

Monday AM

Plenary Lectures

PLS 2000AB

Plenary Lectures

10:30 Introductory Remarks

10:45 0001 *Acrolein Production from Renewable Resources: Glycerol and Ethanol Routes* ***Dubois J-L** <ARKEMA, France>

Questions

12:00 End of Session

Special Symposia - Carbon Capture, Utilization and Storage

CCS1 207

Advances in Carbon Capture

Organizer(s) - Éric Croiset and Maria C Iliuta
Chair(s) - Éric Croiset, Marzieh Shokrollahi

08:00 0002 *Thermodynamic Study of Absorption of CO₂ in Aqueous Mixtures of Alkanolamines by Solution Calorimetry* ***Arcis H** <University of Guelph>, Coulier Y, *Coxam J-Y

08:20 0003 *Liquid-liquid Phase Equilibria of Demixing Amines for Carbon Capture and Storage* **Lowe AR** <Clermont Université, France; CNRS, France>, Coulier Y, *Ballerat-Busserolles K, Coxam J-Y

08:40 0004 *Phase-separating Amines for CO₂ Capture: Carbamate Equilibrium Constants in Aqueous Solutions of CO₂ in 2-methylpiperidine by ¹³C NMR Spectroscopy* ***McGregor C** <University of Guelph>, Penner G, Robertson V, Al-Abdul-Wahid S, Fandiño Torres O, Cox J, *Tremaine PR

09:00 0005 *Impacts of Amine Degradation on Diminishing Capacity of Sweetening Units Working with Different Types of Amines* ***Rezaei Zare E, Azarmehr A** <Bidboland Gas Refining Company, Iran>, Azimi A

09:20 0006 *Thermodynamic and Screening Study of Conventional Ionic Liquids for CO₂ Capture by Molecular Dynamic Simulation* **Aghaie M** <Memorial University of Newfoundland>, Zendejboudi S

09:40 0007 *Acetate-based Ionic Liquids Transported into Mesoporous Silica as Efficient Sorbents for CO₂ Capture* **Mohamedali ME** <University of Regina>, *Ibrahim H, *Henni A

10:00 End of Session

Special Symposia - Process Safety and Loss Management

PSM6 204A

The Future of PSM

Organizer(s) - François Roche and Melanie Wilson
Chair(s) - Melanie Wilson, Jean-Paul Lacoursière

08:00 0643 *Remembering the Past Shapes our Future* ***Kerin T** <Institution of Chemical Engineers Safety Centre, Australia>

09:00 **Minerva-CIAC Case Study Competition Finalist**

09:30 **Minerva-CIAC Case Study Competition Finalist**

10:00 **Minerva-CIAC Case Study Competition Finalist**

10:30 End of Session

Biomedical Engineering

BME1 307B

Biomedical Imaging and Sensing

Organizer(s) - Corinne Hoesli and Patrick Vermette
Chair(s) - Corinne Hoesli, Fabio Ciccoira

08:00 0008 *Association of Non Synonymous SNP in DC-SIGN Receptor Gene with Tuberculosis (TB)* ***Tahir MS** <University of Gujrat, Pakistan>, Kalsoom S

08:20 0009 *Microfluidic "Plaque-on-a-Chip" with Ph Imaging by Metal Enhanced Fluorescence Probes Individual Factors in Tooth Decay* ***Greener J, Boudreau D, Barbeau J, Parvinzadeh Gashti M, Asselin J** <Centre d'optique, photonique et laser>

08:40 0010 *Bacterial Electrotaxis* **Doxsee K** <University of Guelph>, Berthelot R, *Weng X, *Neethirajan S

09:00 0011 *Assessing Biofilm Early Growth Stages in Microchannels with Infrared Spectroscopy and Confocal Microscopy* **Paquet-Mercier F** <Université Laval>, Greener J

09:20 0012 *Nanostructured Bioluminescence Quenching Sensor for Detecting Glucose* ***Zhang J** <Western University>, Chen LY, Chen A

09:40 0013 *Ultrasensitive Detection of Chemical and Biological Analytes in Fluids Using a Novel Surface-enhanced Raman Scattering (SERS) Substrate* **Dies H, Escobedo C, *Docoslis A** <Queen's University>

10:00 End of Session

Biotechnology/Bioengineering

BBE3 2101

Engineered Biological Systems

Organizer(s) - Bruno Gaillet and Denis Groleau
Chair(s) - Céline Vaneekhaute

08:00 0014 *The Development a CRISPR-Cas9 Toolkit for Bacillus subtilis, and its Application to Strain Engineering* **Westbrook AW** <University of Waterloo>, Moo-Young M, *Chou CP

08:20 0015 *Metabolic Pathway Prioritization* **Lu S** <University of Toronto>, *Mahadevan K

08:40 0016 *A Systematic Approach for Identifying Dynamic Flux Balance Models* **Nikdel A** <University of Waterloo>, *Budman H

09:00 0017 *A Novel Peptide-based Agent to Deliver Therapeutic Proteins in Mammalian Cells* **Lepetit-Stoffaers JP** <Université Laval; Feldan Therapeutics>, DelGuidice T, Roberge J, Bordeleau LJ, Gaillet B, *Guay D, *Garnier A

09:20 0018 *Innovative Influenza Vaccines for Pandemic Situations* **Kamen A** <McGill University>

10:00 End of Session

Catalysis and Catalytic Reaction Engineering

CCR1 205A

Catalysis for Sustainable Systems

Organizer(s) - Mladen Eic and Jan Kopyscinski
Chair(s) - Brant Peppley

08:00 0019 *Distributed Generation Reformer and Fuel Cell System* ***DePippo K** <Fuel Cell Research Centre; Queen's University>, *Peppley B

08:20 0020 *Catalytic Pyrolysis for the Production of Stable Phenol Rich Bio-oil from Wood* **Kaushik P** <University of Regina>, *Ibrahim H

08:40 0021 *Alumina Supported Heteropolyacid Catalyst for Biodiesel Production: Physicochemical Characterization and Support Interaction* **Kurhade AH** <University of Saskatchewan>, *Dalai AK

09:00 0022 *Red Mud as an Iron-based Catalyst for Gasification Tar Removal* ***Madadkhani SM** <University of British Columbia>, Burhenne LB, *Bi XB, Ellis NE, Grace JG

09:20 0023 *Statistical Analysis of Photocatalytic Glycerol Valorization into Hydrogen* **Karimi Estahbanati MR** <Université Laval>, Feilizadeh M, *Iliuta MC

09:40 0024 *Processing of Biodiesel Using Sulphonated Poly (Ether Ether Ketone) as a Catalyst* *Beaudry BN, Page DJYS <Royal Military College of Canada>

10:00 End of Session

Chemical Engineering Education

CEE2 307A

Chemical Engineering Curriculum, Quo Vadis?

Organizer(s) - Suzanne Kresta and Michel Perrier
Chair(s) - Suzanne Kresta, Michel Perrier

08:00 0025 *Integration of Chemical Engineering Education and Language Training for First-year International Students: A Collaborative Approach* Murphy M, *Potvin G <University of British Columbia>

08:20 0026 *Module-based Course Design for Disparate Outcome Streams* *Lowry BJ <University of New Brunswick>

08:40 0027 *Online Learning Element Design Development and Application Experiences* *Jamieson MV <University of Alberta>, Shaw JM

09:00 0028 *Consider Industrial Design Leaders Involvement in Specialized Workshops for Design Project Courses* Sidthiphol S, *Joao S <SNC-Lavalin>

09:20 0029 *Pre and Post Course Student Self Assessment of Ceab Graduate Attributes: A Tool for Outcomes Assessment, Student Skill and Course Improvement* *Jamieson MV <University of Alberta>, Shaw JM

09:40 0030 *"Improving the Learning Experience for Millennials, by Millennials"* Goettler L <University of Alberta>, Leung C, Liu A, Roemer C, *Jamieson MV

