

CSASS présente/presents:



et/and

**63rd International
Conference on
Analytical Sciences
and Spectroscopy**



**Programme final et livre de résumés
Final Program and Book of Abstracts**

June 25-28 juin, 2019



Montreal Aeroport Marriott In-Terminal Hotel, Canada
Hôtel Marriott dans l'aéroport de Montréal, Canada

COUP D'OEIL SUR LE PROGRAMME/ PROGRAM AT A GLANCE

(nom de salle entre parenthèses/ room name in parentheses)

Spectr'Atom / ICASS

Heure Time	Mardi/Tuesday June 25 juin	Mercredi Wednesday	Jeudi/Thursday June 27 juin	Vendredi/Friday June 28 juin
07:30-08:40 or 9:00	Déjeuner Breakfast (<i>Opal 3-6</i>)	Déjeuner Breakfast (<i>Opal 3-6</i>)	Déjeuner Breakfast (<i>Opal 3-6</i>)	Déjeuner Breakfast (<i>Opal 3&4</i>)
Matinée	Etat de l'art et perspectives (<i>Topaze 1</i>)	Préparation d'échantillons et applications (<i>Topaze 1</i>)	Analyse directe de solides (<i>Topaze 1</i>)	Analyse de nanoparticules (<i>Topaze 1</i>)
Morning	LA-ICPMS course (<i>Topaz 2</i>)	Plenary session for Gerhard Herzberg award, ThermoFisher Scientific Spectroscopy award and Burgener Research Graduate Student Travel award presentations (<i>Opal 1&2</i>)	Advanced materials in diagnostics & therapeutics I (<i>Topaz 2</i>)	Electrochemical sensing & analysis I (<i>Opal 5</i>)
	Risk Assessments on Nanomaterials course (<i>Topaz 3</i>)		Agricultural & food safety I (<i>Topaz 3</i>)	Sample introduction for the ICP I (<i>Opal 6</i>)
			Innovations from Manufacturers (<i>Opal 1</i>)	Speciation analysis II (<i>Opal 1</i>)
			Separations & MS II (<i>Opal 2</i>)	Separations & MS IV (<i>Opal 2</i>)
12:00-13:40 or 14:00	Dîner, exposition et affiches Spectr'Atom (<i>Opal 3-6</i>)	Dîner, exposition et affiches (ICASS) Lunch, exhibition and ICASS posters (<i>Opal 3-6</i>)	Dîner / Lunch, CSASS AGM (<i>Opal 3-6</i>)	Clôture de Spectr'Atom 2019 Dîner/ Lunch (<i>Opal 3&4</i>)
Après-midi	Analyse environnementale et isotopique (<i>Topaze 1</i>)	Solutions proposées par les constructeurs (<i>Topaze 1</i>)	Après-midi libre	
Afternoon	Risk Assessments on Nanomaterials course (continued) (<i>Topaz 2</i>)	Industrial applications (<i>Topaz 2</i>)	Advanced materials in diagnostics & therapeutics II (<i>Topaz 2</i>)	Electrochemical sensing & analysis II (<i>Opal 5</i>)
	LA-ICPMS course (continued) (<i>Topaz 3</i>)	Separations & mass spectrometry I (<i>Opal 2</i>)	Separations & MS III (<i>Opal 2</i>)	Environmental analysis (<i>Opal 2</i>)
	Set up of exhibition booths (<i>Opal 3-6</i>)	Speciation analysis I (<i>Opal 1</i>)	Nanomaterials and their analysis (<i>Opal 1</i>)	Agricultural & food safety II (<i>Opal 1</i>)
			Henry Longerich Symposium (<i>Topaz 3</i>)	Sample introduction for the ICP II (<i>Opal 6</i>)
			Take down of exhibition	Forensic & archeological applications (<i>Topaz 1</i>)
17:00-19:00 (<i>Opal 3-6</i>)	Session d'affiches (auteurs présents)	Poster session (authors present)		End of ICASS
	Ouverture de l'exposition (portes ouvertes), réception / Exhibition opening (open house), reception	Exposition (portes ouvertes) / Exhibition (open house)		
18:00-21:00			Banquet (<i>Opal 3</i>)	

Spectr'Atom 2019

Programme

(numéros de résumés entre parenthèses)

MARDI 25 JUIN

7:30-8:50 Déjeuner (inclus) – *Opale 3-6*

ÉTAT DE L'ART ET PERSPECTIVES DE LA SPECTROMÉTRIE ATOMIQUE – *Topaze 1*

Présidente: Diane Beauchemin (Queen's Université)

08:50 Accueil

09:00 (S14) ÉTAT DE L'ART DE LA TECHNIQUE SP-ICP-MS POUR LA MESURE DE NANOPARTICULES INORGANIQUES: AVANTAGES, LIMITES ET AMÉLIORATIONS. **Madjid Hadioui**, Genviève Knapp, Laurie Frechette-Viens et Kevin J. Wilkinson, Département de Chimie, Université de Montréal, QC, Canada.

09:30 (S29) ALATA: UN CONCEPT APPLICABLE EN SPECTROMÉTRIE ATOMIQUE? **Dominic Larivière**, Département de chimie, Université Laval, Québec, QC, Canada.

10:00 Pause-café – *Opale 3-6*

10:40 (S30) POSSIBILITÉS ET LIMITES DE LA SPECTROSCOPIE ATOMIQUE POUR DÉTERMINER LA SPÉCIATION CHIMIQUE DES MÉTAUX DANS DES ÉCHANTILLONS ENVIRONNEMENTAUX, **Marc Lamoureux**, Saint Mary's University, Department of Chemistry, Halifax, NS, Canada

11:10 (S31) USAGES ET MÉSUSAGES DE L'INJECTION EN FLUX CONTINU POUR L'INTRODUCTION D'ÉCHANTILLONS EN SPECTROMÉTRIE DE MASSE À PLASMA INDUCTIF. **Diane Beauchemin**, Queen's University, département de chimie, Kingston, ON, Canada.

11:40 Table ronde

12:00 Dîner (inclus) – *Opale 3-6*

ANALYSES ENVIRONNEMENTALES ET ISOTOPIQUES – *Topaze 1*

Président: Dominic Larivière (Université Laval)

14:00 (S02) APPORT DE LA SPECTROMÉTRIE DE MASSE DANS LE CADRE DE L'ÉVOLUTION DU CONTEXTE ET DES OBJECTIFS ASSOCIÉS À LA CARACTÉRISATION RADIOLOGIQUE DE L'ENVIRONNEMENT. **Fabrice Leprieur**, Azza Habibi, Céline Augeray, Marine Verlinde. Institut de radioprotection et de sûreté nucléaire (IRSN), Laboratoire d'expertise, de radiochimie et de chimie analytique, Le Vésinet Cedex – France.

14:30 (S09) DÉTERMINATION RAPIDE PAR SPECTROMÉTRIE DE MASSE DU PLOMB-210 À L'ÉTAT D'ULTRA-TRACE: ÉTUDE COMPARATIVE ENTRE TECHNIQUES D'EXTRACTION ET DE PRÉ-CONCENTRATION. **Guillaume**

Blanchet-Chouinard, Kamesh Viswanathan Baskaran, Dominic Larivière,
Laboratoire de radioécologie, département de chimie, Université Laval, Québec, QC,
Canada.

14:50 (S07) LE DÉPISTAGE DE LA RADIOACTIVITÉ PAR SPECTROMÉTRIES
GAMMA, ALPHA ET DE MASSE DANS LES RÉSIDUS MINIERES. **Claire
Dalencourt**, Dominic Larivière, Département de Chimie, Université Laval, Québec,
QC, Canada.

15:10 Pause-café et affiches – *Opale 3-6*

15:50 (S06) UTILISATION DE LA SPECTROMÉTRIE DE FLUORESCENCE DES
RAYONS X PORTABLE POUR L'ANALYSE RAPIDE DE LA COMPOSITION
MULTI-ÉLÉMENTAIRE DE FEUILLES DE VIGNE IN-SITU. P. Soulé, **T. Prunet**,
F. de Raemaeker, M. Peypelut, H. Roussarie, G. Daugey, T. Dalix, P. Masson.
USRAVE, Centre de Recherches INRA de Bordeaux, Villenave d'Ornon cedex,
France.

16:10 (S18) DESTIN INTRACELLULAIRE ET MÉCANISMES DE GESTION DU
CUIVRE CHEZ LA MICROALGUE VERTE *CHLAMYDOMONAS REINHARDTII*.
E. Kochoni, I. Aharchaou, M. Rosabal, C. Fortin. INRS, Centre Eau Terre
Environnement, Québec, QC, Canada.

16:30 Table ronde

17:00 Session d'affiches – *Opale 3-6*

17:00-19:00 SESSION D'AFFICHES (auteurs présents) et ouverture de l'exposition (portes
ouvertes) – *Opale 3-6*

#Panneau Présentation

1 (S20) DÉVELOPPEMENT D'UNE MÉTHODE POUR LA DÉTERMINATION DE
SOUFRE ET AUTRES ÉLÉMENTS DANS DES OS D'OISEAUX PAR L'ETV-
ICPOES. **Margaret MacConnachie**, Diane Beauchemin. Queen's University,
département de chimie, Kingston, ON, Canada.

