

61ST ICASS FINAL PROGRAM

19-23 JUNE 2017

Delta Quebec, Quebec City

MONDAY, JUNE 19, AFTERNOON

11:00-15:00 Set-up of exhibition - *Jonquière/Lauzon*

19:00-22:00 Exhibition opening reception - *Jonquière/Lauzon*

TUESDAY, JUNE 20, MORNING

Innovations from manufacturers I – *Wolfe/Montcalm*

Organizers and co-Chairs: Lucas Choma and Diane Beauchemin

9:00 **(1009)** MIR AND FIR ANALYSIS OF INORGANIC SPECIES IN A SINGLE DATA ACQUISITION. **Sergey Shilov**, Mathias Keßler, Xia Stammer, Bruker Optics

9:20 **(1027)** INTRODUCING AGILENT'S SECOND GENERATION ICP-MS/MS, THE 8900 QQQ FOR UNPRECEDENTED SPECTRAL INTERFERENCE CONTROL, EXTREME HIGH SENSITIVITY, PERFECT ISOTOPIC SIGNATURES, AND MUCH MORE. **Pamela Wee**, Agilent Technologies Canada Inc.

9:40 **(1005)** HANDLING INTERFERENCES IN THE MODERN LABORATORY WITH ADVANCED TRIPLE QUADRUPOLE ICP-MS TECHNOLOGY. Daniel Kutscher, Shona McSheehy Ducos, Maura Rury. Thermo Fisher Scientific. Presented by: **Michael Plantz**

10:00 Coffee break - *Foyer*

10:40 **(1031)** ELEMENTAL ANALYSIS BY MASS SPECTROMETRY: SOLUTION FROM NU INSTRUMENTS, HR-ICP-MS ATTOM AND GDMS ASTRUM. **Benoit Disch**, Ariane Donard, Phil Shaw, Nu Instruments

11:00 **(1052)** HIGH SENSITIVITY TIN SPECIATION USING A NEW GC INTERFACE WITH SECTOR FIELD HIGH RESOLUTION ICP-MS. **Peter Stow**, Isomass Scientific Inc.

11:20 **(1053)** NEXION 2000 ICP-MS – ANY MATRIX, ANY INTERFERENCE, ANY PARTICLE SIZE. **Andrew Rams**, PerkinElmer Inc.

11:40 **(1022)** CHOOSING THE PROPER SAMPLE INTRODUCTION SYSTEM TO ALLEVIATE INTERFERENCES IN ICP. **Jerry Dulude** and Ryan Brennan, Glass Expansion

12:00 Lunch – *Foyer* & Exhibition and Poster session - *Jonquière/Lauzon*

Mass Spectrometry – Crémazie/Garneau

Organizer: Kingsley Donkor

Co-Chairs: Paul Mayer and Alexander Donald

- 9:00 **(I008)** THE QUANTITATIVE MASS SPECTROMETRIC ANALYSIS OF MICROBIAL METABOLISM OF DIETARY GLYCOCONJUGATES. **Zandberg, Wesley F¹**; Noestheden, Matthew¹; Vicaretti, Sara D¹; Gibson, Deanna²; Wylie, Aaron D¹. University of British Columbia, Okanagan Campus; Department of ¹Chemistry and ²Biology.
- 9:40 **(I019)** CHARACTERISATION OF BIOACTIVE CRANBERRY FRACTIONS BY MASS SPECTROMETRY APPROACHES. Marie-Claude Denis¹, Yves Desjardins², André Marette², Pascal Dubé², Stéphanie Dudonné², Edgard Delvin¹, Emile Levy¹, **Alexandra Furtos¹**, ¹Université de Montréal, Montréal, QC H3T 1C5, ²Institute of Nutraceuticals and Functional foods (INAF), Université Laval, QC G1V 0A6
- 10:00 Coffee break - *Foyer*
- 10:40 **(I081)** LC/ESI-MS METHOD FOR DETERMINATION OF POTENTIALLY-RELEVANT FATTY ACIDS IN BEEF. **Kingsley K. Donkor¹**, Laiel C. Soliman¹, Elizabeth M. Andrucson¹, Bruno Cinel¹, John S. Church², Thompson Rivers University, Department of Chemistry¹ and Department of Natural Resource Sciences², Kamloops, BC
- 11:00 **(I045)** MECHANISM AND CONTROL OF THE SELECTIVE FRAGMENTATION OF PROTEIN IONS. Huixin X. Wang,¹ Michael G. Leeming,² **W. Alexander Donald¹**, ¹School of Chemistry, UNSW Sydney, Australia; ²School of Chemistry, University of Melbourne, Australia
- 11:40 **(I017)** DEVELOPMENT OF LC-QQQ-MS METHODS FOR CHARACTERIZATION OF REGENERABLE AMINE SOLVENTS USED IN CO₂ CAPTURE. **S. Gallant**, A. Furtos, K. C. Waldron. Department of Chemistry, Université de Montréal.
- 12:00 Lunch - *Foyer* & Exhibition and Poster session - *Jonquière/Lauzon*