10:00 End of Session

Chemical Engineering Foundations

CEF2 206A

Fluid Flow and Mixing in Continuous and Discrete Systems

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Ali Lohi, Seyed M Taghavi

08:20 0032 *A PAT-based Experimental Methodology Relating Velocity Profiles of a Binary Granular System under Gravitational Flow with Cohesion/Adhesion Parameters* **Chaib O** <Université de Sherbrooke>, *Abatzoglou N

08:40 0033 *Development of Pressure Based Methods for the Determination of the Just-suspended Speed and Suspension State in Viscous Solid-liquid Mixing* **Bertrand O** <Polytechnique Montréal>, Blais B, *Bertrand F, Fradette L

09:00 0034 *CFD Modeling and Experimental Validation of Offshore Floating Packed Bed Hydrodynamics* *Motamed Dashliborun A <Université Laval>, Hamidipour M, *Larachi F

09:20 0031 *Suitable Power-law Exponent for Scaling-up Pickering Emulsions: Effect of Oil Viscosity, Oil Volume Fraction and Coverage Potential* *Al-haik A <Polytechnique Montréal>, Tsabet È, *Fradette L

09:40 End of Session

CEF5 2105

Transport Phenomena Triptych

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Ayodeji A Jeje, Anthony Wachs

08:00 0035 *Flash Point prediction for Crudes with Wide Boiling Range* *Veldandi P <Cognizant Technology Solutions>, Bethi A

08:20 0036 *Nonlocal Fractional Non-Fourier Heat Conduction for Ultrafast Heat Transfer* *Akbarzadeh AH <McGill University>, Cui Y, Chen ZT

08:40 0037 *A Simple Method for Reducing the k_{1a} Error Induced by Oxygen Depletion in Effective Gas/Liquid Contactors* *Idhbeaa AO <Dalhousie University>, *Al Taweel AM, Ghanem A, Walsh M, Schlüter M

09:00 0038 *Field-driven Dynamics of Nematic Droplets in PDLC Smart Glass* **Fu F** <University of Waterloo>, *Abukhdeir NM

09:20 0039 *Packed-bed Reactor Studies of the Effects of Polymetal Sulphides Galvanic Interactions on Ore Conditioning and Flotation* **Gravel O** <Université Laval>, Larachi F, Hart B

09:40 0040 *Pore-scale Modeling of Transport in a Porous Catalyst Particle with Hierarchy of Porosity* *Sadeghi M <McGill University>, Aghighi M, *Gostick JT

10:00 End of Session

Electrochemistry and Electrochemical Engineering

EEE1 205B

Batteries, Electrolyzers and Supercapacitors

Organizer(s) - Zhongwei Chen and Elöd Gyenge
Chair(s) - Jeff Gostick, Jesse Greener

08:00 0041 *Multiphysics Simulation of the Flow Battery Cathode; Cell Architecture and Electrode Optimization* *Kok MD R <McGill University>, *Gostick J

08:40 0042 *High Power Density Flow Battery System* *Rachid RZ <Qatar Environment & Energy Research Institute, Qatar>

09:00 0043 *Optimizing Novel Electrospun Materials for Flow Battery Electrodes* **Liu SP** <McGill University>, *Gostick J

09:20 0044 *Using X-ray Radiographic Imaging Technique for Investigation of Water Droplet Dynamics in Proton Exchange Membrane (PEM) Fuel Cells* **Rahimian Esfahani P** <University of Saskatchewan>, Battrell L, Anderson R, Zhu N, Zhang L

09:40 0045 *Pore Network Modeling of Phase Change in the Gas Diffusion Layers of PEMFC* **Aghighi M** <McGill University>, *Gostick JT

10:00 End of Session

Energy Resources

ENR3 205C

Fossil Energy

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Nicolas Abatzoglou

08:20 0046 *Recent Developments in Hydrocarbon Production and Processing Technology and Related Environmental Issues* *Riazi MR <Kuwait University, Kuwait>

08:40 0048 *The Clean Green Coal Project - A New Energy System Paradigm* **Peachey BR** <New Paradigm Engineering Ltd>, Budwill K, Mkandawire M

09:00 0049 *Mass Transfer Equipment Design: From the Phase Equilibrium Model to an Operating Unit, a 100 Year Search for the Optimal Device* **Krela M** <Koch-Glitsch>, *Shah M

09:20 0050 *Greenhouse Gas Emissions Associated to Natural Gas Production in Western Canada and the Role of Emerging Technologies* **Liu R** <University of Calgary>, *Bergerson J

09:40 0051 *Comparative Analysis of the Extraction, Transportation, Upgrading and Shipping of Canadian Oil Sands Products from Production Site to the Asia Pacific Region: A Techno-economic Assessment* **Sapkota K** <University of Alberta>, Oni AO, *Kumar A

10:00 End of Session

Environment

ENV2 204B

Trends in Wastewater Mitigation and Water Quality

Organizer(s) - Madhumita B Ray, Rafael M Santos and Peter Vanrolleghem
Chair(s) - José Herrera, Mehrab Mehrvar

08:00 0055 *Adsorption of Problematic Organic Compounds from Wastewater Using Hybrid Pyroxene Nanoparticles* **Nafie G** <University of Calgary>, *Nassar N, Vitale G

08:20 0052 *Gas and Liquid Backwash for Flux Restoration and Irreversible Fouling Remediation in Latex Paint Effluent Ultrafiltration* **Abdelrasoul A** <Ryerson University>, *Doan H, Lohi A, Cheng C-H

08:40 0053 *Fabrication of Polysulfone/Metal-Organic Framework Hybrid Nanofiber Membrane via Electro-spinning and Electro-spraying for Removal of Heavy Metal Ions from Aqueous Solution* **Johnson E** <University of Ottawa>, *Rana D, Lan C, *Matsuura T

09:00 0054 *1D Nanomaterials Synergistically Improve the Mechanical Properties and Contaminant Adsorption Capacity of Graphene Oxide Hydrogels* **Yousefi N** <McGill University>, Wong KKW, *Tufenkji N

09:20 0056 *Development and Treatment Procedures of Water Contaminated by Arsenate Using Chitosan Support Derivative* **Brion-Roby R** <Université du Québec à Rimouski>, Deschênes J-S, Gagnon J, Chabot B

09:40 0057 *Modification of Pristine Sponge and its Applications for Oil Spill Remediation* **Oribayo S** <Soochow University, China>, Feng X, Rempel G, *Pan Q

10:00 End of Session

Macromolecular Sciences and Engineered Polymers

MSP1 202

Advances in Macromolecular Science and Engineering

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Josée Brisson

08:00 0058 *Precursor Effects on the Structure and Properties of Polymer Networks Synthesized Using Molecular Dynamics* **Zhang S**, *Xi L <McMaster University>

08:20 0059 *Sorption of Water/Methanol on Teflon and Hydrocarbon Proton Exchange Membranes (PEMs)* **He C** <Université Laval>, Mighri F, *Guiver MD, *Kaliaguine S

08:40 0060 *Gas Separation Properties of Mixed Matrix Membrane from Poly(amide-ethylene oxide) and MIL-53* **Meshkat S** <Université Laval; CREPEC>, Kaliaguine S, *Rodrigue D

09:00 0062 *Modelling and Experimental Investigation of the AGET ATRP of Butyl Acrylate in a Two-stage Dispersed System* **Massicotte E** <Ryerson University>, Duever T, *Dhib R

09:20 0063 *Synthesis and Characterisation of a Natural Gum Obtained from Crotalaria juncea: Effect of Various Degumming Processes* **Sadhukhan S**, *Sarkar U <Jadavpur University, India>

09:40 End of Session

Systems and Control

SYC3 203

Process Optimization and Predictive Control

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Chris Swartz, Xiang Li

08:00 0065 *Global Optimization of a Power Distribution System* **Li DL**, *Li XL <Queen's University>

08:20 0066 *A Parameter Adaptation Scheme for the Batch-to-batch Optimization of Bioprocesses Under Model-plant Mismatch* **Hille R** <University of Waterloo>, Mandur J, *Budman H

08:40 0067 *Coordinated Distributed MHE for Linear Systems* **An T** <University of Alberta>, *Liu J, *Forbes JF