2 (S21) MSFA SP-ICPMS POUR L'ANALYSE DES NANOPARTICULES
MÉTALLIQUES. **Andrew Williams**, Diane Beauchemin. Queen's University,
département de chimie, Kingston, ON, Canada.

3 (S28) BIOACCESSIBILITÉ DU CHROME HEXAVALENT ISSU DE MINÉRAI DE
CHROMITE ET DES SOLS DU CERCLE DE FEU (NORD DE L'ONTARIO,
CANADA). **Amanda Mills**, Louise Meunier, Université Queen's, Kingston, ON,
Canada.

MERCREDI 26 JUIN

7:30-9:00 Déjeuner (inclus) – *Opale 3-6*

PRÉPARATION D'ÉCHANTILLONS ET APPLICATIONS DIVERSES – *Topaze 1*

Présidente: Louise Meunier (Queen's University)

- 9:00 (S12) EXTRACTION LIQUIDE-LIQUIDE EN PHASE AÉROSOL POUR L'ANALYSE ÉLÉMENTAIRE. **José-Luis Todolí**, Raquel Sánchez, Salvador Maestre, Soledad Prats. Laboratoire de Chimie Analytique, Nutrition et Bromatologie, Université d'Alicante, Espagne.
- 9:30 (S07) ÉLABORATION D'UNE STRATÉGIE ANALYTIQUE DE DISSOLUTION DU PLOMB ET DU MERCURE DANS LES ALIMENTS PAR DISSOLUTION ULTRASON ALCALINE. **Audrey Laberge-Carignan**, Dominic Larivière, Laboratoire de radioécologie, département de chimie, Université Laval, Québec, QC, Canada.
- 9:50 (S08) DÉTECTION DU RADIUM DANS LE CUIVRE AU NIVEAU D'ULTRA TRACE PAR SPECTROMÉTRIE DE MASSE À PLASMA INDUCTIF SUITE À UNE CHROMATOGRAPHIE PRÉPARATIVE. **Mélodie Bonin**, Dominic Larivière. Département de chimie, Université Laval, Québec, QC, Canada.
- 10:10 Pause-café, exposition et affiches du 63e ICASS – *Opale 3-6*
- 10:50 (S16) ANALYSE DU CUIVRE ET DU FER DANS LES BIOPSIES HÉPATIQUES PAR ICP-MS/MS: SÉLECTION DE L'ÉTALON INTERNE EN MODE AMMONIAC AVEC CHANGEMENT DE MASSE. **Claudine Roussy**. Centre de toxicologie du Québec, Institut national de santé publique du Québec, Québec, QC, Canada.
- 11:10 (S13) EVOLUTION DE LA COMPOSITION ÉLÉMENTAIRE DURANT LA PRODUCTION DE VIN. **José-Luis Todolí**, Raquel Sánchez, Alexandra Bica. Department of Analytical Chemistry, Nutrition and Food Science, University of Alicante, Spain.
- 11:30 Table ronde
- 12:00 Dîner (inclus) – *Opale 3-6*
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SOLUTIONS PROPOSÉES PAR LES CONSTRUCTEURS – *Topaze 1*

Président: José-Luis Todolí (Université d'Alicante)

- 14:00 (S03) PRÉPARATION D'ÉCHANTILLONS PAR FUSION ALCALINE; GÉNÉRALITÉS ET CAS SPÉCIAUX. **B. Bouchard**. Katanax® inc., Québec, QC, Canada
- 14:20 (S23) *EASYPREP SAMPLE HANDLER* – UN CONCEPT D'AUTOMATISATION INNOVANT POUR PRÉPARER LES ÉCHANTILLONS POUR DIGESTION PAR ACIDES. **Rachid Choudar**. SCP SCIENCE, Baie D'Urfé, QC, Canada.
- 14:40 (S17) LA SPECIATION D'ÉLÉMENTS INORGANIQUES EST MAINTENANT POSSIBLE SANS UTILISATION D'UN COUPLAGE SPÉCIFIQUE, GRACE AU

- NOUVEL OUTIL D'ANALYSE EN LIGNE: PREPFAST IC. **Aurelien Viscardi**, Rashid Khokhar, C. Derrick Quarles. Elemental Scientific Inc. Omaha, NE, USA.
- 15:00 Pause-café, exposition et affiches du 63e ICASS – *Opale 3-6*
- 15:40 (S24) SURMONTER LES DEFIS ANALYTIQUES COMMUNS ET AMELIORER LA QUALITE DES DONNEES AVEC L'ICP-OES 5110 D'AGILENT. Wayne Blonski, Agilent Technologies Canada. Présenté par **Anne-Catherine Breton**.
- 16:00 (S25) QUOI DE NEUF CHEZ PERKINELMER: SINGLE CELL ICP-MS ET UN NOUVEAU SYSTEM DE SPÉCIATION NEXAR. **Chady Stephan**. PerkinElmer Canada
- 16:20 Table ronde
- 17:00-19:00 Exposition (portes ouvertes) et session d'affiches du 63^e ICASS. – *Opale 3-6*

JEUDI 27 JUIN

7:30-9:00 Déjeuner (inclus) – *Opale 3-6*

ANALYSE DIRECTE DE SOLIDES – *Topaze 1*

Président: Marc Lamoureux (Saint Mary's University)

- 09:00 (S19) LASER-INDUCED BREAKDOWN SPECTROSCOPY (LIBS): DE L'IMAGERIE MULTI-ÉLÉMENTAIRE À LA TOMOGRAPHIE: **F.R. Doucet**¹, L.Ç. Özcan¹, K. Rifai^{1,2}, F. Gervais², F. Vidal³. ¹ELEMISSION inc., Montréal, QC, Canada; ²École Polytechnique de Montréal, Montreal, QC, Canada; ³INRS University, Dept. of Plasma diagnostics, Varennes, QC, Canada.
- 09:30 (S26) QUANTIFICATION DES MINÉRAUX PAR SPECTROSCOPIE LASER PLASMA. **Francis Vanier**,¹ Elton Soares de Lima Filho,¹ Josette El Haddad,¹ Aïssa Harhira¹, Christian Padioleau,¹ Mohamad Sabsabi,¹ Alain Blouin,¹ Greg Wilkie². ¹Energy, Mining and Environment Research Centre, National Research Council Canada, Boucherville, Canada; ²CRC-ORE, Pinjarra Hills, QLD 4069, Australia.
- 09:50 (S22) EXACTITUDE DE LA VAPORIZATION ÉLECTROTHERMIQUE COUPLÉE À LA SPECTROMÉTRIE D'ÉMISSION ATOMIQUE À PLASMA INDUCTIF POUR DÉTERMINER LE SEXE À PARTIR D'UN FRAGMENT DE CHEVEU. Mickey Chen, **Diane Beauchemin**. Université Queen's, département de chimie, Kingston, ON, Canada.
- 10:10 Pause-café et exposition – *Opale 3-6*
- 10:50 (S04) LOCALISATION ET QUANTIFICATION DE L'URANIUM DANS LES STRUCTURES RENALES DE RONGEURS EXPOSES AU NITRATE D'URANYLE PAR LA TECHNIQUE LA-ICP-MS. N. Grijalba, A. Legrand, **V. Holler**, C. Bouvier-Capely. Institut de Radioprotection et de Sûreté Nucléaire, PSE-SANTE/SESANE/LRSI, Fontenay-aux-Roses Cedex, France.
- 11:10 (S05) DEVELOPPEMENT D'UNE TECHNIQUE DE CALIBRATION POUR L'IMAGERIE QUANTITATIVE D'ECHANTILLONS BIOLOGIQUES PAR ABLATION AU LASER COMPATIBLE AVEC L'ANALYSE SIMS: APPLICATION A LA LOCALISATION DE L'URANIUM DANS LE TISSU RENAL. **A. Legrand**, N. Grijalba, D. Suhard, V. Holler, C. Bouvier-Capely. Institut

de Radioprotection et de Sûreté Nucléaire, PSE-SANTE/SESANE/LRSI, Fontenay-aux-Roses Cedex, France.

11:30 Table ronde

12:00 Dîner (inclus), réunion annuelle de CSASS et exposition (qui se termine à 14:00) – *Opale 3-6*

Après-midi libre.

18:00-21:00 Banquet (billet requis) incluant la remise de prix pour les affiches et une heure de bar ouvert. – *Opal 3*

VENDREDI 28 JUIN

7:30-9:00 Déjeuner (inclus) – *Opale 3-6*

ANALYSE DE NANOPARTICULES – *Topaze 1*

Président: Kevin Wilkinson (Université de Montréal)

9:00 (S10) TOXICITÉ DES NANOPARTICULES MÉTALLIQUES DANS L'ENVIRONNEMENT - SINGLE PARTICLE ET SINGLE CELL ICP-MS: DEUX TECHNOLOGIES INDISPENSABLES. **Chady Stephan**, PerkinElmer, Canada.

9:30 (S15) AMÉLIORATIONS SUR L'ANALYSE DES NANOPARTICULES DE DIOXYDES DE CÉRIUM PAR SP-ICPMS: DÉTECTION ET CARACTÉRISATION DANS UN ÉCHANTILLON ENVIRONNEMENTAL ET UN PRODUIT COMMERCIAL. **Ibrahim Jreije**, Madjid Hadioui, Kevin J. Wilkinson. Département de chimie, Université de Montréal, Québec, Canada.