TUESDAY, JUNE 20, AFTERNOON

Innovations from manufacturers II – Wolfe/Montcalm

Organizers and co-Chairs: Lucas Choma and Diane Beauchemin

- 13:40 **(I020)** FTIR SPECTROELECTROCHEMISTRY: NEW ASSESSORIES AND APPLICATIONS. **Sergey Shilov**, Matthias Kessler, Bruker Optics
- 14:00 **(I016)** THE AGILENT 5110 ICP-OES: ROBUST – POWERFUL – FAST. **Wayne Blonski**, Agilent Technologies Canada Inc.
- 14:20 **(I065)** ADVANCES IN ICP-OES HARDWARE AND OPTICAL DESIGN. **Dion Tsourides**. Spectro Ametek.
- 14:40 **(I067)** SELECTING THE OPTIMUM SAMPLE INTRODUCTION SYSTEM FOR ICP-OES ANALYSIS OF DIFFICULT SAMPLES. **Sergei Leikin**. Texas Scientific Products

- 15:00 Coffee break - *Foyer*
- 15:40 **(1059)** NEW TECHNIQUES FOR PREPARING PLASTICS AND POLYMERS BY MICROWAVE SAMPLE PREPARATION. Tina Restivo, Austin Thornton, Bob Lockerman, and Michael Howe, CEM Corporation. Presented by: **Bill MacLuckie**
- 16:00 **(1064)** ADVANCES IN MICROWAVE SAMPLE PREPARATION: TRADITIONAL AND MODERN DAY DESIGNS FOR TRACE METALS ANALYSIS. **Parag Bhargava** and Gilles Groulx, ATS Scientific Inc. 4030 Mainway, Burlington, ON Canada
- 16:20 **(1069)** EasyPREP SAMPLE HANDLER, AUTOMATION OF TEDIOUS LIQUID TRANSFER TASKS. **John Dykeman**, SCP SCIENCE
- 16:40 End of session
- 17:00-18:00 Non-student poster session (authors present) - *Jonquière/Lauzon*
- 18:00-22:00 Short course on Inductively Coupled Plasma Spectrometry (dinner included in course registration fee) – *Brébeuf/Kent*

Mass Spectrometry – *Crémazie/Garneau*

Organizer: Kingsley Donkor

Co-Chairs: Wesley Zandberg and Kingsley Donkor

- 13:40 **(1058)** INVESTIGATION OF THE UNIMOLECULAR REACTIONS OF IONIZED POLYCYCLIC AROMATIC HYDROCARBONS. Brandi West, Alicia Sit, Sabria Mohamad, Eduardo Solano, Jake Burner, Yardley Paige Cuthbert, Iden Djavani-Tabrizi and **Paul M. Mayer**. Department of Chemistry and Biomolecular Sciences, University of Ottawa; Sarah Rodriguez, Christine Joblin. Université de Toulouse III, Toulouse, France; Andras Bodi, Patrick Hemberger: Paul Sherrer Institut, Villigen, Switzerland
- 14:00 **(1018)** THE DEVELOPMENT OF AN AIR TREATMENT UNIT FOR IMPROVED REAL TIME MSMS MONITORING OF VOLATILE ORGANIC COMPOUNDS. **Alexandre Ouellet**, Marco Li Fraine, Christophe Romiguère, Annie Michaud, Dominic Lortie, Jean-François Boily and Patrick Avon, Centre d'expertise en analyse environnementale du Québec, MDDELCC; 850, boulevard Vanier, porte Sud, Laval, QC
- 14:40 **(1033)** MONITORING UPTAKE OF A DNAZYME MOTOR BY LIVING CELLS USING ICP-MS. Hanyong Peng, Xing-Fang Li, X. Chris Le, **Hongquan Zhang**. Division of Analytical and Environmental Toxicology, Department of Laboratory Medicine and Pathology, University of Alberta, Edmonton, Alberta, T6G 2G3, Canada
- 15:00 Coffee break - *Foyer*
- 15:40 **(1011)** ANALYSIS OF NEONICOTINOIDS AND PARTICLE BOUND PESTICIDES IN ATMOSPHERIC SAMPLES BY LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY. **Renata Raina-Fulton**, Asal Behdarvandan. University of Regina, Department of Chemistry and Biochemistry.
- 16:00 **(1062)** DEVELOPMENT OF ANALYTICAL TECHNIQUES TO STUDY THE HUMAN MICROBIOME, Daniel Figeys, University of Ottawa. Presented by: **Zhibin Ning**

16:40 End of session

17:00-18:00 Non-student poster session (authors present) - *Jonquière/Lauzon*

18:00-22:00 Short course on Inductively Coupled Plasma Spectrometry (dinner included in course registration fee) – *Brébeuf/Kent*

Measurement of radioactive nuclides by mass spectrometry – *Brébeuf/Kent*

Organizers: Dominic Larivière, Jack Cornett and Doug Evans

co-Chairs: Jack Cornett and Doug Evans

13:20 **(I078)** RADIOCHEMICAL SEPARATIONS FOR UNUSUAL SAMPLE MATRICES.

Ralf Sudowe, Department of Environmental & Radiological Health Sciences, Colorado State University

14:00 **(I077)** MEASURING ULTRA-TRACE PLUTONIUM CONCENTRATIONS IN ARCTIC SEAWATER. Andy Z. Zhou, Xiaolei. Zhao, Daniel Sauve, Chris Charles and **R.**

Jack Cornett, A.E. Lalonde Laboratory for Accelerator Mass Spectrometry, University of Ottawa, Ottawa, Canada.