09:00 0068 *Towards a Fully Decentralized Model Predictive Control Technique* **Skoko S** <Queen's University>, *Guay M

09:20 0069 *Multi-rate Subspace-based System Identification and Economic Model Predictive Control of the Electric Arc Furnace* **Rashid MM** <McMaster University>, *Mhaskar P, Swartz CLE

09:40 0064 *Global Optimization of Nonlinear Gasoline Blend Planning and Scheduling Problems* **Castillo Castillo PA** <McMaster University>, *Mahalec V, Castro PM

10:00 End of Session

Monday PM

Plenary Lectures

PLS 2000AB

Plenary Lectures

13:00 Introductory Remarks

13:05 0070 *Yesterday, Waste was a Problem. Today, it is a Valuable Resource* ***Chaouki J** <Polytechnique Montréal>

Questions

14:00 End of Session

Special Symposia - Carbon Capture, Utilization and Storage

CCS2 207

New opportunities in CO2 Utilization/Conversion

Organizer(s) - Éric Croiset and Maria C Iliuta
Chair(s) - Éric Croiset, Marzieh Shokrollahi

14:00 0071 *Carbon Storage and Utilization in Canada: Applications to Energy and Environment* **Zendehboudi SZ** <Memorial University of Newfoundland>, James LJ

14:20 0072 *Shell Quest Project - Comparing Options for CO2 Storage* **Peachey BR** <New Paradigm Engineering Ltd>, Lee P, Liu CJ, Lu P, Sharma RI, Vashisht D, Wang YB

14:40 0073 *Hydrated Magnesium Carbonates, Formation and Stability in Ambient Conditions* **Entezari Zarandi A** <Université Laval>, *Larachi F, Beaudoin G, Plante B, Sciortino M

15:00 0074 *Improved Solvents for CO2 Capture by Molecular Simulation Methodology* ***Smith WR**, **Qi W** <University of Guelph>, Kelly B

15:20 End of Session

Special Symposia - Process Safety and Loss Management

PSM1 204A

Audits and Corrective Actions

Organizer(s) - François Roche and Melanie Wilson
Chair(s) - Mireille Busque

14:00 0075 *Consistent Risk Assessments in a Worldwide Diversified Organization* **Roche F** <Air Liquide Canada>

14:30 0076 *Condensate Induced Water Hammer Risks as Related to Steam Assisted Gravity Drainage Plants in the Oilsands* **Dancey JJ** <BakerRisk>

15:00 0077 *The Use of Bowtie Analysis in Process Safety Auditing* **Ramsden M** <ERM, UK>, [†]Pettit G, Anderson D, Caulfield M

15:30 Coffee Break

16:00 0078 *Industrial Auditing in a World Scale Organization* **Drolet P** <Air Liquide Canada>

16:30 0079 *Lessons Learned from Safety Audit of College of Engineering Facilities* [†]**Houache O** <Sultan Qaboos University, Oman>

17:00 0080 *An Analysis of CSB Investigation Reports* **Irvine Y** <Dalhousie University>, [†]Amyotte PR, Khan FI

17:30 End of Session

Biomedical Engineering

BME2 307B

Functional Biomaterials and Molecular Therapeutics

Organizer(s) - Corinne Hoesli and Patrick Vermette
Chair(s) - Patrick Vermette, Mark Ungrin

14:00 0081 *Experimental Techniques to Study the Blood Dynamics and the Blood Rheology in the Microcirculation* [†]**Fenech M** <University of Ottawa>

14:40 0082 *Surface Endothelialization of Vascular Substitutes by a Combinatorial Peptide-antibody Functionalization Approach* **Boulanger M** <McGill University>, Elkhodiry M, Vanslambrouck S, Tanguay JF, Laroche G, Hoesli C

15:00 0083 *Development of Bone Substitute: Poly(ϵ -caprolactone) Scaffold Functionalized by Adhesive Peptides in Combination with Soluble BMP-9* **Drevelle O** <Université de Sherbrooke; Polytechnique Montréal>, Sarazin P, Virgilio N, [†]Faucheux N

15:20 0084 *Peptide-based Biomimetic Approach to Enhance the Re-endothelialization of Vascular Substitutes* [†]**Elkhodiry MA** <McGill University, >, Boulanger M, Brassard J, Tanguay JF, Laroche G, [†]Hoesli CA

15:40 Coffee Break

16:00 0085 *Conducting Polymer Films for Stretchable Bioelectronics* Zhang S, Tomasello G, Kumar P, Boubée F, Valitova I, Yi Z, [†]**Cicoira F** <Polytechnique Montréal>

16:20 0086 *Decoration of Biomaterials with Growth Factors via Amphiphilic Coil-tags* **Murschel F** <Polytechnique Montréal>, Zaimi A, Noel S, Jolicoeur M, [†]De Crescenzo G

16:40 0087 *Guar Gum-sodium Borohydride System to Prepare Self-healing and Stimuli-responsive Hydrogels* [†]**Dai L** <University of New Brunswick>, Nadeau B, An X, Cheng D, Ni Y

17:00 0088 *Functionalized Magnetic Nanoparticles for Targeted Drug Delivery* [†]Nui P X, [†]Son LV, **Thi T** <Hue University, Vietnam, >

17:20 End of Session

Biotechnology/Bioengineering

BBE4 2101

Renewable Chemicals/Bio-products/Bio-therapeutics

Organizer(s) - Bruno Gaillet and Denis Groleau
Chair(s) - Alain Garnier, Mario Jolicoeur

14:00 0090 *Hydrothermal Liquefaction of Wheat Straw in Mixture of Ethanol and Water for the Preparation of Bio-based Rigid Polyurethane Insulation Foams* [†]**Li H** <Western University; Northwest A&F University, China>, Yuan Z, Mahmood N, Wei Q, [†]Xu C

14:20 0091 *Mechanical Pretreatment Based on TMP Refining System for the Sugars Production from Lignocellulosic Biomass* [†]**Chen J** <Polytechnique Montréal>, Adjalle K, Paris J, Perrier M, Barnabe S

14:40 0092 *Modified Lignin: A Biobased Antioxidant for Polyolefins* **Kabir A** <Western University>, Mahmood N, Yuan Z, Kuboki T, [†]Xu C

15:00 0093 *Enzymatic Approaches to Produce Bioactive Oligosaccharides* [†]**Cabrera JC** <Unité de biotechnologie-Materia Nova, Belgium, >, Falcón A, Costales D, Napoles MC, González L, Cabrera G, De Winter J, Gerbaux P, Tanghe A, Wégria G, Onderwater RCA, Wattiez R

15:20 0094 *Towards Complete Biosynthesis of Adipic Acid in *Saccharomyces cerevisiae* (Baker's Yeast)* **Venkatesan K** <University of Toronto>, [†]Mahadevan R

15:40 Coffee Break

16:00 Hatch Innovation Award Lecture

16:00 0095 *Can Natural Extracts Help Us in the Fight against Antibiotic Resistance?* [†]**Tufenkji N** <McGill University>, Maisuria V, Hidalgo G, O'May C

16:40 0096 *Anticancer Activity of Ontario Grown Onions* **Murayyan A** <University of Guelph>, Manohar C, [†]Neethirajan S

17:00 0097 *Final Optimization of a Serum-free Medium for the Multiplication of Human Myoblasts* **Côté A** <Université Laval>, Gaillet B, Juneau PM, Trenblay J, [†]Garnier A

17:20 0098 *Screening Ontario Grown Onion Varieties for its Antioxidant Properties* **Manohar M** <University of Guelph>, Xue J, [†]Neethirajan S, Murayyan A, Shi J

17:40 End of Session

Catalysis and Catalytic Reaction Engineering

CCR1 205A

Catalysis for Sustainable Systems

Organizer(s) - Mladen Eic and Jan Kopyscinski
Chair(s) - Jan Kopyscinski

14:00 0099 *Dual Function Adsorbent/Catalysts Materials for CO₂ Capture and Conversion* [†]**Farrauto R** <Columbia University, USA>