9:50 (S01) ÉVALUATION DE L'EXPOSITION À LONG TERME AUX PARTICULES ET VAPEURS DE MERCURE ISSUES DES PROCÉDURES DE RESTAURATION DES AMALGAMES DENTAIREES. Adelle Leonard, **Louise Meunier**, Département de génie chimique, Université Queen's, Kingston, ON, Canada

10:10 Pause-café – *Opale 3&4*

10:50 (S27) ANALYSE DE NANOPARTICULES DE NICKEL PAR SPECTROMÉTRIE DE MASSE À PLASMA INDUCTIF AVEC ET SANS INJECTION EN FLUX CONTINU. Ram P. Lamsal¹, Mohamed Seif Eddine Houache², Elena Baranova², Gregory Jerkiewicz¹, **Diane Beauchemin**¹. ¹ Université Queen's, département de chimie, Kingston, ON, Canada; ² Université d'Ottawa, Département de génie chimique et biologique, Ottawa, ON, Canada.

11:10 Table ronde

11:45 Clôture de Spectr'Atom 2019

12:00 Dîner (inclus) – *Opale 3&4*

Le 63e ICASS (inclus dans l'inscription à Spectr'Atom 2019) se poursuit jusqu'à 17:00.

63rd ICASS

Program

(Abstract number in parentheses)

TUESDAY, 25 JUNE

08:00-17:00 Pre-ICASS courses

Breakfast (08:00-9:00), lunch (12:00-13:30) & coffee breaks (10:00-10:30 and 15:00-15:30)
included in course fee – *Opal 3-6*

- Laser Ablation Inductively Coupled Plasma Mass Spectrometry, by Henry Longerich (Memorial University of Newfoundland, Canada) – *Topaz 2*
- Risk Assessments on Nanomaterials, by Petra Krystek (Vrije Universiteit, The Netherlands) – *Topaz 3*

17:00-19:00 Opening of the exhibition (open house) with reception and Spectr'Atom posters –
Opal 3-6

WEDNESDAY, 26 JUNE, MORNING

7:30-9:00 Breakfast (included) – *Opal 3-6*

Plenary Award Session - *Opal 1&2*

Chair: Diane Beauchemin

09:00 Welcome and logistics

09:15 **Gerhard Herzberg Award Presentation.**

(I131) RECENT DEVELOPMENTS IN QUANTITATIVE CHIRALITY ANALYSIS.
Yunjie Xu, Department of Chemistry, University of Alberta, Edmonton, AB, Canada.

10:00 Refreshment break, exhibition and posters – *Opal 3-6*

10:40 **ThermoFisher Spectroscopy Award Presentation.**

(I126) ATOMICALLY PRECISE CLUSTERS: EXCITED STATE PROPERTIES
AND GIANT TWO-PHOTON ABSORBANCE. **Kevin Stamplecoskie**, Queen's
University, Kingston, ON, Canada.

11:25 **Burgener Research Graduate Student Travel Award Presentation.**

(I064) DEVELOPING THE CONTINUOUS ON-LINE LEACHING METHOD FOR
USE IN BIOACCESSIBILITY RISK ASSESSMENTS OF CONTAMINATED SOILS
WITH INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Alastair
Kierulf**¹, Iris Koch², Diane Beauchemin¹. ¹Queen's University, Department of
Chemistry and ²Royal Military College of Canada, Kingston, ON, Canada.

12:00 Lunch (included) – *Opal 3-6*

WEDNESDAY, 26 JUNE, AFTERNOON

Industrial Applications – Topaz 2

Organizer and Chair: Robert Teuma-Castelletti

- 13:40 (I054) ANALYSIS OF ALLERGY MEDICATIONS USING ICP-OES FOLLOWING USP 232/233 GUIDELINES WITH SOFTWARE DESIGNED TO AID IN 21 CFR PART 11 COMPLIANCE. Aaron Hineman, Ken Neubauer, **Andrew Rams**. PerkinElmer, 501 Rowntree Dairy Rd, Woodbridge, ON, Canada.
- 14:00 (I073) SHOULD WE BOTHER WITH SPECIATION IN THE GAS AND OIL INDUSTRY? D. Ruhland, K. Nwoko, M. Mueller, Eva M. Krupp, **Joerg Feldmann**. TESLA (Trace Element Speciation Laboratory), University of Aberdeen, Meston Walk, Aberdeen, Scotland, UK.
- 14:40 (I026) ACCURATE QUANTITATION OF INORGANIC CHLORIDE IN PETROLEUM HYDROCARBONS COULD NOT GET ANY EASIER. **Zuzana Gajdosechova**, Zoltan Mester, Enea Pagliano. National Research Council of Canada, Ottawa, ON, Canada.
- 15:00 Coffee break, exhibition and posters – *Opal 3-6*
- 15:40 (I076) ELEMENTAL ANALYSIS USING PLASMA TECHNIQUES IN THE PETROLEUM INDUSTRY: A CLOSE LOOK. **Francisco Lopez-Linares**¹, Laura Poirier¹, Jenny Nelson². ¹Chevron Energy Technology Company, Richmond, CA, USA; ²Agilent Technologies, Inc., Santa Clara, CA, USA.
- 16:20 (I079) FIELD FLOW FRACTIONATION: A TECHNIQUE BUILT TO HANDLE THE DIVERSE CHALLENGES OF INDUSTRIAL ANALYTICAL APPLICATIONS. **Robert Reed**, Soheyl Tadjiki. Postnova Analytics, Inc. Salt Lake City, UT, USA.
- 17:00-19:00 Poster session (authors present) & exhibition open house – *Opal 3-6*
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Separations & Mass Spectrometry I – Opal 2

Organiser: Kingsley Donkor

Chair: Karen Waldron

- 14:00 (I014) LC-HRMS FOR BIOMONITORING OF MYCOTOXINS IN HUMAN PLASMA. Irina Slobodchikova, Cian S. Monnin, Samiur Rahman, Reajean Sivakumar **Dajana Vuckovic**. Concordia University, Montréal, QC, Canada.
- 14:20 (I021) INVESTIGATION OF NONCOVALENT MOLECULAR INTERACTIONS BY AFFINITY CAPILLARY ELECTROPHORESIS WITH UV-ABSORPTION AND MASS SPECTROMETRY DETECTION. **Vaclav Kasička**, Renata Konasova, Martin Ruzicka, Dusan Koval, Lukas Severa, Paul Reyes-Guiterrez, Filip Tepy. Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences, Flemingovo 2, 166 10 Prague 6, Czechia.
- 15:00 Coffee break, exhibition and posters – *Opal 3-6*
- 15:40 (I041) ELECTROOSMOTIC FLOW MODIFICATION THROUGH DIRECT FLUORINATION OF THE CAPILLARY SURFACE. **Christopher R. Harrison**,

Sangho Davie Yun, and Kai Nguyen. San Diego State University, San Diego, CA, USA.

16:00 (I030) DETECTING OPIOIDS AND THEIR METABOLITES IN WASTEWATER. **Madison Pursell** and Alison E. Holliday. Moravian College, Department of Chemistry, 1200 Main Street, Bethlehem, PA, USA.

16:20 (I043) ANALYTICAL PROTEOMICS FOR BIOMARKER DISCOVERY AND DEVELOPMENT. **Andrei P. Drabovich**, Department of Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada.

16:40 (I039) APPLICATIONS OF MALDI-TOF IMAGING MASS SPECTROMETRY FOR LIPIDOMIC STUDIES. **Ethan Yang** and Pierre Chaurand. Department of Chemistry, Université de Montréal, Montréal, QC, Canada.

17:00-19:00 Poster session (authors present) & exhibition open house with reception – *Opal 3-6*

Speciation Analysis I – Opal 1

Organizer and Chair: Randa Althobiti

14:00 (I067) SELENIUM SPECIATION ANALYSIS – THE IMPORTANCE OF SENSITIVE AND ROBUST MEASUREMENT TECHNIQUES. **Kelly L. LeBlanc**, Enea Pagliano, Zoltán Mester. National Research Council of Canada, Ottawa, ON, Canada.

14:40 (I063) HIGH THROUGHPUT IN SPECIATION MONITORING. **Eve Kroukamp**, Helmut Ernstberger, Simone Korstian. PerkinElmer Inc., Shelton, CT, USA.

15:00 Refreshment break, exhibition and posters – *Opal 3-6*

15:40 (I072) SPECIATION AND NANOPARTICLE ANALYSIS SOLVE MYSTERY IN BIOGEOCHEMISTRY. N. Laitip¹, N.L.A. Jamari², Z. Gajdosechova^{1,2}, Eva M. Krupp¹, **Joerg Feldmann**¹. ¹TESLA (Trace Element Speciation Laboratory), University of Aberdeen, Meston Walk, Aberdeen, Scotland, UK; ² National Research Council Canada, Ottawa, ON, Canada.

16:00 (I001) HEXAVALENT CHROMIUM BIOACCESSIBILITY FROM CHROMITE ORE TAILINGS AND SOILS IN THE RING OF FIRE REGION (NORTHERN ONTARIO, CANADA). Amanda Mills, **Louise Meunier**. Queen's University, Department of Chemical Engineering, Kingston, ON, Canada.

16:40 (I081) TOTAL METALS AND SPECIATION ANALYSIS USING AN AUTOMATED, SINGLE PLATFORM SAMPLE INTRODUCTION SYSTEM COMBINED WITH ICP-MS. **C. Derrick Quarles Jr.** Elemental Scientific, Omaha, NE, USA.