14:20 **(I084)** NEW METHODOLOGY TO RELEASE ^{129}I FROM CHARCOAL SAMPLES.

Barbara Francisco and Robert Jack Cornett, AEL-AMS Laboratory, Advanced Research Complex, University of Ottawa. 25 Templeton Street, Ottawa, ON, K1N 6N5.

14:40 **(I048)** DETERMINATION OF ^{210}Pb IN WATER SAMPLES BY ICP-MS/MS AFTER CLOUD POINT EXTRACTION USING CROWN ETHERS. **Guillaume Blanchet-**

Chouinard and Dominic Larivière, Radioecology laboratory, Chemistry Department, Laval University.

15:00 Coffee break - *Foyer*

15:40 **(I073)** ONLINE SEPARATION AND DETERMINATION OF ^{226}Ra AND TRACE METALS FROM MINING WASTEWATER AND FRACKING WATER. **Wei Wang** and Douglas Evans, School of Environment, Trent University, Peterborough, ON Canada

16:00 **(I079)** A NEW RAPID TECHNIQUE TO MEASURE ^{226}Ra CONCENTRATIONS IN WATER. Andy Z. Zhou, Xiaolei. Zhao and **R. Jack Cornett**, A.E. Lalonde Laboratory for Accelerator Mass Spectrometry, University of Ottawa, Ottawa, Canada.

16:20 **(I047)** A CPE METHOD TO PRE-CONCENTRATE AND EXTRACT RADIONUCLIDES FROM ENVIRONMENTAL MATRICES. **Anthony Tremblay** and Dominic Larivière, Radioecology laboratory, Chemistry Department, Laval University.

16:40 **(I074)** THE ACCURATE DETERMINATION OF RADIONUCLIDES WITHOUT PRIOR CHEMICAL SEPARATION OF INTERFERENCES USING AN AGILENT ICP-MS/MS. **Pamela Wee**, Agilent Technologies Canada Inc.

17:00 End of session

17:00-18:00 Non-student poster session (authors present) - *Jonquière/Lauzon*

(1001) SAMPLE PREPARATION METHODS FOR DETERMINATION OF PHTHALATE ESTERS IN FOOD SAMPLES BY GAS CHROMATOGRAPHY. **Wanna Kanchanamayoon** and Sutthirak Uansiri, Creative Chemistry and Innovation Research Unit, Department of Chemistry, Faculty of Science, Mahasarakham University, MahaSarakham 44150, Thailand.

(1015) NANOPARTICLE SIZE AND ZETA POTENTIAL USING TUNEABLE NANOPORE RESISTIVE PULSE SENSING (TRPS) TECHNOLOGY. **Mary-Luyza Avramescu**¹, Pat .E. Rasmussen^{1,2}, ¹Environmental Health Science and Research Bureau, Environmental and Radiation Health Sciences Directorate, HECSB, Health Canada, Ottawa, ON, ²Earth and Environmental Sciences Department, University of Ottawa, Ottawa, ON

(1061) SPECIATION ANALYSIS OF ARSENIC IN MILK: METHOD DEVELOPMENT AND APPLICATION TO THE FRENCH SURVEILLANCE PLAN CONCERNING MILK CONTAMINATION BY ARSENIC SPECIES. A. Leufroy, R. Chekri, J. Zinck, N. Marchond, **T. Guérin** and P. Jitaru

(1066) DEVELOPMENT AND APPLICATION OF A NOVEL ANALYTICAL APPROACH BASED ON ASYMMETRIC FLOW FIELD FLOW FRACTIONATION COUPLED TO ICP-MS FOR TiO₂ NANOPARTICLES DETERMINATION IN FOOD. Lucas Givélet^a, D. Boutry^a, S. Motellier^a, P. Jitaru^b, **T. Guérin**^b and J-F. Damlencourt^a, ^a CEA Grenoble, Laboratoire de Recherche en Nanosécurité, Grenoble, France ; ^b Université de Paris-Est, Anses, Laboratoire de Sécurité des Aliments, Maisons-Alfort, France

(1089) DEVELOPMENT OF METHODS FOR THE CHARACTERIZATION OF A 12 M KOH ZINCATE FUEL FOR GREEN ENERGY BACKUP SYSTEMS USING FLOW INJECTION COUPLED TO INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **Tia Anderlini** and Diane Beauchemin, Department of Chemistry. Queen's University, 90 Bader Lane, Kingston, Ontario K7L 3N6, Canada

18:00-22:00 Short course on Inductively Coupled Plasma Spectrometry (dinner included in course registration fee) – *Brébeuf/Kent*