14:40 0100 *Hydrogen Production by Glycerol Steam Reforming Using an Industrial Residue-based Catalyst* [†]**Ali Zadeh Sahraei O** <Université Laval>, Abatzoglou N, Larachi F, [†]Iliuta MC

15:00 0101 *Hydrogen Generation from Biomass Residues via Catalytic Supercritical Water Gasification* [†]**Dalai AK** <University of Saskatchewan, >, Kang K, Azargohar R, Wang H

15:20 0102 *Dry and Steam Reforming of Methane with a New Catalyst Derived from a Negative Value Mining Residue Spinellized with Nickel* **Chamoumi M** <Université de Sherbrooke>, [†]Abatzoglou N, Iliuta MC, Larachi F

15:40 Coffee Break

16:00 0103 *Glucose to 6-C Carboxylic Acids* **Carnevali D** <Polytechnique Montréal>, [†]Patience GS

16:20 0104 *Determination of the Best NiMo/OC_P Catalyst for Hydrotreating: Effects of Varying Metal Compositions in Catalyst Formulation* **Aryee E** <University of Saskatchewan>, Dalai AK, Adjaye JD

16:40 0105 *Resolving the Electronic Structure of the Vanadia-Titania System: Catalytic Consequence of Domain Size and Composition* **Yun DM** <Western University>, [†]Herrera JE

17:00 0106 *Single-even Microkinetic Model for Fisher-Tropsch Synthesis on Co-based Catalyst* ***Maya-Yescas R**
<Universidad Michoacana de San Nicolás de Hidalgo, México, >, Díaz-Trujillo LA, Toledo-Chávez G, Jiménez-García G, Hernández-Escoto H

17:20 0107 *Cobalt-mediated Cyclization of Benzyl Halide, Imine and Carbon Monoxide*
Liu R <Soochow University, China>, Lin S, Pan Q

17:40 End of Session

Chemical Engineering Education

CEE1 307A

Chemical Engineering Curriculum: Optimus Liber Est Magister

Organizer(s) - Suzanne Kresta and Michel Perrier
Chair(s) - Michel Perrier, Suzanne Kresta

14:00 0108 *Instructional Strategies to Drive Engagement, Curiosity, & Reflection*
***Nychka JA** <University of Alberta>

14:40 0109 *Rethinking Materials Science for Chemical Engineers with Problem-based Learning* ***Braidy N** <Université de Sherbrooke>, Bédard D

15:00 0110 *Continuous Course Improvement across Instructors and Sections: Let's Stop Reinventing the Wheel* ***Kresta SM** <University of Alberta>

15:40 Coffee Break

16:00 0111 *Team Midterm in An Introductory Process Design Course*
***Jamieson MV** <University of Alberta>, Shaw JM

16:20 0112 *A Dynamic Simulator for Active Learning* **Marcotte E** <Polytechnique Montréal>, Aubé M, Farand P, Fradette L, Perrier M, Tavares JR, Joao S

16:40 0113 *Using One-minute Quizzes to Continually Assess Student Knowledge and Promote Student Engagement* ***Sowinski A** <University of Ottawa>

17:00 0114 *Research Methodology Course for Graduate Chemical Engineering Students: A Case Study* ***Abdelrasoul A** <Ryerson University>, Upreti S

17:20 0115 *Chemical Engineering in Lebanon: Best Practice and Innovative Teaching* ***Manneh R** <University of Balamand, Lebanon>, El Zakhem H

17:40 End of Session

Chemical Engineering Foundations

CEF1 2105

Colloids and Interfaces

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Ayodeji A JeJe, A Eslami

14:00 0116 *A Microfluidics-based Technique for Passive Non-intrusive Tracking of Biofilm Viscosity in Time* ***Greener J** <Université Laval>, Taghavi SM, Paquet-Mercier F, Parvinzadeh Gashti M, Eslami A

14:20 0117 *Investigation on Effect of Moisture Content on Tribocharging Behaviour and Volume Resistivity of Pharmaceutical Granules* Choi K, **Taghavivand M** <University of Saskatchewan>, Zhang L

14:40 0118 *Ionic-liquid Self-aggregation on Rare-earth Semi-soluble Mineral Surfaces in Aqueous and Non-aqueous Systems* ***Azizi D** <Université Laval>, Larachi F

15:00 0119 *Preparation and Characterization of Tuneable Hydrophobic Graphene-based Thin Films* **Gallerneault M** <Queen's University>, Osazuwa O, Giglio C, Truica-Marasescu F, ***Docoslis A**

15:20 0120 *Directed Synthesis of Silica Particles via Microfluidic Platform for Nanofluid Improved Oil Recovery* **Bazazi P** <University of Calgary>, ***Hejazi SH**

15:40 End of Session

CEF2 206A

Fluid Flow and Mixing in Continuous and Discrete Systems

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Anthony Wachs, Seyed M Taghavi

14:00 0121 *Effects of the Immiscible Liquid Phase Properties on Particle Agglomeration due to Liquid Bridging in a Slurry Bubble Column* ***MacIntyre S**, Atkinson M, ***Pjontek D** <Western University>

14:20 0122 *Quantitative Mixing Assessment of Non-cohesive Powders in Convective Blenders by Incorporating the Discrete Element Method (DEM)* **Yaraghi A** <Ryerson University>, Ebrahimi M, Ein-Mozaffari F, Lohi A

14:40 0123 *Use of Electrical Resistance Tomography (ERT) to Investigate the Effect of the Rheological Parameters on the Quality of Distributive Mixing in the SMX Static Mixer* **Jegatheeswaran S** <Ryerson University>, Ein-Mozaffari F, Wu J

15:00 0543 *The Effects of Geometry Movement on non-Newtonian Displacement Flows* Amiri A, Larachi F, ***Taghavi SM** <Université Laval>

15:20 0125 *Effects of Drag-reducing Polymers on the Transition and Growth of Turbulent Coherent Structures* Bai X, ***Xi L** <McMaster University>

15:40 Coffee Break

16:00 0126 *EPIC-Enabling Process Innovation through Computation*
***Nandakumar K** <Louisiana State University, USA>

16:40 0127 *CFD Modeling of Oil-water Annular Flow across a Sudden Contraction in Horizontal Circular Pipe* ***Belgacem I** <University of Science and Technology Houari Boumediene, Algeria; UAMOB, Algeria>, Si-Ahmed E-K, Legrand J

17:00 0128 *Comparison Electrical Signals Response for Different Multiphase Flow Arrangement* **Saied M** <Dalhousie University>, Donaldson A

17:20 0129 *The Effect of Biomass Volume Fraction on Bubbles in Sand-biomass Fluidized Beds* **Jalalinejad F** <University of Saskatchewan>, Zhang L, Spiteri RJ

17:40 End of Session

Electrochemistry and Electrochemical Engineering

EEE3 205B

Fuel Cells

Organizer(s) - Zhongwei Chen and Elöd Gyenge
Chair(s) - Jesse Greener, Jeff Gostick

14:00 0130 *An Analysis of Monolithic Biochar Properties and Supercapacitor Performance Relationships* **Ngan A** <University of Toronto>, ***Jia CQ**

14:20 0131 *Electrical Conductivity of Photosynthetic Biomass-derived Nanoporous Biochar* **Gabhi RS** <University of Toronto>, ***Jia CQ**, Kirk DW

14:40 0132 *The Significance of Precursor Structure on Monolithic Wood-derived Biochar Supercapacitor Electrode Performance* **Caguiat JN** <University of Toronto>, ***Jia CQ**, Kirk DW

15:00 0133 *In situ Active Chlorine Production Capacity: Experimental Modeling and Optimization of Online Electrochemical Process* ***Zaviska F** <Université de Montpellier, France>, Brosillon S, Delgado L

15:20 0134 *Pitting Corrosion Evaluation of Austenitic Stainless Steel Types 304 and 316 in Saturated KCl and Potash Brine* *[§]Tolouei M, Ding Y, Kennell G, **Evitts R** <University of Saskatchewan>