17:00-19:00 Poster session (authors present) & exhibition open house with reception – *Opal 3-6*

Poster session (17:00-19:00) – Opal 3-6

Board # Poster

- 1 (I104) DEVELOPMENT OF A METHOD FOR THE DETECTION OF FLUORINE IN PHARMACEUTICAL PRODUCTS USING ETV-ICPOES. **Patricia Maung**, Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 2 (I103) FERROFLUIDS BASED PRECONCENTRATION AND ULTRA RACE DETERMINATION OF THE PLATINUM GROUP ELEMENTS AND GOLD FOLLOWED BY INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Yam Gotame**, Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 3 (I106) LEAD ISOTOPE RATIO MEASUREMENTS BY INDUCTIVELY COUPLED PLASMA QUADRUPOLE MASS SPECTROMETRY TO IDENTIFY THE SOURCE OF BIO-ACCESSIBLE LEAD IN ENVIRONMENTAL SAMPLES FROM SAUDI ARABIA. **Randa Althobiti**, Diane Beauchemin, Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 4 (I007) SYNTHESIS AND CHARACTERISATION OF A NOVEL GRAPHENE WOOL SAMPLER FOR ORGANIC AIR POLLUTANTS. **Genna-Leigh Schoonraad**^{1,2}, Jack Madito³ and Yvonne Wojno¹, Patricia Forbes¹. ¹Department of Chemistry, University of Pretoria, South Africa. ²Impala Platinum Ltd, Processing Laboratory, Rustenburg, South Africa. ³Department of Physics, University of Pretoria, South Africa.
- 5 (I023) FACTORS INFLUENCING THE INTERACTIONS OF PESTICIDES WITH SOILS. **Heather A. Gamble**¹, Donald S. Gamble², Mitesh Patel¹. ¹PerkinElmer Canada, Woodbridge, ON, ²St. Mary's University Department of Chemistry, Halifax, NS.
- 6 (I057) TUNING THE MOBILE PHASE AND SAMPLE MATRIX COMPOSITION TO IMPROVE THE SEPARATION OF AMINE COMPOUNDS BY HYDROPHILIC INTERACTION CHROMATOGRAPHY (HILIC)-MS. **Zari Saadati Nehzad**, Thanh Ngan Thang, Marie-Pier Ouellet, Alexandra Furtos and Karen C. Waldron. Département de chimie, Université de Montréal, Montréal QC, Canada.
- 7 (I070) AEROSOL PHASE EXTRACTION METHOD FOR THE SIMULTANEOUS DETERMINATION OF METALS AND POLYPHENOLS IN EXTRA VIRGIN OLIVE OIL. **José-Luis Todolí**, Raquel Sánchez, Soledad Prats, Carolina Mirón. Department of Analytical Chemistry, Nutrition and Food Science, University of Alicante, Spain.
- 8 (I114) ASSESSMENT OF METAL CONTENT IN SERUM OF DYALIZED PATIENTS. **José-Luis Todolí**,¹ Sara Valderrama,² Carlos del Pozo,² Ricardo Molina². ¹Department of Analytical Chemistry, Nutrition and Food Science, University of Alicante, Spain; ²Hospital Virgen de los Lirios, Alcoy, Spain.
- 9 (I087) CHARACTERIZATION OF ARSENIC SPECIES IN APPLE JUICES. **Eve Kroukamp**, Helmut Ernstberger, Kenneth Neubauer. PerkinElmer Inc., 710 Bridgeport Ave, Shelton, CT, USA.

- 10** (I117) NOVEL DATA PROCESSING WITH FLOW INJECTION FOR ACCURATE DETERMINATION OF ANALYTES THAT NORMALLY CAUSE DETECTOR SATURATION IN INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Amir Bunyat-zada**, Robert J. Teuma-Castelletti and Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 11** (I118) USE OF A MIXED ARGON-HYDROGEN CARRIER GAS FOR THE ANALYSIS OF NICKEL MATERIALS BY ELECTROTHERMAL VAPORIZATION COUPLED TO INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **Kristen Harrington**, Ahmed Al Hejami, and Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 12** (I119) SAMPLE INTRODUCTION STRATEGY FOR THE ACCURATE MEASUREMENT OF TRACE METALS IN 2 TO 6 M KOH WITHOUT DEGRADING SENSITIVITY IN INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Marko Xidos** and Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 13** (I123) GC-MS AND HPLC ANALYSIS OF SPME WATER EXTRACTS. **Jade Powers** and Alison E. Holliday, Moravian College, Department of Chemistry, Bethlehem, PA, USA.
- 14** (I124) ANALYSIS OF PEPTIDE INTERACTIONS USING CAPILLARY ELECTROPHORESIS. **Allyson Kovach** and Alison E. Holliday. Moravian College, Department of Chemistry, Bethlehem, PA, USA
- 15** (I012) PLATINUM DETERMINATION IN BIOLOGICAL CELLS VIA ELECTROTHERMAL VAPORIZATION COUPLED TO INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **Calvin Palmer**, Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 16** (I042) RP-HPLC METHOD FOR SIMULTANEOUS DETERMINATION OF SOFOSBUVIR AND DACLATASVIR DIHYDROCHLORIDE IN SOLID DOSAGE FORM. **Paresh U. Patel**¹, Khushbu S. Bhavsar². ¹Shree S. K. Patel College of Pharmaceutical Education and Research, Ganpat University, Ganpat Vidyanagar, Mehsana, Gujarat, India; ² IPQA, Biotech Visioncare Pvt. Ltd., Kalol, Gujarat, India
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THURSDAY, 27 JUNE, MORNING

7:30-8:40 Breakfast (included) – *Opal 3-6*

Advanced Materials in Diagnostics and Therapeutics I – Topaz 2

Organizer and Chair: Sahar S. Mahshid

- 9:00 (I088) ELECTROCHEMICAL DNA-BASED SENSORS FOR MOLECULAR DETECTION IN A DROP OF BLOOD. **Alexis Vallée-Bélisle**. Université de Montréal, Département de biochimie et médecine moléculaire, Montréal, QC, Canada.
- 9:40 (I116) INTEGRATED GRAPHENE/3D GOLD NANOSTRUCTURES FOR ELECTROCHEMICAL SENSING OF DOPAMINE. **Mahsa Jalali**, Elizabeth Filine,

Samantha Dalfen, Sara Mahshid. McGill University, Department of Bioengineering, Montreal, QC, Canada.

10:00 Refreshment break and exhibition – *Opal 3-6*

10:40 (I121) NANO-SURFACE FLUIDIC DEVICES BASED ON 2D AND 3D NANOSTRUCTURES FOR BIOSENSING APPLICATIONS. **Sara Mahshid**, McGill University, Montreal, QC, Canada.

11:20 (I019) BIOCONJUGATE APPROACHES TO MONOCLONAL ANTIBODY MANUFACTURING. P. Anees¹, Y. Zhao¹, H. Soleymani¹, Y. Gong², A. A. Greschner¹, N. Drossis³, T. R. Congdon¹, A. Niederquell⁴, M. Kuentz⁴, J.-C. Leroux², H. W. de Haan³, N. Cottenye⁵, **M. A. Gauthier**¹. ¹ Institut National de la Recherche Scientifique (INRS), EMT Research Center, Canada, ² ETH Zurich, Department of Chemistry and Applied Biosciences, Switzerland, ³ University of Ontario Institute of Technology (UOIT), Canada, ⁴ University of Applied Sciences Northwestern Switzerland, Switzerland, ⁵ BioAstra Technologies Inc., Canada.

12:00 Lunch (included), exhibition (end of exhibition at 14:00) and CSASS AGM – *Opal 3-6*

Agricultural and Food Safety I – Topaz 3

Organizer and Chair: Alastair Kierulf

9:00 (I044) SPECIATION ANALYSIS OF ARSENIC, SELENIUM, IODINE, AND BROMINE IN INFANT FORMULA, NUTRITIONAL PRODUCTS, AND RAW INGREDIENTS USING HPLC-ICP-MS. **Jennifer Nelson**¹⁻³, Lawrence Pacquette⁴, Courtney Tanabe²⁻³, Shuofei Dong¹, Michiko Yamanda¹, ¹Agilent Technologies, Inc., Santa Clara, CA, USA; ²Food Safety and Measurement Facility, University of California, Davis, Davis, CA, USA; ³Department of Viticulture and Enology, University of California, Davis, Davis, CA, USA; ⁴Abbott Nutrition, Columbus, OH, USA.

9:40 (I082) IMPROVING LABORATORY EFFICIENCY RELATED TO FOOD SAFETY USING STATE OF THE ART AUTOMATION. **C. Derrick Quarles Jr.**^{1,2} ¹Elemental Scientific, Inc., Omaha, NE, USA; ²Elemental Scientific Lasers, Bozeman, MT, USA.

10:00 Refreshment break and exhibition – *Opal 3-6*

10:40 (I098) TOOLS TO ENSURE SAFE FOOD ALSO IN THE FUTURE – ANALYTICAL METHODS, SURVEYS, BIOMONITORING AND COMMUNICATION; WITH EXAMPLES ON HEAVY METALS AND SPECIATION OF ARSENIC. **Barbro Kollander**. National Food Agency, Sweden.

