Pohl, Purnendu K Dasgupta
- (1400-17 P) **Use of Flow Analytical Method on the Evaluation Test of Visible Light Responded N/Si Co-Doped TiO₂ Sheet in Aqueous Phase** TSUYOSHI SUGITA, Gunma University, Katayama Katayama, Masanobu Mori, Akinori Mase, Hideyuki Itabashi, Shinji Iwamoto
- (1400-18 P) **Evaluation of Microbiological Qualities of Tyume River Located in Amatole District, Eastern Cape Province, South Africa** ANTHONY OKOH, University of Fort Hare, Timothy Sibanda
- (1400-19 P) **Increased Throughput for VOCs** JOY OSBORNE, Teledyne Tekmar, Nathan Valentine, Kristina M Mason
- (1400-20 P) **Preliminary Performance Study on a New Sample Processor for GC-MS Analysis of Volatile Organic Compounds (VOCs) in Water and Soil Matrices** J GARRETT SLATON, Xylem/OI Analytical, Douglas A Toschlog, Gary Engelhart
- (1400-21 P) **Inline Dual Element Sample Treatment with Automated Back Flush** BERNARD G SHELDON, Thermo Fisher Scientific
- (1400-22 P) **Perchlorate and Bromate Analysis in Various Water Matrices Using Suppressed Ion Chromatography** JAY GANDHI, Metrohm USA
- (1400-23 P) **Ion Chromatographic Separation of Divalent Cations by Lewis Base-Coated Zirconia Stationary Phase Column** MORI MASANOBU, Gunma University, Masuno Tomoe, Itabashi Hideyuki, Tanaka Kazuhiko

POSTER SESSION Session 1410

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Food Science: Flavors

Tuesday Afternoon

- (1410-1 P) **Application of Solid Phase Extraction with Gas Chromatography-Mass Spectrometry in Geographical Profiling and Characterization of Volatile Organic Compounds in Kenyan Honey** ONDITI O ANAM, Jomo Kenyatta University of Agriculture and Technology, Fredrick N Munga
- (1410-2 P) **Detection of Low-Level Sulfur Compounds in Spearmint Oil Using the Pulsed Flame Photometric Detector (PFPD)** GARY ENGELHART, OI Analytical, Hank Hahn
- (1410-3 P) **Antioxidant Stability of Coffee and Tea Products Using the TEAC Method** XIAOPING LI, Georgia Gwinnett College, Jessie Conejo, Mai Mouta
- (1410-4 P) **Comparison of Different Direct Mass Spectrometric Approaches for the Quality Control of Virgin Olive Oil** ANTONIO MOLINA-DIAZ, University of Jaen, Felipe J Lara-Ortega, José Robles-Molina, Bienvenida Gilbert-López, Juan F García-Reyes
- (1410-5 P) **Evaluation of the Essential Elements Behavior in Raw and Cooked Beans (Phaseolus vulgaris L.)** JULIANA NAOZUKA, UNIFESP, Alessandra S T Ferreira, Gislayne A R Kelmer, Pedro V Oliveira

- (1410-6 P) **Antioxidant Activities of Rosmarinus Officinalis L. Essential Oil Obtained by Hydro-Distillation and Solvent Free Microwave Extraction** OMOBOLA OLURANTI OKOH, University of Fort Hare, Alexandra P Sadimenko, Anthony J Afolayan
- (1410-7 P) **Batch to Batch Sensory Quality Control of Ranch Sauce Using a Gas Chromatography Electronic Nose and Olfactometry** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marion Bonnefille, Herve Lechat, Fatma Ayouni, Valerie Vabre
- (1410-8 P) **Quantification of the Bitterness Level of Olive Oils with an Electronic Tongue** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marie-Laure Vicenty, Marion Bonnefille
- (1410-9 P) **Flavor Profiles of Imported and Domestic Beers by Purge and Trap Thermal Desorption GC/MS** RONALD EDWARD SHOMO, Scientific Instrument Services, Robert S Frey, Christopher Baker, John J Manura
- (1410-10 P) **Vegetable Oils and Their Thermal Stability Under Frying Process** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Izabel Cristina Freitas Moraes
- (1410-11 P) **Essential Oils Authenticity Assessment in Food and Beverages Products by Static Headspace and Chiral Fast GC-TOF-MS** DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero

POSTER SESSION

Session 1420

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Food Science: Screening Strategies

Tuesday Afternoon

- (1420-1 P) **Use of a Voltammetric Electronic Tongue for Discrimination of Milk Adulteration with Urea, Formaldehyde and Melamine** LIGIA BUENO, Universidade de Sao Paulo, Maiara Salles, William de Araujo, Thiago Paixao
- (1420-2 P) **Nitrogen/Protein Determination in Starch by Flash Combustion Using Large Sample Weight in Alternative to Kjeldahl Method** GUIDO GIAZZI, Thermo Fisher Scientific, Lilliana Krotz
- (1420-3 P) **Fast and Cost-Efficient Nitrogen/Protein Analysis for Starch** WERNER KUPPERS, C. Gerhardt GbmH & Co. KG.
- (1420-4 P) **Method Development for Modifying QuEChERS in Modern Applications** DERICK LUCAS, Agilent Technologies, Trisa Robarge, Mike Chang, Irina Diomaeava
- (1420-5 P) **Electrical Conductivity, Color, Water Activity, Ash and Specific Rotatory Power in Selected Colombian Honeys** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Laura María M Reyes Méndez, Paulo Jose Amaral do Sobral
- (1420-6 P) **Very Large Range Pesticide Screening in Food Using GC Triple Quadrupole MS** MASSIMO SANTORO, Thermo Fisher Scientific, David Steiniger, Juan Carmona, Paul Silcock, Jason Cole
- (1420-7 P) **Identification of Fraudulent Truffle Oil Adulterants by Thermal Desorption GC/MS** RONALD EDWARD SHOMO, Scientific Instrument Services, Christopher Baker, John J Manura, Robert S Frey
- (1420-8 P) **Analysis of PAHs in Olive Oil Using a New Dual-Layer SPE Cartridge** KATHERINE K STENERSON, Supelco/Sigma-Aldrich, Olga I Shimelis, Ken Espenschied, Michael Halpenny
- (1420-9 P) **Veterinary Drug Residue Analysis Using an Automated Solution to QuEChERS** TYLLER TRENT, Teledyne Tekmar
- (1420-10 P) **The Applications of SHINERS Technology in Food Safety** HUAIZHI KANG, Xiamen University, Zhongqun Tian
- (1420-11 P) **Analysis of Coffee Packaging and Filter Leachates from Various Single-serve Coffee Pod Suppliers Using GCxGC-HRT** CORY S FIX, Leco Corporation, Joe Binkley, Jeff Patrick
- (1420-12 P) **Utilizing HPLC and HPLC-MS for the Characterization, Isolation, and Quantitation of Capsaicinoids in Chili Peppers and Hot Sauces** J PRESTON, Phenomenex, Seyed Sadjadi, Sky Countryman, Zeshan Aqeel
- (1420-13 P) **Ion Exclusion Ultra-High Performance Liquid Chromatography of Aliphatic and Aromatic Acids** JENNIFER D FASCIANO, Miami University, Fotouh R Mansour, Neil D Danielson

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 1430

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Sensors: General Interest and Others

Tuesday Afternoon

- (1430-1 P) **A Highly Sensitive, Real Time LSPR Sensor** DANIEL WILLETT, Clemson University, George Chumanov
- (1430-2 P) **Nitrite-Selective Optical Sensors Based on Co(III) Corrole and Rh(III) Porphyrin as Ionophores** SI YANG, University of Michigan, Mark E Meyerhoff
- (1430-3 P) **SERS Active Three Dimensional Gold Nanostructure** TAKAO FUKUOKA, University of Hyogo/Archilys, Ryo Takahashi, Yuichi Utsumi, Akinobu Yamaguchi
- (1430-4 P) **Disposable Microelectrode Ensembles Fabricated with Toner Masks for Hydrogen Peroxide Determination** ANA PAULA R DE SOUZA, Universidade de Sao Paulo, Luiza M F Dantas, Mauro Bertotti
- (1430-5 P) **Determination of Fe(III) in Water Samples Using a Ruthenium Oxide Hexacyanoferrate Modified Microelectrode** ROSELYN C PEÑA, Universidade de Sao Paulo, Ana Paula R de Souza, Mauro Bertotti
- (1430-6 P) **Total Biosensing System Based on Newly Proposed Surface Plasmon Resonance** TOSHIKAZU KAWAGUCHI, Hokkaido University, Katsuaki Shimazu, Kinichi Morita
- (1430-7 P) **Highly Sensitive and Reproducible SERS Sensors Based on AuNps/SPIONs Composites** JONNATAN J SANTOS, Universidade de Sao Paulo, Sergio H Toma, Henrique E Toma, Koiti Araki
- (1430-8 P) **Hydrogen Ion-Selective Poly(Vinyl Chloride) Membrane Electrode for the Use in Highly Acidic Solutions Containing Hydrofluoric Acid** DAISAKU YANO, Organo Corporation, Koji Suzuki
- (1430-9 P) **Functionalized Magnetic Nanoparticles for Homogeneous SERS Assay Platforms** UGUR TAMER, Gazi University, Aykut Onal, Hakan Cifticico, Adem Zengin, Demet Cetin, Zekiye Suludere, Ismail H Boyaci
- (1430-10 P) **Research and Development of TI – Sensitive Solid State Sensor with TI1–Ag₂S–As₂S₃ Glass Membrane** YURY VLASOV, Saint-Petersburg State University, Yuri E Ermolenko, Igor E Alekseev, Dmitrii Kaliagin

WEDNESDAY, MARCH 5, 2014

MORNING

AWARDS

Session 1440

ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science

arranged by Brian Bidlingmeyer, Agilent Technologies

Wednesday Morning, Room S401a

Brian Bidlingmeyer, Agilent Technologies, Presiding

- 8:30 **Introductory Remarks - Brian Bidlingmeyer**
- 8:35 **Presentation of the 2014 ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science to Michael G Roper, Florida State University, by Brian Bidlingmeyer, Agilent Technologies**
- 8:40 (1440-1) **Microscale Separation Methods to Monitor Dynamics of Biological Systems** MICHAEL G ROPER, Florida State University
- 9:15 (1440-2) **Petroleomics: GCxGC and LC to Separate Functional Groups and/or Isomers and Increase Dynamic Range to Complement Elemental Compositions Resolved and Identified by Ultra-High Resolution FT-ICR Mass Spectrometry** ALAN G MARSHALL, Florida State University, Amy C Clingenpeel, Jacqueline M Jarvis, Jie Lu, Amy M McKenna, Winston K Robbins, Ryan P Rodgers, Steven M Rowland
- 9:50 (1440-3) **Electroosmotic Perfusion of Tissue Coupled to On-Chip Derivatization, Separation, and Quantitation - Analysis of Extracellular Biochemistry of Thiols** STEPHEN G WEBER, University of Pittsburgh, Juanfang Wu, Bocheng Yin, Jerome P Ferrance, Kerui P Xu, James P Landers, Erin Redman, Jean P Alarie, J Michael Ramsey, Mats Sandberg
- 10:25 **Recess**
- 10:40 (1440-4) **Microchip Electrophoresis with Electrochemical Detection for Monitoring Markers of Oxidative/Nitrosative Stress in Cells** SUSAN M LUNTE, University of Kansas, Dulan Gunesevara, Joseph M Siegel, Christopher T Culbertson
- 11:15 (1440-5) **Capillary Electrophoresis for High Throughput Proteomics** NORMAN J DOVICH, University of Notre Dame

SYMPOSIUM

Session 1450

ACS DAC: Chemometrics for Modeling and Analyzing Chemical Systems

arranged by Frank Vogt, University of Tennessee

Wednesday Morning, Room S401bc

Frank Vogt, University of Tennessee, Presiding

- 8:30 **Introductory Remarks - Frank Vogt**
- 8:35 (1450-1) **OPLS Methods for Improved Model Interpretation and Multi-Block Data Integration** JOHAN TRYGG, Umeå University
- 9:10 (1450-2) **Geospatial Pattern Recognition: What Can Be Deduced From Geolocated Chemical Data Sets?** STEVEN D BROWN, University of Delaware, Liyuan Chen, Yushan Liu
- 9:45 (1450-3) **Multivariate Modeling and Chemometric Resolution of Mixture Spectra in Dynamic Reaction Systems** PAUL GEMPERLINE, East Carolina University, Chun Hsieh, David Joiner, Julien Billeter, Mary Ellen McNally, Ronald Hoffman
- 10:20 **Recess**
- 10:35 (1450-4) **Fusing Spectroscopic Data to Improve Protein Structure Analysis** RENEE D JIJI, University of Missouri Columbia, Olayinka O Oshokoya
- 11:10 (1450-5) **Mass Spectrometry-Based Oncometabolomics** FACUNDO M FERNANDEZ, Georgia Institute of Technology, Xiaoling Zang, Maria Eugenia Monge, Christina Jones, Tran Quoc Long, Alex Gray, John McDonald, Jaeyeon Kim, Martin Matzok

SYMPOSIUM Session 1460

ACS DAC: Nanofabrication and Nanoconstructs for Chemical Separations

arranged by Lisa A Holland, West Virginia University

Wednesday Morning, Room S401d

Lisa A Holland, West Virginia University, Presiding

8:30		Introductory Remarks - Lisa A Holland
8:35	(1460-1)	Nanostructured Materials for Liquid Chromatographic Separations SUSAN V OLESIK, The Ohio State University, Toni Newsome, Xin Fang, Dmytro Kulyk
9:10	(1460-2)	Carbon-Based Nanomaterials for Chemical Separations LUIS A COLON, University at Buffalo - SUNY, John C Vinci, Zuqin Xue, Lisandra Santiago-Capeles
9:45	(1460-3)	2D Microfluidic Separation of DNA by Length and Sequence LINDA B MCGOWN, Rensselaer Polytechnic Institute, Xingwei Tepke, Xueru Zhang, Steven Cramer
10:20		Recess
10:35	(1460-4)	Nano-Scaffolds for Construct of Biocompatible Coatings in Capillary Electrophoresis CHARLES A LUCY, University of Alberta, Mahmoud F Bahnasy, Nathan Paisley
11:10	(1460-5)	Reversible Nanogels for Microscale Separations with Tunable Selectivity LISA A HOLLAND, West Virginia University, Brandon C Durney, Tyler Davis, Srikanth Gattu, Cassandra L Crihfield

SYMPOSIUM Session 1470

Applications of the Newest Light Sources

arranged by Roland Felix Hirsch, Office of Science, US Dept of Energy, SC-23.2 and Andrzej Joachimiak, Director, Structural Biology Center & Midwest Center for Structural Genomics

Wednesday Morning, Room S402a

Roland Felix Hirsch, Office of Science, US Dept of Energy, SC-23.2, Presiding

8:30		Introductory Remarks - Roland Felix Hirsch and Andrzej Joachimiak
8:35	(1470-1)	Technologies and Applications of Synchrotrons and X-Ray Free-Electron Lasers KEITH O HODGSON, Stanford/SLAC
9:10	(1470-2)	XFP: A National Resource for X-ray Footprinting at the NSLS-II to Probe Nucleic Acids and Protein Structure and Dynamics MARK CHANCE, Case Western Reserve University, Jen Bohon, Michael Sullivan
9:45	(1470-3)	Title Not Provided at Time of Printing
10:20		Recess
10:35	(1470-4)	Infrared Spectromicroscopy: The Chemistry of Living Cells HOI-YING N HOLMAN, Lawrence Berkeley National Laboratory
11:10	(1470-5)	Advances in the Use of Newest Synchrotron X-Ray Sources in Biology MATTHIAS WILMANN, EMBL

SYMPOSIUM Session 1480

Biological TERS: Instrumentation Development and Applications

arranged by Volker Deckert, Institut für Photonische Technologien and Igor K Lednev, University at Albany, SUNY

Wednesday Morning, Room S402b

Volker Deckert, Institut für Photonische Technologien, Presiding

8:30		Introductory Remarks - Volker Deckert and Igor K Lednev
8:35	(1480-1)	Single Molecule and Low Temperature Tip-Enhanced Raman Spectroscopy RICHARD P VAN DUYN, Northwestern University
9:10	(1480-2)	Scratching the Surface - Limits in High Resolution Raman VOLKER DECKERT, IPHT Jena
9:45	(1480-3)	Application of TERS to Extracellular Matrix Components LAURENT KREPLAK, Dalhousie University
10:20		Recess
10:35	(1480-4)	Membrane Receptors Probed with Tip Enhanced Raman Scattering ZACHARY D SCHULTZ, University of Notre Dame
11:10	(1480-5)	TERS is Uniquely Suitable for Structural Characterization of the Surface of Amyloid Fibrils IGOR K LEDNEV, University at Albany - SUNY, Dmitry Kurouski, Tanja Deckert-Gaudig, Volker Deckert

SYMPOSIUM Session 1490

IAEAC: Label-Free Biosensing: Impedance-Based Biosensors for Environmental Applications

arranged by Joachim Wegener, Regensburg University and Antje Baeumner, Cornell University

Wednesday Morning, Room S404a

Joachim Wegener, Regensburg University, Presiding

8:30		Introductory Remarks - Joachim Wegener and Antje Baeumner
8:35	(1490-1)	A Biosensor Using Living Cells IVAR GIAEVER, BioPhysics
9:10	(1490-2)	Field Portable Impedance-Based Water Toxicity Sensor Using Fish Cells on Fluidic Biochips LINDA MARIE BRENNAN, US Army Center for Environmental Health Research, Mark W Widder, William H van der Schalie, Lucy E Lee
9:45	(1490-3)	Impedance Based Microfluidic Devices to Monitor Cell Volume of Adherent Cells in Real Time and the Interconnections between Cells SUSAN HUA, SUNY-Buffalo
10:20		Recess
10:35	(1490-4)	Electrochemical Aptasensors for Microbial and Viral Pathogens MAXIM V BEREZOVSKI, University of Ottawa, Mahmoud Labib
11:10	(1490-5)	Hyphenated Impedimetric Sensors: A New Route to a Non-Imaging, Label-Free High Content Screening? JOACHIM WEGENER, Universitaet Regensburg

SYMPOSIUM Session 1500

Recent Advances in Laser Induced Breakdown Spectroscopy

arranged by Jagdish P Singh, Mississippi State University and Rick Russo, Lawrence Berkeley National Laboratory

Wednesday Morning, Room S404bc

Jagdish P Singh, Mississippi State University, Presiding

8:30		Introductory Remarks - Jagdish P Singh and Rick Russo
8:35	(1500-1)	LIBS on Mars: ChemCam's First 100,000 Spectra from the Red Planet ROGER C WIENS, Los Alamos National Lab, Sylvestre Maurice, Olivier Forni, Sam Clegg, Ryan B Anderson, M Darby Dyar, Cecile Fabre, Jeremie Lasue, MSL Science Team
9:10	(1500-2)	Laser-Induced Breakdown Spectroscopy (LIBS) as an Emerging Tool: Figures, Facts and Future MOHAMAD SABSABI, National Research Council, Paul Bouchard, Francois R Doucet, Lutfu C Ozcan, Anrdé Moreau, Aissa Harhira, Alain Blouin
9:45	(1500-3)	Fieldable LIBS: Advances in Man-Portable and Handheld Devices ANDRZEJ W MIZIOLEK, US Army Research Laboratory
10:20		Recess
10:35	(1500-4)	Application of Laser Induced Breakdown Spectroscopy (LIBS) for Monitoring CO₂ Storage Permanence DUSTIN MCINTYRE, USDOE NETL
11:10	(1500-5)	Laser-Induced Breakdown Spectroscopy in Life Science AWADHESH K RAI, Allahabad University, Ashok K Pathak

SYMPOSIUM Session 1510

Refining Chemical Analysis in the Central Nervous System

arranged by Adrian C Michael, University of Pittsburgh and Martyn Boutelle, Imperial College London

Wednesday Morning, Room S404d

Adrian C Michael, University of Pittsburgh, Presiding

8:30		Introductory Remarks - Adrian C Michal and Martyn Boutelle
8:35	(1510-1)	In-Vivo, Real-Time Chemical Characterization of Brain Tumour Tissues by Rapid Evaporative Ionization Mass Spectrometry ZOLTAN TAKATS, Imperial College London
9:10	(1510-2)	A Biosensor-Based Microfluidic Analysis System for Monitoring Brain Injury MICHELLE ROGERS, Imperial College London, Chi Leng Leong, Sally Gowers, Xize Niu, Andrew De Mello, Martyn G Boutelle
9:45	(1510-3)	Brain Tissue Response to Intra-Cortical Microelectrode Arrays TRACY CUI, University of Pittsburgh
10:20		Recess
10:35	(1510-4)	Micro-electrode Array Biosensors for Neurotransmitter Detection During Operant Conditioning NIGEL T MAIDMENT, University of California, Los Angeles, Kate M Wassum, Hal G Monbouquette
11:10	(1510-5)	Electrochemical Recordings in Animals and Humans: WINCS, MINCS, and Harmoni LEE KENDALL, Mayo Clinic

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM

Session 1520

Science without Borders: Analytical Chemistry Opportunities in Brazil

arranged by Doriane Barreto, NurnbergMesse Brasil

Wednesday Morning, Room S405a

Lucio Angnes, University of Sao Paulo, Presiding

8:30		Introductory Remarks - Lucio Angnes
8:35	(1520-1)	Analytical Chemistry and Quality of Life: Brazilian Contributions CLÉSIA C NASCENTES, Federal University of Minas Gerais
9:10	(1520-2)	Research Opportunities at Sao Paulo State (Brazil) LUCIO ANGNES, Universidade de Sao Paulo
9:45	(1520-3)	Analytical Chemistry Opportunities in Areas of Interest MARIA LUIZA BRAGANCA TRISTAO, Petrobras
10:20		Recess
10:35	(1520-4)	Brazil Science Mobility Program: Challenges and Opportunities for the Private Sector MICHELLE SHAYO, American Chamber of Commerce for Brazil
11:10	(1520-5)	Brazil Scientific Mobility Program and New Opportunities in Analytical Chemistry NATACHA CARVALHO FERREIRA SANTOS, CNPq -Brazil

ORGANIZED CONTRIBUTED SESSIONS

Session 1530

New Technologies and Methods in Protein Quantitation for Biotherapeutics and Clinical Diagnostics

arranged by Mike Lee, Milestone Development Services and Gary A Valaskovic, New Objective

Wednesday Morning, Room S405b

Mike Lee, Milestone Development Services, Presiding

8:30	(1530-1)	Enabling Label-Free Quantitation for Top Down Proteomics PAUL M THOMAS, Northwestern University, Kyunggon Kim, Ryan T Fellers, John P Savaryn, Neil Kelleher, Ioanna Ntai
8:50	(1530-2)	Title Not Provided at Time of Printing
9:10	(1530-3)	Title Not Provided at Time of Printing
9:30	(1530-4)	Next Generation Plasma Collection Technology for Clinical and Pharmaceutical Applications ROBERT E BUCO, Shimadzu Corporation, Fred Regnier, Jinhee Kim, Tim Woenker, Scott Kuzdzal, Jeff Dahl, Jeremy Post, Faith Hays
9:50		Recess
10:05	(1530-5)	Title Not Provided at Time of Printing
10:25	(1530-6)	Opening the Quant Faucet: Meeting the New Challenges of Protein and Small Molecule Quantitation — With High Performance, Robust Microflow LC-MS Solutions SUBODH NIMKAR, AB SCIEX
10:45	(1530-7)	Validation of a Micro Flow LC-MS/MS Method for Large Molecule Bioanalysis CASEY JOHNSON, Alturas Analytics, Inc., Chad Christianson, Jennifer Zimmer, Shane Needham
11:05	(1530-8)	Breaking the Barriers for Sensitivity and Throughput with Nanospray Based Mass Spectrometry GARY A VALASKOVIC, New Objective Inc.