WEDNESDAY, JUNE 21, MORNING

Food safety – *Wolfe/Montcalm*

Organizers and co-Chairs: Nausheen Sadiq and Diane Beauchemin

- 8:40 **(1054)** CHROMIUM SPECIATION ANALYSIS IN DAIRY AND CEREAL PRODUCTS BY HPLC-ICPMS. **T. Guérin**¹, F. Hernandez¹, N. Bemrah¹, F. Cormant¹, F. Séby², L. Noël¹, P. Jitaru¹, ¹Université Paris-est, Anses, Laboratoire de Sécurité des Aliments, Maisons-Alfort, France ; ²UT2A, Pau, France.
- 9:20 **(1050)** INORGANIC ARSENIC SPECIATION IN RICE AND RICE-BASED PRODUCTS USING HYDRIDE GENERATION ATOMIC ABSORPTION SPECTROMETRY (HG AAS). **Dirce Pozebon**, Greice Magalhães dos Santos, Camila Cerveira and Diogo P. de Moraes. Instituto de Química, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves 9500, 91501-970, Porto Alegre, RS, Brazil
- 9:40 **(1087)** INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY WITH ON-LINE LEACHING: A METHOD TO ASSESS THE MAXIMUM BIO-ACCESSIBILITY OF TOXIC AND ESSENTIAL ELEMENTS IN WHEAT FROM SAUDI ARABIA. **Randa Althobiti** and Diane Beauchemin, Department of Chemistry. Queen's University, 90 Bader Lane. Kingston, Ontario K7L 3N6, Canada.
- 10:00 Coffee break - *Foyer*
- 10:40 **(1051)** MULTIELEMENT DETERMINATION IN VEGETABLES USING LA-ICP-MS. **Valderi Luiz Dressler**, Matheus A. G. Nunes. Department of Chemistry, Federal University of Santa Maria, Av. Roraima 1000, 97105-900, Santa Maria, RS, Brazil.
- 11:00 **(1049)** DEVELOPMENT OF LC-MS/MS BASED PROTOCOLS FOR THE NON-TARGETED ANALYSIS OF FOOD CONTAMINANTS. **Stéphane Bayen**, L. Tian, A. von Eyken, Department of Food Science and Agricultural Chemistry, McGill University, 21111 Lakeshore, Ste Anne de Bellevue, QC
- 11:20 **(1046)** NON-TARGETED IDENTIFICATION OF ORGANIC MIGRANTS FROM REUSABLE PLASTIC BOTTLES USING LC-MS: INFLUENCE OF THE DATA POST-PROCESSING. **L.Tian**, S. Bayen, Department of Food Science and Agricultural Chemistry, McGill University, 21111 Lakeshore, Ste Anne de Bellevue, QC
- 11:40 **(1090)** MULTI-ELEMENTAL RISK ASSESSMENT OF TOXIC AND ESSENTIAL ELEMENTS IN OAT CEREAL USING ION EXCHANGE CHROMATOGRAPHY COUPLED TO INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Nausheen Sadiq** and Diane Beauchemin, Department of Chemistry, Queen's University, 90 Bader Lane, Kingston, Ontario K7L 3N6, Canada
- 12.00 Lunch – *Foyer*, Exhibition and Poster session - *Jonquière/Lauzon*, Nu Luncheon Seminar - *Duquesne*

Separations

Organizer and Chair: Alison Holliday

- 9:00 **(I032)** CAPILLARY AND MICROCHIP ELECTROPHORESIS FOR FLUORESCENCE-BASED ASSAYS OF ENZYME ACTIVITY IN *DICTYOSTELIUM*. Kathy Rodogiannis, Jessica T. Duong, Kunwei Yang, and **Michelle L. Kovarik**. Department of Chemistry, Trinity College, 300 Summit St. Hartford, CT 06106.
- 9:40 **(I039)** INVESTIGATION BY LIQUID CHROMATOGRAPHY OF A MIXED-MODE STATIONARY PHASE BASED ON BILE ACID OLIGOMERS AS INVERTIBLE AMPHIPHILIC POCKETS. **V. Dionne-Dumont**, M. Zhang, N. Lévaray, X.X. Zhu and K.C. Waldron, Département de chimie, Université de Montréal
- 10:00 Coffee break - *Foyer*
- 10:40 **(I036)** AUTOMATED ENZYME MICROREACTOR FABRICATION FOR PROTEOMICS APPLICATIONS: EVALUATION BY CZE, HPLC AND MS. G. Ghafourifar, A. Fleitz, B. Fleury and **K.C. Waldron**. Department of Chemistry, Université de Montréal, Montréal, QC.
- 11:20 **(I040)** CAPILLARY ELECTROPHORESIS FOR DETECTION OF PEPTIDE FOLDING INTERMEDIATES. John D. Barr,¹ Amanda M. Miller,¹ Liujing Shi,² David E. Clemmer,² and **Alison E. Holliday**¹, ¹Department of Chemistry, Moravian College, Bethlehem, PA
- 12:00 Lunch – *Foyer*, Exhibition and Poster session - *Jonquière/Lauzon*, Nu Luncheon Seminar - *Duquesne*

COMPLIMENTARY WORKSHOP

Image Analysis – *Crémazie/Garneau*

Instructor: Jesse Greener

- 9:00 **(W1)** Image analysis workshop using powerful open-access image analysis software, ImageJ. Participants will gain hands on experience to analyse sample data sets, which include 2D, 3D images and videos. Various concepts will be covered related to: (i) setting up your workspace environment, (ii) image display enhancements and (iii) image manipulation and analysis, and (iv) special topics.
- 12:00 Lunch – *Foyer*, Exhibition and Poster session - *Jonquière/Lauzon*, Nu Luncheon Seminar - *Duquesne*