11:20 (I096) SIMULTANEOUS DETERMINATION OF HYDRIDE AND NON-HYDRIDE ELEMENTS IN FISH SAMPLES USING THE AGILENT 5110 SVDV ICP-OES WITH THE MULTI-MODE SAMPLE INTRODUCTION SYSTEM (MSIS) ACCESSORY. Neli Drvodelic, Agilent Technologies, Melbourne, Australia. Presented by **Wayne Blonski**. Agilent Technologies, Winnipeg, MB, Canada.

11:40 (I069) DIRECT MULTIELEMENTAL ANALYSIS OF UNDILUTED WINE SAMPLES BY MEANS OF ICP-MS. **José-Luis Todolí**,¹ Raquel Sánchez,¹ Carlos Sánchez,¹ Francisco Ardini,² Claudia Cerutti² and Marco Grotti². ¹Department of

Analytical Chemistry, Nutrition and Food Science, University of Alicante, Spain.

²Department of Chemistry and Industrial Chemistry, University of Genoa, Italy.

12:00 Lunch (included) and CSASS AGM in the exhibition room (end of exhibition at 14:00) –
Opal 3-6

Innovations from Manufacturers/Vendors Showcase – Opal 1

Organizer: Diane Beauchemin

Chair: Petra Krystek

- 8:40 (I027) GC-MS/MS WITH A NOVEL SOFT IONIZATION PLASMA SOURCE: UNIQUE SOLUTION FOR A WIDE RANGE OF APPLICATIONS. **Mehrnaz Sarrafzadeh**, Reza Javahery, Chuck Jolliffe. PerkinElmer Inc., Woodbridge, ON, Canada.
- 9:00 (I033) DUAL MODE ELECTRON IMPACT ION SOURCE (DMEI™) WITH A REACTION CELL - NEW ADVANCES IN ION GENERATION FOR GC-MS/MS. **Harikrishnan Sukumar**, Heather Gamble, Anna Kornilova, Dante Sanchez, Victor Titov, Reza Javahery. PerkinElmer Inc., Woodbridge, ON, Canada.
- 9:20 (I110) USING A MARS 6 DIGESTION SYSTEM FOR PREPARATION OF CANNABIS SAMPLES. Sam Heckel, Tina Restivo, **Jessica Giles**, David Rings. CEM Corporation.
- 9:40 (I108) EVOLUTION OF OPEN VESSEL ACID DIGESTION FOR ICP ANALYSIS: FROM DIGIPREP TO DIGIPLATE. **John Dykeman**, SCP SCIENCE, Baie D'Urfé, QC, Canada.
- 10:00 Refreshment break and exhibition – *Opal 3-6*
- 10:20 (I084) SAMPLESENSE – THE LATEST INNOVATION IN SAMPLE AUTOMATION FROM ELEMENTAL SCIENTIFIC. **Andrew Toms**, Rashid Khokhar and C. Derrick Quarles. Elemental Scientific Inc., Omaha, NE, USA.
- 10:40 (I083) INNOVATIONS IN FIELD FLOW FRACTIONATION (FFF): THE NEW ELECTRIC-FLOW FFF, PLUS SIMULATING FLOW FFF AND CENTRIFUGAL FFF SEPARATIONS TO AID IN METHOD DEVELOPMENT. **Robert Reed**¹, Florian Meier², Roland Drexel², Soheyl Tadjiki¹, Thorsten Klein². ¹Postnova Analytics Inc., Salt Lake City, UT, Usa; ²Postnova Analytics GmbH, Landsberg, Germany.
- 11:00 (I109) HOW TO SOLVE THE “AXIAL-RADIAL” DILEMMA? Dirk Ardel, Wolfram Bohle, Olaf Schulz, **Meredith Daniel-Prowse**, Spectro Analytical Instruments GmbH, Boschstraße 10, 47533 Kleve, Germany.
- 11:20 (I018) ADVANCES IN TRIPLE QUADRUPOLE ICP-MS FOR ROUTINE TRACE ELEMENT ANALYSIS OF COMPLEX SAMPLES. **Keith MacRenaris**¹, Daniel Kutscher². ¹Thermo Fisher Scientific, Bannockburn, IL; ²Thermo Fisher Scientific, Bremen, Germany.
- 11:40 (I095) HARNESSING THE POWER OF TRIPLE-QUAD ICP-MS. **Bastian Georg**, Clint Walker, Jean-Louis Cabral. Agilent Technologies – Canada.
- 12:00 Lunch (included), exhibition (end of exhibition at 14:00) and CSASS AGM – *Opal 3-6*
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Separations & Mass Spectrometry II – Opal 2

Organizer: Kingsley Donkor

Co-Chairs: Chris Harrison & Renata Raina-Fulton

- 09:00 (I020) ANALYSIS AND FATE OF OXYTETRACYCLINE IN SHRIMP USING A NON-TARGETED SCREENING APPROACH. **Anca Baesu**, Stéphane Bayen. Department of Food Science and Agricultural Chemistry, McGill University, Montreal, QC, Canada.
- 09:20 (I090) ANALYSIS OF NEONICOTINOIDS AND PARTICLE BOUND PESTICIDES IN ATMOSPHERIC SAMPLES BY LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY. **Renata Raina-Fulton**, Asal hdarvandan. University of Regina, Department of Chemistry and Biochemistry, Regina, SK, Canada.
- 09:40 (I051) DETECTION OF DNA DAMAGE FROM ENVIRONMENTAL AGENTS USING CAPILLARY ELECTROPHORESIS WITH LASER-INDUCED FLUORESCENCE. **Jeffrey W. Guthrie**, Robert T. Limmer¹, Eric A. Brooks¹, Chelsea C. Wisniewski¹, Nneka D. Loggins-Davis¹, Abderraouf Bouzid¹, J. Lee², M. Weinfeld², X.C. Le³. ¹Eastern Michigan University, Department of Chemistry, Ypsilanti, MI, USA. ²Department of Oncology, University of Alberta Cross Cancer Institute, AB, Canada. ³Analytical and Environmental Toxicology, Department of Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada.
- 10:00 Refreshment break and exhibition – *Opal 3-6*
- 10:40 (I047) MASS SPECTROMETRIC SAMPLE PREPARATION USING A COMBINATION OF (SUPER)HYDROPHOBIC/ HYDROPHILLIC SURFACES. Kasia Donovan¹, Prashant Agrawal¹, Alexa Mainguy¹, David Simon¹, Haidy Metwally¹, Alexa Mainguy¹, David M. Berman^{2,3}, R. David, Andrew⁴, **Richard Oleschuk**¹. ¹Department of Chemistry, ²Cancer Biology & Genetics, Queen's Cancer Research Institute, ³Department of Pathology & Molecular Medicine, ⁴Department of Biomedical and Molecular Sciences, Queen's University, Kingston, ON, Canada.
- 11:00 (I016) ARSENIC SPECIATION IN HUMAN URINE FOR AN EPIDEMIOLOGICAL STUDY. **Jagdeesh S. Uppal**, Xiufen Lu, X. Chris Le. Division of Analytical and Environmental Toxicology, Department of Laboratory Medicine and Pathology, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, AB, Canada.
- 11:20 (I091) INVESTIGATION OF INTERNAL STANDARDS FOR MIGRATION TIME CORRECTION APPLIED TO PEPTIDE MAPPING BY CAPILLARY ELECTROPHORESIS - DIODE ARRAY DETECTION (CE-DAD). **Karen C. Waldron**, Marie-Pier Ouellet, Université de Montréal, Department of Chemistry, Montreal, QC, Canada.
- 11:40 (I071) CAVITY-ENHANCED RAMAN SCATTERING FROM SINGLE MICRODROPLETS. **Thomas Colin Preston**. Department of Chemistry & Department of Atmospheric and Oceanic Sciences, McGill University, Montreal, QC, Canada.
- 12:00 Lunch (included) and CSASS AGM – *Opal 3-6* (end of exhibition at 14:00)
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THURSDAY, 27 JUNE, AFTERNOON

Advanced Materials in Diagnostics and Therapeutics II – Topaz 2

Organizer and Chair: Sahar S. Mahshid

- 13:40 (I120) METAL ION-CHELATION IN BIO-SOURCED MATERIALS FOR ENERGY STORAGE. **Clara Santato**. École Polytechnique de Montréal, Montréal, QC, Canada.
- 14:20 (I031) CARBON DOTS IN SENSING APPLICATIONS. **R. Naccache**. Department of Chemistry and Biochemistry and the Centre for Nanoscience Research, Concordia University, Montreal, QC, Canada.
- 15:00 Refreshment break – *Opal 3-6*
- 15:40 (I029) ADVANCED MATERIALS FOR LOWERING THE LIMIT-OF-DETECTION OF BIOSENSORS. **Leyla Soleymani**. Department of Engineering Physics, McMaster University, Hamilton, ON, Canada.
- 16:20 (I115) NANO-CAVITIES FOR THE CONFINEMENT OF NANO-SCALE BIO COMPONENTS. **Imman I. Hosseini**¹, Zezhu Liu², Walter Reisner², Sara Mahshid¹. ¹McGill University, Department of Bioengineering, Montreal, QC, Canada; ²McGill University, Department of Physics, Montreal, QC, Canada.
- 16:40 (I122) PLASMONIC MATERIALS AND SUBSTRATES FOR EXOSOME CHARACTERIZATION. **Sebastian Wachsmann-Hogiu**. McGill University, Department of Bioengineering, Montreal, QC, Canada.
- 17:20 End of session
- 18:00 Banquet (ticket required) including poster prizes and one-hour open bar – *Opal 3*
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Nanomaterials and their Analysis – Opal 1