ORGANIZED CONTRIBUTED SESSIONS

Session 1540

Novel Application of Terahertz and Millimeter Waves in Spectroscopy and Imaging

arranged by Anis K Rahman, Applied Research & Photonics and Nachappa "Sami" Gopalsami, Argonne National Laboratory

Wednesday Morning, Room S501a

Anis K Rahman, Applied Research & Photonics, Presiding

8:30	(1540-1)	Dendrimer Based Terahertz Spectroscopy Applications With Examples in Fullerenes and Single Nucleotide Polymorphism ANIS K RAHMAN, Applied Research & Photonics, Aunik K Rahman
8:50	(1540-2)	Millimeter Wave Remote Sensing of Nuclear Signatures NACHAPPA "SAMI" GOPALSAMI, Argonne National Laboratory, Shaolin Liao, Thomas W Elmer, Eugene R Koehl, Sasan Bakhtiari, Apostolos C Raptis
9:10	(1540-3)	Terahertz Sub-Surface 3D Nano-Scale Imaging for Semiconductor Inspection AUNIK K RAHMAN, Applied Research & Photonics, Anis K Rahman

9:30	(1540-4)	Application of Millimeter-Wave Technology to Remote Sensing of Biometric Signatures—A Review SASAN BAKHTIARI, Argonne National Laboratory, Thomas W Elmer, Shaolin Liao, Nachappa "Sami" Gopalsami, Apostolos C Raptis, Ilya Mikhelson, Alan V Sahakian
9:50		Recess
10:05	(1540-5)	Towards Microwave and Millimeter Wave 3D Real-Time Imaging REZA ZOUGHI, Missouri University of Science and Technology, MT Ghasr, JT Case
10:25	(1540-6)	A Novel Millimeter Wave and Terahertz Wave Interferometric Radar Architecture SHAOLIN LIAO, Argonne National Laboratory, Sasan Bakhtiari, Thomas W Elmer, Nachappa "Sami" Gopalsami, Paul Raptis
10:45	(1540-7)	Applications of Microwave and Millimeter Wave for Nondestructive Testing and Evaluation (NDT&E) REZA ZOUGHI, Missouri University of Science and Technology
11:05	(1540-8)	Novel Approaches to Significantly Enhance THz Emission and Detection Efficiency HOOMAN MOHSENI, Northwestern University

ORAL SESSIONS

Session 1550

Application of Bioanalytical Sensors

Wednesday Morning, Room S501bc

8:30	(1550-1)	Rapid and Sensitive Detection of DPA Using a Nanopore Probe SHUO ZHOU, Illinois Institute of Technology, Liang Wang, Yujing Han, Guihua Wang, Xiyun Guan
8:50	(1550-2)	Enhanced Stability of Suspended Lipid Bilayers for Ion Channel Recordings and Biosensor Development LEONARD K BRIGHT, University of Arizona, Christopher A Baker, Craig A Aspinwall
9:10	(1550-3)	Cross-platform Optical and Mass Spectrometric Analysis with Calcinated Plasmonic Materials SAMUEL HINMAN, University of California, Riverside, Chih-Yuan Chen, Quan Cheng
9:30	(1550-4)	Surfactant-Induced Wetting of Hydrophobic Nanopores by Aqueous Solutions ANGIE S MORRIS, University of Iowa, Yulia Skvortsova, M Lei Geng
9:50		Recess
10:05	(1550-5)	Nanopore Stochastic Sensing of HIV-1 Protease YUJING HAN, Illinois Institute of Technology, Liang Wang, Shuo Zhou, Xiyun Guan
10:25	(1550-6)	Signal Amplification Strategies on Nucleic Acid-Based Lateral Flow Biosensors GUODONG LIU, North Dakota State University
10:45	(1550-7)	Directly Probing Key Protein-lipid Interactions Mediating the Blood Coagulation Cascade Using Silicon Photonic Microring Resonators ELLEN M MUEHL, University of Illinois at Urbana-Champaign, Ryan C Bailey, Jim H Morrissey, Courtney D Sloan, Josh M Gajsiewicz
11:05	(1550-8)	Development of Radioluminescent pH Sensor Films for In Vivo Bacterial Infection Detection through Tissue FENGLIN WANG, Clemson University, Yash Raval, Tzuen-Rong J Tzeng, John D DesJardins, Jeffrey N Anker

ORAL SESSIONS

Session 1560

Biospectroscopic Methods for Binding Studies (Half Session)

Wednesday Morning, Room S501d

8:30	(1560-1)	Highly Efficient Peptide Self-Assembled Monolayers to Reduce Non Specific Adsorption of Crude Cell Lysate on SPR Biosensors ALEXANDRA AUBÉ, Université de Montréal, Julien Breault-Turcot, Jean-François Masson
8:50	(1560-2)	Second Harmonic Correlation Spectroscopy: A New Method for Determining Surface Binding Kinetics and Thermodynamics KRISTAL L SLY, University of Utah, John C Conboy, Sze-Wing Mok
9:10	(1560-3)	Rotation Dynamics of Gold Nanorods on Cell Membrane Studied with Confocal Resonance Scattering Microscopy GUFENG WANG, North Carolina State University, Bhanu Neupane, Yaqing Zhao
9:30	(1560-4)	Molecular Recognition and Dynamics of Dihydrofolate Reductase Studied with Atomic Force Microscopy HOLLY MORRIS, University of Iowa

ORAL SESSIONS Session 1570

Chemometrics

Wednesday Morning, Room S502a

- 8:30 (1570-1) **Search Prefilters Coupled with a Cross Correlation Library Search Algorithm for Identification of Infrared Spectra of Clear Coat Paint Smears** BARRY K LAVINE, Oklahoma State University, Ayuba Fasasi, Nikhil Mirjankar, Matthew Allen
- 8:50 (1570-2) **Chemometric Modeling of Microalgal Adaptations to Chemical Shifts in Marine Environments** FRANK VOGT, University of Tennessee, Lauren H White
- 9:10 (1570-3) **Passive Acoustic Monitoring for Inhalation Device Performance Analysis** LARS KARLSSON, AstraZeneca R&D
- 9:30 (1570-4) **Interpretation of NIR Spectra Using 1H-NMR and Sequential PLS** AMR S ALLI, Biogen Idec, Maureen Lanan
- 9:50 **Recess**
- 10:05 (1570-5) **Impact of Fluctuations in the First Dimension Sampling Phase on Peak Area Quantitation by PARAFAC Based Methods in Fast On-Line LC x LC** ROBERT C ALLEN, University of Minnesota, Marcelo R Filgueira, Peter W Carr, Sarah C Rutan
- 10:25 (1570-6) **Removing Correlation Degeneracies in Spectral Angle-Based Hyperspectral Image Analyses** LEANNA N ERGIN, Cleveland State University, John F Turner
- 10:45 (1570-7) **Unique Ion Filter: A Strategy for GC-MS Data Processing Prior to Chemometric Analysis** JAMES J HARYNUK, University of Alberta, Lawrence A Aduwtum
- 11:05 (1570-8) **Comprehensive Two-Dimensional Gas Chromatography – Mass Spectrometry Combined to Chemometric Analysis for Detection of Disease-Resistant Clones of Eucalyptus** LEANDRO WANG HANTAO, University of Campinas, Bruna Toledo, Alves de Lima Ribeiro Fabiana, Marilia Pizetta, Caroline Geraldi Pierozzi, Edson Luiz Furtado, Fabio Augusto

ORAL SESSIONS Session 1580

Environmental Analysis of Persistent and Toxic Compounds

Wednesday Morning, Room S502b

- 8:30 (1580-1) **Monitoring Endocrine Disruption in Japanese Medaka Fish Using Capillary Electrophoresis and Egg Hatching** VINCENT T NYAKUBAYA, West Virginia University, Brandon C Durney, Lisa A Holland
- 8:50 (1580-2) **Graphene Oxide Based Sensors for Environmental Applications** PETER SHANTA, University of California, Riverside, Quan Cheng
- 9:10 (1580-3) **Evaluation of a Single-Stage Consumable-Free Thermal Modulator for Comprehensive Two-Dimensional Gas Chromatography** MATTHEW EDWARDS, University of Waterloo, Tadeusz Gorecki, Alina Muscalu
- 9:30 (1580-4) **GCxGC–TOFMS Investigation of Mixed-Halogen Dioxins and Furans Generated During Combustion** KARI L ORGANTINI, Pennsylvania State University, Elizabeth Humston-Fulmer, Joe Binkley, Mark Merrick, Frank Dorman
- 9:50 **Recess**
- 10:05 (1580-5) **Non-Target Contaminants Analysis in Freshwater Eels Using GC-HRT and GCxGC-HRT** JONATHAN BYER, Leco Corporation, Grazina Pacepavicius, Joe Binkley, Peter V Hodson, Mehran Alaei
- 10:25 (1580-6) **New Levels of Mass Spectral Selectivity for Pesticide Residue Analysis: GC/Q-TOF in the MS/MS Mode with Chemical Ionization** PHILIP L WYLLIE, Agilent Technologies, Chris Sandy
- 10:45 (1580-7) **Analysis of Cytostatic and Cytotoxic Agents in Wastewater, Surface Water and Drinking Water** JORDAN STUBLESKI, Pennsylvania State University, William H Campbell, Philip Smith, Frank Dorman
- 11:05 (1580-8) **Rapid Separation of Hexabromocyclododecane Diastereomers and Tetrabromobisphenol-A Using a Novel Method Combining Convergence Chromatography and MS/MS Detection** DOUGLAS STEVENS, Waters Corporation, Lauren Mullin, Kenneth J Rosnack, Andrew Aubin, Jennifer Burgess, Bert van Bavel, Ingrid Ericson Jogsten, Dawei Geng

ORAL SESSIONS Session 1590

Food Science: Impurity Analysis and Content Determination

Wednesday Morning, Room S503a

- 8:30 (1590-1) **Pesticide Residues Analysis of Beer, Wine and their Agricultural Constituents (Hops, Grapes, Grains) Using QuEChERS Extraction and High-Throughput Sample Preparation** PATRICIA L ATKINS, SPEX CertiPrep, Matt Snyder
- 8:50 (1590-2) **A Novel Approach to the Reduction of False Positive and Negative Identifications in Screening of Pesticide Residues in Food Analysis** KENNETH J ROSNACK, Waters Corporation, Severine Gosciny, Michael McCullagh, Kieran Neeson, Jeff Goshawk, David Eatough, Sara Stead, Ramesh Rao, Dominic Roberts
- 9:10 (1590-3) **Characterization of Adulterated Olive Oils in Cases of Food Fraud by Comprehensive Two-dimensional Gas Chromatography with Time-of-Flight Mass Spectrometry (GCxGC-TOFMS)** ELIZABETH HUMSTON-FULMER, Leco Corporation, Jeff Patrick, Joe Binkley
- 9:30 (1590-4) **Applications of Surface Enhanced Raman Spectroscopy in Food Science** LILLI HE, University of Massachusetts Amherst
- 9:50 **Recess**
- 10:05 (1590-5) **Impurity Isolation from Synthetic Dyes Using Mass-Directed Preparative Liquid Chromatography** RUI CHEN, Waters Corporation, Jo-Ann Jablonski, John P McCauley
- 10:25 (1590-6) **Quantification and Stability Studies of Alicin in Fresh Garlic Extracts** YAN LIU, California State Polytechnic University Pomona, Kenneth Chong, Martha P Zamora, Dileshni A Tilakawardane, Nancy E Buckley
- 10:45 (1590-7) **Speciation Analysis of Arsenic in Prenatal and Children's Dietary Supplements** MESAY WOLLE, Duquesne University, Mizanur Rahman, HM Skip Kingston, Matt Pamuku
- 11:05 (1590-8) **The Determination of Benzo(a)pyrene in Vegetable Oil By Solid Phase Extraction** WANG RUYI, Bonna-Agela Technologies Inc., Wang Wan, Lu Guotao

ORAL SESSIONS Session 1600

FTIR/Raman Analytical Applications

Wednesday Morning, Room S503b

- 8:30 (1600-1) **Surface Selection Rule of Infrared Diffuse Reflection Spectrometry for Analysis of Molecular Adsorbates on a Rough Surface of a Non-Absorbing Medium** TAKESHI HASEGAWA, Kyoto University, Seiya Morimine, Shingo Norimoto, Shimoaka Takafumi
- 8:50 (1600-2) **Spectroscopic Assessment of a Full-Scale Collective Protection Filter System against Chemical Warfare Agents and Toxic Industrial Chemicals** SUN H MCMASTERS, US Army
- 9:10 (1600-3) **Attenuated Total Reflectance Infrared Spectroscopy Applied to Forensic Analysis of Automotive Paints** BARRY K LAVINE, Oklahoma State University, Ayuba Fasasi, Nikhil Mirjankar, Koichi Nishikida
- 9:30 (1600-4) **High Throughput Virtual Slit Technology: Benefits for Chemical Identification** JEFFREY T MEADE, Tornado Spectral Systems, Bradford B Behr, Yusuf Bismilla, Andrew T Cenko, Brandon DesRoches, Arie Henkin, Elizabeth A Munro, Jared Slaa, Scott Baker, David Rempel, Arsen R Hajian
- 9:50 **Recess**
- 10:05 (1600-5) **Effect of Varying Balance Gas for FTIR Analysis** MONACA MCNALL, Air Liquide
- 10:25 (1600-6) **A Novel Infrared Imaging Spectroscopy Equipped with a Near Common Light Path Interferometer** RYUJI TAO, Kagawa University, Akira Nishiyama, Kenji Wada, Ishimaru Ichiro, Toshihide Tani, Hiroki Hayashi
- 10:45 (1600-7) **A Polarization Difference Technique for Surface-Enhanced Infrared Absorption Spectroscopy** TARO UCHIDA, Kitasato University, Takeshi Hasegawa, Masatoshi Osawa

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS Session 1610

Mass Spectrometry: Omics, Environmental and High Throughput Analytical

Wednesday Morning, Room S504a

- 8:30 (1610-1) **Identification of Bacteria in Complex Double-Blind Microorganism Mixtures by LC-ESI-MS/MS** A PETER SNYDER, Private Citizen, Rabih E Jabbour, Samir V Deshpande
- 8:50 (1610-2) **High Resolution Matrix-Assisted in Vacuum (MAIV) by Fourier Transform Mass Spectrometry** CHARLES L WILKINS, University of Arkansas, Beixi Wang, Evgenia Akhmetova, Rohanna Liyanage, Sarah Trimpin
- 9:10 (1610-3) **High Speed Capillary Electrophoresis Coupled to ESI-MS for the Analysis of Metabolites** SCOTT SARVER, University of Notre Dame, Norman J Dovichi, Nicole M Schiavone, Carlos Gartner, Roza Wojcik
- 9:30 (1610-4) **Identification and Quantification of Hypocretin-1 in Cerebrospinal Fluid of Narcoleptic Patients Using Nanoparticles and Isotope Dilution Mass Spectrometry** HEMASUDHA CHATRAPAGADDA, Duquesne University, HM Skip Kingston, Matt Pamuku, Birgitte R Kornum, Emmanuel Mignot
- 9:50 **Recess**
- 10:05 (1610-5) **High Pressure Mass Spectrometry with Microscale Cylindrical Ion Trap Arrays** KENION BLAKEMAN, University of North Carolina at Chapel Hill, Craig A Cavanaugh, Kevin P Schultze, J Michael Ramsey
- 10:25 (1610-6) **High Throughput Screening for Modulators of Sirtuin 1 Using Mass Spectrometry Plate Reader** SHUWEN SUN, University of Michigan, Robert Kennedy
- 10:45 (1610-7) **A Microionizer for High Pressure Mass Spectrometry Using Air Buffer Gas** CRAIG A CAVANAUGH, University of North Carolina at Chapel Hill, Kenion Blakeman, Tina E Stacy, Stanley Pau, J Michael Ramsey

ORAL SESSIONS Session 1620

Mass Spectrometry: Bioanalytical

Wednesday Morning, Room S504bc

- 8:30 (1620-1) **Building Supported Lipid Bilayers (SLBs) for Laser-Based Mass Spectrometry Imaging (MSI) of Lipid Domain Formation** VICTORIA L BROWN, North Carolina State University, Lin He, Tara N Moening
- 8:50 (1620-2) **In Situ Protein Identification and Visualization Using Multiply Charged MALDI Mass Spectrometry Imaging** BINGMING CHEN, University of Wisconsin-Madison, Christopher B Lietz, Chuanzi Ouyang, Lingjun Li
- 9:10 (1620-3) **Near-Field Laser Ablation Sample Capture for Mass Spectrometry Imaging** KERMIT K MURRAY, Louisiana State University, Suman Ghorai, Chinthaka Seneviratne
- 9:30 (1620-4) **Nanopipettes as Sampling Tools and Reaction Vessels for MS Analysis** ALICIA K FRIEDMAN, Indiana University, Elizabeth M Yuill, Steven J Ray, Lane A Baker
- 9:50 **Recess**
- 10:05 (1620-5) **Standard Curve Generation in MALDI and LC-MS Analyses by Isotopic N, N-Dimethylated Leucine (DiLeu) Reagents for Absolute Quantitation of Peptides** TYLER J GREER, University of Wisconsin-Madison, Feng Xiang, Nicole Woodards, Lingjun Li
- 10:25 (1620-6) **Cysteine-Focused Combined Precursor Isotopic Labeling and Isobaric Tagging (cPILOT) Enhanced Multiplexing** LIQING GU, University of Pittsburgh, Adam R Evans, Rena A Robinson
- 10:45 (1620-7) **N,N-Dimethyl Leucine Tags for De Novo Peptide Sequencing: Neutron Encoding and Fragmentation Dynamics** CHRISTOPHER B LIETZ, University of Wisconsin-Madison, Ling Hao, Tyler J Greer, Dustin Frost, Zhidan Liang, Robert Cunningham, John Rogers, Lingjun Li
- 11:05 (1620-8) **Molecular Imaging with C₆₀ SIMS: Sample Preparation and Application to Single Neuron Analysis** ERIC J LANNI, University of Illinois at Urbana-Champaign, Jonathan V Sweedler, Stanislav S Rubakhin

ORAL SESSIONS Session 1630

Materials Science

Wednesday Morning, Room S504d

- 8:30 (1630-1) **Novel Engineered Carbon Adsorbents Utilizing a Bonded Fullerene Phase Enable Unique SPE Efficacy** CONOR SMITH, United Science Corporation, Dwight Stoll, Jon Thompson
- 8:50 (1630-2) **Particle Size Measurement Errors and Refractive Index Selection in Laser Diffraction** JEFFREY BODYCOMB, HORIBA Scientific, Ian Treviranus, Amy Hou, Kiwan Park, Brian Sears, Hirotsuke Sugawara, Shigemi Tochino, Makoto Umezawa
- 9:10 (1630-3) **Nanoscale Infrared Spectroscopy of Fiber Composite Materials** MICHAEL LO, Anasys Instruments, Curtis Marcott, Qichi Hu, Craig B Prater, Kevin Kjoller
- 9:30 (1630-4) **Filling in the Holes: Nanoscale Insight into Anti-Fouling Hybrid Xerogel Materials by Co-localized Atomic Force, Scanning Kelvin Probe and Confocal Raman Microscopies** JOEL F DESTINO, University at Buffalo - SUNY, Michael R Detty, Frank V Bright
- 9:50 **Recess**
- 10:05 (1630-5) **Experimental and Theoretical Studies on Molecular Weight Determination of Organic Vapors Using a Quartz Crystal Microbalance with Dissipation Monitoring** BISHNU P REGMI, Louisiana State University, Isiah M Warner, Nicholas Speller, Susmita Das
- 10:25 (1630-6) **Development of ECL Electrospun Nanofibers** MICHAEL BEILKE, The Ohio State University, Susan V Olesik
- 10:45 (1630-7) **Modifications to Known Cationic Conjugated Polythiophenes for Improved Fluorescence Detection of MicroRNA** THOMAS E CHASE, North Carolina State University, Shantan Krovvidi, Lin He

ORAL SESSIONS Session 1640

Pharmaceutical: Others (Half Session)

Wednesday Morning, Room S501d

- 10:05 (1640-1) **Pharmaceutical Solid-State Stressed Stability Investigation by Using Moisture-Modified Arrhenius Equation and JMP Statistical Software** MINGKUN FU, Millennium: The Takeda Oncology Company, Michael Perlman
- 10:25 (1640-2) **Accurate Determination of Proteins Diffusion Coefficient by Fast Fourier Transformation with Whole Column Imaging Detection (WCID)** ATEFEH SADAT ZARABADI, University of Waterloo, Janusz Pawliszyn
- 10:45 (1640-3) **3D Printed Fluidic Devices: Revolutionizing Automated, In Vitro Pharmacokinetic Studies** SARAH Y LOCKWOOD, Michigan State University, Dana Spence

ORAL SESSIONS Session 1650

X-Ray Techniques

Wednesday Morning, Room S505a

- 8:30 (1650-1) **Potential Applications of X-Ray Photoelectron Spectroscopy (XPS) for Forensic Science** BRIAN R STROHMEIER, Thermo Fisher Scientific
- 8:50 (1650-2) **High Resolution X-Ray (hiRX) Characterization of Pu Content in High Salt Matrices** GEORGE J HAVRILLA, Los Alamos National Lab, Kathryn G McIntosh, Velma Montoya, Eli J Berg
- 9:10 (1650-3) **Characterization of Metal Doped Polymer Capsules Using Confocal Micro X-ray Fluorescence Spectroscopy and X-Ray Computed Tomography** NIKOLAUS CORDES, Los Alamos National Lab, George J Havrilla, Kimberly Obrey, Igor Usov, Brian M Patterson
- 9:30 (1650-4) **Analysis for Metals in Nail Polish by Wavelength Dispersive X-ray Fluorescence (WDXRF)** ANDREA MCWILLIAMS, Research Triangle Institute, Michael Levine, Lauren Felder, Al Martin
- 9:50 **Recess**
- 10:05 (1650-5) **Remember the Colors: XRF and SEM Analysis of Fresco Pigment from the Alamo** NICOLE FELDMAN, Trinity University, Pamela J Rosser, Michelle M Bushey