WEDNESDAY, JUNE 21, AFTERNOON

Nanomaterials and their analysis – Wolfe/Montcalm

Organizers and co-Chairs: Ram Lamsal and Diane Beauchemin

- 13:40 **(I026)** ANALYSIS OF SMALL NANOPARTICLES BY SP-ICP-MS- LOWER SIZE DETECTION LIMITS THROUGH INSTRUMENTAL IMPROVEMENTS AND DATA TREATMENT. Madjid Hadioui and **Kevin J. Wilkinson**. Biophysical Environmental Chemistry Group, Department of Chemistry, University of Montreal, QC
- 14:00 **(I097)** SYNTHESIS OF BIMETALLIC HOLLOW AgM NANOPARTICLES, STRUCTURE AND COMPOSITION ANALYSIS. **Josée R. Daniel**,¹ Sadegh Yazdi,² Lauren McCarthy,² Emilie Ringe² and Denis Boudreau¹, ¹Département de chimie et Centre d'optique, photonique et laser (COPL), Université Laval, Québec (QC), G1V 0A6, Canada; ²Department of Materials Science and NanoEngineering, Rice University, Houston, Texas, 77005, USA.
- 14:20 **(I055)** ADVANCEMENTS IN SINGLE PARTICLE ICP-MS – SIGNIFICANT INSTRUMENT SETTINGS AND THEIR IMPLICATIONS ON DATA QUALITY. Chady Stephan, Samad Bazargan, Hamid Badiei, Aaron Hineman, **Andrew Rams**. PerkinElmer Inc., Woodbridge, ON
- 14:40 **(I043)** SIZE AND NUMBER QUANTIFICATION OF Ag NANOPARTICLES IN NATURAL WATERS USING SINGLE PARTICLE ICP-MS. **Karla Newman**, Water Quality Center, Trent University, 1600 West Bank Drive, Peterborough, ON
- 15:00 Coffee break - *Foyer*
- 15:40 **(I056)** SP-ICP-MS TECHNIQUE FOR THE ANALYSIS AND THE STABILITY STUDY OF METAL NANOPARTICLES IN BIOLOGICAL FLUIDS. **Ciprian M Cirtiu**, Institut National de Santé Publique du Québec, Centre de Toxicologie du Québec.
- 16:00 **(I021)** SINGLE CELL ICP-MS ANALYSIS: QUANTIFYING THE UPTAKE OF METALS BY UNICELLULAR ORGANISMS ON A CELLULAR LEVEL. Ruth Merrifield¹, Lauren Amable², Jamie Lead¹, **Andrew Rams**³, Chady Stephan³, ¹Center for Environmental NanoScience and Risk (CENR), Department of Environmental health sciences, Arnold School of Public Health, University of South Carolina, Columbia SC, ²Division of Intramural Research, National Institute on Minority Health and Health Disparities, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland, 20892, ³PerkinElmer Inc. Shelton, CT
- 16:20 **(I068)** GRAPHENE QUANTUM DOTS: DEPOSITION ON POLYDOPAMINE-MODIFIED TiO₂ NANOPARTICLES. **Edward P.C. Lai** and Kaiyu Wang, Department of Chemistry, Carleton University, Ottawa, ON
- 16:40 **(I083)** SINGLE PARTICLE INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY METHOD FOR THE CHARACTERIZATION OF PLATINUM NANOPARTICLES FOR FUEL CELL APPLICATIONS. **Ram P. Lamsal**^a, Sadaf Tahamasebi^a, Gregory Jerkiewicz^a, Stève Baranton^b, Christophe Coutanceau^b, Aaron Hineman^c, Chady Stephan^c and Diane Beauchemin^a, ^aQueen's University, Department of Chemistry, 90 Bader Lane, Kingston, Ontario K7L 3N6, Canada; ^bUniversité de Poitiers IC2MP, 4 Rue Michel Brunet, B27, TSA 51106, 86073

Poitiers cedex 9, France; °Perkin Elmer Canada, 501 Rowntree Dairy Rd, Unit 6,
Woodbridge, ON, L4L 8H, Canada

17:00 End of session

17:00-18:00 Student poster session (authors present) - *Jonquière/Lauzon*

19:00-22:00 Complimentary boat tour (no meal included)

Imaging – *Crémazie/Garneau*

Organizer and Chair: Jesse Greener

13:40 **(I041)** SUPER-RESOLUTION FLUORESCENCE MICROSCOPY AS A TOOL FOR THE CHARACTERIZATION OF CELLULOSE NANOSTRUCTURE. Mouhanad Babi and **Jose Moran-Mirabal**, Department of Chemistry and Chemical Biology, McMaster University

14:20 **(I010)** LOCALIZED QUANTIFICATION OF pH USING FLUORESCENT NANOSENSORS IN SINGLE-PARTICLE TRACKING ANALYSES. **Jérémie Asselin**, Denis Boudreau, Université Laval.