Organizer and Chair: Ram Lamsal

- 13:40 (I065) ANALYTICAL CASE STUDIES ON NANOMATERIALS IN ENVIRONMENTAL AND HUMAN EXPOSURE MATRICES. **Petra Krystek**^{1,2}. ¹Vrije Universiteit (VU), Dep. Environment & Health, Amsterdam, The Netherlands; ²TNO, Dep. Environmental Modelling, Sensing and Analysis, Utrecht, The Netherlands.
- 14:20 (I086) DEVELOPMENT OF AN ANALYTICAL PROCEDURE FOR THE QUANTIFICATION OF CU AND ZN NANOPARTICLES IN SOILS BY SP-ICP-MS. **Angerson N. do Nascimento**, Hadioui Madjid, Juliana A. Galhardi, Kevin J. Wilkinson. Department of Chemistry, Université de Montréal, Montréal, QC, Canada.
- 14:40 (I034) CHALLENGES OF ENVIRONMENTAL NANOPARTICLE ANALYSIS: BIG PICTURE APPROACH. **David Patch**¹, Vincent Gagnon¹, Iris Koch¹ Denis O'Carroll², Kela Weber¹. ¹Environmental Sciences Group, Department of Chemistry and Chemical Engineering, Royal Military College of Canada, Kingston, ON, Canada. ²School of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia.
- 15:00 Coffee break – *Opal 3-6*

- 15:40 (I024) ASSESSMENT OF STRATEGY FOR THE ANALYSIS OF TITANIUM DIOXIDE NANOPARTICLES IN BIOLOGICAL FLUIDS USING SINGLE-PARTICLE-ICP-MS. **Samantha Salou**, Ciprian Mihai Cirtiu, Dominic Lariviere. Institut national de santé publique du Québec, Centre de toxicologie du Québec, Québec, QC, Canada.
- 16:00 (I085) RELEASE OF TiO₂ NANOPARTICLES FROM PAINTED SURFACES UNDER NATURAL WEATHERING CONDITIONS: CHARACTERIZATION USING SP-ICP-MS. **Agil Azimzada**^{1,2}, Jeffrey Farner², Madjid Hadioui¹, Carolyn Liu-Kang¹, Nathalie Tufenkji², Kevin J. Wilkinson¹. ¹University of Montreal and ²McGill University, Montreal, QC, Canada.
- 16:20 (I111) ELECTROCHEMICAL DETECTION OF ZINC OXIDE NANOPARTICLES IN WATER CONTAMINATION ANALYSIS BASED ON SURFACE CATALYTIC REACTIVITY. **Wenyu Zhang**, E.P.C. Lai. Carleton University, Department of Chemistry, Ottawa, ON, Canada.
- 16:40 (I128) NEW DEVELOPMENTS AND APPLICATIONS OF SINGLE PARTICLE ICP-MS. **Andrew Rams**. PerkinElmer, Woodbridge, ON, Canada.
- 17:00 End of session
- 18:00 Banquet (ticket required) including poster prizes and one-hour open bar – *Opal 3*
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Separations & Mass Spectrometry III – Opal 2

Organizer: Kingsley Donkor

Co-Chairs: Alison Holliday & Kingsley Donkor

- 14:00 (I003) ON-CHIP SYNTHESIS OF FUNCTIONAL MEMBRANES, **J. Greener**, Laval University, Microfluidic Bioanalytical Chemistry Lab, Laval University, Department of Chemistry Pavillon Alexandre-Vachon, Québec, QC, Canada.
- 14:40 (I037) EMERGING CONTAMINANTS IN BIOTA: LETTUCE AND FISH. **Araceli Peña-Álvarez**, Jeronimo Cabrera-Peralta, IranOcaña-Rios. Facultad de Química, Departamento de Química Analítica, Universidad Nacional Autónoma de México, Ciudad de México, México.
- 15:00 Refreshment break – *Opal 3-6*
- 15:40 (I010) DETERMINING THRESHOLDS OF IN VIVO DNA ADDUCTS BY MASS SPECTROMETRY. **Maureen McKeague**. McGill University, Department of Pharmacology and Therapeutics, Faculty of Medicine, Montreal, QC, Canada. Department of Chemistry, Faculty of Science, Montreal, QC, Canada.
- 16:00 (I053) SEPARATING COMPLEX MIXTURES OF AMINES BY LC-MS: APPLYING DESIGN OF EXPERIMENTS (DOE) – CENTRAL COMPOSITE FACE-CENTERED DESIGN TO OPTIMIZE THE ELUTION GRADIENT. **Thanh Ngan Thang**, Marie-Pier Ouellet, Stéphanie Gallant, Alexandra Furtos, Karen C. Waldron. Département de chimie, Université de Montréal, Montréal QC, Canada.

- 16:20 (I052) USING CAPILLARY ELECTROPHORESIS TO MONITOR OPERATION OF TARGET-TRIGGERED DNAZYME MOTORS. **Hongquan Zhang**. Department of Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada.
- 16:40 (I038) TRANSMEMBRANE ELECTROPHORESIS: IMPROVED SURFACTANT EXTRACTION, PROTEIN PURIFICATION AND IN SITU DIGESTION FOR MASS SPECTROMETRY ANALYSIS. **Philip Jakubec**, Subin Rajendran, Alan Doucette. Dalhousie University, Department of Chemistry, Halifax, NS, Canada.
- 17:00 End of session
- 18:00 Banquet (ticket required) including poster prizes and one-hour open bar – *Opal 3*
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Symposium in Honor of Henry Longerich – Topaz 3

Organizer and Chair: Diane Beauchemin

- 13:40 (I099) CRITICAL CONTRIBUTIONS TO THE DEVELOPMENT OF ICP-MS ANALYSIS: A TRIBUTE TO PROFESSOR HENRY PERRY LONGERICH. **Simon Jackson**, Geological Survey of Canada, Ottawa, ON, Canada.
- 14:00 (I040) CONTACTLESS, SUB-PPM DETECTION OF SELENIUM IN CONTINUOUS AQUEOUS FLOW BY LASER-ABLATION-ASSISTED LASER-INDUCED-FLUORESCENCE (LA-LIF). **Elton Soares de Lima Filho**¹, Aïssa Harhira¹, Josette El-Haddad¹, Alain Blouin¹, Mohamad Sabsabi¹ and Guy Lamouche¹. ¹ Energy, Mining and Environment Research Centre, National Research Council Canada, Boucherville, QC Canada.
- 14:20 (I077) USE OF AN AUTOMATED METHOD TO MEASURE BROMINE, CHLORINE, AND IODINE SPECIATION AND TOTAL METALS CONTENT IN DRINKING WATER USING A SINGLE PLATFORM INSTRUMENT COMBINED WITH ICP-MS. **Andrew Toms**, C. Derrick Quarles Jr. Elemental Scientific, Omaha, NE, USA.
- 14:40 (I113) A NEW METHOD TO DECONVOLUTE BINARY MIXTURE IN LA-ICP-MS ANALYSES TO QUANTIFY THE COMPOSITION OF PHASES SMALLER THAN THE LASER SPOT SIZE. **Longbo Yang**¹, Vincent J. Van Hinsberg¹ and Iain M. Samson². ¹Department of Earth & Planetary Sciences, McGill University, Montreal, QC, Canada. ²Department of Earth and Environmental Sciences, University of Windsor, Windsor, ON, Canada.
- 15:00 Refreshment break – *Opal 3-6*
- 15:40 (I100) INNOVATION IN REAL-TIME MULTI-ELEMENTAL ANALYSIS USING LASER-INDUCED BREAKDOWN SPECTROSCOPY (LIBS). **F.R. Doucet**¹, L.Ç. Özcan¹, K. Rifai^{1,2}, F. Gervais², F. Vidal³. ¹ELEMISSION inc., Montréal, QC, Canada; ²École Polytechnique de Montréal, Montreal, QC, Canada; ³INRS University, Dept. of Plasma diagnostics, Varennes, QC, Canada.
- 16:20 (I080) FEASIBILITY STUDY OF RESONANT LASER ABLATION COUPLED WITH LASER-INDUCED BREAKDOWN SPECTROSCOPY ON COPPER ALLOY. **K. Hamam***, M. Sabsabi, A. Harhira, A. Blouin. Energy, Mining and Environment Research Centre, National Research Council Canada (NRC),

Boucherville, QC, Canada,* Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia.