POSTER SESSION

Session 1660

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

General Interests: Lab Informatics, Validation, Software and Process Analytics

Wednesday Morning

- (1660-1 P) **Safety Management in Multidisciplinary Shared Facilities** SHUYOU LI, Northwestern University, Suresh V Mallipeddi, Steven Karlman, Tera Moskal, Vinayak P Dravid
- (1660-2 P) **Direct Access to Chromatography Data System through Smart Device** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Masatoshi Takahashi, Ken Matama, Takeshi Yoshida, Yuji Watanabe, Ryuji Nishimoto
- (1660-3 P) **FT-IR Method Validation for Measuring PPB Level Moisture in Phosphine Cylinders** WENWEN ZHANG, Matheson Trigas, Joshua Cooper, Mitch Owens, Dan Chase
- (1660-4 P) **"Stealth" Nanobeacons for Preventing Counterfeit Products** TAKAO FUKUOKA, University of Hyogo/Archilys, Yasushige Mori
- (1660-5 P) **Universal Analyzer for Fluidic Systems** HENDRIK FISCHER, Hamburg University of Technology, Joern Frank, Uwe Grosse-Wortmann, Gerhard Matz
- (1660-6 P) **Spot the Difference: Novel Software Developments for Comparative Analysis of Complex Mixtures** NICOLA M WATSON, Markes International, Vanessa Frost Barnes, Charlie Haws, Laura McGregor, Nick Bukowski, Patrick Henry, Joe Blanch, Steve Smith
- (1660-7 P) **Convolution of Currents at Electroinactive Films on Electrodes** JEFFREY LANDGREN, University of Iowa, Heung Chan Lee, Krysti L Knoche, Johna Leddy
- (1660-8 P) **New Laser Technology to be Used for Biogas, Biosyngas and Biomethane Analysis** ONY RABETSIMAMANGA, GDF SUEZ - CRIGEN, Jean-Philippe Leininger, Etienne Basset, Alice Vatin, Cyrille Levy
- (1660-9 P) **Surface-Enhanced Raman Spectroscopy Based on Nanoporous Waveguide Resonance for Biosensing** WEIQING XU, Jilin University, Fu Cuicui, Gu Yujiao, Xu Shuping
- (1660-10 P) **Automated On-Line UHPLC Analysis Enabled by a Novel Process Sample Manager** AARON D PHOEBE, Waters Corporation, Sara Sadler, Graham B Jones, Robert J Tinder, Craig H Dobbs, Charles H Phoebe
- (1660-11 P) **Quantitative Analysis of Hydrogen Peroxide Down to 1 µg/L in Ultrapure Water Using Palladium Catalysts for Preparing Blank Water** MASAMI MURAYAMA, Organo Corporation, Daisaku Yano, Koji Yamanaka
- (1660-12 P) **Automatic Twin Vessel Recrystallizer: Absolute Purity Evaluation by Determination of Critical T_0 Value for 100% Pure Compound by DSC** OSAMU NARA, Tohoku Pharmaceutical University
- (1660-13 P) **Baseline Water Analysis Measurements of Zurich Bog, New York** BENJAMIN J HAYWOOD, St. John Fisher College, Kimberly Chichester, Kenneth H Townsend
- (1660-14 P) **Flow-Through System for the Generation of Standard Aqueous Solution of UV Filters and Biocides** FARDIN AHMADI, University of Waterloo, Janusz Pawliszyn, Chris Sparham

POSTER SESSION

Session 1670

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Liquid Chromatography/Mass Spectrometry Applications

Wednesday Morning

- (1670-1 P) **Using the 2nd HPLC Dimension to Add the Power of Accurate Mass to Traditionally Non MS Applications** SUSAN DANTONIO, Agilent Technologies, Lynne Marshall, Rita Steed, Patrick Coleman
- (1670-2 P) **Developing Multi-Dimensional Metabolomic Investigation Technology (MUDMIT) Using 2D LC-MS** ANNA FORZANO, Saint Louis University
- (1670-3 P) **Parameters Affecting the Performance of LC-HRMS Screening Methods for Multiclass Screening of 600 Organic Contaminants in Food Based on Accurate-Mass Database** JUAN F GARCIA-REYES, University of Jaen, Patricia Perez-Ortega, Antonio Molina-Diaz
- (1670-4 P) **Coupling MS to Fast Online Comprehensive Two-Dimensional Liquid Chromatography: Potential of Using 1 mm vs 2.1 mm id Columns** IMAD A HAIDAR AHMAD, University of Minnesota, Brian B Barnes, Allen C Robert, Peter W Carr
- (1670-5 P) **A Reversed-Phase LC-MS/MS Method for the Quantitation of Ethyl Glucuronide and Ethyl Sulfate in Human Urine** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Chris Denicola, Paul Connolly
- (1670-6 P) **Simultaneous Determination of an Anti-Cancer Drug Temozolomide Capsules Dosage Form in Pharmaceutical Preparation by High-Performance Liquid Chromatography** RAKESHKUMAR V MEHTA, L M College of Pharmacy
- (1670-7 P) **The Determination of Caffeic Acid in Tobacco Filler of Cigarettes by High-Performance Liquid Chromatography – Tandem Mass Spectrometry** PHUONG NGAC, Centers for Disease Control and Prevention, Roberto Bravo, Clifford H Watson
- (1670-8 P) **Mix-Mode Chromatographic Separation of 12 Mono-Hydroxylated Brominated Biphenyl Ethers in Human Serum** SYRAGO (SISSY) PETROPOULOU, Cal EPA/DTSC, Wendy Duong, Zachary T Smith, Myrto Petreas, June-Soo Park
- (1670-9 P) **LC-MS/MS Analysis of Bisphenol A and Other Brominated Phenols in Human Serum Using 96 Well Plate Phospholipid Removal Plate and No Additional SPE** SYRAGO (SISSY) PETROPOULOU, Cal EPA/DTSC, Zachary T Smith, Myrto Petreas, June-Soo Park
- (1670-10 P) **Determination of Perfluorooctanoic Acid (PFOA) from the Surface of Cookware Under Simulated Cooking Conditions Using Accelerated Solvent Extraction (ASE) and LC/MS/MS** CHANGLING QIU, South Dakota State University, Douglas Raynie
- (1670-11 P) **LC/UV/MS Analysis of Monitoring Bioethanol Manufacturing Process Using Polymer Based Multi-solvent SEC Column** JUNJI SASUGA, Showa Denko KK, Melissa Turcotte, Ronald Benson
- (1670-12 P) **LC/MS Analysis of Choline and Acetylcholine in Living Organisms Using Polymer-Based Cation IC Column** JUNJI SASUGA, Showa Denko KK, Ritsuko Wakayama, Melissa Turcotte, Ronald Benson
- (1670-13 P) **Degradation-Resistant Peptides: Do They Contain D-Amino Acids?** HUA-CHIA TAI, University of Illinois at Urbana-Champaign, Itamar Livnat, Stanislav S Rubakhin, Jonathan V Sweedler
- (1670-14 P) **Downscaling Proteome Profiling: Toward Single Cell Proteomics** MASAKI WAKABAYASHI, University of Illinois at Urbana-Champaign, Jordan Aerts, Stanislav S Rubakhin, Yasushi Ishihama, Jonathan V Sweedler
- (1670-15 P) **Hepatocyte Spheroid Array Kit as a Tool for Predicting In Vivo Drug Metabolism** TATSUYUKI KANAMORI, National Research Institute of Police Science, Yamamuro Tadashi, Kuwayama Kenji, Tsujikawa Kenji, Iwata Yuko, Inoue Hiroyuki
- (1670-16 P) **Studying Cell Signaling By Using a Microfluidic Device Coupled With HPLC-MS/MS** CASSANDRA DIANE MCCULLUM, Jackson State University, Xiangtan Li, Yiming Liu, Paul B Tchounwou
- (1670-17 P) **Comparative Proteomic Analysis of Secretome in Vascular Smooth Muscle Cells by Label-free Quantitation via Data-Independent Acquisition (DIA) Mass Spectrometry** CHENXI YANG, University of Wisconsin-Madison, Di Ma, Xudong Shi, Craig Kent, Lingjun Li

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 1680

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Mass Spectroscopy: General Interest

Wednesday Morning

- (1680-1 P) **Proton-Transfer-Reaction Time-of-Flight Mass Spectrometry (PTR-TOFMS): Latest Improvements in Selectivity and Sensitivity** ALFONS JORDAN, IONICON Analytik GmbH., Lukas Maerk, Christian Lindinger, Eugen Hartungen, Matteo Lanza, Simone Juerschik, Gernot Hanel, Jens Herbig, Lukas Fischer, Philipp Sulzer, Tilmann D Maerk
- (1680-2 P) **Simultaneous Detection with Different Compensation Voltages of FAIMS Using an Array Ion CCD Detector** YUICHIRO HASHIMOTO, Hitachi, Ltd., Masao Suga, Hideki Hasegawa, Hiroyuki Satake
- (1680-3 P) **Determination of Tetracyclines in Surface Water by Ultra High Performance Liquid Chromatography/Tandem Mass Spectrometry** DONG HENGTAO, Shimadzu
- (1680-4 P) **Pulsed Desorption Electrospray Ionization Mass Spectrometry** TROY COMI, University of Illinois at Urbana-Champaign, Richard Perry
- (1680-5 P) **Lipid Residues in Ceramics: A Comparison of GC-MS and DART-MS Analyses** STEVE SPAULDING, Eastern Michigan University, Ruth Ann Armitage, John Hopkins
- (1680-6 P) **Improved ESI-MS Detection of Phosphorothioate Pesticides Through Complexation with Ag⁺ and Cu²⁺** ADETAYO M MUSTAPHA, University of Idaho, Sofie P Pasilis
- (1680-7 P) **Enhanced Characterization of Hydrocarbons by Selective Ionization** NICOLA M WATSON, Markes International, Charlie Haws, Vanessa Frost Barnes, Laura McGregor, Nick Bukowski, Joe Blanch, Steve Smith, Pierre Schanen, Gerhard Horner
- (1680-8 P) **Determination of Multiple Pesticide Residues in Animal Foods by On-Line Gel Permeation Chromatography/Gas Chromatography/Mass Spectrometry** YE YING, Shimadzu (China) Co., Ltd.
- (1680-9 P) **Determination of Dithiocarbamate Pesticide Residues in Fruits and Vegetables by SHS-GC-TOFMS According to Method EN 12396-2** DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero

POSTER SESSION

Session 1690

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Polymer and Plastic Analysis

Wednesday Morning

- (1690-1 P) **Addressing the Challenges: Improving Polymer Characterization by Size Exclusion Chromatography** AMANDAA K BREWER, Tosoh Bioscience LLC
- (1690-2 P) **Surface Spectroscopic Study of New Anti-Bio Fouling Polymers** CHUAN LENG, University of Michigan, Zhan Chen
- (1690-3 P) **Capillary Channeled Polymer (C-CP) Fibers Modified with Cibacron Blue Dye for the Removal of Bovine Serum Albumin** MARISSA PIERSON, Clemson University, R Kenneth Marcus
- (1690-4 P) **Analysis of Clear Finishes for Wood Using Pyrolysis-GC/MS** THOMAS WAMPLER, CDS Analytical, Karen Sam, Steve Wesson

POSTER SESSION

Session 1700

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Process Analytical Chemistry

Wednesday Morning

- (1700-1 P) **Ultrapure Methylene Chloride for Interference-Free Analytical Work** SUBHRA BHAT-TACHARYA, Thermo Fisher Scientific, Eric Oliver, Mark Jasco, Deva Puranam, Stephen Roemer
- (1700-2 P) **Reaction Mechanism Determination with React NMR Coupled with On-Line HPLC and HR-MS** BRADLEY CAMPBELL, Eli Lilly and Company, Jonas Y Buser, Lauren E Click, Todd D Maloney, Adam D McFarland
- (1700-3 P) **Determination of Clopyralid Levels in Local Community Composts** DANIELLE M KIECK, St. John Fisher College, Kimberly Chichester
- (1700-4 P) **SERS Investigation of pH Effect on the Adsorption Behavior of 4-Carboxythiophenol on Ag Surface** SZETSEN LEE, Chung Yuan Christian University, Chun-Hsien Ho
- (1700-5 P) **Characterization of Coal and Its By-Products Using Borate Fusions and ICP-OES Analyses** MARIE-EVE PROVENCHER, Claisse, Corporation Scientifique, Janice Pitre, Melanie Bedard, John A Anzelmo
- (1700-6 P) **Spectrophotometric Determination of Copper Using 2-Hydroxy-4-Isobutoxy Acetophenone Oxime** SANJAYKUMAR S SHAH, Shri VI Shah Commerce College, Janakkumar R Shukla
- (1700-7 P) **Determination of Critical Micelle Concentration of Cationic Surfactants by Surface-Enhanced Raman Scattering** YAM SHRESTHA, North Carolina Central University
- (1700-8 P) **Transmission Measurement and Diffuse Reflectance Measurement of Tablet in Very Short-time by Using Compact, High-Speed and High-Sensitive Near Infrared Spectrometer** KODAI MURAYAMA, Yokogawa Electric Corporation, Ditaro Ishikawa, Takuma Genkawa, Hiroyuki Sugino, Makoto Komiya, Takashi Tsuneoka, Ozaki Yukihiko
- (1700-9 P) **2-Hydroxy-4-Isobutoxy-5-Bromo Acetophenone Tiosemicarbazone (Hibbat) as a Spectrophotometric Reagent for Copper** SANJAYKUMAR S SHAH, Pilvai College, Milin A Shah, Kalpesh S Parikh

POSTER SESSION

Session 1710

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

SEAC: Society for Electroanalytical Chemistry Poster Session

Wednesday Morning

- (1710-1 P) **Nanomolar Detection of Cd²⁺, Ag⁺, and K⁺ Using Paper-Strip Ion-Selective Electrodes** SAMANTHA T MENSAH, University of Central Florida, Percy Calvo-Marzal, Karin Chumbimuni-Torres
- (1710-2 P) **Interfacial Electron Transfer Kinetics across Single Layer Graphene** JINGSHU HUI, University of Illinois at Urbana-Champaign, Joaquin Rodriguez-Lopez, Adam Chinderle
- (1710-3 P) **Observation and Quantification of Electrogenerated Chemiluminescence at Single Layer Graphene Electrodes Using Scanning Electrochemical Microscopy** TERESA C CRISTAELLA, University of Illinois at Urbana-Champaign, Jingshu Hui, Adam Chinderle, Daniel Ziegler, Mei Shen, Joaquin Rodriguez-Lopez
- (1710-4 P) **Study of Degradation of Bimetallic Nanoparticle Electrocatalysts Using Micro-ITIES Interfaces as SECM Probes** BURTON H SIMPSON, University of Illinois at Urbana-Champaign, Colin B Kramer, Garrett Hoepker, Mei Shen, Paramaconi B Rodriguez, Joaquin Rodriguez-Lopez
- (1710-5 P) **Investigation and Characterization of Potentiometric-Scanning Ion Conductance Microscopy** ANNA EWEBER, Indiana University, Yi Zhou, Lushan Zhou, Lane A Baker
- (1710-6 P) **Elimination of the Light Sensitivity of Ionophore-Based Ion-Selective Electrodes** XU ZOU, University of Minnesota, Koichi Nishimura, Li D Chen, Philippe Buhlmann
- (1710-7 P) **Development of Novel Cations to Extend the Electrochemical Window of Ionic Liquids: Improving the Energy Density of Nanostructured Supercapacitors for Electrical Energy Storage** MARAL PS MOUSAVI, University of Minnesota, Philippe Buhlmann
- (1710-8 P) **Highly Fluorinated Polymers for Ion-Selective Electrodes** JESSE L CAREY, University of Minnesota, Philippe Buhlmann
- (1710-9 P) **Biofouling of Ion-Selective Electrode Membranes: The Role of Ionic Site Leaching into Biological Samples** ADAM J DITTMER, University of Minnesota, Philippe Buhlmann

WEDNESDAY, MARCH 5, 2014
AFTERNOON

- (1710-10 P) **Complexation of Silver Ions by Natural Organic Matter as Studied Using Fluorous-Phase Ion-Selective Electrodes** CARLOS E PÉREZ DE JESÚS, University of Puerto Rico at Mayagüez, Maral PS Mousavi, Ian Gunsolus, Christy L Haynes, Philippe Buhlmann
- (1710-11 P) **Electrochemical Nanosampler** YUN YU, Queens College—CUNY, Jean-Marc Noël, Michael V Mirkin, Yang Gao, Gary Friedman, Yury Gogotsi
- (1710-12 P) **CNTs Based Disposable Potentiometric Sensor for Urea Detection** EWA JAWORSKA, Warsaw University, Agata Michalska, Krzysztof Maksymiuk

POSTER SESSION

Session 1720

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Separation Sciences: Bioanalytical and Pharmaceutical

Wednesday Morning

- (1720-1 P) **High Resolution Separation of Proteins Using Two-Dimensional Capillary Electrophoresis** RYAN FLAHERTY, University of Notre Dame, Bonnie J Hüge, Norman J Dovichi
- (1720-2 P) **Protein A Modification of Capillary-Channeled Polymer (C-CP) Fibers for the Capture and Recovery of Immunoglobulin G (IgG)** ABBY SCHADOCK-HEWITT, Clemson University, R Kenneth Marcus
- (1720-3 P) **Cyclodextrin Polymer/Fe3O4 Nanocomposites as Solid Phase Extraction Material Coupled with UV-VIS Spectrometry for the Analysis of Rutin** ZHU XIASHI, Yangzhou University
- (1720-4 P) **2D-LC-CAD-MS Method for the Characterization and Stability Study of Polysorbate 20 in Protein Formulations** YI LI, Genentech, Daniel Hewitt, Andrea Ji, Taylor Y Zhang, Kelly Zhang
- (1720-5 P) **The Development of Unique HPLC and SFC Stationary Phases that Utilize Advanced Particle Technologies** MATTHEW PRZYBYCIEL, ES Industries, David Kohler
- (1720-6 P) **A Study of Four Stress Conditions on the Degradation of Bisphenol A (BPA)** KIMBERLY CHICHESTER, St. John Fisher College, Edward Freeman
- (1720-7 P) **High Resolution Separation Media for High Throughput Monoclonal Antibody Analysis** SRINIVASA RAO, Thermo Fisher Scientific, Julia Baek, Ilze Birzniece, Yury Agroskin, Christopher Pohl
- (1720-8 P) **Ultraviolet Radiation Enhances the Glycation of Human Serum Albumin: A Study Involving Quantification of Carboxymethyl Lysine Derivatives** WEIXI LIU, University of Rhode Island, Menashi A Cohenford, Leslie Frost, Joel A Dain
- (1720-9 P) **Separation of Half-mAb and Half-mAb Equivalents with High Resolution Using Size Exclusion Chromatography Packed with a Unique Controlled Pore Technology** JUSTIN STEVE, Tosoh Bioscience LLC, Atis Chakrabarti
- (1720-10 P) **Stability Indicating Method Development and Validation for the Determination of Prednisolone Acetate in Raw Material and Degradant Products Utilizing Reversed-Phase Liquid Chromatography** MONIKA BOBA, Northeastern Illinois University, John Albazi

AWARDS

Session 1730

Ralph N Adams Award

arranged by Julie Stenken, University of Arkansas

Wednesday Afternoon, Room S401a

Julie Stenken, University of Arkansas, Presiding

- 1:30 **Introductory Remarks** - Julie Stenken
- 1:35 **Presentation of the 2014 Ralph N Adams Award to Mark E Meyerhoff, University of Michigan, by Julie Stenken, University of Arkansas**
- 1:40 (1730-1) **Advanced Electrochemical Sensors/Devices for Medical Applications** MARK E MEYERHOFF, University of Michigan
- 2:15 (1730-2) **Monitoring Neurotransmitter Control of Cerebral Blood Flow** R MARK WIGHTMAN, University of North Carolina at Chapel Hill, Elizabeth S Bucher
- 2:50 (1730-3) **New Approaches to High Throughput Analysis of Protein Function by MS and Microfluidics** ROBERT KENNEDY, University of Michigan
- 3:25 **Recess**
- 3:40 (1730-4) **In Situ Bioanalytical Measurements with Near Infrared Spectroscopy** MARK ARNOLD, University of Iowa
- 4:15 (1730-5) **Modulating the Macrophage Towards Improved Wound Healing at "Sensor" Implant Sites** JULIE STENKEN, University of Arkansas, Geetika Bajpai, Geoff Keeler, Cynthia Sides, Liping Tang, Jeannine Durdik

AWARDS

Session 1740

The Coblenz Society - Williams-Wright Award

arranged by Douglas L Elmore, 3M Corporate Research Analytical Laboratory

Wednesday Afternoon, Room S401bc

Douglas L Elmore, 3M Corporate Research Analytical Laboratory, Presiding

- 1:30 **Introductory Remarks** - Douglas L Elmore
- 1:35 **Presentation of the 2014 Coblenz Society - Williams-Wright Award to Walter M Doyle (Mike), Axiom Analytical, Inc. and Symbion Systems, Inc., by Douglas L Elmore, 3M Corporate Research Analytical Laboratory - The Coblenz Society**
- 1:40 (1740-1) **Random Walk through 50 Years of Optics and Spectroscopy** WALTER M DOYLE, Axiom Analytical, Inc.
- 2:15 (1740-2) **Fifty Years of FT-IR Spectrometry** PETER R GRIFFITHS, Griffiths Consulting LLC
- 2:50 (1740-3) **FTIR: Prehistory and Early History** GERALD AUTH, Midac Corporation
- 3:25 **Recess**
- 3:40 (1740-4) **The Interactions Between IR Instrumentation Development and Industrial Sampling Methods Over Time** D WARREN VIDRINE, Vidrine Consulting
- 4:15 (1740-5) **Learning to Think Inside the Box: Spectroscopy and Chemometrics Come of Age Together** RICHARD KRAMER, Applied Chemometrics, Inc.

Wednesday Morning

Wednesday Afternoon

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM

Session 1750

ACS DAC: Lifelong Teaching and Learning in Separation Science

arranged by Charles A Lucy, University of Alberta

Wednesday Afternoon, Room S401d

Charles A Lucy, University of Alberta, Presiding

1:30		Introductory Remarks - Charles A Lucy
1:35	(1750-1)	Approaches to Teaching Separations at Primarily Undergraduate Institutions, with an Emphasis on the Use of a Web-Based HPLC Simulator DWIGHT STOLL, Gustavus Adolphus College, Mark F Vitha, Paul Boswell
2:10	(1750-2)	Technology for Analytical Chemistry Instruction Inside and Outside of the Classroom CHRISTOPHER R HARRISON, San Diego State University
2:45	(1750-3)	Teaching Separation Science at the Graduate Level CHARLES A LUCY, University of Alberta
3:20		Recess
3:35	(1750-4)	Old School vs. New School: A Survey of Recent Efforts in Analytical Chemistry Education KEVIN A SCHUG, University of Texas at Arlington
4:10	(1750-5)	50 Years of an ACS Short Course HAROLD MCNAIR, Virginia Tech

SYMPOSIUM

Session 1760

Advances in Mass Spectrometry Based on Ultrashort Pulse Laser Technology

arranged by Martin E Fermann, IMRA America Inc.