14:40 **(I006)** EVALUATION OF NANOPARTICLE DISPERSION USING DIFFERENT MICROSCOPIC TECHNIQUES, **R. Lussier**, Université Laval

15:00 Coffee break - *Foyer*

15:40 **(I024)** FORM SINUSOIDAL WAVES LAMINAR CO-FLOW IN MICRO DEVICES BY USING MICRO-MANAGER TO CONTROL FLOW RATE. **Nan Jia**, Jesse Greener, Department of Chemistry and Centre de recherche sur les matériaux avancés (CERMA), Université Laval, Québec, QC

16:00 **(I029)** CONFOCAL LASER SCANNING MICROSCOPY AND ELECTROCHEMICAL STUDY ON MICROFLUIDIC MICROBIAL FUEL CELL. **Mehran Abbaszadeh Amirdehi**, Jesse Greener, Université Laval, Québec, QC

16:20 **(I035)** THE USE OF MICRO-IMAGING TECHNIQUES TO ANALYZE BIOFILM DEVELOPMENT DATA IN MICROCHANNEL. **Farnaz Asayesh**, Jesse Greener, Department of Chemistry, Laval University, Quebec, QC

16:40 **(I037)** A COMBINED OPTICAL MICROSCOPY AND INFRARED SPECTRAL MICROSCOPY APPROACH FOR *IN-SITU* STUDYING OF BIOFILMS. **Mohammad Pousti**, Jesse Greener, Department of Chemistry, Laval University, Quebec, QC

17:00 End of session

17:00-18:00 Student poster session (authors present) - *Jonquière/Lauzon*

19:00-22:00 Complimentary boat tour (no meal included)

17:00-18:00 Student poster session (authors present) - *Jonquière/Lauzon*

(1007) IMPROVING THE ANALYTICAL PERFORMANCE OF ETV-ICPOES VIA A MIXED-GAS PLASMA. **Guilherme L. Scheffler**,^a Dirce Pozebon,^a and Diane Beauchemin^b.

^aInstituto de Química, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves, 9500, 91501-970 Porto Alegre, RS, Brazil. ^bDepartment of Chemistry, Queen's University, Kingston, Ontario K7L 3N6, Canada.

(1044) CLOUD POINT EXTRACTION OF PLUTONIUM IN FISH TISSUES COUPLED TO ALPHA SPECTROMETRY. **Alexa Leblanc** and Dominic Larivière, Radioecology laboratory, Chemistry Department, Laval University.

(1082) SINGLE PARTICLE ANALYSIS USING MIXED-GAS INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY, **Lucas Choma** and Diane Beauchemin, Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, ON K7L 3N6, Canada.

(1088) INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY WITH ON-LINE LEACHING TO ASSESS THE MAXIMUM BIO-ACCESSIBILITY OF TOXIC AND ESSENTIAL ELEMENTS IN NATURAL TOOTHBRUSH FROM SAUDI ARABIA. **Randa Althobiti** and Diane Beauchemin, Department of Chemistry, Queen's University, 90 Bader Lane, Kingston, Ontario K7L 3N6, Canada

(1094) ASSESSMENT OF NI-BASED ELECTRODE STABILITY IN ALKALINE FUEL CELLS THROUGH THE DEVELOPMENT OF ICP-MS METHODS FOR BASIC ELECTROLYTE SOLUTIONS. **Alexa Mainguy**, Nausheen Sadiq and, Diane Beauchemin* Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, ON K6L 3N6

(1092) PRE-CONCENTRATION OF NICKEL IN ALKALINE FUEL CELL ELECTROLYTE FOR ANALYSIS BY INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **Suhaylah Sequeira** and Diane Beauchemin, Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, ON K7L 3N6

(1075) NOVEL DESIGN OF INFRARED-HEATED INTEGRATED SAMPLE INTRODUCTION SYSTEM FOR IMPROVING ANALYTICAL PERFORMANCE OF INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **Ahmed Al Hejani** and Diane Beauchemin, Chemistry Department, Queen's University, Kingston, Ontario, Canada

(1095) SLURRY NEBULIZATION AND INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY WITH A MIXED-GAS PLASMA FOR THE ANALYSIS OF VEGETATION SAMPLES. **R. Teuma-Castelletti** and Diane Beauchemin, Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, ON K7L 3N6

19:00-22:00 Complimentary boat tour (no meal included)