- 16:40 (I127) QUANTITATIVE DETERMINATION OF TRACE LEVEL (PPB) CONCENTRATIONS OF RHODIUM AND PALLADIUM IN COPPER-RICH MINERALS USING LA-ICP-MS. **Zhaoping Yang**¹, Simon E. Jackson¹, Louis J. Cabri², Pamela Wee³, Henry P. Longerich⁴, and Marcin Pawlak⁵. ¹Geological Survey of Canada, Natural Resources Canada, Ottawa, ON, Canada; ²Cabri Consulting Ltd., Ottawa, ON, Canada; ³Agilent Technologies Canada Inc., Mississauga, ON, Canada; ⁴Department of Earth Sciences, Memorial University of Newfoundland, St. John's, NF, Canada; ⁵Canada Centre for Mineral and Energy Technology, Natural Resource Canada, Ottawa, ON, Canada.
- 17:00 Words on behalf of former collaborators, and farewell. **Diane Beauchemin**, Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 17:20 End of session
- 18:00 Banquet (ticket required) including poster prizes and one-hour open bar – *Opal 3*
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FRIDAY, 28 JUNE, MORNING

7:30-9:00 Breakfast (included) – *Opal 3&4*

Electrochemical Sensing and Analysis I – *Opal 5*

Organizer and Chair: Zhe She

- 09:00 (I008) ANALYTICAL ELECTROCHEMISTRY TO EXPLORE SUPRAMOLECULAR INTERFACES. **Hua-Zhong Yu**. Department of Chemistry, Simon Fraser University, Burnaby, BC, Canada.
- 09:40 (I049) ELECTROCHEMICAL DETECTION OF INTERACTION BETWEEN COPPER(II) AND PEPTIDES RELATED TO PATHOLOGICAL α -SYNUCLEIN MUTANTS. **Shaopei Li**, Kagan Kerman*. Department of Physical and Environmental Sciences, University of Toronto Scarborough, Toronto ON, Canada.
- 10:00 Coffee break – *Opal 3&4*
- 10:40 (I009) USING ELECTROCHEMICAL METHODS TO PROBE NEUROCHEMISTRY OF PROTEINS. **Sanela Martić**. Trent University, Department of Forensic Science, and Environmental and Life Sciences, Peterborough, ON, Canada.
- 11:20 (I013) ELECTROANALYSIS OF NEURODEGENERATIVE DNA REPEAT EXPANSIONS. **Mohtashim H. Shamsi**¹, Motahareh Taki¹, Narges Asefifeyzabadi¹, Kushal J. Rohilla², Maria Barton², and Keith Gagnon². Southern Illinois University Carbondale, ¹Department of Chemistry & Biochemistry, ²Department of Biochemistry and Molecular Biology, IL, USA.
- 12:00 Lunch (included) – *Opal 3&4*
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Sample Introduction Systems for the Inductively Coupled Plasma I – Opal 6

Co-Organizers and Co-Chairs: Andrew Schug and Ahmed Al Hejami

- 09:00 (I060) MICROFLUIDIC CHIP-INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY FOR TRACE ELEMENTS AND THEIR SPECIES ANALYSIS IN CELLS. **Bin Hu**. Key Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), Department of Chemistry, Wuhan University, Wuhan, China
- 09:40 (I046) DEVELOPMENT OF DROPLET INJECTION SYSTEM FOR SINGLE PARTICLE/CELL INTRODUCTION TO INDUCTIVELY COUPLED PLASMA. **Akitoshi Okino**, Mako Yoshida, Yuma Suenaga, Takahiro Iwai, Koichi Chiba. Tokyo Institute of Technology, FIRST, Midori-ku, Yokohama 226-8502, Japan.
- 10:00 Refreshment break – *Opal 3&4*
- 10:40 (I058) CLOUD POINT EXTRACTION – A SUITABLE APPROACH FOR SAMPLE ENRICHMENT FOR INORGANIC MASS SPECTROMETRY ANALYSES. **Dominic Larivière**, Laboratoire de radioécologie, département de chimie, Université Laval, Québec, QC, Canada.
- 11:20 (I056) DUAL SPRAY CHAMBER FOR ICP-MS OR ICP-OES —SIMULTANEOUS MEASUREMENT OF INCOMPATIBLE ELEMENTS— **Yoshitaka Takagai**¹ and Makoto Furukawa^{1, 2}.¹Fukushima University, Cluster of Science and Technology, 1 Kanayagawa, Fukushima, Japan; ²PerkinElmer Japan Co., Ltd., Hodogaya, Yokohama, Kanagawa, Japan.
- 11:40 (I066) AN ALTERNATIVE SAMPLE INTRODUCTION TECHNIQUE FOR THE ANALYSIS OF FUSED SAMPLES BY INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Andrew Schug**, Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 12:00 Lunch (included) – *Opal 3&4*
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Separations & Mass Spectrometry IV – *Opal 2*

Organizer: Kingsley Donkor

Chair: Jeffrey Guthrie

- 09:00 (I025) TARGETED AND NON-TARGETED ANALYSIS OF PLASTIC-RELATED CONTAMINANTS IN FOOD FROM MONTREAL USING HPLC-QTOF-MS. **Lei Tian**¹, Jingyun Zheng¹, Cindy Gates Goodyer², Stéphane Bayen¹. ¹Department of Food Science and Agricultural Chemistry, McGill University, Ste-Anne-de-Bellevue, QC, Canada. ²Department of Medicine, Division of Experimental Medicine, McGill University Health Centre, Montreal, QC, Canada.
- 09:20 (I036) UNTARGETED METABOLOMICS TO DECIPHER METABOLIC CHANGES UPON ACETAMINOPHEN TREATMENT IN RATS. **Lekha Sleno**, Leanne Ohlund, Vivaldy Prinville. Université du Québec à Montréal, Montreal, QC, Canada.
- 09:40 (I093) APPLYING AN EXPERIMENTAL DESIGN TO IMPROVE THE USE OF INSOLUBLE CROSSLINKED PROTEOLYTIC ENZYMES FOR BETTER SAMPLE PREPARATION IN MICROSCALE PROTEOMICS APPLICATIONS. **Marie-Pier**

Ouellet, Guillaume Lasnier, Coralie L. Dubois, Karen Waldron. University of Montreal, Department of Chemistry, Montréal, QC, Canada.

10:00 Refreshment break – *Opal 3&4*

10:40 (I017) DETECTION OF MICRORNA USING CRISPR/CAS13A. **Wei Feng**, Hanyong Peng, Hongquan Zhang, X. Chris Le. Division of Analytical & Environmental Toxicology, Department of Laboratory Medicine & Pathology, University of Alberta, Edmonton, AB, Canada.

11:00 (I094) MAPPING GLYCATION SITES OF AN ANTITUMOR TN-BSA NEOGLYCOCONJUGATE BY MASS SPECTROMETRY. Simin Tavangari,¹ René Roy,^{1,2,3} **Alexandra Furtos**⁴. ¹Department of Chemistry, Université du Québec à Montréal, Montréal, QC, Canada; ²INRS-Institut Armand-Frappier, Université du Québec, Laval, QC, Canada; ³Glycovax Pharma Inc., Montreal, QC, Canada; ⁴Department of chemistry, Montreal University, Montreal, QC, Canada.

11:20 (I015) NON-TARGETED METABOLOMICS APPROACH FOR MONITORING NITROFURAZONE ABUSE IN SHRIMP FARMING. **Pablo Elizondo**, Stéphane Bayen. McGill University, Department of Food Science, 21111 Lakeshore, Ste-Anne-de-Bellevue, QC, Canada.

11:40 (I125) MICELLAR ELECTROKINETIC CHROMATOGRAPHY METHOD DEVELOPMENT FOR THE MONITORING OF ROTENONE IN LAKE WATERS. **Kingsley Donkor**¹, Iran Ocaña-Rios², Araceli Peña-Alvarez²; ¹Department of Chemistry, Thompson Rivers University, Kamloops, BC, Canada. ² Departamento de Química Analítica, Facultad de Química, Universidad Nacional Autónoma de México, Ciudad de México, Mexico.

12:00 Lunch (included) – *Opal 3&4*

Speciation Analysis II – *Opal 1*

Organizer and Chair: Randa Althobiti

09:00 (I005) SPECIATION ANALYSIS OF ARSENIC IN SEAFOOD AND SEAWEED AT THE US FOOD AND DRUG ADMINISTRATION. **Mesay M. Wolle** and Sean D. Conklin. Center for Food Safety and Applied Nutrition, US Food and Drug Administration, College Park, MD, USA.

09:40 (I035) FORMATION PATHWAY OF ARSENOBETAINE IN TERRESTRIAL FUNGI. **Blaire Coffey**, David Patch, Iris Koch, Jennifer Scott and Kenneth Reimer. Royal Military College of Canada, Department of Chemistry and Chemical Engineering, Kingston, ON, Canada.

10:00 Refreshment break – *Opal 3&4*

10:40 (I097) WHAT GOES IN NOT NECESSARILY COMES OUT – BIOMONITORING OF ARSENIC SPECIES IN URINE. **Barbro Kollander**, National Food Agency, Sweden.

11:20 (I112) ARSENIC SPECIATION PROFILING FOR EVALUATING THE ASSOCIATION BETWEEN CANCER AND ARSENIC EXPOSURE. **Jong Sung Kim**, Dalhousie University, Halifax, NS, Canada.

11:40 (I092) DETERMINATION OF PLATINUM AND NICKEL ELECTRODE DISSOLUTION IN FUEL CELL ELECTROLYTE BY CATION EXCHANGE CHROMATOGRAPHY COUPLED TO INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Lukas Miner**, Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.

12:00 Lunch (included) – *Opal 3&4*

FRIDAY, 28 JUNE, AFTERNOON

Agricultural and Food Safety II – Opal 1

Organizer and Chair: Alastair Kierulf

14:00 (I048) BIOACCESSIBILITY AND BIOAVAILABILITY IN RISK ASSESSMENT: PRACTICAL ASPECTS. **Iris Koch**¹, Alastair Kierulf², Kenneth J. Reimer¹.
¹Environmental Sciences Group, Royal Military College of Canada, Kingston, ON, Canada; ²Queen's University, Department of Chemistry, Kingston, ON, Canada.