15:40 End of Session

Energy Resources

ENR2

205C

Forest Biomass Refinery

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Louis Fradette

14:00 0135 ~~*Solvent Losses in the Tailings Generated from a Hybrid Bitumen Extraction Process*~~ *[§]Lin F <Natural Resources Canada>, ~~Xu Y, Dabros T, Xu Z, Nelson R~~ WITHDRAWN

14:20 0136 *Performance Enhancement of Solvent-Assisted Gravity Drainage Process by Periodic Variation of Air Injection Temperature* **Khodaei Booran S** <Ryerson University>, *Upreti SR, [§]Ein-Mozaffari F

14:40 0137 *Innovative Hybrid Extraction Process of Bitumen from Athabasca Oil Sands* [§]Zhu Y <University of Alberta>, *Xu Z, Masliyah J

15:00 0138 *Phase Inversion of Solid-stabilized Emulsions with Application to Crude Oil Dewatering* **Wan B** <Polytechnique Montréal>, *Fradette L

15:20 0139 *FTIR Quantification and Characterization to Bitumen Remediated by Green Solvent from Alberta Tailing Soils* *[§]Gan QJ <McGill University>, [§]Ismail AA

15:40 Coffee Break

16:00 0140 *Assessment of an Organosolv Biorefinery Integrated at a Softwood Kraft Pulp Mill Located in a Mixed Forest* [§]Jeaidi J <Natural Resources Canada>, Gilani B, Ajao O, Mansoornejad M, *Benali M

16:20 0141 *Hemicellulose Extraction from Process Waste Streams and its Use to Enhance the Properties of NBSK Pulp* **Rangu V** <University of British Columbia>, *Trajano HL, [§]Beatson R, Chen J, Chen X, Chang XF

16:40 Award Lecture for Best Graduate Student Paper Published in CJChE

16:40 0142 *Multi-objective Optimization of Biobutanol Production* **Sharif Rohani A** <University of Ottawa>, [§]Mehrani P, *Thibault J

17:20 0143 *Multi-objective Optimization of the Ammonia Converter at Different Catalyst Lifetime Stages* *[§]Ivanov SY <Western University>, [§]Ray AK

17:40 End of Session

Environment

ENV2

204B

Trends in Wastewater Mitigation and Water Quality

Organizer(s) - Madhumita B Ray, Rafael M Santos and Peter Vanrolleghem
Chair(s) - Madhumita B Ray, Joao Soares

14:00 0144 *Characterization and Bioavailability of Silver Nanoparticles towards the Green Alga, Chlamydomonas reinhardtii in Wastewaters* **Azimzada AA** <McGill University>, Wilkinson KJW, *[§]Tufenkji NT

14:20 0145 *The Influence of Water Quality on the Characteristics of Lead Corrosion Scales* **Guo D** <Western University>, *Herrera JE, Robinson C

14:40 0625 *Optimization of a Combined UV-C/H₂O₂-FUV System for the Treatment of an Actual Slaughterhouse Wastewater* **Naderi KV, Bustillo-Lecompte CF** <Ryerson University>, Mehrvar M, Abdekhodaei MJ

15:00 0147 *Biodegradation of Naphthenic Acids in Microbial Fuel Cell Type Bioreactors* **Valdes Labrada G** <University of Saskatchewan>, *[§]Nemati M

15:20 0148 *Bioremediation of Waters Contaminated with Phenol and Cresols* **Zhou Y** <University of Saskatchewan>, *[§]Nemati M

15:40 Coffee Break

16:00 0151 *Evaluation of Biosurfactant and Biodegradation Treatment on the Removal of Petroleum Hydrocarbons from Drill Cuttings and Oil-contaminated Soils* **Olasanmi IO** <University of Northern British Columbia>, Thring RW

16:20 0152 *Removal of Sulfide Wastewater by Alginate-iron Oxide Magnetic Nanoparticles* *[§]Banat F <The Petroleum Institute, United Arab Emirates>, Pal P, Edathil A

16:40 0149 *Ultraviolet Light Emitting Diode: A New Technology for Water Treatment* *[§]Taghipour F <University of British Columbia>

17:00 0153 *Evaluation and Optimization of a Spinning Disc Photoreactor for the Degradation of Phenol* [§]Mirzaei M, *Dabir B, Dadvar M, **Jafarikojoor M** <Amirkabir University of Technology, Iran; University of British Columbia>

17:20 0150 *A New Design Photoreactor for Water Treatment Using Impinging Jet Stream on a Flat Disc* *[§]Jafarikojoor M <Amirkabir University of Technology, Iran; University of British Columbia>, *Dabir B, Sohrabi M, Royaei SJ

17:40 End of Session

Macromolecular Sciences and Engineered Polymers

MSP2

202

Bio-based, Biomedical and Green Polymers

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Michel Huneault

14:00 0154 *Determining Kinetics of Bio-renewable Butyrolactone Monomers in Aqueous Solutions Using in-situ NMR and PLP-SEC* [§]Luk S <Queen's University>, Kollar J, Lacik I, Monascek J, *Hutchinson RA

14:20 0155 *Conjugated Linoleic Acid/Styrene/n-Butyl Acrylate Emulsion Terpolymerization for Adhesive Applications* *[§]Dubé MA <University of Ottawa>, Roberge S

14:40 0156 *Adhesive Performance Modification in Core-shell Latex Films Using d-Limonene as a Chain Transfer Agent* **Ren S** <University of Ottawa>, *[§]Dubé MA

15:00 0157 *Carbon Dioxide as both Feedstock and Blowing Agent for the Formation of Biobased Microcellular Non-isocyanate Polyurethane Materials or Foams* *[§]Poussard L <University of Mons & Matera Nova, Belgium>, Grignard B, Detrembleur C, Park CB, Raquez JM, Dubois P

15:20 0158 *The Effect of Drying Method on Porosity in Reticulated Sorbent Biofoams* *[§]Outwaite A <Dalhousie University>, Donaldson A

15:40 End of Session

MSP3

202

Novel Functional Polymeric Materials

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Michel Huneault

16:00 0159 *Stress-sensitive Color-changing Polymers and their Application in Structural Materials* *[§]Li M <McMaster University>, Zhang Q, [§]Zhu S

16:20 0160 *Porous Environmentally Sensitive Hydrogels with Tunable and Enhanced Response Properties* **Gancheva T** <Polytechnique Montréal>, *[§]Virgilio N

16:40 0161 *Development of Thermoplastic Reversible and Multiple Shape Memory Polymer Systems* **Gao Y** <McMaster University>, Liu W, [§]Zhu S

17:00 0162 *Microfluidic Synthesis of Highly Porous Non-spherical Particles and their Optical Modulation by Swelling* **Li M** <Ryerson University; St. Michael's Hospital>, Jung D, Kozinski JA, *[§]Hwang DK

17:20 0163 *Gas-switchable Microgels' Application on High Internal Phase Emulsion with Double Emulsion Morphology and Gas-switchable Microgel-colloidosome* **Lei L** <McMaster University>, [§]Zhu S

17:40 End of Session

Nanomaterials and Nanotechnology

NNT1 2105

Nanomaterials: New Applications and Enhancing Conventional Processes

Organizer(s) - Trong-On Do and Aiping Yu
Chair(s) - Nadi Braidy, Trong-On Do

16:00 0164 *Effects of Self-assembly Monolayer on Photoelectrical Properties of Polymer/Benzothienobenzothiophene Blend Based Organic Thin Film Phototransistors* **Ljubic D** <Xerox Research Centre of Canada; McMaster University>, Jarvis V, Smithson CS, Wu Y, Hu N-X, [§]Zhu S

16:20 0165 *A Mechanism for the Protective Properties of Nanometric Oxide Clusters of the ODS Steels against High Temperature Creep and Radiations* **Reda M** <Canadelectrochim>

16:40 0166 *Investigation of Effects and Interactions of Reaction Mixture Composition Ratios on the Characteristics of NaA Zeolite Nanoparticles* **Mirfendereski SM** <Shahid Beheshti University, Iran>, Mohammadi T

17:00 0167 *Surface Modifying Macromolecules: Synthesis, Characterizations and Applications for Nano-porous Materials* **Rana D** <University of Ottawa>, [§]Matsuura T