Wednesday Afternoon, Room S402a

Martin E Fermann, IMRA America Inc., Presiding

1:30		Introductory Remarks - Martin E Fermann
1:35	(1760-1)	Femtosecond Laser Ablation ICP-MS: Ultra-Short Pulse Performance RICHARD E RUSSO, Lawrence Berkeley National Laboratory, Vassilia Zorba, X L Mao, JJ Gonzalez, Jong Yoo
2:10	(1760-2)	Ultrafast Lasers Enable Non-Statistical Ion Activation and Sub-Cellular Atmospheric Pressure Chemical Imaging MARCOS DANTUS, Michigan State University
2:45	(1760-3)	High Pressure Femtosecond Laser Ionization Mass Spectrometry DAVID M RAYNER, National Research Council
3:20		Recess
3:35	(1760-4)	Quantitative Protein Analysis via Femtosecond Laser Vaporization-ESI-MS ROBERT J LEVIS, Temple University
4:10	(1760-5)	DIVE-PI: Towards Fundamental Limits in Biodiagnostics and Spatial Mapping with MS RJ DWAYNE MILLER, Max Planck/University of Toronto

SYMPOSIUM

Session 1770

Analytical Innovations for Metabolomics

arranged by Richard A Yost, University of Florida

Wednesday Afternoon, Room S402b

Richard A Yost, University of Florida, Presiding

1:30		Introductory Remarks - Richard A Yost
1:35	(1770-1)	Title Not Provided at Time of Printing
2:10	(1770-2)	Isotopic Ratio Outlier Analysis (IROA) and Imaging Mass Spectrometry in Metabolomics TIMOTHY J GARRETT, University of Florida, Richard A Yost, Robert Menger, Yu-Hsuan Tsai, Candice Ulmer
2:45	(1770-3)	Progress Toward Rapid Throughput Quantitative Glycomics CARLITO LEBRILLA, University of California, Davis
3:20		Recess
3:35	(1770-4)	Title Not Provided at Time of Printing
4:10	(1770-5)	Title Not Provided at Time of Printing

SYMPOSIUM

Session 1780

Bioinformatics: Metabolite Identification and Quantification

arranged by Xiang Zhang, University of Louisville

Wednesday Afternoon, Room S404a

Xiang Zhang, University of Louisville, Presiding

1:30		Introductory Remarks - Xiang Zhang
1:35	(1780-1)	Identifying the 'Dark Matter' in GC/MS and LC/MS Experiments STEVE STEIN, National Institute of Standards and Technology
2:10	(1780-2)	Similarity Difference-Based False Discovery Compound Identification in GC-MS based Metabolomics SEONGHO KIM, Karmanos Cancer Institute/Wayne State University, Xiang Zhang
2:45	(1780-3)	ADAP-GC 2.0: Deconvolution of Co-Eluting Metabolites from GC/TOF-MS Data for Metabolomics Studies XIUXIA DU, University of North Carolina at Charlotte
3:20		Recess
3:35	(1780-4)	Strategies to Improve High-Throughput Identification in Untargeted Metabolomics GARY J PATTI, Washington University
4:10	(1780-5)	A Computational Platform for Analysis of Comprehensive Two-Dimensional Gas Chromatography Mass Spectrometry-Based Metabolomics Data XIANG ZHANG, University of Louisville

SYMPOSIUM

Session 1790

Biosensors and Single Cells: Speed, Sensitivity, Spatial Resolution

arranged by Andrew G Ewing, University of Gothenburg

Wednesday Afternoon, Room S404bc

Andrew G Ewing, University of Gothenburg, Presiding

1:30		Introductory Remarks - Andrew G Ewing
1:35	(1790-1)	Sensing Neuropeptides at Slices and Maybe Single Cells LESLIE A SOMBERS, North Carolina State University, Andreas C Schmidt, Lars Dunaway, Gregory McCarty
2:10	(1790-2)	Electrochemical Sensing of Acetylcholine Release from an Artificial Secretory Cell ANN-SOFIE CANS, Chalmers University of Technology, Jacqueline Keighron, Michael Kurczyk, Joakim Wigström
2:45	(1790-3)	Nanopipettes: A Versatile Tool for Biosensing and Single Cell Manipulation NADER POURMAND, University of California Santa Cruz
3:20		Recess
3:35	(1790-4)	FEEM Imaging of Dynamic Cellular Events with Nanoscale Resolution BO ZHANG, University of Washington, Stephen Oja, Chris Gunderson, Stephen J Percival, Joshua Guerrette
4:10	(1790-5)	Measuring Spatial Release Across a Single Cell with Array Electrodes and Biosensors ANDREW G EWING, Chalmers University and University of Gothenburg

SYMPOSIUM

Session 1800

Global Challenges in Food Safety

arranged by Lowri S DeJager, US Food and Drug Administration

Wednesday Afternoon, Room S405a

Lowri S DeJager, US Food and Drug Administration, Presiding

1:30		Introductory Remarks - Lowri S DeJager
1:35	(1800-1)	The Impact of Globalization of the Food Supply on the Analytical Laboratory STEVEN MUSSER, FDA
2:10	(1800-2)	Chasing Zero-How Changes in Methodology Complicate Food Safety Challenges JONATHAN DEVRIES, Medallion Laboratories/General Mills Inc.
2:45	(1800-3)	Challenges in Monitoring Chemical Contaminants in Food STEVEN LEHOTAY, USDA Agricultural Research Service
3:20		Recess
3:35	(1800-4)	Food Contamination - Taints, Off-Flavours and Looking for Unknowns KATHY RIDGWAY, Reading Scientific Services, Ltd.
4:10	(1800-5)	Analytical Challenges in Emergency Response to Chemical Contamination Events in Foods DOUGLAS HEITKEMPER, Food and Drug Administration

SYMPOSIUM Session 1810

New Enabling Analytical Techniques for Electrochemical Energy Materials

arranged by Joaquin Rodriguez-Lopez, University of Illinois at Urbana-Champaign

Wednesday Afternoon, Room S404d

Joaquin Rodriguez-Lopez, University of Illinois at Urbana-Champaign, Presiding

1:30		Introductory Remarks - Joaquin Rodriguez-Lopez
1:35	(1810-1)	Combinatorial Techniques for the Discovery of New Catalysts for Solar Fuel Production BRUCE A PARKINSON, University of Wyoming
2:10	(1810-2)	Understanding Spatial and Temporal Heterogeneities of Electrochemical Events Using Combined Optical and Electrochemical Methods SHANLIN PAN, The University of Alabama, Caleb Hill, Jia Liu, Daniel Clayton
2:45	(1810-3)	Selective Electrocatalysis MARC KOPER, Leiden University
3:20		Recess
3:35	(1810-4)	Quantitative Multi-Scale Imaging of Electrochemical and Ionic Reactivity in Ion-Battery Interfaces Using Novel Amperometric Probes JOAQUIN RODRIGUEZ-LOPEZ, University of Illinois at Urbana-Champaign, Zachary J Barton, Simpson H Burton, Mei Shen
4:10	(1810-5)	Title Not Provided at Time of Printing

SYMPOSIUM Session 1820

Quantitative Glycomic and Glycoproteomic Strategies

arranged by Yehia Mechref, Texas Tech University

Wednesday Afternoon, Room S405b

Yehia Mechref, Texas Tech University, Presiding

1:30		Introductory Remarks - Yehia Mechref
1:35	(1820-1)	Development of the INLIGHT Strategy for Relative Quantification of N-Linked Glycans in Complex Biospecimens DAVID C MUDDIMAN, North Carolina State University
2:10	(1820-2)	Methods for High-Throughput Glycosylation Analysis of Biopharmaceutical and Clinical Samples MANFRED WUHRER, VU University Amsterdam
2:45	(1820-3)	Carbonyl-Reactive Tandem Mass Tags for MS-Based Quantitative Glycomics SERGEI I SNOVIDA, Thermo Fisher Scientific
3:20		Recess
3:35	(1820-4)	Quantitative N-Glycosylation Analysis of Therapeutic Antibodies ANDRAS GUTTMAN, The Scripps Research Institute
4:10	(1820-5)	Quantitative Glycomics by High Temperature LC-MS of Permethylated N-Glycans YEHIA MECHREF, Texas Tech University, Hu Yunli, Shiyue Zhou, Ahmed Hussein

SYMPOSIUM Session 1830

SAS: Applications of Vibrational Spectroscopy in Medical Diagnostics

arranged by Max Diem, Northeastern University

Wednesday Afternoon, Room S502a

Max Diem, Northeastern University, Presiding

1:30		Introductory Remarks - Max Diem
1:35	(1830-1)	Infrared Spectral Pathology: Data Acquisition and Analysis on a Practical Clinical Timescale PETER GARDNER, University of Manchester, Paul Bassan, Jonathan Shanks, Michael D Brown, Noel W Clarke
2:10	(1830-2)	Clinical Diagnosis via Raman Spectroscopic Approaches JUERGEN POPP, Friedrich-Schiller University Jena
2:45	(1830-3)	Molecular Vision – Measuring the Chemical Content of Tissue for Pathology Using Vibrational Spectroscopic Imaging ROHIT BHARGAVA, University of Illinois
3:20		Recess
3:35	(1830-4)	What Lies Beneath: Probing Disease in Sub-surface Tissues Using Novel Raman Techniques NICK STONE, University of Exeter, Pavel Matousek
4:10	(1830-5)	Infrared Spectral Diagnostics: What are the Limits? MAX DIEM, Northeastern University

WORKSHOPS Session 1840

Current Trends in Pharmaceutical Dissolution Testing

arranged by Gregory Webster, AbbVie and J Derek Jackson, Cubist Pharmaceuticals

Wednesday Afternoon, Room S502b

Gregory Webster, AbbVie, Presiding

1:30		Introductory Remarks - Gregory Webster and J Derek Jackson
1:35	(1840-1)	Implementing Enhanced Mechanical Qualification for Dissolution Apparatus BRYAN CRIST, Agilent Technologies
2:05	(1840-2)	Fully Automated Dissolution Systems GEOFFREY GROVE, SOTAX Corporation
2:35	(1840-3)	HPLC and Automated Tablet Dissolution Testing Come Together IAN HIBBERT, Gilson, Inc., Matthew Smith
3:05		Recess
3:20	(1840-4)	Fiber Optic Dissolution Systems: Novel Applications KONSTANTIN TSNIMAN, Pion Inc., Oksana Tsinman
3:50	(1840-5)	Importance of Visual Observations in Dissolution Testing ADITYA A MARFATIA, Electrolab, Kavita Singh
4:20	(1840-6)	Vertical Diffusion Cell Testing ROYAL HANSON, Hanson Research

ORAL SESSIONS Session 1850

Advances in Renewable Energy Research: Devices and Analyses

Wednesday Afternoon, Room S501a

1:30	(1850-1)	Electrochemical Analysis of Photosystem I Integrated with Carbon-Based Materials GABRIEL LEBLANC, Vanderbilt University, Evan A Gizzie, Kevin M Winter, Kane G Jennings, David E Cliffl
1:50	(1850-2)	Electrochemical and Spectroscopic Characterization of Sn as an Alternative Anode in Lithium-Ion Batteries DANNY X LIU, The Ohio State University, Amy Casaday, Anne Co
2:10	(1850-3)	Development of Polyoxometalate-Ionic Liquid Compounds for Processing Cellulosic Biomass JUDE ABIA, Northeastern State University, Ruya Ozer
2:30	(1850-4)	New Methods and Developments on Syngas Pollutants Analysis ETIENNE BASSET, GDF SUEZ - CRIGEN, Marianne Andre-Gallardo
2:50		Recess
3:05	(1850-5)	Fractionation, Characterization, and Toxicity of a Spirulina Hydrothermal Liquefaction Wastewater JOHN W SCOTT, Illinois Sustainable Technology Center, Jonathan Byer, Joe Binkley, Mai Pham, Nandakishore Rajagopalan, Michael Plewa, Lance Schideman
3:25	(1850-6)	Analysis of Biodiesel Feedstock Using GCMS and Unsupervised Chemometric Classification Methods AMBER M HUPP, College of the Holy Cross, Mariel E Flood, Julian Goding, Jack O'Connor, Dorisanne Ragon
3:45	(1850-7)	Near Real-Time Determination of Inhibitors in the Production of Renewable Cellulosic Biofuels LEE N POLITE, Helios Scientific, LLC, Harold M McNair
4:05	(1850-8)	Electrochemical Studies of Photosystem I/Polymer/Semiconductor Interfaces for Biohybrid Solar Energy Conversion EVAN A GIZZIE, Vanderbilt University, Gabriel LeBlanc, Kane G Jennings, David E Cliffl

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS Session 1860

Developments of Bioanalytical Sensors

Wednesday Afternoon, Room S501bc

- 1:30 (1860-1) **Making Silver Nanoparticles Biocompatible** X NANCY XU, Old Dominion University, Kerry J Lee, Lauren M Browning, Prakash D Nallathamby
- 1:50 (1860-2) **Multiplexed Detection of Cardiac Troponin Biomarkers Using Silicon Photonic Microring Resonators** WINNIE W SHIA, University of Illinois at Urbana-Champaign, James H Wade, Ryan C Bailey
- 2:10 (1860-3) **Development of Proximity Ligation Assays for Picomolar-Range Quantitation of Insulin and Leptin in Complex Matrices** JESSICA C BROOKS, Auburn University, Leah A Godwin, Christopher J Easley, Joonyul Kim, Michael Greene
- 2:30 (1860-4) **Rapid Discrimination of Epigenetic Modifications within Double-Stranded DNA in a Nano-Channel** GUIHUA WANG, Illinois Institute of Technology, Gupta Jyoti, Xiyun Guan
- 2:50 **Recess**
- 3:05 (1860-5) **In Vivo Toxicology Study of Ions on Embryonic Development** MARTHA S JOHNSON, Old Dominion University, Amanda K Swain, Lauren M Browning, X Nancy Xu
- 3:25 (1860-6) **A Label-Free Real-Time cDNA Sensor for Infectious Diseases by Nanopore Analysis** LIANG WANG, Illinois Institute of Technology, Yujing Han, Shuo Zhou, Guihua Wang
- 3:45 (1860-7) **Development of Au Nanorod Biochip for Label-free Biological Detection** YANYAN WANG, University of Texas at San Antonio, Liang Tang

ORAL SESSIONS Session 1870

Environmental Analysis: Petrochemicals (Half Session)

Wednesday Afternoon, Room S501d

- 1:30 (1870-1) **Automated Fractionation of Extractable Petroleum Hydrocarbons Using a 6 mL Silica Gel Cartridge** WILLIAM R JONES, Horizon Technology, Brian LaBrecque, Alicia J Cannon, Robert S Johnson
- 1:50 (1870-2) **Automated, Rapid, Reliable Determination of Dissolved Gases in Water by Static Headspace – Gas Chromatography** MASSIMO SANTORO, Thermo Fisher Scientific, Andrea Caruso, Richard Jack
- 2:10 (1870-3) **Oil and Grease Analysis Around the World** ZOE GROSSER, Horizon Technology, David Friedman

ORAL SESSIONS Session 1880

Food Science: Bulk and Matrix Composition Analysis

Wednesday Afternoon, Room S503a

- 1:30 (1880-1) **Sensory Benchmarking of Sausages Using E-Sensing Instruments** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marion Bonnefille, Herve Lechat, Fatma Ayouni, Valerie Vabre
- 1:50 (1880-2) **Determinations of Inorganic Anions and Organic Acids in Beverages Using Suppressed Conductivity and Charge Detection** TERRI TOYOKO CHRISTISON, Thermo Fisher Scientific, Alexander Zhang, Cathy Tanner, Linda Lopez
- 2:10 (1880-3) **Investigation of “Dry Hop Index” as an Indicator for Hop Oxidation via UV-VIS Spectrometry and GC-TOF MS** ELIZABETH HUMSTON-FULMER, Leco Corporation, Carolyn Stordeur, Lauren Torres, Kevin Payne, Lucas R Chadwick, Joe Binkley
- 2:30 (1880-4) **Determination of Natural Vitamin E and Benzopyrene by High Performance Liquid Chromatography** ZHANG JINRAN, Bonna-Agela Technologies Inc., Su Xuan, Lu Guotao
- 2:50 **Recess**
- 3:05 (1880-5) **The Importance of GC-TOFMS and GC-HR-TOFMS for Flavor and Off-Flavor Analysis for Packaging Related Issues** RAY THOMAS MARSILI, Marsili Consulting Group
- 3:25 (1880-6) **Multi Target Detection Using Total Surface Plasmon Resonance Sensing System** TOSHIKAZU KAWAGUCHI, Hokkaido University, Su Herman, Katsuaki Shimazu, Kinichi Morita

ORAL SESSIONS Session 1890

Gas Chromatography: Carrier Gasses, Capillary Techniques (Half Session)

Wednesday Afternoon, Room S501d

- 3:05 (1890-1) **Optimizing and Improving Carrier Gas Systems Enables You to Reduce Your Gas Usage** REGINALD J BARTRAM, Bartram Consulting
- 3:25 (1890-2) **Unintended Consequences with Conversion to Hydrogen Carrier in Gas Chromatography** RANDALL BRAMSTON-COOK, Lotus Consulting
- 3:45 (1890-3) **Using Large Volume Injection (LVI) on Conventional Split / Splitless Inlets to Improve Sensitivity or Reduce Sample Preparation** KORY KELLY, Phenomenex
- 4:05 (1890-4) **How to Manage Helium Shortage? Let's Use Hydrogen to Measure THT in Natural Gas with Micro-Chromatographs** ONY RABETSIMAMANGA, GDF SUEZ - CRIGEN, Etienne Basset

ORAL SESSIONS Session 1900

High-Throughput Chemical Analysis (Half Session)

Wednesday Afternoon, Room S503b

- 1:30 (1900-1) **Open Probe Fast GC-MS – Real Time Analysis with Separation** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Uri Keshet, Tal Alon
- 1:50 (1900-2) **Design and Fabrication of Multiplexed Plasmonic Nanorod Biochip for High Throughput Biological Assay** YANYAN WANG, University of Texas at San Antonio, Liang Tang
- 2:10 (1900-3) **Electrochemical Determination of As(III) by Subtractive Anodic Stripping Coulometry in a Micro-Fabricated Platform** MOHAMED M MAREI, University of Louisville, Thomas J Roussel, Keynton S Robert, Richard P Baldwin
- 2:30 (1900-4) **Innovative Approach to Helium Carrier Gas Conservation in Analytical Gas Chromatography** MASSIMO SANTORO, Thermo Fisher Scientific, Edward B McCauley, Paolo Magni, Alexander N Semyonov

ORAL SESSIONS Session 1910

Mass Spectrometry: Bioanalytical and Biomedical

Wednesday Afternoon, Room S504a

- 1:30 (1910-1) **New Derivatization Reagents to Optimize Retention and Response for Quantitative Analysis by LC-ESI-MS/MS** ROSS M WOODS, University of Texas at Arlington, Daniel W Armstrong, Kevin A Schug
- 1:50 (1910-2) **Mapping N-Glycoproteomics in Cells by an MS-Based Novel Chemical Deglycosylation Method** RONGHU WU, Georgia Tech
- 2:10 (1910-3) **Internal Energy Transfer for Thermometer Molecules and Ions Desorbed from Multilayers by Femtosecond Pulse Laser Desorption** LUKE HANLEY, University of Illinois at Chicago, Slobodan Milasinovic, Yang Cui, Robert J Gordon
- 2:30 (1910-4) **Controlled Proteolysis in Trypsin-modified Membrane to Obtain Large Peptides for Mass Spectrometry** WENJING NING, Michigan State University, Jinlan Dong, Weihang Wang, Yujing Tan, Li Cui, Gavin Reid, Merlin Bruening
- 2:50 **Recess**
- 3:05 (1910-5) **Fundamentals of ESI-MS from Nanopipette Emitters** ELIZABETH M YUILL, Indiana University, Niya Sa, Alicia K Friedman, Steven J Ray, Gary M Hieftje, Lane A Baker
- 3:25 (1910-6) **Systematic Mechanistic Exploration of Negative Ion Electron Capture Dissociation (niECD) with Synthetic Peptides** NING WANG, University of Michigan, Kristina Hakansson
- 3:45 (1910-7) **Development of a Sampling Technique for Single Cell MALDI Mass Spectrometry** ANUMITA SAHA, Indiana University, Lane A Baker, Steven J Ray
- 4:05 (1910-8) **Continuous Real-Time Breath Gas Monitoring in Mechanically Ventilated Patients by Means of Proton-Transfer-Reaction-Time of Flight-Mass Spectrometry** PHILLIP TREFFZ, University Medicine of Rostock, Beate Brock, Jochen K Schubert, Marcus Schmidt, Wolfram Miekisch

ORAL SESSIONS Session 1920

Mass Spectrometry: Neurochemistry and General Interest

Wednesday Afternoon, Room S504bc

- 1:30 (1920-1) **Detection of Uranyl Compounds Using Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) Mass Spectrometry** LYNN X ZHANG, Clemson University, Benjamin T Manard, R Kenneth Marcus
- 1:50 (1920-2) **Rapid Quantification of Biogenic Amines from *Drosophila Melanogaster* Using MALDI-MS** CATHERINE L KRAMER, University of Arizona, Alyssa E Vollaro, Eric B Monroe, Michael L Heien
- 2:10 (1920-3) **A D-Amino Acid-Containing Neuropeptide Discovery Funnel** ITAMAR LIVNAT, University of Illinois at Urbana-Champaign, Hua-Chia Tai, Stanislav S Rubakhin, Jonathan V Sweedler
- 2:30 (1920-4) **Assessment of the Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) as an Ambient Desorption/Ionization Source for Mass Spectrometry** BENJAMIN T MANARD, Clemson University, Lynn X Zhang, R Kenneth Marcus
- 2:50 **Recess**
- 3:05 (1920-5) **Method Optimization for Comprehensive Characterization of Petroleum with High Resolution Time-of-Flight Mass Spectrometry Platforms** CLECIO F KLITZKE, Leco Corporation, David E Alonso, Kevin Siek, Elizabeth Humston-Fulmer, John Heim, Joe Binkley, Jeff Patrick
- 3:25 (1920-6) **Investigation of Pressure Tolerant Faraday Cup Detectors for High Pressure Mass Spectrometry** KEVIN P SCHULTZE, University of North Carolina at Chapel Hill, M Bonner Denton, J Michael Ramsey
- 3:45 (1920-7) **Tandem MS of Laser-Reduced Anthraquinones: Implications for LDI Detection of Paints and Dyes** MICHAEL P NAPOLITANO, University of Florida, Ping-Chung Kuo, Jodie V Johnson, Julie Arslanoglu, Richard A Yost
- 4:05 (1920-8) **Rapid Determination of Furanic Compounds in Dielectric Liquids with Direct Infusion ESI-MS/MS and DESI-MS/MS** JINYU DU, Missouri University of Science and Technology, Shubhender Kapila