THURSDAY, JUNE 22, MORNING

Speciation analysis – Wolfe/Montcalm

Organizers and co-Chairs: Nausheen Sadiq and Diane Beauchemin

- 9:00 **(I070)** TOWARDS UNDERSTANDING OF METHYLMERCURY TOXICITY, **Z. Gajdosechova**^{a,b}, M. M. Lawan^a, D. S. Urgast^a, A. Raab^a, K. G. Scheckel^c, E. Lombi^d, P. M. Kopittke^e, K. Loeschner^f, E. H. Larsen^f, G. Woods^g, A. Brownlow^h, F. L. Readⁱ, J. Feldmann^a, E. M. Krupp^a, ^aTESLA, University of Aberdeen, UK. ^bNRC, Ottawa, Canada ^cUS EPA, National Risk Management Research Laboratory, Cincinnati, USA. ^dFuture Industries Institute, University of South Australia, South Australia. ^eSchool Agriculture and Food Sciences, The University of Queensland, Australia. ^fNational Food Institute, Technical University of Denmark, Denmark. ^gAgilent Technologies UK. ^hSAC Wildlife Unit, UK. ⁱOceanlab, University of Aberdeen, UK
- 9:40 **(I071)** TRACE METAL SPECIATION IN A MULTIVITAMIN CANDIDATE REFERENCE MATERIAL. **Kelly LeBlanc**, Lucia D'Ulivo, Kenny Nadeau, Indumathi Pihillagawa Gedara, Lu Yang, Zoltan Mester. National Research Council of Canada.
- 10:00 Coffee break - *Foyer*
- 10:40 **(I014)** METAL SPECIATION IN NATURAL WATERS USING HIGH RESOLUTION MASS SPECTROMETRY. **C. Guéguen**, T. Nguyen Quoc, V. Mangal. Trent University, Peterborough, ON.
- 11:20 **(I072)** OVERCOMING CHALLENGES OF Hg SPECIES QUANTIFICATION IN PETROLEUM HYDROCARBONS. **Z. Gajdosechova**^{a,b}, M. S. Boskamp^a, F. Lopez-Linares^c, J. Feldmann^a, E. M. Krupp^a. ^aTESLA, University of Aberdeen, UK, ^bNRC, Ottawa, Canada, ^cChevron Energy Technology Company, USA
- 11:40 **(I091)** SPECIATION ANALYSIS OF NICKEL IN ALKALINE FUEL CELL ELECTROLYTE BY ION CHROMATOGRAPHY COUPLED TO INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Nausheen Sadiq**, Sadaf Tahmasebi, Gregory Jerkiewicz and Diane Beauchemin, Department of Chemistry, Queen's University, 90 Bader Lane, Kingston, Ontario K7L 3N6, Canada
- 12:00 Lunch – *Foyer* & CSASS Annual General Meeting – *Wolfe/Montcalm*

Microfluidics I – *Crémazie/Garneau*

Organizer and Chair: Jesse Greener

- 9:00 **(1060)** HIGHLY-MINIATURIZED AND LOW POWER POTENTIOSTAT FOR ON-CHIP ELECTROCHEMICAL SENSING. ¹Jessy Mathault, ^{1,2} Samuel Morneau-Gamache, ¹Elnaz Ghodsevali, ¹Hamza Landari, ³Mounir Boukadoum, ²Élodie Boisselier, ¹**Amine Miled**, ¹LABioTRON Bioeng. Research Laboratory, ECE Dept. Université Laval, Québec, QC.
- 9:40 **(1012)** REAL-TIME IMAGING OF pH VARIATIONS IN MICROCHANNELS USING FLUORESCENT NANOPARTICLES. **Jérémie Asselin**, Mazeyar P. Gashti, Denis Boudreau, Jesse Greener. Université Laval.
- 10:00 Coffee break - *Foyer*
- 10:40 **(1025)** HYDRODYNAMIC EFFECTS ON BIOFILM AT THE BIOINTERFACE USING A MICROFLUIDIC ELECTROCHEMICAL CELL: CASE STUDY OF PSEUDOMONAS SP. **Mirpouyan Zarabadi**¹, François Paquet-Mercier¹, Steve Charette², Jesse Greener¹, Département de chimie¹ and Département de biochimie, de microbiologie et de bio-informatique², Faculté des sciences et de génie, Université Laval, Québec, QC
- 11:00 **(1063)** SPINNING FLUIDS FOR POINT-OF-CARE DIAGNOSTICS. **Maurice Boissinot**, CHU de Québec-Université Laval
- 11:40 **(1023)** PHOTOTHERMAL MICROFLUIDIC CANTILEVER DEFLECTION SPECTROSCOPY REFLECTING CLUSTERING MECHANISM OF ETHANOL WATER MIXTURES. **M. S. Ghoraishi**, J. E. Hawk, T. Thundat, Chemical and Material Engineering Department, University of Alberta, Canada
- 12:00 Lunch - *Foyer* & CSASS Annual General Meeting – *Wolfe/Montcalm*

THURSDAY, JUNE 22, AFTERNOON

Forensic Applications – *Wolfe/Montcalm*

Organizers and co-Chairs: Lily Huang and Diane Beauchemin

- 13:40 **(1076)** TRACE ELEMENT AND ISOTOPE ANALYSES OF MICRO-SOLDERING LEAD-BASED METAL ASSOCIATED TO IMPROVISED EXPLOSIVE DEVICE (IED) BY ICP-MS, AND FORENSIC ASSOCIATION WITH ORIGIN. **Claude Dalpé** and Nigel G.R. Hearns. Royal Canadian Mounted Police, National Forensic Laboratory Services, Ottawa, Canada.
- 14:20 **(1002)** PAINT IDENTIFICATION USING VIBRATIONAL SPECTROSCOPY FROM MIR TO THz SPECTRAL RANGE. **Sergey Shilov**, Tom Tague, Pang Wang, Bruker Optics, 19 Fortune Dr., Billerica, MA, USA.
- 14:40 **(1042)** FORENSIC ANALYSIS OF AUTOMOTIVE PAINT CHIPS FOR VEHICLE MANUFACTURER, COLOUR AND YEAR OF PRODUCTION USING ELECTROTHERMAL VAPORIZATION COUPLED TO INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **L. Huang** and D. Beauchemin, Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, ON K6L 3N6