17:20 End of Session

Systems and Control

SYC2 203

Applied Statistics and Multivariate Methods in Process Systems

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Carl Duchesne, Ryan Gosselin

14:00 0169 *Future of Latent Variable Methods in the Process Industry 4.0* **Ferrer A** <Universitat Politècnica de València, Spain>

14:40 0170 *A Data-driven Approach to Establish a Design Space for Raw Materials Properties and Manufacturing Conditions for Pharmaceutical Drug Stability Assurance* **Ghasemzadeh-Barvarz M** <Université Laval>, Duchesne C, Cournoyer A

15:00 0171 *Revisiting Dynamic PLS: Creating Meaningful Models for Process Monitoring* **Lavoie FB** <Université de Sherbrooke>, [§]Gosselin R, Muteki K

15:20 0172 *Curve Fitting Regression: Getting More from your WD-XRF* **Kikongi P** <Université de Sherbrooke>, [§]Gosselin R, Salvat J, Simard J-S, Blais S

15:40 Coffee Break

16:00 0173 *Handling Class Imbalance and Multiple Objectives in the Design of Industrial Inspection Systems* **Liu J** <Pukyong National University, South Korea>

16:20 0174 *Application of Markov Random Field Based Image Segmentation for Oil Water Interface Detection* **Liu Z** <University of Alberta>, [§]Huang B, Afacan A, Kodamana H, Ibrahim F

16:40 0175 *3D Mapping of Pharmaceutical Tablets by Coupling Raman and Color Imaging* **Fauteux-Lefebvre C** <Université de Sherbrooke; Pfizer Canada Inc>, Guay J-M, [§]Gosselin R

17:00 0176 *Map and Quantify Components in Low-count Spectral Images* **Lavoie FB** <Université de Sherbrooke>, Braidy N, [§]Gosselin R

17:20 0177 *Inspection of PLA Films Using NIR Chemical Imaging and Multivariate Image Analysis* **Amirabadi S** <Université Laval>, [§]Duchesne C, Rodrigue D

17:40 End of Session

SYC4 207

Systems and Process Design and Simulation

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Tom A Adams, Luis Ricardez-Sandoval

16:00 0178 *Optimal Design of Integrated Upgrading Plant and Utility System for the Oil Sands Industry* **Shahandeh H**, [§]Li Z <University of Alberta>

16:20 0179 *Simultaneous Design and Control of Chemical Processes under Uncertainty Using a New Back-off Approach* **Rafiei M** <University of Waterloo>, Mehta S, [§]Ricardez-Sandoval L

16:40 0180 *Design and Assessment of Novel Second Generation Biobutanol Plants Based on a Thermochemical Route* **Okoli CO**, [§]Adams TA <McMaster University>

17:00 0181 *Biofuel and Bioenergy Production from Brown Algae through Biochemical Conversion Pathways* **Liu JJ** <Pukyong National University, South Korea>, [§]Fasahati P

17:20 0182 *Modelling the Intrinsic Behaviours of Selected Solvents in the Extraction of Naphthenic Acids from Crude Oil* **Okeke EO** <MERCOGAS Limited>

17:40 End of Session

Poster Symposium

POS 2000C

Poster

From 17:40 until 19:30

0183 *Controlled Release of Growth Factors from Biomaterials Using Coiled-coil Interactions* **Murschel F** <Polytechnique Montréal>, Fortier C, Hodges RS, Jolicoeur M, [§]De Crescenzo G

0184 *New Approach for the Evaluation of Aorta Stenosis* **Belgacem I** <University of Science and Technology Houari Boumediene, Algeria; 2UAMOB, Algeria>, Latreche S, Si-Ahmed E-K, Legrand J

0185 *In situ Preparation of Surface-enhanced Raman Scattering (SERS) Substrates for Ultrasensitive Analyte Detection in Food and Water* **Dies H**, Escobedo C, [§]Docoslis A <Queen's University>

0186 *Alginate Scaffolds for 3D Cell Culture Systems* **Drevelle O** <Université de Sherbrooke; Polytechnique Montréal>, Sarazin P, Fauchoux N, [§]Virgilio N

0187 *Production and Optimization of Bacterial Cellulose Tubes: A Promising Platform for Spinal Cord Injuries* **Stumpf TR** <University of Ottawa>, Tang L, Cao X

0188 *Composition of Organic Acids in Anaerobic Acidogenic Reactor: Effect of Different Temperatures* **Wassila A** <École de Technologie Supérieure>

0189 *In vitro Characterization of Camelina Sativa Antitumor Peptides against Colorectal Adenocarcinoma Cells* **Thevathasan I**, **Murayyan A** <University of Guelph>, [§]Neethirajan S

0191 *Synthesis and Characterization of Surface Functionalized Fe₃O₄ and its Application for Immobilization of Cytochrome P450 BM3 from Bacillus megaterium* **Bahrami A** <Université Laval>, Garnier A, Larachi F, [§]Iliuta MC

0192 *Optimization of the Extraction of Bioactive Polyphenolic Compounds from Cranberry Pomace by Untargeted Profiling Approach and Response Surface Methodology* **Belair V** <McGill University>, [§]Orsat V, Maheux M

0193 *A Microfluidic Device for Constraining Upstream Spreading of Bacterial Biofilm* **Asayesh F** <Université Laval>, [§]Greener J