ORAL SESSIONS Session 1930

Neurochemistry: New Approaches to Better Information from Measurements

Wednesday Afternoon, Room S504d

- 1:30 (1930-1) **Carbon Nanotube Yarn Electrodes for Enhanced Detection of Neurotransmitter Dynamics in Brain Tissue** ANDREAS C SCHMIDT, North Carolina State University, Xin Wang, Yuntian Zhu, Leslie A Sombers
- 1:50 (1930-2) **The Use of Pharmacological Agents for the Prevention of Tissue Damage During Brain Microdialysis** KATHRYN M NESBITT, University of Pittsburgh, Andrea Jaquins-Gerstl, Erika L Varner, Adrian C Michael
- 2:10 (1930-3) **The Effects of Adsorption Kinetics on the Interpretation of Fast-Scan Cyclic Voltammetry Data during Behavior** NATHAN T RODEBERG, University of North Carolina at Chapel Hill, Elizabeth S Bucher, R Mark Wightman
- 2:30 (1930-4) **Amperometric Measurement of the Effect of Nanoparticles on Exocytosis from PC12 Cells** HODA MASHADI FATHALI, Chalmers University of Technology, Johan Dunevall, Jacqueline Keighron, Lisa Mellander, Andrew G Ewing
- 2:50 **Recess**
- 3:05 (1930-5) **Microfabricated Microelectrode Sensor for Measuring Tonic and Phasic Neurochemistry** ADAM DENGLER, North Carolina State University, Gregory McCarty, R Mark Wightman, Susan Carroll
- 3:25 (1930-6) **MS Investigation of Neuropeptide Distribution and Expression Pattern Changes upon Exposure to Nanoparticles in Decapod Crustacean** CHUANZI OUYANG, University of Wisconsin-Madison, Albert T Kim, Bingming Chen, Chenxi Yang, Hui Ye, Lingjun Li
- 3:45 (1930-7) **Towards Using Electrokinetic Transport for the Delivery of Macromolecules to the Brain** ALEC C VALENTA, University of Pittsburgh, Andrea Jaquins-Gerstl, Amir H Faraji, Adrian C Michael, Stephen G Weber
- 4:05 (1930-8) **Capacitive Changes as a Measure of Ionic Adsorption on Carbon-Fiber Microelectrodes** CADDY N HOBBS, University of North Carolina at Chapel Hill, Anna M Belle, Preethi Gowrishankar, R Mark Wightman

ORAL SESSIONS Session 1940

Process Analytical Chemistry: Techniques (Half Session)

Wednesday Afternoon, Room S503b

- 3:05 (1940-1) **Process Analytical Technology (PAT) Improving Efficiency and Workflows in the Laboratory** ERNIE J HILLIER, Waters Corporation, Tanya Jenkins, Charles H Phoebe, Aaron D Phoebe, Craig H Dobbs
- 3:25 (1940-2) **On-Line Analysis for Reaction Monitoring: More Than One Way to Dilute a Sample** BRADLEY CAMPBELL, Eli Lilly and Company, Martin D Johnson, Ryan J Linder, Wei-Ming Sun, Nikolay Zaborenko
- 3:45 (1940-3) **Full Automation of Soluble Fraction Measurement in a Simple Approach Especially Suitable for Quality Control in Polypropylene Plants** BENJAMIN MONRABAL, Polymer Char, Pilar Del Hierro, Alberto Ortin, Raquel Ubeda
- 4:05 (1940-4) **Developing a Workflow for Development of a Continuous Process with Online UHPLC Monitoring** CHARLES H PHOEBE, Waters Corporation, Sara Sadler, Aaron D Phoebe, Graham B Jones, Craig H Dobbs, Robert J Tinder

ORAL SESSIONS Session 1950

Sampling/Sample Preparation: Biological Applications

Wednesday Afternoon, Room S505a

- 1:30 (1950-1) **Rapid and Controlled Protein Digestion in Porous Membrane Reactors Containing Covalently Immobilized Trypsin** JINLAN DONG, Michigan State University, Wenjing Ning, Weihang Wang, Yujing Tan, Li Cui, Gavin Reid, Merlin Bruening
- 1:50 (1950-2) **Thin-Film Solid-phase Microextraction for Determination of Cocaine and Methadone in Urine Samples by Direct Analysis in Real Time (DART) Coupled with Tandem Mass Spectrometry** ANGEL RODRIGUEZ-LAFUENTE, University of Waterloo, Janusz Pawliszyn, Fatemeh Mirnaghi
- 2:10 (1950-3) **An Automated Approach for Solid Phase Extraction Methods Development for the Research Laboratory** JOHN PATRICK SIIRA, Horizon Technology, David Gallagher, Michael Ebitson
- 2:30 (1950-4) **Application of Hydrophobic Magnetic Ionic Liquids in Dispersive Liquid-Liquid Microextraction** HONGLIAN YU, The University of Toledo, Omprakash Nacham, Jared L Anderson
- 2:50 **Recess**
- 3:05 (1950-5) **A Simplified Load-Wash-Elute Solid Phase Extraction Procedure for the Reversed Phase Micro Elution Plate** XIN ZHANG, Waters Corporation, Pamela Iraneta, Michelle Teuscher
- 3:25 (1950-6) **Electrospinning Nanofibers for Extraction of Phosphorylated Peptides and Proteins** WENWAN ZHONG, University of California, Riverside, Hui Wang
- 3:45 (1950-7) **Evaluation New Developed Extended Tip Needle Trap Devices and Their Application for In-Field Sampling** SABA ASL HARIRI, University of Waterloo, Janusz Pawliszyn, German Augusto Gomez-Rios
- 4:05 (1950-8) **Determination of Drugs in Human Saliva Utilizing Microextraction by Packed Sorbent and Liquid Chromatography-Tandem Mass Spectrometry** MOHAMED ABDEL-REHIM, Stockholm University

ORAL SESSIONS Session 1960

Sensors: Environmental and Fuels, Energy and Petrochemical (Half Session)

Wednesday Afternoon, Room S505b

- 1:30 (1960-1) **Small Molecule Aptamers and Their Engineering for Enhanced Affinities** MAN BOCK GU, Korea University, Young Sup Kwon, Nurul Hanun Raston
- 1:50 (1960-2) **Detecting Toxicants with a Cell-Based Impedance Biosensor** KAYLA SHAW, University of Notre Dame, Paul W Bohn
- 2:10 (1960-3) **Optical Sensing with Electrospun Polydiacetylene (PDA)-Embedded Nanofibers** ANDREW J BURRIS, University of California, Riverside, Bryce W Davis, Christopher D Hare, Chih-Yuan Chen, Quan Cheng
- 2:30 (1960-4) **Use of Solvatochromism to Detect FAME/Biodiesel in Diesel** JONATHAN FONG, University of Tennessee, Zi-Ling Xue

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 1970

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, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Bioanalytical Neurochemistry, Capillary Electrophoresis, Electrophoresis, and Microfluidics

Wednesday Afternoon

- (1970-1 P) **Capillary Zone Electrophoresis—Electrospray Ionization—tandem Mass Spectrometry for Top-Down Intact Secreted Protein Characterization** YIMENG ZHAO, University of Notre Dame, Liangliang Sun, Matthew M Champion, Norman J Dovichi
- (1970-2 P) **Design of a Droplet Generation Device with a Long Incubation Channel for Fully-Integrated DNA and Proteins Assays** JEAN T NEGOU, Auburn University, Kennon S Deal, Joonyul Kim, Christopher J Easley
- (1970-3 P) **Fully Automated Capillary Electrophoresis Analysis of Affinity Reagents** BONNIE J HUGE, University of Notre Dame, Ryan Flaherty, Norman J Dovichi, Oluwatosin O Dada
- (1970-4 P) **Mass Spectrometry Imaging of Peptides in the Planarian *Schmidtea mediterranea*** TAHSUAN ONG, University of Illinois at Urbana-Champaign, James J Collins, Elena V Romanova, Phillip Newmark, Jonathan V Sweedler
- (1970-5 P) **Investigation of Neuropeptide Release in Response to Mechanical Stimulation of DRG Neurons** EMILY G TILLMAAND, University of Illinois at Urbana-Champaign, Callie A Croushore, Stanislav S Rubakhin, Taher A Saif, Jonathan V Sweedler
- (1970-6 P) **Capillary Electrophoresis-Based Characterization and Applications of Graphene Quantum Dots** LEONA SIRKISOON, Wake Forest University, Honest Makamba, Christa L Colyer
- (1970-7 P) **Targeting Membrane Bound Proteins with Methylated Aptamers** ANDREW SCHMUDLACH, University of Notre Dame, Bonnie J Huge, Flaherty Ryan, Norman J Dovichi
- (1970-8 P) **A Microfluidic Long-Term Cell Culture Device for Improving Biomimetic Modeling in Diabetes Metabolomics** LAURA FILLA, Saint Louis University, James L Edwards
- (1970-9 P) **Integrating Microscale Enzymatic Reactions with Capillary Electrophoresis** SRIKANTH GATTU, West Virginia University, Cassandra L Carihfield, Lisa A Holland
- (1970-10 P) **Measurements of Serotonin Release in Huntington's Disease Model R6/2 Mice** RACHEL GEHRINGER, University of Kansas, Sam Kaplan, Ryan Limbocker, Michael A Johnson
- (1970-11 P) **Mass Spectrometry and Microfluidics-based Strategy for Characterization of Peptide Release in Mammalian Peripheral Nervous System** NING YANG, University of Illinois at Urbana-Champaign, Callie A Croushore, Emily G Tillmaand, Elena V Romanova, Stanislav S Rubakhin, Jonathan V Sweedler
- (1970-12 P) **Acute Nicotine Administration has Different Effects on Evoked Dopamine Responses at Different Fast and Slow Type Sites in the Rat Striatum** BRENDAN P SESTOKAS, University of Pittsburgh, Seth H Walters, Adrian C Michael
- (1970-13 P) **Optimizing EMMA Overlap Conditions: Experiment and Simulation** MARIA D JONES, Bucknell University, Adam R Meier, Timothy G Strein
- (1970-14 P) **Coupling Immobilized Alkaline Phosphatase-based Automated Diagonal Capillary Electrophoresis to Tandem Mass Spectrometry for Extent of Phosphorylation Analysis** SI MOU, University of Notre Dame
- (1970-15 P) **An Organic Light-Emitting Diode (OLED) Induced Fluorescence Detection System for Use in a Compact Disk-Type Microfluidic Device** KAZUHIRO MORIOKA, Tokyo Metropolitan University, Hizuru Nakajima, Akihide Hemmi, Hulin Zeng, Shungo Kato, Katsumi Uchiyama
- (1970-16 P) **On-Line Concentration and Separation of Parabens by Micellar Electrokinetic Chromatography Using Polymer Solutions Containing Sodium Dodecyl Sulfate** CHIEN-WEI WU, National Taiwan Ocean University, Tai-Chia Chiu, Cho-Chun Hu
- (1970-17 P) **On-Line HPLC Separation and Fluorescent Tagging of Primary Fatty Acid Amide Conjugates Using Droplet-Based Microfluidics and Single Photon Counting Detection** ANDREW P DAVIC, Duquesne University, Michael Cascio
- (1970-18 P) **Bottom-Up Proteome Analysis of *E. coli* Using Capillary Zone Electrophoresis-Tandem Mass Spectrometry with an Electrokinetic Sheath-Flow Electrospray Interface** XIAOJING YAN, University of Notre Dame, David C Essaka, Liangliang Sun, Guijie Zhu, Norman J Dovichi
- (1970-19 P) **High-Speed Capillary Electrophoresis Coupled with Electrospray Ionization-Mass Spectrometry for Metabolite Analysis** NICOLE M SCHIAVONE, University of Notre Dame, Scott Sarver, Carlos Gartner, Roza Wojcik, Norman J Dovichi

- (1970-20 P) **Latex Nanoparticle Pseudo-Stationary Phases for Electrokinetic Chromatography: Influence of the Ionic Shell** JESSE HYSLOP, University of Montana, Leah Hall, Christopher P Palmer
- (1970-21 P) **Determining Extra-Cellular Amino Acids Secreted from Human Adipocytes Using Online Microdialysis Capillary Electrophoresis** RACHEL HARSTAD, University of Minnesota, Michael T Bowser
- (1970-22 P) **Electro-Transfer Efficiency of Various Protein Types Using an Automated a Semi-Dry Method for Western Blot Analysis** EWA Z LANG, Abbott Laboratories, Tracey D Rae, Kevin R Rupprecht, Jeffrey Fishpaugh

POSTER SESSION

Session 1980

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Bioanalytical: Vibrational Spectroscopy

Wednesday Afternoon

- (1980-1 P) **Site Selective Characterization of Protein Electrostatics and Conformational Heterogeneity with Infrared Spectroscopy** EDWARD BASOM, Indiana University, James Spearman, Megan C Thielges
- (1980-2 P) **Quantitative Protein Detection Using Surface-Enhanced Raman Scattering** MUSTAFA CULHA, Yeditepe University, Ertug Avci
- (1980-3 P) **Coherent Anti Stokes Raman Scattering Correlation Spectroscopy (CARS-CS)** LAWRENCE O ITEL, University of Notre Dame, Karen A Antonio, Zachary D Schultz
- (1980-4 P) **Label-Free Lipid Vesicle Detection in a Flow Cell Detector Using SERS** KEVIN T JACOBS, University of Notre Dame, Pierre Negri, Zachary D Schultz
- (1980-5 P) **Preparation of Silver Nanocrystals Coated ZnO/Fe₃O₄ Nanocomposites via Photoreduction as SERS Substrate for Detection of Uric Acid in Urine** MELISEW TADELE ALULA, Bahir Dar University, Jyisy Yang
- (1980-6 P) **Analysis of Human Erythrocytes Fourier Transform Infrared Microspectroscopy** MENASHI A COHENFORD, Marshall University, SeungJin Lim, Tabitha Norman, Maggie Anderson, Sarah Chapman, Pamela Meadows
- (1980-7 P) **Infrared Spectroscopy of Photosynthetic Electron Transfer Complexes** AMANDA LE SUEUR, Indiana University
- (1980-8 P) **Surface-Enhanced Raman Bio-Imaging Using Gold Nano-Coral** SHOGO YAMAZOE, FUJIFILM Corporation, Megumi Shiota, Masayuki Naya, Mayumi Kajimura, Makoto Suematsu

POSTER SESSION

Session 1990

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Biopharmaceutical Analysis

Wednesday Afternoon

- (1990-1 P) **Optimization of Si-Based CVD Coatings for Anti-Bio Fouling Applications** GARY BARONE, SilcoTek Corporation, Min Yuan, David Smith
- (1990-2 P) **Radio Ion Chromatography** JAY GANDHI, Metrohm USA, M Espinosa, J Chesa-Jimenez, Andrea Wille
- (1990-3 P) **Method Optimization to Eliminate Protein Sample Carryover: Evaluation of Bovine Serum Albumin and Ovalbumin Using Ion Exchange Low Flow HPLC Purification** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Takashi Nakamura, Yuichiro Hayashi

POSTER SESSION

Session 2000

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Mass Spectrometry for Art and Archaeological Analysis

Wednesday Afternoon

- (2000-1 P) **DART-MS Applications to the Analysis of Art and Archaeological Materials** RUTH ANN ARMITAGE, Eastern Michigan University
- (2000-2 P) **Identification of Red Dyes in Archaeological Textile Fragments by DART-MS Before and After Sample Cleaning** CALVIN DAY, Eastern Michigan University, Ruth Ann Armitage
- (2000-3 P) **DART-MS Analysis of Historic Tobacco Pipes to Investigate the Preservation of Nicotine Residues** SYLVIA TORRES, Eastern Michigan University, Ruth Ann Armitage

POSTER SESSION

Session 2010

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Mass Spectroscopy: Bioanalytical and 'Omics

Wednesday Afternoon

- (2010-1 P) **Comparison of Nanostructured Initiator Mass Spectrometry (NIMS) and Matrix-Enhanced Surface-Assisted Laser Desorption/Ionization (ME-SALDI) in MSI of Small Molecules** TARA N MOENING, North Carolina State University, Victoria L Brown, Lin He
- (2010-2 P) **Lipid Identification and Imaging in Single Cells Using Combined SIMS and Laser Desorption Ionization** AMIR SAEID MOHAMMADI, Chalmers University of Technology, Anders O Lundgren, Per Malmberg, John S Fletcher, Jörg Hanrieder, Andrew G Ewing
- (2010-3 P) **Enhanced Laser Ionization for MALDI-QTOF Quantitative Analysis of a Biomedically Important Analyte** LOGAN MILLER, Duquesne University, HM Skip Kingston
- (2010-4 P) **Impact of Protein Corona on Nanotube-Conjugated CpG Immunotherapy for Glioma** SHANG ZENG, University of California, Riverside, Wenwan Zhong
- (2010-5 P) **Utilizing SAMDI Mass Spectrometry to Understand the Evolutionary Relationship of Phosphatases and Adaptor Domains** KYLE C BANTZ, Northwestern University, Danielle Seedorf, Milan Mrkisch
- (2010-6 P) **Discriminating Peptide Epimers in Complex Mixtures by Radical Directed Dissociation LC-MS** YUANQI TAO, University of California, Riverside, Ryan R Julian
- (2010-7 P) **High-Resolution Enabled 10-plex DiLeu Isobaric Tagging Reagents for Mass Spectrometry-Based Relative Quantitation** DUSTIN FROST, University of Wisconsin-Madison, Tyler J Greer, Lingjun Li
- (2010-8 P) **Sequence Mapping of Apolipoprotein B-100 on Human Low-Density Lipoprotein Surface Using NHS Ester Modified Magnetic Iron Oxide Nanoparticles with a Cleavable Linker Coupled with Liquid Chromatography-Tandem Mass Spectrometry** PARISA PIRANI, University of New Orleans, Ujwal S Patil, Yang Cai, Matthew A Tarr
- (2010-9 P) **Direct MALDI Imaging of Glycosphingolipids (GSL) in Brain Tissue of Mouse Models of Lysosomal Storage Disorders** JENNIFER ARCEO, University of Notre Dame, Norman J Dovichi
- (2010-10 P) **Combining Fibrinogen-Conjugated Gold Nanoparticles with a Cellulose Membrane for the Mass Spectrometry-Based Detection of Fibrinolytic-Related Proteins** WEI CHANE CHIU, National Taiwan Ocean University, Chih-Ching Huang
- (2010-11 P) **High Spatial Resolution Multi Modal Imaging Mass Spectrometry (IMS) of Neuropeptides in the Cerebral Cortex and the Corpus Callosum of the Mouse Brain** MASOUMEH DOWLAT-SHAHI POUR, Chalmers University of Technology, Per Malmberg, Andrew G Ewing
- (2010-12 P) **Detection of MicroRNA in Tumor Cells by Enzyme and Graphene Oxide-Regulated Signal Amplification** RONG-CING HUANG, National Taiwan Ocean University, Chih-Ching Huang
- (2010-13 P) **Development of a Quantitative LC-MS/MS Assay for the Simultaneous Quantitation of Acetylcholine, Histamine, and Their Metabolites in Human Cerebrospinal Fluid (CSF) Using sub 2µm HILIC UPLC** MARY ELAME, Waters Corporation, Erin Chambers, Kenneth J Fountain

- (2010-14 P) **Nanogold Membrane Coupled with Laser Desorption/Ionization Mass Spectrometry for Detection of Iodide in Urine** YU-JIA LI, National Taiwan Ocean University
- (2010-15 P) **Lipidomics on Intact Breast Cancer Cell Lines Using Desorption Electrospray Ionization Mass Spectrometry** HEATHER ROBISON, University of Illinois at Urbana-Champaign, Richard Perry
- (2010-16 P) **A Comparison of Metabolomics Analysis by One-Dimensional GC-TOFMS and Two-Dimensional GCxGC-TOFMS as a Function of Throughput Versus Characterization** JOHN HEIM, Leco Corporation, David E Alonso, Joe Binkley, Jeff Patrick
- (2010-17 P) **Headspace GC-MS Detection of Dodecafluoropentane Collected Using Microdialysis Sampling** ALDA A DIAZ-PEREZ, University of Arkansas, Jennifer Gidden, Jackson O Lay, Julie Stenken
- (2010-18 P) **In Vivo Detection of Volatile Signatures from Mycobacterium Avium spp. Paratuberculosis (MAP) by Means of Needle-Trap-Micro-Extraction (NTME), Solid-Phase-Micro-Extraction (SPME) and GC-MS** ANDREAS BERGMANN, University Medicine of Rostock, Heike Koehler, Petra Reinhold, Klaus Klepik, Phillip Trefz, Jochen K Schubert, Sina Fischer, Wolfram Miekisch
- (2010-19 P) **Analysis of the Essential Oil from the Leaves of Cissampelos Owariensis, a Profertility Plant** MODUPE MABEL OGUNLESI, University of Lagos, Wesley O Okiei, Edith U Ofor
- (2010-20 P) **GC-MS Analysis of the Essential Oil from the Edible Nuts from Tetracarpidium Conophorum** MODUPE MABEL OGUNLESI, University of Lagos, Wesley O Okiei, Funmilola A Adesanya

POSTER SESSION

Session 2020

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Pharmaceutical: GC, MS, LC/MS and Others

Wednesday Afternoon

- (2020-1 P) **Decane as a New Dilution Medium for the Analysis of Alcohols with Headspace-Gas Chromatography** KYUJIN KYUNG, Samyang Biopharmaceuticals Corporation, Dongho Lee, Bumchan Min
- (2020-2 P) **Use of Additives for Improving Chromatographic Analysis** RUDOLF KOHLING, Sigma-Aldrich, Namtso Reichlin, Mathias Drexler, Shyam Verma, Vicki Yearick
- (2020-3 P) **Use of Mass Detection in Method Development for Components with No UV Absorbance** SEAN M MCCARTHY, Waters Corporation, Michael D Jones
- (2020-4 P) **Chiral and Achiral Reaction Monitoring with Ultra-Performance Chromatography and Mass Detection** SEAN M MCCARTHY, Waters Corporation, Michael D Jones
- (2020-5 P) **Microwave, Raman and Infrared Spectra, Conformational Stability, Structural Parameters, and Vibrational Assignment of Cyclopentylamine** IKHLAS D DARKHALIL, University of Missouri - Kansas City, James R Durig
- (2020-6 P) **Integrating Predictive and Experimental Tools to Capture Degradation Knowledge in the Early Development Phase of a Drug's Lifetime** TASNEEM PATWA, Pfizer
- (2020-7 P) **USP <467>: Determination of Residual Solvents in Pharmaceutical Products Using Static Headspace and Time of Flight GC/MS system** ILARIA FERRANTE, DANI Instruments, Chiara Abate, Roberta Lariccia, Daniele Recenti

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 2030

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Sampling and Sample Preparation