14:40 (I022) A DUAL ESI-APCI LC-MS/MS METHOD FOR THE ANALYSIS OF PESTICIDES FROM PLANT EXTRACTS. **Heather A. Gamble**¹, Avinash Dalmia².¹PerkinElmer Canada, Woodbridge, ON, ²PerkinElmer, Shelton, CT, USA.

15:00 Refreshment break – *Opal 3&4*

15:40 (I129) BIO-ACCESSIBILITY OF POTENTIALLY TOXIC ELEMENTS FROM STAPLE FOODS. Nausheen Sadiq, Mabrok Salem, Emma Mitchell, **Diane Beauchemin**. Queen's University, Department of Chemistry, Kingston, ON, Canada.

16:20 (I059) NANOMATERIALS IN FOOD: UNDERSTANDING FATE OF PROTEIN-NANOPARTICLE INTERACTIONS. **Wut Hmone Phue** and Saji George, McGill University, Department of Food Science and Agricultural Chemistry, Sainte-Anne-de-Bellevue, QC, Canada.

16:40 (I055) MICROWAVE PREPARATION AND ICP-MS ANALYSIS OF TOXIC ELEMENTS IN CANNABIS RELATED MATERIALS. **Andrew Rams**. PerkinElmer, Woodbridge, ON, Canada.

17:00 End of the 63rd ICASS

Electrochemical Sensing and Analysis II – Opal 5

Organizer and Chair: Zhe She

13:40 (I011) DIELECTRIC RELAXATION AND ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY FOR IMPROVED UNDERSTANDING OF INTERFACES. Mahmoud Khademi, Sammi Cheng, **Dominik P.J. Barz**. Department of Chemical Engineering, Queen's University, Kingston, ON, Canada.

14:20 (I062) ELECTROCHEMICAL APPROACHES TO UNDERSTAND BIOMOLECULAR INTERACTIONS IN ALZHEIMER'S DISEASE. Han Su, Hashwin V. S. Ganesh, **Kagan Kerman**. Department of Physical and Environmental Sciences, University of Toronto Scarborough, Toronto, ON, Canada.

- 15:00 Refreshment break – *Opal 3&4*
- 15:40 (I002) MICROSCALE ELECTROCHEMICAL BIOFLOW SYSTEM FOR DETECTION AND DISCOVERY OF BACTERIAL BIOFILMS. **J. Greener**. Laval University, Microfluidic Bioanalytical Chemistry Lab, Laval University, Department of Chemistry Pavillon Alexandre-Vachon, Québec, QC, Canada.
- 16:20 (I006) USING SURFACES AS THE PLATFORM FOR BACTERIA SENSING. **Zhe She**. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 17:00 End of the 63rd ICASS
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Environmental Analysis – *Opal 2*

Organizer and Chair: Eve Kroukamp

- 14:00 (I050) ELUCIDATING THE DECOMPOSITION KINETICS OF XANTHATE COMPOUNDS IN MINING WATERS BY GC/MS. **Kingsley Donkor**¹, Adrian Batista¹, William Primrose¹, John Andrew², Kevin Strukoff².¹Department of Chemistry, Thompson Rivers University, Kamloops, BC, Canada; ²New Gold Inc, New Afton Mine, Kamloops, BC, Canada.
- 14:20 (I028) SOFT AND HARD ELECTRON IONIZATION SOURCE FOR GC-MS/MS. Anna Kornilova, Dante Sanchez, **Harikrishnan Sukumar**, Victor Titov, Dmitry Valyaev, Reza Javahery. PerkinElmer Inc., Woodbridge, ON, Canada.
- 14:40 (I032) AN LC-MS/MS STUDY OF THE KINETICS OF ATRAZINE DECOMPOSITION CATALYZED BY INTERACTIONS WITH SOIL. **Mitesh Patel**¹, Heather A. Gamble¹, Donald S. Gamble².¹PerkinElmer Canada, Woodbridge, ON; ²St. Mary's University, Department of Chemistry, Halifax, NS.
- 15:00 Refreshment break – *Opal 3-4*
- 15:40 (I004) ALTERNATIVE APPROACHES TO TRACE ORGANIC AIR POLLUTANT SAMPLING. **Patricia Forbes**, Genna-Leigh Schoonraad, Chiedza Munyeza and Yvonne Wojno. Department of Chemistry, University of Pretoria, South Africa.
- 16:20 (I061) DETECTION OF TOXIC SMALL MOLECULE-ALBUMIN INTERACTION USING OPTICAL AND CALORIMETRIC TECHNIQUES. **Bhargav Patel**, Kagan Kerman. Department of Physical and Environmental Sciences, University of Toronto at Scarborough, Toronto, ON, Canada.
- 16:40 (I089) ANALYSIS OF POTABLE WATER USING THE NEXION 2000 ICP-MS INSTRUMENT COUPLED TO A HIGH THROUGHPUT SAMPLE INTRODUCTION SYSTEM. **Ram P. Lamsal**¹, Eve Kroukamp², Pritesh Patel² and Chady Stephan². ¹Department of Chemistry, Queen's University Kingston, ON, Canada; ²PerkinElmer Inc., Woodbridge, ON, Canada.
- 17:00 End of the 63rd ICASS
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Forensic and Archeological Applications – Topaz 1

Organizer and Chair: Margaret MacConnachie

- 14:00 (I107) DETERMINATION OF GENDER FROM MUMMY'S HEAD HAIR USING SOLID SAMPLING ELECTROTHERMAL VAPORIZATION COUPLED TO INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. Sarah Lu and **Diane Beauchemin**, Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 14:20 (I074) AMBIENT IONIZATION MASS SPECTROMETRY FOR CHARACTERIZING ARCHAEOLOGICAL MATERIALS. **Ruth Ann Armitage**, Department of Chemistry, Eastern Michigan University, Ypsilanti, MI, USA.
- 15:00 Refreshment break – *Opal 3&4*
- 15:40 (I075) HEME AND HEMOGLOBIN: IDENTIFYING BLOOD IN CULTURAL HERITAGE OBJECTS. **Daniel Fraser**, Department of Chemistry and Physical Science, Lourdes University, Sylvania, OH, USA.
- 16:20 (I102) USE OF SOLID SAMPLING ELECTROTHERMAL VAPORIZATION WITH INDUCTIVELY COUPLED PLASMA SPECTROMETRY FOR MULTI-ELEMENTAL ANALYSIS OF SOLDER FOR APPLICATIONS IN FORENSIC SCIENCE. **Margaret MacConnachie** and Diane Beauchemin, Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 16:40 (I130) EFFECTIVE ABATEMENT OF HIGH LEAD LEVEL CONTAMINATION IN A FORENSIC FIRING RANGE. Lily Huang¹, **Diane Beauchemin**¹, Claude Dalpé². ¹Queen's University, Department of Chemistry, Kingston, ON, Canada; ²Royal Canadian Mounted Police, National Forensic Laboratory Services, Ottawa, ON, Canada.
- 17:00 End of the 63rd ICASS
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Sample Introduction Systems for the Inductively Coupled Plasma II – Opal 6

Co-Organizers and Co-Chairs: Andrew Schug and Ahmed Al Hejani

- 14:00 (I068) ANALYSIS OF HEAVY PETROLEUM PRODUCTS THROUGH ICP TECHNIQUES. **José-Luis Todolí**,¹ Johan Lefevre,² Santiago Martínez,¹ Raquel Sánchez¹. ¹Department of Analytical Chemistry, Nutrition and Food Science, University of Alicante, Spain. ²Total Research and Technology Gonfreville, Harfleur, France.
- 14:40 (I078) COMPARISON OF SAMPLE INTRODUCTION AND CALIBRATION TECHNIQUES FOR SINGLE PARTICLE INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY. **Andrew Williams**, Diane Beauchemin. Queen's University, Department of Chemistry, Kingston, ON, Canada.
- 15:00 Refreshment break – *Opal 3&4*
- 15:40 (I045) AUTOMATED MATRIX-MATCHING CALIBRATION USING STANDARD DILUTION ANALYSIS WITH TWO INTERNAL STANDARDS AND A SIMPLE THREE-PORT MIXING CHAMBER. **John T. Sloop**¹, Henry J.B. Bonilla¹, Tina McSweeney², Bradley T. Jones¹ and George L. Donati¹, ¹Department of Chemistry,

Wake Forest University, Winston Salem, NC, USA; ²Agilent Technologies, Cary, NC, USA.

16:20 (I105) FLOW INJECTION ANALYSIS AS A COST-EFFECTIVE FORM OF ONLINE AUTO-DILUTION. **Robert Teuma-Castelletti**, Diane Beauchemin, Queen's University, Department of Chemistry, Kingston, ON, Canada.

16:40 (I101) COUPLING AN INFRARED-HEATED SAMPLE INTRODUCTION SYSTEM WITH MONOSEGMENTED FLOW ANALYSIS TO ENHANCE THE CAPABILITY OF INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY. **Ahmed Al Hejami**, Diane Beauchemin, Queen's University, Department of Chemistry, Kingston, ON, Canada.

17:00 End of the 63rd ICASS