- 0194 *A Novel Strategy for Desorption of Cellulases from Delignified Wheat Straw for Production of Biofuel* **Baig KS** <Ryerson University>, Turcotte G, Doan H
- 0195 *Tuning Salt-responsive Antifouling Properties of PMTAC Brush Coating* **Han L** <University of Alberta>, Yan B, Huang J, Zeng H
- 0196 *Spectroscopic Imaging in Microchannels for High-throughput Studies of Biofilms and their Biocatalytic Properties* **Pousti M** <Université Laval>, Paquet-Mercier F, Vicent-Langlois R, Greener J
- 0197 *Cloning, Expression and Production of a Novel Codon-optimized pH Stable Fungal Xylanase in Pichia pastoris* **Yang Z** <University of Ottawa, >, Zhang Z
- 0198 *Effect of the Microenvironment of Ni on Thiophene Catalytic Adsorption Desulfurization Activity* **Qiuqiao J** <SINOPEC Research Institute of Petroleum Processing, China>
- 0199 *Kinetic Performance of Iron Doped Ceria Catalyst for Soot Oxidation* **Li B** <University of Waterloo>, Wen J, Croiset E
- 0200 *Electrospun Ceria Nanofibers for Diesel Soot Filtration* **Tan ZT, Ahne JA** <University of Waterloo>
- 0202 *Key Metal Oxide Catalysts for Ammoxidation of Acrolein to Acrylonitrile* **Thanh-Binh N** <Université Laval>, Dubois J-L, Kaliaguine S
- 0203 *Visible Light Photocatalytic Conversion of Wet Biomass to Valorized Products Using Nanostructured WO₃* **Imbault AL** <University of Toronto>, Farnood R
- 0205 *Transesterification of Vegetable Oil by Homogeneous Organic Strong Base Catalysts via Ultrasonic Process* **Kaliaguine S, Mighri N** <Université Laval>, Hoang V-T
- 0207 *Preparation of Templated Mesoporous α -alumina Catalysts Supports, Synthesis, Structural Properties and Catalytic Activity for Triglycerides Hydrogenation* **Afshar Taromi A** <Université Laval>, Kaliaguine S
- 0208 *Separation of Valuable Components in Foods and their Separability Evaluation Using Hansen Solubility Parameters* **Sato T** <Kansai University, Japan>, Yamamoto H
- 0209 *Study on the Separation of Hafnium (Hf) from Zirconium (Zr) Compounds Using Crystallization Method* **Matsuno H** <Kansai University, Japan>, Yamamoto H, Wang J
- 0210 *Evaluation of Physical Property for Zeolite Surface Using Hansen Solubility Parameter* **Yamane S** <Kansai University, Japan>, Yamamoto H
- 0211 *Synthesis and Characterization of Titanium Chabazite without Aluminum by Hydrothermal Treatment* **Ishii H** <Kansai University, Japan>, Imasaka S, Araki S, Yamamoto H
- 0212 *Development of Falling Needle Rheometer Using Blood Collecting Tube* **Horikawa D** <Kansai University, Japan>, Yamamoto H, Tamura E, Kawamura K
- 0213 *Determination of Fluorine Parameter(-F) of Group Contribution Method for Hansen Solubility Parameter Estimation* **Fukatsu N** <Kansai University, Japan>, Yamamoto H
- 0214 *Regeneration of HF from Acid Waste Discharged from Semiconductor Manufacturing Process* **Toyozone S** <Kansai University, Japan>, Yamamoto H
- 0215 *Measurement of Hansen Solubility Parameter of Ionic Liquids* **Agata Y** <Kansai University, Japan>, Yamamoto H
- 0218 *Measurements for the Phase Equilibrium and Formation Kinetics for Methane and Carbon Dioxide Hydrates in the Presence of Additive Materials* **Chen YP** <National Taiwan University, Taiwan>, Tang M
- 0219 *CFD Study of Shear Thinning Fluid Flows in a Vessel Stirred by Flat-blade Impellers* **Ameur H** <University Center Ahmed Salhi, Algeria>
- 0220 *Incorporation of Multi-walled Carbon Nanotubes to Enhance Performance of Microbial Fuel Cells* **Abbaszadeh Amirdehi M** <Université Laval>, Zarabadi MP, Greener J
- 0221 *Hydrodynamic Effects on Electrode Respiration of an Anaerobic Bacterium - Toward Improvement of Future Microbial Fuel Cells (MFCs)* **Zarabadi MP** <Université Laval>, Greener J
- 0223 *Real-time Temperature Monitoring for Traditional and Extensive Green Roofs: A Lebanese Case Study* **El Bachawati MB, Manneh RM** <University of Balamand, Lebanon>, Belarbi RB, El Zakhem HZ
- 0225 *Hollow Fiber Membrane Desiccant for Vacuum Desiccant Cooling Application* **Yang Y, Rana D** <University of Ottawa>, Matsuura T
- 0227 *Optimization and Modeling of Hemicellulose Oligomers Production from Pulp Mill Residues for Use as Pulp Strength Additives* **Chen J** <University of British Columbia>, Chang XF, Chen X, Beatson RP, Trajano HL
- 0228 *Spacer Geometry Design Influence and Modelling of Feed Flow in Ultrafiltration Channel using Computational Fluids Dynamics CFD* **Abdelrasoul A** <Ryerson University>, Doan H, Lohi A, Cheng C-H
- 0229 *The Critical Effect of Fossil Fuels Produced Acidic Gases (S(IV) and Nitrogen Oxides) on the Resident Time of CO₂ in the Atmosphere* **Reda M** <Canadelectrochim>
- 0230 *Development and Treatment Procedures of Water Contaminated by Molybdenum Using a Chitosan Support Derivative* **Briion-Roby R** <Université du Québec à Rimouski>, Deschênes J-S, Gagnon J, Chabot B
- 0232 *Biosorption of Atrazine by Moringa oleifera Lam in Aqueous Solutions Using Fixed-bed Column* **Homem NC, Andrade MB** <State University of Maringá, Brazil, >, Santos TRT, Bergamasco R, Vieira MF
- 0233 *Graphene-iron Oxide Nano-composite for Pesticide Removal from Water* **Santos TRT** <Université Laval; Universidade Estadual de Maringá, Brazil>, Andrade M, Bergamasco R, Hamoudi S
- 0234 *Use of Isotope Marking to Evaluate the Effect of Different Structures on the Composting Degradability of Energetic Materials* **Araya M** <Polytechnique Montréal>, Dubois C
- 0235 *Study on the Valorization of Brewer's Spent Grains* **Ostojic S** <Royal Military College of Canada>, Zeman F
- 0236 *Double Emulsion Systems for Liquid-liquid Extraction Processes* **Freitas HFS, Bezerra VMF** <Federal University of Rio Grande do Norte, Brazil>, Paulo JBA
- 0237 *Filtration and Centrifugation of Oil Sands Tailings Treated with Hyperbranched Functionalized Polyethylenes (HBfPE)* **Nguyen B** <University of Alberta>, Davey S, Botha L, Soares J
- 0238 *Treatment of Polluted Air Using Biofilter Based S. griseous Species* **Awad G** <National Research Centre, Egypt, >, Mohamed EF, El-Diwany AI
- 0239 *Adsorption Performance of Packed Bed Column for the Removal of Glyphosate from Aqueous Solutions Using MnFe₂O₄-graphene Composite Supported on Activated Carbon* **Marin P, Bergamasco R, Paraiso PR, Hamoudi S** <Université Laval>
- 0240 *Comparative Study of Activated Babassu Coconut Carbon and Activated Bone Carbon and its Use Removing the Yellow Dye Tartrazine* **Reck IM, Paixão RM, Santos TRT** <State University of Maringá, Brazil>, Andrade MB, Vieira AMS, Vieira MF, Bergamasco R
- 0241 *Removal of Pharmaceutical and Personal Care Products from Drinking Water by Adsorption Using a Composite Carbon Nanoparticle Electrospun Nanofiber Membrane* **Soberman MJ** <University of Toronto>, Feng C, Farnood RR

0242 *Refuse Derived Fuel from Montreal Municipal Solid Waste: Comparing Thermal Valorization Alternatives* **Girard C** <Polytechnique Montréal>, *Legros R

0246 *Producing Value-added Mineral Products from Metallurgical Slag* ***Santos RM** <Sheridan Institute of Technology>, Georgakopoulos E, Chiang YW, Manovic V

0247 *Hydrochar Production from Neutral Sulfite Semi-chemical Red Liquor* **Gamgoum R, Dutta A, Santos RM** <Sheridan Institute of Technology>, *Chiang YW

0249 *Waterborne Biobased Polyurethane or Polyurethane-urea: Which of Both Has the Better Anti-corrosion Properties?* ***Poussard L** <University of Mons & Matera Nova, Belgium>, Mariage J, Sénéchal T, Raquez JM, Dubois P

0250 *The Mechanism and Kinetics of Poly (Lactic Acid) Chemical Modification with Various Coagents and Peroxides* **Dawidziuk K** <Queen's University>, *Kontopoulou M, *Parent J

0251 *Carbon Nanomaterials Reinforced Polyurethane Composite as Coating for Oil Pipelines and Flanges* **Um JG** <University of Waterloo>, *Yu A, Krithivasan H

0252 *Electrospun Nanofibers for Enhanced Flocculation and Dewatering of Mature Fine Tailings* **Zhang D** <University of Alberta>, *Thundat T, *Narain R

0254 *Development of Colloidal Polymeric Nanocarrier for Topical Meglumine Antimoniate Delivery* ***Horoiva TA** <Institute of Technological Research of São Paulo, Brazil>, Oliveira AM, Cerize NNP

0255 *Graphene Associated with Iron Oxide Nanoparticles for Pesticide Removal from Water* ***Santos TRT** <Université Laval; Universidade Estadual de Maringá, Brazil>, Andrade MB, *Hamoudi S, Bergamasco R

0256 *Heavy Metals, PPCPs, and Pathogen Removal from Wastewater Using Electrospun Nanofiber Membranes* **Amerian TA** <University of Toronto>

0257 *Graphene-Iron Oxide Nanoparticles Composite for Atrazine Removal* ***Andrade MB** <Université Laval; Universidade Estadual de Maringá, Brazil>, Santos TRT, *Hamoudi S, Bergamasco R, Vieira MF

0259 *Functionalizations of Nanobiochar for Laccase Immobilization* ***Naghdi M** <Université du Québec>, Taheran M, *Brar SK, Verma M, Surampalli RY, Valéro JR

0261 *A Universal Approach in Developing Antibiofouling Membranes* **Kim Y, *Rana D** <University of Ottawa>, *Matsuura T, Chung W-J