Wednesday Afternoon

- (2030-1 P) **Development of Novel Passive Air Sampler for Simultaneous Determination of NO and NO₂ Employing Ceria/quartz Fiber Filter** AYANO AZUMA, Tokai University, Yoshika Sekine, Yuki Nagaoka, Michio Butsugan
- (2030-2 P) **Nicotine and Metabolites: Evaluation of Supported Liquid Extraction Approaches Prior to UPLC-MS/MS Analysis** ALAN EDGINGTON, Biotage, Williams Lee, Victor Vandell, Frank A Kero, Tom Enzweiler, Elena Gairloch, Brad Nolt
- (2030-3 P) **Method NIOSH 2549: Thermal Desorber Analysis for Occupational Safety and Health** ILARIA FERRANTE, DANI Instruments, Daniele Recenti
- (2030-4 P) **New Stationary Phases for Large Volume SPE** JING HONG, Thermo Fisher Scientific, Rosanne Slingsby, Pranathi R Perati
- (2030-5 P) **Alternative Extraction for EPA 548.1, The Analysis of Endothal** KORY KELLY, Phenomenex
- (2030-6 P) **Automation of a Solid Phase Extraction Method for the Determination of Ochratoxin A in Wine and Beer Samples Prior to LC-MS/MS** FRANK A KERO, Biotage, Leonardo Mariño Repizo, Soledad Cerutti, Victor Vandell, Adam Senior, Tom Enzweiler, Elena Gairloch
- (2030-7 P) **Use of Accelerated Solvent Extraction (ASE) with Centrifugal Evaporation to Automate Fat Determination in Food Matrices** AARON KETTLE, Thermo Fisher Scientific
- (2030-8 P) **Eliminating the Need for Matrix-Matched Calibration Standards for GC and LC Pesticide Residue Analyses of QuEChERS Extracts Using a Robotic Solid Phase Extraction Clean-Up Procedure** BRUCE D MORRIS, RJ Hill Laboratories, Richard Schriener, Kim Gamble, Rick Youngblood
- (2030-9 P) **Sample Preparation and Quantification of Arsenic Compounds in Insoluble Gypsum Wallboards** KANA OKAMOTO, Fukushima University, Atsushi Manaka, Masamoto Tafu, Yoshitaka Takagai
- (2030-10 P) **Increasing Extraction Efficiency of Wet Samples Using a Novel New Polymer During Accelerated Solvent Extraction** PRANATHI R PERATI, Thermo Fisher Scientific, SM Rahmat Ullah
- (2030-11 P) **Novel Methods for the Pretreatment of Whole Blood Using Fenton-Like Processes** SAMUEL M ROSOLINA, University of Tennessee, Kimberly N Johnson, Zi-Ling Xue
- (2030-12 P) **Comparison of Sampling Methods for Identification of Process Tank Residues** MARY L STELLMACK, McCrone Associates, Anna S Teetsov
- (2030-13 P) **Utility of a Moisture Removal Polymer for Extraction Applications** SM RAHMAT ULLAH, Thermo Fisher Scientific, Kannan Srinivasan, Christopher Pohl
- (2030-14 P) **Fast "Load-Wash-Elute" SPE Method With No Dry Down Steps for Peptide Extraction from Plasma and Serum Prior to LC-MS/MS Analysis** VICTOR VANDELL, Biotage, Frank A Kero, Tom Enzweiler, Elena Gairloch
- (2030-15 P) **Introduction of New Syringeless Filtration Device for Easy Use Prior to Instrument Analysis** LIMIAN ZHAO, Agilent Technologies, Wei Song, Greg Webster
- (2030-16 P) **Are You Worried about the Loss of Target Analytes by Sample Filtration?** LIMIAN ZHAO, Agilent Technologies, William John Long
- (2030-17 P) **New Graphitized Polymer Carbons and Carbon Molecular Sieves for Sample Preparation Applications** WILLIAM R BETZ, Supelco/Sigma-Aldrich, Jay Jones, Mike Keeler, Wendy Roe
- (2030-18 P) **Increased Efficiency of the Coomassie (Bradford) Assay for Protein Content Determination Using Simple Automated Liquid Handling vs. Manual Procedures** TONI HOFHINE, Gilson, Inc., Dan Brunner, Seth Hanson, Tristan Berto
- (2030-19 P) **Automated Inspection for Disease Vector Tracking** LEVI B LAZARUS, University of Arizona, Roger L Miesfeld, Jun Isoe, Michael L Heien

POSTER SESSION

Session 2040

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Sensors: Bioanalytical and Biomedical

Wednesday Afternoon

- (2040-1 P) **Functionalization of Poly(methyl methacrylate) (PMMA) for the Usage as a Glucose Biosensor** MARCOS CERQUEIRA, USP, Lucio Angnes, Renato Matos
- (2040-2 P) **Highly Sensitive SERS-Active Optical Fiber Sensor Prepared by Photo-Induced Reaction and Its Application for In Situ Detection** XU SHUPING, Jilin University, Wang Shaoyan, Liu Chunyu, Chen Gang, Jia Qiong, Xu Weiqing
- (2040-3 P) **Label-Free Real-Time Chemical Observation of Living Cells Using a New CCD-type Ion Image Sensor** TOSHIKI HATTORI, Toyohashi University of Technology, Takashi Sakurai, Koichi Okumura, Fumihito Dasai, Kazuaki Sawada
- (2040-4 P) **Capacitive Micromachined Ultrasonic Transducer for Immunosensor Design** ALMIRA RAMANAVICIENE, Vilnius University, Darius Virzonis, Asta Makaraviciute, Gailius Vanagas, Dovydas Barauskas, Arunas Ramanavicius
- (2040-5 P) **Diruthenium Compounds as Tunable Electrochemical Tags in Biosensing** ANTOINE LEVY, North Carolina State University
- (2040-6 P) **Non-Enzymatic Glucose Sensor Based on the 3-Aminophenylboronic Acid Molecular Recognition Group** HAKAN CIFTCI, Kirikkale University, Ugur Tamer, Mutluhan Biyikoglu
- (2040-7 P) **Covalent Bond Type Molecularly Imprinted Polymers for Sensing Carbonyl Compounds** NOBUAKI KOBAYASHI, Kobe University, Yukiya Kitayama, Tooru Ooya, Toshifumi Takeuchi
- (2040-8 P) **A Cost-Effective Impedance Biosensor for Rapid Detection of Avian Influenza Virus in Chicken Swabs** JIANHAN LIN, China Agricultural University, Ronghui Wang, Peirong Jiao, Yuntao Li, Xinhua Wen, Ming Liao, Yanbin Li, Maohua Wang
- (2040-9 P) **A Q-Body Assay System for Illegal Drugs** ABE RYOJI, USHIO Inc., Ohashi Hiroyuki, Nomoto Daisuke
- (2040-10 P) **Diamond Microfluidic Devices for Electrochemical Analysis** JON C NEWLAND, University of Warwick, Mark E Newton, Julie V Macpherson

POSTER SESSION

Session 2050

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Separation Sciences: General Interest, Materials Science and Others

Wednesday Afternoon

- (2050-1 P) **Characterization of Lauryl Acrylate Porous Polymer Monoliths used as Stationary Phases in Capillary Electrochromatography** KHOA BUI, Trinity University, Rohit Sampat, Xuanli Deng, B W Iba, Kelly A Hewes, Monette N Cardona, Charlisa R Daniels, Michelle M Bushey
- (2050-2 P) **Development of a Strategy for Scaling SFC Methods** KENNETH J FOUNTAIN, Waters Corporation, Christopher J Hudalla, Abhijit Tarafder
- (2050-3 P) **Synthesis and Characterization of Amino Acid Based Chiral Ionic Liquids** JOANNA VASSILIOU, St. John Fisher College, Irene Kimaru
- (2050-4 P) **Surface Molecular Imprinting on the Sol-Gel Particles** SUNG HYU CHOUGH, Chonnam National University, Hye Ryoung Park
- (2050-5 P) **Physicochemical Properties in Edible Oil of Oenocarpus Bataua var. Bataua (Areaceae: Oenocarpus)** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Alicia Rios Hurtado

THURSDAY, MARCH 6, 2014
MORNING
SYMPOSIUM **Session 2060**
ACS DAC: Interferometry in Chemistry, Biology and Medicine

arranged by Darryl J Bornhop, Vanderbilt University

Thursday Morning, Room S401a

Darryl J Bornhop, Vanderbilt University, Presiding

8:30		Introductory Remarks - Darryl J Bornhop
8:35	(2060-1)	An Ultra-Sensitive, Low-Volume, Free-Solution, Label-Free Molecular Interaction Platform DARRYL J BORNHOP, Vanderbilt University, Amanda Kussrow, Ian Olmsted, Michael Baksh, MG Finn, Lawrence J Marnett, Shalley N Kudalkar, Esther N Pesciotta, Robert Flowers, Pierre Massion, Mohamed Hassanein
9:10	(2060-2)	Application of Back-Scattering Interferometry in the Study of Biomolecular Interactions and Non-Aqueous Media ROBERT FLOWERS, Lehigh University
9:45	(2060-3)	Meeting the Need for Physiologically-Relevant Affinity Measurements DENISE M O'HARA, Pfizer
10:20		Recess
10:35	(2060-4)	Non-Small Cell Lung Cancer Biomarker Validation and Quantification Using Backscattering Interferometry PIERRE MASSION, Vanderbilt Ingram Cancer Center, School of Medicine, Ian Olmsted, Mohamed Hassanein, Megan Hoeksema, Amanda Krussow, Ming Li, Darryl J Bornhop
11:10	(2060-5)	Backscattering Interferometry On and In Virus-Like Particles MG FINN, Georgia Institute of Technology, Michael Baksh, Jin-Kyu Rhee, Jolene Lau

SYMPOSIUM **Session 2070**
Application of SERS Sensors to Biomedicine and the Environment

arranged by John Rabolt, University of Delaware

Thursday Morning, Room S401bc

John Rabolt, University of Delaware, Presiding

8:30		Introductory Remarks - John Rabolt
8:35	(2070-1)	Novel Platforms for SERS-Based Sensing of Infectious Disease RICHARD A DLUHY, University of Georgia
9:10	(2070-2)	SERS in Blood CHRISTY L HAYNES, University of Minnesota
9:45	(2070-3)	SERS of Biological Cells for Diagnostics and Forensics LAWRENCE ZIEGLER, Boston University
10:20		Recess
10:35	(2070-4)	SERS for the Investigation of Nano-Bio Interactions JANINA KNEIPP, Humboldt-Universität zu Berlin, Daniela Drescher, Tina Büchner, Ingrid Zeise
11:10	(2070-5)	Immobilization of Gold Nanorods onto Electrospun Polymer Nanofibers via Polyelectrolyte Decoration—A 3-D SERS Substrate JOHN RABOLT, University of Delaware, Wenqiong Tang, Bruce Chase

SYMPOSIUM **Session 2080**
Characterization and Quality Control of Monoclonal Antibodies and Biopharmaceutical: Best Practices and Developments

arranged by Michael W Dong, Genentech

Thursday Morning, Room S401d

Michael W Dong, Genentech, Presiding

8:30		Introductory Remarks - Michael W Dong
8:35	(2080-1)	Deciphering the Chromatographic Unknowns TAYLOR Y ZHANG, Genentech
9:10	(2080-2)	Analytical Strategies to Support Biologics Development DAOTIAN FU, Livzon Mabpharm, Inc.
9:45	(2080-3)	The Utility of Mass Spectrometry in Biopharmaceutical Characterization Studies OLEG V BORISOV, Novavax
10:20		Recess
10:35	(2080-4)	Practical Applications of High-Throughput Capillary Electrophoresis Methods DAVID A MICHELS, Genentech, A Member of the Roche Group
11:10	(2080-5)	Advances in New Ion-Exchange Stationary Phases for Bio-Pharmaceutical Analysis CHRISTOPHER POHL, Thermo Fisher Scientific

SYMPOSIUM **Session 2090**
Fiber-Based Analytical Platforms

arranged by Antje Baeumner, Cornell University and R Kenneth Marcus, Clemson University

Thursday Morning, Room S402a

R Kenneth Marcus, Clemson University, Presiding

8:30		Introductory Remarks - R Kenneth Marcus and Antje Baeumner
8:35	(2090-1)	Electrospinning Functional Nanofibers for Analytical Applications MARGARET W FREY, Cornell University, Larissa Buttaro, Daehwan Cho, Dapeng Li
9:10	(2090-2)	Nano Fiber-Based Biosensors for Integrated Sample Preparation ANTJE BAEUMNER, University of Regensburg
9:45	(2090-3)	Fiber-Based Platforms for Sampling/Sample Preparation JANUSZ PAWLISZYN, University of Waterloo
10:20		Recess
10:35	(2090-4)	Integration of Paper Microfluidic Methods for Detection of Infectious Diseases for Low Resource Settings PAUL YAGER, University of Washington, Barry Lutz, Elaine S Fu
11:10	(2090-5)	Capillary-Channeled Polymer (C-CP) Fibers: Versatile Phases for Protein Analytics R KENNETH MARCUS, Clemson University, Abby Schadock-Hewitt, Benjamin T Manard, Marissa Pierson

SYMPOSIUM **Session 2100**
Method Development Strategies for Two-Dimensional Liquid Chromatography

arranged by Dwight Stoll, Gustavus Adolphus College

Thursday Morning, Room S402b

Dwight Stoll, Gustavus Adolphus College, Presiding

8:30		Introductory Remarks - Dwight Stoll
8:35	(2100-1)	Selecting a Suitable Column for the Second Dimension in RPxRP PETER W CARR, University of Minnesota, Robert C Allen, Brian B Barnes, Imad A Haidar Ahmad
9:10	(2100-2)	Applications of On-Line/At-Line Two Dimensional HPLC with VWD/DAD-MS Detection for Pharmaceutical Analysis TODD D MALONEY, Eli Lilly and Company
9:45	(2100-3)	Method Development Strategies for Pharmaceutical Analysis Using 2D-LC-MS CADAPAKAM (CJ) VENKATRAMANI, Genentech, Larry Wigman, James Girotti
10:20		Recess
10:35	(2100-4)	Multi-Dimensional Liquid Chromatography Approaches in Food Analysis PAOLA DUGO, University of Messina, Francesco Cacciola, Paola Donato, Mondello Luigi
11:10	(2100-5)	Two-Dimensional LC-SRM Bioanalytical Assays for Small Molecules and Peptides CATALIN E DONEANU, Waters Corporation, Paul Rainville

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM Session 2110

More Than One Way to Skin a Cat:

The Diversity of Analytical Tools for Chemically Mapping the Brain

arranged by Parastoo Hashemi, Wayne State University and Michael L Heine, University of Arizona

Thursday Morning, Room S404a

Parastoo Hashemi, Wayne State University, Presiding

8:30		Introductory Remarks - Parastoo Hashemi and Michael L Heine
8:35	(2110-1)	Neurochemical Sensors for Tracking the Dynamics of Human Brain Injury MARTYN G BOUTELLE, Imperial College London, Michelle Rogers, Chi Leng Leong, Sally Gowers, Anthony J Strong, Xize Niu
9:10	(2110-2)	New Views of Brain Chemistry from LC-MS and Microfabricated Sampling Probes ROBERT KENNEDY, University of Michigan
9:45	(2110-3)	Lab on a Sheep SUSAN M LUNTE, University of Kansas, Rachel A Saylor, David E Scott, Anne Regel
10:20		Recess
10:35	(2110-4)	High-Throughput Quantitative Analysis of Neurochemicals and Behavior in Insects MICHAEL L HEIEN, University of Arizona
11:10	(2110-5)	Fast-Scan Cyclic Voltammetry as a Screening Tool for Anti-Depressants PARASTOO HASHEMI, Wayne State University, Janet Best, Michael C Reed, Kevin M Wood

SYMPOSIUM Session 2120

Nanobiotechnology against Cancer, Heart and Neurological Diseases: A Fight in Progress

arranged by Raoul Kopelman, University of Michigan and Weihong Tan, University of Florida

Thursday Morning, Room S404bc

Raoul Kopelman, University of Michigan, Presiding

8:30		Introductory Remarks - Raoul Kopelman and Weihong Tan
8:35	(2120-1)	Studying Single Cell Death Mechanisms and the Dynamics of Drug Delivery Using Targeted Plasmonically Enhanced Single Cell Imaging Spectroscopy MOSTAFA A EL-SAYED, Georgia Institute of Technology
9:10	(2120-2)	Targeted Multifunctional Nano Platforms for Diagnostics and Therapy of Cancer and Heart Arrhythmia RAOUL KOPELMAN, University of Michigan
9:45	(2120-3)	Developing Nanoscale Measurements for the Brain PAUL S WEISS, University of California, Los Angeles, Anne M Andrews
10:20		Recess
10:35	(2120-4)	Biological Probes Based on AIE Nanodots BEN ZHONG TANG, Hong Kong University of Science and Technology
11:10	(2120-5)	Surface Nanostructured Engineering: Methodology and Possible Application for Bioanalysis LIJUN WAN, University of Florida/Chinese Academy of Sciences

SYMPOSIUM Session 2130

Proteomic Imaging of Ultrastructure Brain Tissue

arranged by Andrea Jaquins-Gerstl, University of Pittsburgh and Marcel Bruchez, Carnegie Mellon University

Thursday Morning, Room S405a

Andrea Jaquins-Gerstl, University of Pittsburgh, Presiding

8:30		Introductory Remarks - Andrea Jaquins-Gerstl and Marcel Bruchez
8:35	(2130-1)	Watching the Brain with Super-resolution Microscopy BO HUANG, University of California, San Francisco
9:10	(2130-2)	Imaging the Molecular Organization and Ultrastructure of Mammalian Cortex Using Array Tomography KRISTINA D MICHEVA, Stanford University School of Medicine
9:45	(2130-3)	Mapping Mouse Brains by STP Tomography PAVEL OSTEN, CSHL
10:20		Recess
10:35	(2130-4)	Proteomic Imaging of Single Cells and Brain Tissues XIAOHU GAO, University of Washington
11:10	(2130-5)	Fluorogenic Detection of Proteins, Nucleic Acids and Small Metabolites for Cell and Tissue Imaging MARCEL BRUCHEZ, Carnegie Mellon University

SYMPOSIUM Session 2140

Toward a Preferred Instrument for Gram Scale Supercritical Fluid Chromatography (SFC) Purification

arranged by Christopher J Welch, Merck Research Laboratories and Christina Kraml, Lotus Separations, LLC

Thursday Morning, Room S404d

Christopher J Welch, Merck Research Laboratories, Presiding

8:30		Introductory Remarks - Christopher J Welch and Christina Kraml
8:35	(2140-1)	Latest Development in SFC Technology and Its Expanding Applications in Drug Discovery YINGRU ZHANG, Bristol Myers Squibb, Chunlei Wang
9:10	(2140-2)	Recent Progress in the Development of Gram Scale Preparative SFC Instrumentation RUI CHEN, Waters Corporation
9:45	(2140-3)	Addressing User Needs for Gram Scale Preparative SFC DJ TOGNARELLI, Jasco Inc., John Burchell
10:20		Recess
10:35	(2140-4)	An Approach to a Unified Hardware and Software Solution for Preparative Scale SFC GEOFFREY B COX, PIC Solution Inc.
11:10	(2140-5)	Gram-Scale Preparative SFC CHRISTINA KRAML, Lotus Separations, LLC

ORGANIZED CONTRIBUTED SESSIONS Session 2150

SAS: Women in Spectroscopy

arranged by Ellen V Miso, Analytical Answers, Inc. and Gloria Story, Procter and Gamble Co

Thursday Morning, Room S405b

Ellen V Miso, Analytical Answers, Inc., Presiding

8:30	(2150-1)	Why Do We Need a Woman In Spectroscopy Session? ELLEN V MISEO, Analytical Answers, Inc.
8:50	(2150-2)	Title Not Provided at Time of Printing
9:10	(2150-3)	Fifty Years - and Counting - in Molecular Spectroscopy MARILYN E JACOX, National Institute of Standards and Technology
9:30	(2150-4)	Careers at Primarily Undergraduate Institutions: Teaching, Research, and Service KARLA S MCCAIN, Austin College
9:50		Recess
10:05	(2150-5)	An Experimental Life: Three Decades of Negotiating the Academic Terrain LINDA B MCGOWN, Rensselaer Polytechnic Institute
10:25	(2150-6)	Being a Woman in Spectroscopy: Hard Work, Planning, and Serendipity KATHERINE ANTOLIN BAKEEV, B&W Tek
10:45	(2150-7)	A Fulfilling Career in Spectroscopy DIANE PARRY, The Procter & Gamble Co
11:05	(2150-8)	Career Options for Women In Chemistry ANNA M TISINGER, Agilent Technologies

ORAL SESSIONS Session 2160

Advances in Catalysis and Hydrocarbon Analysis

Thursday Morning, Room S501a

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|-------|---------------|--|
| 8:30 | (2160-1) | Trace Analysis of Total Sulfur and Nitrogen in Hydrocarbon Matrixes by Combustion and UV Fluorescence and Chemiluminescence: Optimization of Analytical Parameters AARON A MENDEZ, PAC, Lisa Houston, Chetan Desai |
| 8:50 | (2160-2) | Investigation of Copper Monolayer Catalyst for CO₂ Reduction JARED B STEED, The Ohio State University, Anne Co, Joshua Billy |
| 9:10 | (2160-3) | Application of High Resolution Time-of-Flight Mass Spectrometry Platforms in Petroeomics CLECIO F KLITZKE, Leco Corporation, David E Alonso, Kevin Siek, Elizabeth Humston-Fulmer, John Heim, Joe Binkley, Jeff Patrick |
| 9:30 | (2160-4) | Robust and Reliable Oxygen Catalysts: Pt on Nanoporous Copper ERIC J COLEMAN, The Ohio State University, Anne Co |
| 9:50 | Recess | |
| 10:05 | (2160-5) | Fuel Quality Verification in 30 Seconds at the Point of Receipt Using a Military Grade Raman Spectrometer STUART FARQUHARSON, Real-Time Analyzers, Inc., Carl Brouillette, Hermes Huang, Wayne Smith |
| 10:25 | (2160-6) | Online GC-MS Sampling and Analysis of Combustion Engine Crankcase Ventilation Aerosols ANDREAS BEHN, Hamburg University of Technology, Matthias Feindt, Gerhard Matz, Sven Krause |
| 10:45 | (2160-7) | Pulsed Flow Modulation GCxGC-MS with Cold EI – The Emergence of GCxGCxMS AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Uri Keshet, Tal Alon |
| 11:05 | (2160-8) | New High Temperature Polar Alumina PLOT Column That Allows RGA Analysis to be Done in Minutes JAAP DEZEEUW, Restek, Tom Vezza, Gary Stidsen, Kristi Sellers |

ORAL SESSIONS Session 2170

Bioanalytical Separations

Thursday Morning, Room S501bc

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|-------|---------------|---|
| 8:30 | (2170-1) | Development of Monolithic Microcolumns Containing Immobilized Albumin for Rapid Chiral Separations ERIKA L PFAUNMILLER, University of Nebraska-Lincoln, Zhao Li, Stephen Gross, David S Hage, Mahli Hartmann, Shannon Lum, Marie Laura Paulemond |
| 8:50 | (2170-2) | Determination of Carbohydrates in Various Matrices by Capillary HPAE-PAD TERRI TOYOKO CHRISTISON, Thermo Fisher Scientific, Alexander Zhang, Cathy Tanner, Linda Lopez |
| 9:10 | (2170-3) | Capillary-Channeled Polymer (C-CP) Stationary Phases for the Separation of Lignin and its Degradation Products PAUL HAUPT-RENAUD, Clemson University, R Kenneth Marcus |
| 9:30 | (2170-4) | New Zirconia Magnetic Microspheres as a New Recyclable Chiral Selector for the Separation of Racemic Drugs YONG-ILL LEE, Changwon National University, Avvaru Praveen Kumar |
| 9:50 | Recess | |
| 10:05 | (2170-5) | Aptamer-functionalized Solid Phase Microextraction-liquid Chromatography/Tandem Mass Spectrometry for Selective Enrichment and Determination of Thrombin NAZMUL ALAM, University of Waterloo, Fuyou Du, Janusz Pawliszyn |
| 10:25 | (2170-6) | New Advances in Stationary Phases for Glycan Analysis XIAODONG LIU, Thermo Fisher Scientific, Udayanath Aich, Christopher Pohl |
| 10:45 | (2170-7) | Development of Peptide Reporters for Monitoring E3 Ligase and Proteasome Activity in Single Cells GREGORY WOSS, University of North Carolina at Chapel Hill, Adam Melvin, Kaiulani Houston, Lukas Dumberger, Marcey Waters, Nancy Allbritton |
| 11:05 | (2170-8) | Measurement of the Secretion Dynamics of Islets of Langerhans Using a Microfluidic Device NIKITA MUKHITOV, Florida State University, Lian Yi, Michael G Roper |