- 15:00 Coffee break - *Foyer*
- 15:40 **(I093)** FORENSIC ANALYSIS OF HUMAN NAIL FOR GENDER AND ETHNICITY USING ELECTROTHERMAL VAPORIZATION COUPLED TO INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. A. Schug and **D. Beauchemin**, Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, ON K6L 3N6
- 16:00 **(W2) COMPLIMENTARY WORKSHOP:** FORENSIC SCIENCE AND REVERSE ENGINEERING USING VIBRATIONAL SPECTROSCOPY. **Sergey Shilov**, Bruker Optics, USA
- 17:00 End of session
- 19:00-22:00 Dining cocktail (ticket required) - *Ballroom*

Microfluidics II – *Crémazie/Garneau*

Organizer and Chair: Jesse Greener

- 13:40 **(I028)** RELEASE OF MESOPOROUS SILICA PARTICLES BY FREE STANDING PH SENSITIVE MEMBRANES. **Nan Jia**,^a Erica Rosella,^a Estelle Juèrea,^b Freddy Kleitza,^b Jesse Greener^a, ^aDepartment of Chemistry and Centre de recherche sur les matériaux avancés (CERMA), Université Laval, Québec, Québec G1V 0A6, Canada, ^bInstitute of Inorganic Chemistry – Functional Materials, University of Vienna, Währinger Straße 42, 1090 Vienna, Austria.
- 14:00 **(I003)** A MULTILAYER FLOW MODEL FOR NON-INTRUSIVE BIOFILM VISCOSITY MEASUREMENTS. J. Greener,¹ M. Parvinzadeh Gashti,¹ A. Eslami,² M. P. Zarabadi,¹ and **S. M. Taghavi**² Departments of Chemistry¹ and Chemical Engineering², Université Laval, 1045 Ave. de la Médecine, Quebec, Quebec G1V 0A6
- 14:40 **(I038)** SPECTROSCOPIC IMAGING IN MICROCHANNELS FOR STUDIES OF BIOFILMS. **Mohammad Pousti**, Jesse Greener, Department of Chemistry, Laval University, Quebec, QC
- 15:00 Coffee break - *Foyer*
- 15:40 **(I030)** ELECTROCHEMICAL IMAGING FOR MICROFLUIDICS: A FULL-SYSTEM APPROACH. **Mehran Abbaszadeh Amirdehi**, Jesse Greener, Université Laval, Québec, QC
- 16:00 **(I034)** MICROFLUIDIC CO-FLOWS FOR A SELF-STANDING COLLAGEN MEMBRANE SYNTHESIS. **Erica Rosella**^a, Nan Jia^a, Diego Mantovani^b, Jesse Greener^a, ^aDept. of Chemistry, Laval University, Quebec city, QC, G1V 0A6, ^bLab. of Biomaterials and Bioengineering, CRC-I, Dept. of Min-Met--Materials Eng. & CHU Research Center, Laval University, Quebec
- 16:20 **(I096)** GONE BUT NOT FORGOTTEN: PATTERNING AND ENHANCED BIOFILM GROWTH BY TEMPORARILY WALL ADHERED BUBBLES IN MICROFLUIDIC FLOW CELLS. **Jesse Greener**, Department of Chemistry, Laval University.
- 17:00 End of session
- 19:00-22:00 Dining cocktail (ticket required) - *Ballroom*

FRIDAY, JUNE 23, MORNING

Environmental applications – Crémazie/Garneau

Organizers and co-Chairs: Tia Anderlini and Diane Beauchemin

- 8:40 **(1086)** NOVEL EXPERIMENTAL APPROACH FOR ATRAZINE-SOIL CHEMISTRY MODELS. **Marc Lamoureux**, Donald S. Gamble, and Hanan Malibari, Department of Chemistry, Saint Mary's University, Halifax, NS, B3H 3C3
- 9:20 **(1013)** IN SITU VIBRATIONAL SPECTROSCOPY FOR ENVIRONMENTAL APPLICATIONS RELATED TO ARSENIC REMOVAL TECHNOLOGIES. **Hind A. Al-Abadleh**. Department of Chemistry and Biochemistry, Wilfrid Laurier University, Waterloo, ON N2L 3C5
- 10:00 Coffee break - *Foyer*
- 10:40 **(1080)** FORMATION, UPTAKE AND METABOLISM OF SELENIUM SPECIES BY FRESHWATER ALGAE. **Dirk Wallschläger**, Kelly LeBlanc, Sarah D'Amario and Denina Simmons. Trent University, Peterborough, ON.
- 11:20 **(1004)** DIRECT ANALYSIS OF AIR FILTERS FOR TOXIC ELEMENTS SCREENING USING A MIXED-GAS PLASMA AND ETV-ICPOES. **Guilherme L. Scheffler**,^a Nausheen Sadiq,^b Dirce Pozebon,^a and Diane Beauchemin^b. ^aInstituto de Química, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves, 9500, 91501-970 Porto Alegre, RS, Brazil. ^bDepartment of Chemistry, Queen's University, Kingston, Ontario K7L 3N6, Canada.
- 11:40 **(1085)** INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY COUPLED TO A MULTI-MODE SAMPLE INTRODUCTION SYSTEM WITH AN INFRARED HEATED PRE-EVAPORATION TUBE FOR THE ANALYSIS OF WASTE WATERS. **Tia Anderlini** and Diane Beauchemin, Queen's University, Department of Chemistry, 90 Bader Lane, Kingston, Ontario K7L 3N6, Canada
- 12:00 End of the 61st ICASS