ORAL SESSIONS Session 2180

Capillary Electrophoresis: Small Molecules and Neurotransmitters

Thursday Morning, Room S501d

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|-------|---------------|---|
| 8:30 | (2180-1) | Metabolomic and Peptidomic Profiling of Crustacean Neuroendocrine Tissues by Capillary Electrophoresis-electrospray Ionization-Mass Spectrometry XUEFEI ZHONG, University of Wisconsin-Madison, Chuanzi Ouyang, Ling Hao, Lingjun Li |
| 8:50 | (2180-2) | Multiple-Location Monitoring of Amino Acid Neurotransmitter in Rat Brain Using Integrated Microfluidic Systems MAOJUN GONG, Wichita State University, Qiyang Zhang |
| 9:10 | (2180-3) | Analysis of Sialic Acids in Bovine Submaxillary Mucins by Capillary Electrophoresis with Laser Induced Fluorescence Detection CHI MAN NG, University at Buffalo - SUNY, Luis A Colon |
| 9:30 | (2180-4) | Enzymatic Characterization and Enzymatic Assay via Phospholipid-Assisted Capillary Electrophoresis CASSANDRA L CRIHFIELD, West Virginia University, Srikanth Gattu, Anthony Moncrief, Lisa A Holland |
| 9:50 | Recess | |
| 10:05 | (2180-5) | Separation and Detection of Neurotransmitters in D. Melanogaster Using Capillary Electrophoresis Coupled to Fast Scan Cyclic Voltammetry MADELAINE DENNO, University of Virginia, B Jill Venton |
| 10:25 | (2180-6) | In Vitro-Microdialysis Coupled with High-Speed Capillary Electrophoresis to Monitor Signaling Events from Cells AMY L HOGERTON, University of Minnesota |
| 10:45 | (2180-7) | Rat Pinealocyte Studies Using Capillary Electrophoresis with Laser Induced Fluorescence Detection Hyphenated with Optical Trapping MOHAMMAD EHSAN, University of Illinois at Urbana-Champaign, Christine Cecala, Christopher Dailey, Jonathan V Sweedler |
| 11:05 | (2180-8) | Development and Characterization of a Novel Sheathless Interface for High Sensitivity C1P/CZE-nanoESI-SRM MS Sample Quantification KEQI TANG, Pacific Northwest National Laboratory |

ORAL SESSIONS Session 2190

Electrodes and Electrode Surfaces

Thursday Morning, Room S502a

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|-------|---------------|--|
| 8:30 | (2190-1) | Real-Time Electrochemical Monitoring of Metabolic Processes In Hollow Fiber Bioreactor Cellular Cultures ANDREW COGNATA, Vanderbilt University, David E Cliffl |
| 8:50 | (2190-2) | Biochar Fiber Microelectrode with Regular Macropores JUNHUA JIANG, University of Illinois at Urbana-Champaign |
| 9:10 | (2190-3) | Recessed Ring-Disk Nanoelectrode Arrays Integrated in Nanofluidic Structures for Selective Electrochemical Detection in Lab-on-a-Chip Devices CHAOXIONG MA, University of Notre Dame, Paul W Bohn |
| 9:30 | (2190-4) | Real-Time Detection of Localized Voltage-Driven Delivery of Charged Species with Ion Current Rectification Effect WENQING SHI, Indiana University, Niya Sa, Rahul Thakar, Baker A Lane |
| 9:50 | Recess | |
| 10:05 | (2190-5) | All-Diamond Boron Doped Diamond (BDD) Band Electrodes for <i>in situ</i> pH Alterations Under Flow Conditions: Enhancing Hydrogen Sulfide Detection ELENI BITZIOU, University of Warwick, Nicola Palmer, Tim Mollart, Mark E Newton, Julie V Macpherson |
| 10:25 | (2190-6) | All Diamond Conductivity Measurement Device MAXIM B JOSEPH, University of Warwick, Kyriacoulla Dalmira, Mark E Newton, Julie V Macpherson |
| 10:45 | (2190-7) | One Dimensional Silver/Silver Halide Nanocomposites: Synthesis, Electrocatalytic Activity and Density Functional Theory Study SU-JIN KIM, Ewha Woman's University, Jun Ho Shim, Seung-Cheol Lee, Chongmok Lee, Youngmi Lee |
| 11:05 | (2190-8) | The Mechanism Study of Oxygen Reduction Reaction at Porous Pt Layer Depending on Its Porosity Using Scanning Electrochemical Microscopy (SECM) YUNBIN CHO, Ewha Woman's University, Chongmok Lee, Youngmi Lee, Sarah S Park |

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS Session 2200

Laboratory Informatics and Management (Half Session)

Thursday Morning, Room S502b

- 8:30 (2200-1) **Development of an Open Framework for Laboratory Data** GORDON HANSEN, Boehringer Ingelheim Pharm./Allotrope Foundation
- 8:50 (2200-2) **LIMS or ELN: Which is Right for Your Lab?** JEFFREY POLICASTRO, CSols, Inc.
- 9:10 (2200-3) **Benefits of an Integrated LIMS and ELN Platform Solution** MICHAEL V KELLY, LabWare
- 9:30 (2200-4) **LIMS Implementations - Lessons Learned** KURT ROBAK, CSols, Inc.

ORAL SESSIONS Session 2210

LC: Column Chemistry (Half Session)

Thursday Morning, Room S502b

- 10:05 (2210-1) **Temperature Assisted Solute Focusing for Increased Analysis Sensitivity in Capillary High Performance Liquid Chromatography** STEPHEN R GROSCKREUTZ, University of Pittsburgh, Yanguang Ou, Stephen G Weber, Juanfang Wu
- 10:25 (2210-2) **Improving the Performance of Nanodiamond-Containing Core-Shell Particles via Extensive Characterization of the Nanodiamonds** BHUPINDER SINGH, Brigham Young University, David S Jensen, Andrew J Miles, Michael A Vail, Andrew E Dadson, Matthew R Linford
- 10:45 (2210-3) **Performances Comparison of Different Graphitic Materials in Sample Pretreatment and Liquid Chromatography** CARLO CRESCENZI, Salerno University, Giovanni D'Amato, Pasquale Del Gaudio, Ermanno Vasca
- 11:05 (2210-4) **A Comparison of the Effect of System Dispersion on 2.1 and 3.0 mm i.d. Columns Packed with Sub-2- μ m Solid-Core Particles** JONATHAN E TURNER, Waters Corporation, Bonnie Alden, Pamela Iraneta, Daniel Walsh, James Cook, Steven Shiner, Michael Savaria, Kevin Wyndham, Thomas Walte

ORAL SESSIONS Session 2220

Microfluidics: Monitoring and Multiple Analytes

Thursday Morning, Room S503a

- 8:30 (2220-1) **Gold Nanoparticle-Mediated Multivalent Binding For Enhanced Capture Of Cancer Cells in Microfluidic Devices** WEIAN SHENG, University of Florida, Z Hugh Fan
- 8:50 (2220-2) **Simultaneous Monitoring of Multi-Hormone Secretion from Islets of Langerhans on a Microfluidic Device** LIAN YI, Florida State University, Michael G Roper
- 9:10 (2220-3) **Molecular Detection Utilizing Surface-Plasmon-Assisted Fluorescence in a V-Shaped Microfluidic Channel** MAKOTO FUJIMAKI, National Institute of Advanced Industrial Science and Technology, Ken-ichi Nomura, Subash CB Gopinath, Thangavel Lakshmi Priya, Nobuko Fukuda, Xiaomin Wang
- 9:30 (2220-4) **A PDMS/Paper Hybrid Microfluidic Biochip Integrated with Graphene Oxide-Based Nanosensors for Multiplexed Pathogen Detection** XIUJUN (JAMES) LI, University of Texas at El Paso, Peng Zuo, Delfina Dominguez
- 9:50 **Recess**
- 10:05 (2220-5) **Quantitative Gene Expression Analysis Using Multiplexed Asymmetric PCR and Silicon Photonic Microring Resonators** RICHARD M GRAYBILL, University of Illinois at Urbana-Champaign, Ryan C Bailey
- 10:25 (2220-6) **A Perfusion Controller/Microclinical Analyzer for Online Optical, Electrochemical, and Mass Spectrometry Analysis of Microfluidic Bioreactors** JENNIFER R MCKENZIE, Vanderbilt University, John P Wikswo, David E Cliffel
- 10:45 (2220-7) **On-Chip Droplet Detection and Quantification - Taking Control of Digital Microfluidics for Chemical Analysis** CHI LENG LEONG, Imperial College London, Robert M Learney, Martyn G Boutelle
- 11:05 (2220-8) **Multichannel Linear-Array Aptasensor for Multiple Protein Detection Built on Graphene Oxide Surface** YUKO UENO, NTT Microsystem Integration Laboratories, Kazuaki Furukawa, Inoue Suzuyo, Katsuyoshi Hayashi, Hiroki Hibino, Hiroshi Koizumi

ORAL SESSIONS Session 2230

Neurochemistry: Peptides, Amino Acids, Adenosine, Norepinephrine, Peroxide, and Oxygen

Thursday Morning, Room S503b

- 8:30 (2230-1) **Analysis of Enantiomeric Amino Acids in Biological Samples via Capillary Electrophoresis Coupled with Laser-Induced Fluorescence and Mass Spectrometry** TAKAYUKI KAWAI, University of Illinois, Nobutoshi Ota, Jonathan V Sweedler
- 8:50 (2230-2) **Monitoring Addiction In-Vivo and In Real-Time with Fast-Scan Cyclic Voltammetry** MEGAN E FOX, University of North Carolina at Chapel Hill, R Isaac Studebaker, Nathaniel J Swofford, R Mark Wightman
- 9:10 (2230-3) **Real-Time Voltammetric Detection of Met-Enkephalin in Rat Adrenal Tissue** LARS DUNAWAY, North Carolina State University, Andreas C Schmidt, Gregory McCarty, Leslie A Sombers
- 9:30 (2230-4) **Histaminergic Regulation of Cerebral Oxygen Dynamics** SUSAN CARROLL, University of North Carolina at Chapel Hill, Anna M Belle, Elizabeth S Bucher, Megan E Fox, R Mark Wightman
- 9:50 **Recess**
- 10:05 (2230-5) **Mass Spectrometry-Based Quantitation of Peptides Differentially Expressed with Exposure to a Drug-Paired Context** SARAH E DOWD, University of Illinois at Urbana-Champaign, Martina L Mustroph, Elena V Romanova, Justin S Rhodes, Jonathan V Sweedler
- 10:25 (2230-6) **Electrochemical Monitoring of Adenosine Modulation of Dopamine in Brain Slices** ASHLEY ELIZABETH ROSS, University of Virginia, B Jill Venton
- 10:45 (2230-7) **Mechanisms of Spontaneous Transient Adenosine Release and Extracellular Clearance** MICHAEL NGUYEN, University of Virginia
- 11:05 (2230-8) **Using Artificial Cells for Probing the Effect of Cholesterol on Membrane Dynamics for Exocytosis** NEDA NAJAFINOBAR, Chalmers University of Technology, Lisa Mellander, Michael Kurczyk, Ann-Sofie Can

ORAL SESSIONS Session 2240

Water Treatment Technologies

Thursday Morning, Room S504a

- 8:30 (2240-1) **Investigating Temperature Effects on Haloacetic Acid Concentrations in Bulk Sodium Hypochlorite Solutions used for Drinking Water Disinfection** CHRISTINA M HENSON, University of Memphis, Paul S Simone, Gary L Emmert
- 8:50 (2240-2) **Selective Adsorption of Organic Pollutants by Resorcinarene-Based Supramolecular Polysaccharide Materials** TAMUTSIWA M MUTUTUVARI, Marquette University, Chieu D Tran
- 9:10 (2240-3) **Automating Near Real Time Trihalomethane Monitoring and Applications to Water Treatment Process Control** AARON W BROWN, University of Memphis, Paul S Simone, Gary L Emmert
- 9:30 (2240-4) **Water Treatment Using Pistia stratiotes for Silver(I) and Silver Nanoparticles** NICOLE HANKS, University of Cincinnati, Joseph A Caruso, Peng Zhang
- 9:50 **Recess**
- 10:05 (2240-5) **Supramolecular Polysaccharides Composite Materials of Dimethoxypillar[5]arene for Selective Removal of Endocrine Disruptors** KL IRESHA S PERERA, Marquette University, Chieu D Tran

POSTER SESSION

Session 2250

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Biomaterials and Natural Products- Synthesis and Characterization

Thursday Morning

- (2250-1 P) **Nature-Inspired Drug-DNA Adduct as Nuclease-Resistant Covalent Drug-DNA Conjugates for Targeted Cancer Therapy** GUIZHI ZHU, University of Florida, Weihong Tan
- (2250-2 P) **Synthesis and Biological Activity of Azetidin-2-one Containing Acetyl Pyrazoline Derivatives** SHAIKESH H SHAH, Patel DKDC Science College
- (2250-3 P) **Physicochemical Parameters of Quality Associated to Roay Jelly Apis Mellifera L (Hymenoptera: Apidae) in Columbia** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Mónica Patricia Osorio Tangarife, Laura María M Reyes Méndez
- (2250-4 P) **Analytical Challenges and Limitations in the Determination of Free-Base Nicotine Cigarette Smoke Deliveries** JOSÉ J PÉREZ, Centers for Disease Control and Prevention, Liza Valentin-Blasini, Roberto Bravo, Clifford H Watson
- (2250-5 P) **Convergent Synthesis and Antimicrobial Evaluation of Thiazolo [3,2-a] Pyrimidine Derivatives** BALBIR KAUR, Punjabi University, Ramandeep Kaur, Lovepreet Kaur
- (2250-6 P) **Self-Oscillations of Chemical Systems Based on Novel Porphyrin Derivatives** TAKASHI ARIMURA, NRI of AIST, Masaru Mukai, Naoki Mitsuyama, Ikeda Shogo
- (2250-7 P) **Preparative Separation of Active Components in Natural Products Using Low-Pressure Gradient Preparative HPLC** KENICHIRO TANAKA, Shimadzu Scientific Instruments, William Hedgepeth, Lincoln Grimes, Tsutomu Watanabe, Takaie Kitagawa, Yosuke Iwata
- (2250-8 P) **Comparing Gas and Liquid Chromatography Determinations of Fatty Amines** ZACHARY S BREITBACH, The University of Texas at Arlington, Choyce Weatherly, Ross M Woods, Chendong Xu, Glenda Vale, Alain Berthod, Daniel W Armstrong
- (2250-9 P) **Selective Detection of Cocaine in Money Using Gas Chromatography-Triple Quadrupole Mass Spectrometry** RAMKUMAR DHANDAPANI, Seton Hall University, Shilpi Chopra, Nicholas H Snow
- (2250-10 P) **Analysis of Phytosterols in Natural Products by HPLC-ECD** BRUCE BAILEY, Thermo Fisher Scientific, Ian N Acworth, Marc Plante, Qi Zhang, David Thomas

POSTER SESSION

Session 2260

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Chemical, Biological and Explosives Analysis

Thursday Morning

- (2260-1 P) **Retrospective Assessment of Chemical Warfare Agent Exposure in Humans Using LC-MS/MS** RUTH N UDEY, Lawrence Livermore National Laboratory, Todd H Corzett, Carlos A Valdez, Saphon Hok, Audrey M Williams
- (2260-2 P) **Effect of Dopant on the Ion Mobility of Chemical Warfare Agents** YASUO SETO, National Research Institute of Police Science, Takafumi Satoh, Tomohide Kondo, Hisayuki Nagashima, Tomoki Nagoya, Takeshi Ohmori, Mieko Kanamori-Kataoka, Koichiro Tsuge, Isaac Ohsawa, Nobuo Nakano
- (2260-3 P) **Explosives Trace Detection by Mass Spectrometry: An Automated Particle Sampler for Collecting Explosives Particles Adhering to Passenger's Baggage** HISASHI NAGANO, Hitachi, Ltd., Yasuaki Takada, Hideo Kashima, Masakazu Sugaya, Koichi Terada, Yuichiro Hashimoto, Minoru Sakairi
- (2260-4 P) **Vapor Performance Testing of Filter Materials and Filter Canisters** MARK HANNING-LEE, Jacobs Dugway Team, Brian Johnson, Laurence Adair, Darren Jolley, Joseph Giese
- (2260-5 P) **Breeze Tunnel Testing of Collective Protection Tent Systems** MARK HANNING-LEE, Jacobs Dugway Team, Laurence Adair, Joseph Giese
- (2260-6 P) **Effect of Sample Gas Humidity on Detector Arrays** JOERN FRANK, Hamburg University of Technology, Hendrik Fischer, Bert Ungethuen, Andreas Walte, Gerhard Matz
- (2260-7 P) **Dynamic Detection Range Expansion of a Gas Measurement Device** HENDRIK FISCHER, Hamburg University of Technology, Joern Frank, Gerhard Matz, Bert Ungethuen, Andreas Walte
- (2260-8 P) **Signal Prediction in Sensor Systems** HENDRIK FISCHER, Hamburg University of Technology, Joern Frank, Gerhard Matz

- (2260-9 P) **Headspace Analysis of Low Volatility Explosive Compounds** LAURYN DEGREEFF, Naval Research Lab, Christopher Katilie, Kevin Johnson, Susan Rose-Pehrsson

- (2260-10 P) **Real-Time Measurements Of Airborne Fungal Spores Biomarkers Using PILS-LC-MS/MS** NICOLAS BONNAIRE, LSCE: CEA/CNRS/UVSQ, Roland Sarda-Estève, Lorna Foliot, Marie-Hélène Nadal, Jean Sciare

- (2260-11 P) **Stimulating of Biodegradation of Oxamyl Pesticide by Treatment of Fungus with Gamma Radiation** ABD EL-MONEIM M AFIFY, Cairo University, Ramy Romeila

- (2260-12 P) **Spectroscopic Investigations on Mode of Interaction of Anti-cancer Drug Lomustine with RNA** SHWETA AGARWAL, CSIR-National Physical Laboratory, Ranjana Mehrotra, Deepak Jangir

- (2260-13 P) **Phylogeny of Veneridae (Mollusca: Bivalvia) Using the Nuclear Ribosomal DNA Internal Transcribed Spacer Based Molecular Technique** K SHINY SREEDHAR, Sree Narayana College, M Ampili

POSTER SESSION

Session 2270

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Forensic Analysis

Thursday Morning

- (2270-1 P) **GC-MS, GC-TOF-MS and GC-IRD Methods for the Differentiation of Regioisomeric and Isobaric Designer Drugs of the Piperazine Class** KARIM ABDEL-HAY, Auburn University, Randall Clark, Jack DeRuiter
- (2270-2 P) **Advanced Forensic Applications Performed with GC-MS with Cold EI** AVIV AMIRAV, Tel Aviv University, Bogdan Belgorodsky, Alexander Fialkov, Tal Alon
- (2270-3 P) **Analysis of Cremated Remains Using Capillary Electrophoresis** CHRISTA A CURRIE, College of Mount St Joseph, Devon Heil, William C Wetzel
- (2270-4 P) **Further Investigation of Principal Components Analysis for Identification of Ignitable Liquids in Fire Debris** JORDYN L GEIGER, Michigan State University, Victoria L McGuffin, Ruth Waddell-Smith
- (2270-5 P) **Differentiation of Regioisomeric Methylamphetamines by GC/MS** HIROYUKI INOUE, National Research Institute of Police Science, Shoko Negishi, Yukiko Nakazono, Kenji Tsujikawa, Yuko T Iwata, Kazuna Miyamoto, Fumiyo Kasuya
- (2270-6 P) **Spectral Imaging Microscopy of Blue Pen Inks Using an Improved Chromoscope** KATHLEEN P MILLER, University of North Carolina Wilmington, Michael R Webb
- (2270-7 P) **A Spectral Matching Algorithm for Raman Spectroscopy** ANUDEEP POLAM, Cleveland State University, John F Turner
- (2270-8 P) **Forensic Discrimination of Cotton Fibers by Derivative Preprocessing of UV/visible Spectra and Multivariate Statistics** STEPHEN L MORGAN, University of South Carolina, Nathan C Fuenffinger
- (2270-9 P) **Instrumental Discrimination of Cultivated and Wild Silk** SHINICHI SUZUKI, National Research Institute of Police Science

PITTCON 2014 TECHNICAL PROGRAM

POSTER SESSION

Session 2280

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Materials Science

Thursday Morning

- (2280-1 P) **Analytical Evaluation of Utilization Natural Cellulosic Fiber Waste as Reinforcing Filler for Rubber** FAHIMA M HELALY, National Research Centre
- (2280-2 P) **Material Application of Novel Interacting Blends of S-Triazine and Epoxy Residues Containing Unsaturated Polyesters and Epoxy Resins** RAMESHADRA P PATEL, Cu Shah Science College
- (2280-3 P) **Nitrogen, Carbon and Sulfur Determination in Paper by Flash Combustion** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz
- (2280-4 P) **Improved Synthesis and Packing Procedure for Carbon Clad Silica Stationary Phases** IMAD A HAIDAR AHMAD, University of Minnesota, Robert C Allen, Brian B Barnes, Peter W Carr
- (2280-5 P) **Evaluation of Five Core Shell Columns Based on Both Separation Behavior and Physical Property** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tuskamoto
- (2280-6 P) **Synthesis and Characterization of Novel Calamitic Liquid Crystalline Compounds Containing 1,3,5-Trisubstituted Pyrazole Ring and Their Cu(II) Complexes** BHARAT THAKER, Veer Narmad South Gujarat University, Deepali Solanki, Neeraj Patel, Kalpesh Patel, Shashikant Patel
- (2280-7 P) **Combining Desorption and Extractive Electrospray Ionization Sources to Intercept Transient High-Valent Iron Oxo Catalytic Intermediates** KEVIN PETERS, University of Illinois at Urbana-Champaign
- (2280-8 P) **Laser Ablation Inductively Coupled Plasma Mass Spectrometry as a Tool for Elemental Mapping Heterogeneous Samples** TOMAS VACULOVIC, CEITEC MU, Masaryk University, Karel Breiter, Viktor Kanicky, Lenka Vyslouzilova
- (2280-9 P) **Determination of Major and Minor Elements in Marine Sediments of Manganese Crusts by ICP-AES** SUN YOUNG, Shimadzu (China) Co., Ltd., Feng Xu
- (2280-10 P) **X-Ray Diffraction Study of Corrosion Products Formed on Anti-Weather Steel** MATASHIGE OYABU, Kanazawa Institute of Technology, Ryo Satoh, Kiyoshi Nomura

POSTER SESSION

Session 2290

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Trace Metals and Gases by AA, ICPMS, ICAFS

Thursday Morning

- (2290-1 P) **Arsenic Speciation in Chinese Medicine by Liquid Chromatography Hydride Generation-AFS** HONGBIN CAO, Beijing Normal University, Xiancai Zeng, Bin Chen, Warren T Corns, Peter B Stockwell
- (2290-2 P) **Selenium Speciation in Flue Gas Desulfurization (FGD) Wastewater by Ion Chromatography Hydride Generation Atomic Fluorescence Spectrometry (IC-HG-AFS)** WARREN T CORNS, P S Analytical, Bin Chen, Peter B Stockwell
- (2290-3 P) **Industrial Challenges for Calibration of Gas-phase Mercury Analyzers** MATTHEW A DEXTER, P S Analytical, Warren T Corns, Peter B Stockwell
- (2290-4 P) **Mercury Release Rates from Dental Amalgam: Measurement and Sampling** MATTHEW A DEXTER, P S Analytical, Warren T Corns, Peter B Stockwell
- (2290-5 P) **Analytical Characterization of Cobalt Thin Films for Atomic Layer Deposition** LISA S MILSTEIN, Air Liquide Balazs, Phil L Clancy, Hugh E Gotts
- (2290-6 P) **An Improvement in Inorganic Arsenic Speciation Analysis Using Thioglycolic Acid Pre-Reductant for Selective Hydride Generation with Iridium Coated Tungsten Coil Electrothermal Atomization Atomic Absorption Spectrometry** NJAW NJIE, Middle East Technical University, Osman Y Ataman
- (2290-7 P) **Stability, Linearity and Repeatability of Nitrogen Determination by Flash Combustion Using Argon as Carrier Gas** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(2290-8 P) **Fast PDMS Quantitation Using ICP-OES** BARBARA PAVAN, Impact Analytical, Katherine Robertson

(2290-9 P) **Mercury Speciation in Canal Sediments by Liquid Chromatography Cold Vapour-AFS** MUSTAFA SHARIF ALI, Brunel University, Mark Scrimshaw, Bin Chen, Warren T Corns, Peter B Stockwell

(2290-10 P) **Preliminary Results for Metals Found in Venison from White-Tailed Deer from Northwestern Pennsylvania** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Matthew R Luderer, Andrew S Rubin, Kayla S Watson

(2290-11 P) **Determination of Arsenic Uptake by Palm Plants, Using Hydride Generation Atomic Absorption Spectrometry (HGAAS): Preliminary Results** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Marissa M Menanno

(2290-12 P) **A New Modular Approach to Automated Cold Vapour and Hydride Generation AFS for Mercury and Hydride Forming Elements** WARREN T CORNS, P S Analytical, Peter B Stockwell, Bin Chen

POSTER SESSION

Session 2300

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Water Quality Parameters: Still Providing Important Information

Thursday Morning

- (2300-1 P) **Seasonal Variations in Water Quality Parameters of Wetlands at Kheda District, Gujarat, India** AMRUTAL B PARMAR, J & J College of Science, Nadiad, Arunkumar H Dholakia, Mahesh Kumar B Chauhan
- (2300-2 P) **Studies on Physico-Chemical Analysis of Bore Wells Drinking Water of Kheda District, Gujarat, India** MAHESH KUMAR B CHAUHAN, J & J College of Science, Nadiad, Dipak Kumar K Bhoi, Amrutal B Parmar
- (2300-3 P) **Rapid Determination of Ultimate Biochemical Oxygen Demand (Ultimate BOD)** WILLIAM C LIPPS, Xylem/OI Analytical
- (2300-4 P) **Analysis of TKN and Ammonia in NPDES Wastewater Samples by In-Line Gas Diffusion Colorimetry** LIBBY A BADGETT, Xylem/OI Analytical, William C Lipps, Gary Engelhart
- (2300-5 P) **A Comparative Study of Selected Analytes in Diverse Natural Waters from Western New York and Western Pennsylvania** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Mary E Toland
- (2300-6 P) **A Comparative Study of On-Line and Laboratory TOC Analyzers for Analysis of Municipal Wastewater** JOHN WELSH, OI Analytical, Gary Engelhart, Steve Skalski, William C Lipps
- (2300-7 P) **A Study of a Novel Phosphate Selective Electrode Interference Pattern in Monitoring Dephosphorylation and Phosphorylation Reactions** MARTIN E ENEMCHUKWU, University of South Africa

THURSDAY, MARCH 6, 2014
AFTERNOON
SYMPOSIUM**Session 2310*****Electroanalytical Chemistry on the Nanoscale***

arranged by Michael V Mirkin, CUNY-Queens College

Thursday Afternoon, Room S401a

Michael V Mirkin, CUNY-Queens College, Presiding

1:30		Introductory Remarks - Michael V Mirkin
1:35	(2310-1)	Electrochemical Characterization of Nanoparticles ALLEN J BARD, University of Texas at Austin, Aliaksei Boika, Byungkwon Kim
2:10	(2310-2)	Vesicular Release of Neurotransmitters: Converting Amperometric Measurements Into Size, Dynamics and Energetics of Initial and Final Fusion Pores CHRISTIAN A AMATORE, ENS-CNRS-UPMC
2:45	(2310-3)	Electrochemistry of Nanobubbles HENRY S WHITE, University of Utah, Long Luo
3:20		Recess
3:35	(2310-4)	Nanostructured Microfluidic Arrays for Protein Detection and Genotoxicity Screening JAMES F RUSLING, University of Connecticut
4:10	(2310-5)	Electrochemical Nanoprobes for Analysis and Mechanistic Studies MICHAEL V MIRKIN, CUNY-Queens College

SYMPOSIUM**Session 2320*****Forensic Analysis in the Lab and Crime Scene***

arranged by Igor K Lednev, University at Albany, SUNY

Thursday Afternoon, Room S401bc

Igor K Lednev, University at Albany, SUNY, Presiding

1:30		Introductory Remarks - Igor K Lednev
1:35	(2320-1)	Development of New Extraction and Analysis Methods for the Rapid Detection of Characteristic Chemicals from Humans and Contraband Materials KENNETH G FURTON, Florida International University, Norma Iris Caraballo, Lauren Colon, Adhly Huertas, Michelle Cerreta, Rodolfo Messa, Abuzar Kabir
2:10	(2320-2)	Versatile Analytical Strategies for Forensic Chemical Profiling of Explosives ARIAN C VAN ASTEN, Netherlands Forensic Institute, Hanneke Brust, Mattijs Koeberg, Peter Schoenmakers, Antoine van der Heijden
2:45	(2320-3)	Effects of Various Decontamination Regimes on DNA-Based Forensic Analysis Methods JAMES MATTHEW ROBERTSON, Federal Bureau of Investigation
3:20		Recess
3:35	(2320-4)	High Efficiency Sampling Using Capillary Microextraction of Volatiles (CMV) Coupled to Gas Chromatography – Mass Spectrometry (GC-MS) JOSE R ALMIRALL, Florida International University, Wen Fan
4:10	(2320-5)	Blood Detection by Infrared Imaging Using Latent Heat Thermography: Instrument Design and Performance STEPHEN L MORGAN, University of South Carolina, Michael L Myrick, Wayne O'Brien, Nicholas D Boltin, Zhenyu Lu, Brianna M Cassidy, Stephanie A DeJong, Emory J Straub, Shi Hao, Raymond G Belliveau

SYMPOSIUM**Session 2330*****Novel Approaches in Quantitative Analysis of Biomarkers in Drug Discovery and Development***

arranged by Guodong Chen, Bristol-Myers Squibb

Thursday Afternoon, Room S401d

Guodong Chen, Bristol-Myers Squibb, Presiding

1:30		Introductory Remarks - Guodong Chen
1:35	(2330-1)	Metabolomics for Biomarker Discovery MICHAEL D REILY, Bristol-Myers Squibb
2:10	(2330-2)	Developing Mass Spectrometry-Based Quantitative Proteomics and Peptidomics Strategies for Biomarker Discovery in Neurodegenerative Diseases LINGJUN LI, University of Wisconsin-Madison, Jingxin Wang, Robert Cunningham, Dustin Frost
2:45	(2330-3)	Utility of Immunochemistry and LC/MS Technology for Quantification of Protein Biomarkers: Where Are We Now and Where Do We Go From Here? GUODONG CHEN, Bristol-Myers Squibb
3:20		Recess
3:35	(2330-4)	Rapid Development of Sensitive, High-Throughput, Quantitative and Highly Selective Mass Spectrometric Targeted Immunoassays for Clinically Important Proteins in Human Plasma and Serum MARY F LOPEZ, Thermo Fisher BRIMS
4:10	(2330-5)	Development a Sensitive LC/MS/MS Platform Based on Trizaic NanoTile Technique to Measure Low Abundance Endogenous Peptide Biomarkers in Plasma MINGXIANG LIN, Merck & Co., Michael Lassman, Russel Weiner, Omar Laterza

SYMPOSIUM**Session 2340*****On-Farm Diagnostics for Improved Food Safety, Quality, and Production***

arranged by Sam R Nugen, University of Massachusetts Amherst

Thursday Afternoon, Room S402a

Sam R Nugen, University of Massachusetts Amherst, Presiding

1:30		Introductory Remarks - Sam R Nugen
1:35	(2340-1)	Produce Food Safety: From Farm to Product AMANDA KINCHLA, University of Massachusetts Amherst
2:10	(2340-2)	Paper-Microfluidic Bovine Estrus Test for Improving the Productivity of Small-holder Dairy Farmers in Resource-Constrained Settings MATTHEW STEWART, Diagnostics For All, Patrick Beattie, Sahil Khullar
2:45	(2340-3)	An On-Farm Device for the Detection of Generic E.coli from Agricultural Water Sources SAM R NUGEN, University of Massachusetts Amherst, Sam A Alcaine
3:20		Recess
3:35	(2340-4)	Designing Handheld Resistance Based Biosensors Utilizing Conducting Nonwoven Fibers for In-Field Microbial Pathogen Detection ANDRE SENECAI, US Army Natick Soldier Research, Development and Engineering Center, Kris Senecal, Patrick Marek, Shannon McGraw, Karen Gleason, Allie Grella, Amanda Hebert, Stephen Torosian
4:10	(2340-5)	In-Parlor Tool for Monitoring of Milk Quality GARY JONAS, Dairy Quality Inc.

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM

Session 2350

Thinking Outside the Laboratory: Innovative Outreach and Educational Approaches that Bring Analytical Chemistry to New Audiences

arranged by Bhavik A Patel, University of Brighton and Michelle Kovarik, Trinity College

Thursday Afternoon, Room S402b

Bhavik A Patel, University of Brighton, Presiding

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|------|----------|--|
| 1:30 | | Introductory Remarks - Bhavik A Patel and Michelle Lynn Kovarik |
| 1:35 | (2350-1) | Bringing Instrumental Analysis into the K-12 Classroom: Service Learning Projects and Laboratory Coursework MICHELLE KOVARIK, Trinity College |
| 2:10 | (2350-2) | Microfluidics in the Middle School Classroom: Implementation, Content, and Instrumentation for Teachers and Students LISA A HOLLAND, West Virginia University, Sharon Athey, Justin Dicks, Tyler Davis, Cassandra L Crihfield, Coltin Kolanko |
| 2:45 | (2350-3) | Analytical Chemistry Students Perform Quality Assurance Tests for Local Microbrewery JILL K ROBINSON, Indiana University |
| 3:20 | | Recess |
| 3:35 | (2350-4) | Collaboration at the Interface of Chemistry and Art Conservation: Surface-Enhanced Raman Studies of Pigments in Historic Oil Paintings KRISTIN L WUSTHOLZ, College of William and Mary, Shelley A Svoboda |
| 4:10 | (2350-5) | Can 'Gamification' Spice up the Analytical Chemistry Classroom? BHAVIK A PATEL, University of Brighton |

ORGANIZED CONTRIBUTED SESSIONS

Session 2360

Advances in Sensor Technology for Food Safety and Food Quality

arranged by Betsy Jean Yakes, U.S. Food and Drug Administration

Thursday Afternoon, Room S405a

Betsy Jean Yakes, U.S. Food and Drug Administration, Presiding

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|------|----------|---|
| 1:30 | (2360-1) | Measurement of Trichothecene Mycotoxins in Wheat Using a Biolayer Interferometry-Based Biosensor CHRIS MARAGOS, USDA-ARS |
| 1:50 | (2360-2) | Where the Rubber Meets the Road: How Affinity Reagent Performance Impacts a Sensor's Effectiveness SETH B HARKINS, KPL, Inc., Farol L Tomson |
| 2:10 | (2360-3) | Application of IR Chemical Imaging and DNA Microarrays to the Identification of Fish Species MAGDI MICHEL MOSSOBA, FDA, Sara Handy, Vladimir Chizhikov, Stephen Paul, Betsy-Jean Yakes, Jonathan Deeds |
| 2:30 | (2360-4) | Detection of Foodborne Pathogens at 100 cfu/g in 4 hours Using Surface-Enhanced Raman Spectroscopy STUART FARQUHARSON, Real-Time Analyzers, Inc., Chetan Shende |
| 2:50 | | Recess |
| 3:05 | (2360-5) | Identification of Microorganisms by Raman Spectroscopy for the Development of New Biosensors in the Food Industry GERALD THOUAND, University of Nantes, Ali Assaf, Emilie Faury, Christophe Cordella, Douglas Rutledge, Michele Lees |
| 3:25 | (2360-6) | hlyA Gene-Based Sensitive Detection of Listeria Monocytogenes Using a Novel Cantilever Sensor RAJ MUTHARASAN, Drexel University, Harsh Sharma |
| 3:45 | (2360-7) | Battery-Free Radio Frequency Identification (RFID) Sensors for Food Quality and Safety NANDINI NAGRAJ, GE Global Research, Radislav A Potyrailo |
| 4:05 | (2360-8) | Title Not Provided at Time of Printing |

ORGANIZED CONTRIBUTED SESSIONS

Session 2370

Recent Advances in Ion Chromatography

arranged by Kannan Srinivasan, Thermo Fisher Scientific

Thursday Afternoon, Room S405b

Kannan Srinivasan, Thermo Fisher Scientific, Presiding

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|------|----------|---|
| 1:30 | (2370-1) | Simulating Chromatography and Wistful X-Ray Visions into a Column: How Far is Reality? PURNENDU K DASGUPTA, University of Texas at Arlington, Brian N Stamos, Akinde F Kadjo |
| 1:50 | (2370-2) | Recent Developments in Suppressor Technology for Ion Chromatography KANNAN SRINIVASAN, Thermo Fisher Scientific, Rong Lin, Sheetal Bhardwaj, Christopher Pohl |
| 2:10 | (2370-3) | Advances in Trace Analysis in Ion Chromatography HERB WAGNER, CB&I |
| 2:30 | (2370-4) | Trials, Tribulations and Triumphs of Small Particles in Ion Chromatography MUHAMMAD FAROOQ WAHAB, University of Alberta, Christopher Pohl, Charles A Lucy |

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| 2:50 | | Recess |
| 3:05 | (2370-5) | Recent Developments in Stationary Phases for Ion Chromatography CHRISTOPHER POHL, Thermo Fisher Scientific |
| 3:25 | (2370-6) | Characterizing the Mixed Cation Exchange-Reversed Phase Retention of Phosphorous Acid Coated Zirconia Columns CHRISTOPHER R HARRISON, San Diego State University, Stephanie M Archibald |
| 3:45 | (2370-7) | Application of Ion Chromatography in Flavor Science ANDREAS DUNKEL, Technical University of Munich |
| 4:05 | (2370-8) | Role of Ion Chromatography in Pharmaceuticals – Assay and Impurities SHREEKANT KARMARKAR, Baxter Healthcare |

ORAL SESSIONS

Session 2380

Microfluidics: Novel Approaches

Thursday Afternoon, Room S404a

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|------|----------|--|
| 1:30 | (2380-1) | Optofluidic Device with SERS Active Three Dimensional Gold Nanostructure TAKAO FUKUOKA, University of Hyogo/Archilys, Ryo Takahashi, Yuichi Utsumi, Akinobu Yamaguchi |
| 1:50 | (2380-2) | Microfluidic Sample Preparation for Liquid Characterization by XRF KATHRYN G MCINTOSH, Los Alamos National Lab, George J Havrilla, Eli J Berg |
| 2:10 | (2380-3) | Droplet-Based Microfluidic Sample Preparation for Mass Spectrometric Analysis of Single Cells RYAN T KELLY, Pacific Northwest National Laboratory, Sheen M Allison, Sarah J Rausch |
| 2:30 | (2380-4) | Flow Injection Analysis in Bare-Narrow-Capillary Hydrodynamic Chromatography for High-Throughput DNA Analysis at Single Molecule Level in Free Solutions ZAI FANG ZHU, University of Oklahoma, Huang Chen, Shaorong Liu |
| 2:50 | | Recess |
| 3:05 | (2380-5) | Detection of Neurotransmitters by Fast-Scan Cyclic Voltammetry in Microfluidic Flow Cells MIMI SHIN, University of Kansas, Michael A Johnson, Meng Sun |
| 3:25 | (2380-6) | High Aspect Ratio Pillar Arrays as Chip Platforms for Separations and Surface Spectroscopy MICHAEL SEPANIAK, University of Tennessee, Nickolay Lavrik, Kirchner Teresa, Jennifer Charlton |
| 3:45 | (2380-7) | Biofouling and Protein Adsorption in Nanofluidic Devices WILLIAM R WICHERT, University of Notre Dame |
| 4:05 | (2380-8) | Microfluidic Devices in Calcium Fluoride Substrates for Achieving Real-Time Infrared Spectroscopic Monitoring SCOTT D NOBLITT, Colorado State University, Brynson J Lehmkuhl, Amber T Krummel, Charles S Henry |

ORAL SESSIONS

Session 2390

Voltammetry

Thursday Afternoon, Room S404bc

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|------|----------|--|
| 1:30 | (2390-1) | Potentiometric Scanning Ion Conductance Microscopy YI ZHOU, Indiana University, Anna Weber, Lushan Zhou, Lane A Baker, Jianghui Hou |
| 1:50 | (2390-2) | Real-Time Cu²⁺ Voltammetry on Carbon Fiber Microelectrodes PAVITHRA PATHIRATHNA, Wayne State University, Srimal A Samaranyake, Kate I Parent, Christopher W Atcherley, Michael L Heien, Parastoo Hashemi |
| 2:10 | (2390-3) | Bridging the Gap Between Molecular Electrochemistry and Electrocatalysis: Interplay Between Solution and Surface Steps in Benzyl Chloride Reduction at Silver Cathodes OLEKSIY V KLYMENKO, ENS-CNRS-UPMC, Olivier Buriez, Eric Labbe, Dong-Ping Zhan, Sandra Rondinini, Zhong-Qun Tian, Irina Svir, Christian A Amatore |
| 2:30 | (2390-4) | Electrochemically Prepared Ionic Liquids for Solid Phase Microextraction JOSHUA YOUNG, University of Toledo, Jon Kirchoff, Jared L Anderson |
| 2:50 | | Recess |
| 3:05 | (2390-5) | Utilization of Polycrystalline Boron Doped Diamond for Pulsed High Temperature Electrochemistry MARK E NEWTON, University of Warwick, James G Iacobini, Julie V Macpherson, Tim Mollart |
| 3:25 | (2390-6) | Extra High Energy of Formation of Dianions Observed by Salt-Free Microelectrode Voltammetry KOICHI JEREMIAH AOKI, University of Fukui |
| 3:45 | (2390-7) | Comparative Electrochemical Study of PANI/PSS and PANI-5%MWNT/PSS Films Obtained by Layer-by-Layer (LBL) Deposition onto ITO Substrates FÁBIO R SIMÕES, UNIFESP, Tiago Rosa, Lucia Codognoto, Luanna Parreira, Mauro dos Santos |
| 4:05 | (2390-8) | Comparison of Heterogeneous Reaction Rate Constants by Steady-State Microelectrode Techniques with Those by Fast Scan Voltammetry JINGYUAN CHEN, University of Fukui, Aoki Koichi, Chaofu Zhang |

Free unique networking opportunities for registered conferees. Meet, resolve, and discuss similar interests, techniques, and problems on various topics. No preregistration required. Check our website for more information and descriptions.

Sunday, March 2, 2014, 1:30 PM - 3:30 PM, McCormick Place

Room N427d	Analytical Advances in Geoscience and Petroleum Chemistry
Room N426b	Fast Gas Chromatography
Room N427bc	ICP-MS and Chromatography for Metals Speciation
Room N426c	Regulatory Meets Finance
Room N427a	Safety in the Laboratory and Field Work

Monday, March 3, 2014, 8:30 AM - 10:30 AM, McCormick Place

Room N427a	Capillary Electrophoresis Mass Spectrometry: A Robust, Sensitive, and Powerful Technology for Your Next Analytical Challenge
Room N426b	High Throughput Liquid-Liquid Microextraction
Room N427bc	Is Your Organization Competent to Perform Environmental Data Operations?
Room N426c	New Perspectives and Lessons Learned in the Identification of Impurities in Drug Development
Room N427d	Reducing Project Scope Creep

Monday, March 3, 2014, 1:30 PM - 3:30 PM, McCormick Place

Room N427d	Controlling Instruments Using Non-manufacturer Software Packages
Room N427a	Establishing a Symbiotic Relationship Between Core Research Facility Managers and Equipment Suppliers
Room N426c	New Directions and Paths in Developing Sample Preparation Technologies
Room N427bc	Non-invasive Biomedical Analysis: Detection of Bacterial Infections by Volatile Fingerprints?
Room N426b	The Quest for Killer Applications of "Low Cost" and "Small Size" Spectrometers

Tuesday, March 4, 2014, 8:30 AM - 10:30 AM, McCormick Place

Room N427bc	Is Chemistry Still a Man's World?
Room N427a	Air Canisters Working Together to Improve Your Analysis
Room N427d	Does Your Enterprise Resource Planning (ERP) Replace LIMS?
Room N426b	Using Social Media Applications in Science
Room N426c	UV LEDs in Molecular Spectroscopy and Microscopy

Tuesday, March 4, 2014, 1:30 PM - 3:30 PM, McCormick Place

Room N427a	Laboratory Information Management and Laboratory Automation Through Unique Identification of Individual Labware and Sample Vials
Room N427bc	Recent Advances in Protein Analysis - Electrophoresis Proteins in Different Tissues and Samples
Room N426b	Solid-Phase Extraction Users
Room N426c	Trace Analysis: Conventional vs. Miniature
Room N427d	Biomarkers of Protein-Lipid Complex Disorder: New Approaches and Technologies

Wednesday, March 5, 2014, 8:30 AM - 10:30 AM, McCormick Place

Room N426c	Managing a Successful Graduate School Experience
Room N427a	Marketing Your Lab Services Effectively
Room N426b	Progress Toward Creating an Intelligent and Automated Analytical Laboratory

Wednesday, March 5, 2014, 1:30 PM - 3:30 PM, McCormick Place

Room N426b	Analytical Technologies at the Nano-Bio Interface
Room N426c	Labs and Apps - Transforming Gadgets into Lab Utilities
Room N427a	Single-cell Analysis