0262 *Field Scale Injection of a Nano Iron-dithionite Treatment for in situ Remediation* **Nunez Garcia A** <Western University>, Boparai H, de Boer C, Chowdhury A, Kocur C, Gabayet J, Herrera J, *O'Carroll DM, Austrins L, Peace C, Johnson R

0263 *Highly Conductive and Interconnected Graphene Foam Based Polymer Composite* ***Jun YS** <University of Waterloo>, Sy S, Rasenthiram L, Tjandra R, *Yu A

0264 *Novel Functionalized Electrospun Nanofibrous Membranes for Virus Adsorption in Drinking Water Applications* **Liegey S** <University of Toronto>, *Farnood R, Feng C

0265 *Hydrophilic SiO₂, CuO, and CaCO₃ Nanoparticles Incorporated Membranes for Desalination by Membrane Distillation* ***Baghbanzadeh M** <University of Ottawa>, Rana D, Matsuura T, Lan C

0267 *Multimodel Based Control of pH Neutralization Process* ***Kanagalakshmi S** <UNKNOWN>, Manamalli D, Mageshwari S

0268 *Development of FT-NIR Based Monitoring Method of Amine Weight Percent and Degree of Neutralization in Flotation Applications in Potash Processing* ***Hussein M, *Donaldson A** <Dalhousie University; Mosaic Inc>

0269 *Degradation of Glyphosate in Aqueous Solutions over Graphene-based Photocatalyst* **Feriani M, Belkacemi K, *Hamoudi S** <Université Laval>

0270 *Glycerol Acetalization with Formaldehyde Using Supported Heteropolyacid Salts on 3D Mesoporous Silica* **Chen L** <Université Laval>, *Kaliaguine S

0272 *Methanol Synthesis by Intensified Sorption Enhanced CO₂ Conversion* ***Iliuta MC** <Université Laval>, Bougie F, Iliuta I, Fongarland P

0274 *Kinetic Modeling of NiO-based Oxygen Carriers Reduction* **Ipsakis D, Antzara A, Heracleous E, Silvester L, Bukur DB, *Lemonidou AA** <Aristotle University of Thessaloniki, Greece>

0275 *Permselective Sod Zeolite Membranes for the Reverse Water Gas Shift Reaction with In-situ Water Removal* ***Bougie F, Iliuta MC** <Université Laval>, Iliuta I, Guilhaume N, *Fongarland P

0276 *Microalgae Dewatering by Electrocoagulation to Produce Multi-purpose Bio-solid Feedstock for Cement Plants* **Khafhafera AK** <Queen's University>

0279 *Wet Extraction of Lutein and Lipids from Microalga by Quantitative Determination of Polarity* **Gong M** <Western University, >, Bassi A

0282 *How Can Regulatory Prosecution Improve Workplace Safety?* ***Umme AM** <University of Alberta>, *Lefsrud LM

0283 *Successfully Impementing Lean Six-sigma in Non-chemical Industries for Sustainability and Prosperity. Eliminating Losses and Increasing Overall Equipment Efficiencies* **Pasha M** <Society for Maintenance and Reliability Professionals>, *Ali M

0285 *Simple Microfluidic Approach for the Generation of Water-in-water Droplets* **Moon BU** <Ryerson University; Keenan Research Centre for Biomedical Science, St. Michael's Hospital; Institute for Biomedical Engineering, Science and Technology (iBEST) - a partnership between Ryerson University and St. Michael's Hospital>, Abbasi N, Jones SG, Tsai SH, *Hwang DK

0286 *Investigation on the Performance of the Counter Flow Technique for the Cooling of Complex Fluids in Heat Exchangers* ***Ameur H** <University Center Ahmed Salhi , Algeria>

0638 *Ultrasound Process for Fischer-Tropsch Catalyst Design* **Louyot P** <Polytechnique Montréal>, Boffito DC, Patience GS, Neagoe C

0639 *Shape Selectivity Effects of Wire Gauzes in Ammonia Oxidation* ***Hayes RE** <University of Alberta>, Fadic A, Votsmeier M

0640 *Crude Glycerol Purification in a Semi-continuous Membrane Apparatus* **Dhabhai R** <University of Saskatchewan>, Nguyen T, Chol CG, *Dalai AK

0641 *Biochar from Non-conventional Biomasses - A Potential Substitute for Coal* **Regmi B** <University of Guelph>, *Zhang B, *Dutta A

0645 *Phosphate Recycling from Municipal Waste* **Meouch O** <University of Ottawa>, *Omelson S

0646 *Phosphorite (Phosphate Rock) Production from Municipal Wastewater Sludge Polyphosphate* **Gao L** <University of Ottawa>, *Omelson S

Tuesday AM

Plenary Lectures

PLS

2000AB

Plenary Lectures

11:00 Introductory Remarks

11:05 0287 *Bridges in Modelling and Simulation of Steam-cracking: From Fossil to Renewable Feedstock and from Molecule to Furnace* ***Marin GB** <Ghent University, Belgium>, Van Geem KM

Questions

12:00 End of Session

Honourary Symposia

SKS1 **205B**

Honourary Symposium in Recognition of Professor S Kaliaguine for Outstanding Contributions in Catalysis

Organizer(s) - Freddy Kleitz and Sébastien Royer

08:30 0288 *Organic Materials: Self Assembled Monolayers and Mesoporous Materials* ***Crudden CM** <Queen's University>

09:10 0289 *Site Dispersion Using Molecular Stencil Patterning and Catalytic Epoxidation Activity in Mesoporous Template Silica* ***Bonneviot LHR** <ENS de Lyon, France>, Fang L, Li C, Albelá B, Yang B, Zheng Y, Wu P, He MY

09:30 0290 *Tailoring Morphology of SiO₂ Materials Using Statistic Design of Experiments on Synthesis Variables* ***Maya-Yescas R** <Universidad Michoacana de San Nicolás de Hidalgo, México>, Paniagua-Rodríguez JC, Rangel-Segura R, Quintana P, Huirache-Acuña R

09:50 0291 *Novel Gas Chromatographic Method for Measuring Multi-component Gas Adsorption Isotherms in NaY Zeolite* **Shirani B** <University of New Brunswick>, Eic M

10:10 0647 *Niobium Oxide as a Promoter for Base Metal Oxides for Carbon Monoxide and Propane Oxidation for Environmental Applications* ***Farrauto RJ** <Columbia University, USA>

10:30 End of Session

Special Symposia - Carbon Capture, Utilization and Storage

CCS1 **207**

Advances in Carbon Capture

Organizer(s) - Éric Croiset and Maria C Iliuta

Chair(s) - Angeliki Lemonidou, Maria C Iliuta

08:10 0293 *Novel CO₂ Capture Process for H₂ Production Combining Ca and Ni Chemical Loops* ***Lemonidou A** <Aristotle University Thessaloniki, Greece>

08:50 0294 *High Purity Hydrogen Production by Intensified Sorption Enhanced Steam Glycerol Reforming* ***Shokrollahi Yancheshmeh M** <Université Laval>, Radfarnia HR, Iliuta MC

09:10 0295 *Modified Thermodynamic Equilibrium Modelling of Chemical Looping Combustion (CLC) with NiO as Oxygen Carrier* Mostafavi E, **Manafi Rasi N** <University of Calgary>, Khakpoor N, *Mahinpey N

09:30 0296 *The Preparation of Alumina Aerogel as a High Surface Area Support for the Chemical Looping Process* **Karami D** <University of Calgary>, Soleimanisalim AH, *Mahinpey N

09:50 0297 *The Synthesis of Oxygen Carriers with Impregnation of Active Metals over Modified Alumina Using Sol-gel Technique* **Soleimanisalim AH** <University of Calgary>, Sedghkerdar M, Karami D, *Mahinpey N

10:10 0298 *A Mechanism for the Reactivation of Sintered CaO Based Sorbent during Carbonation* ***Reda M** <Canadelectrochim>

10:30 End of Session

Special Symposia - Challenges and Opportunities for Micro-algal Technologies

MAT1 **307A**

Challenges and Opportunities for Micro-algal Technologies

Organizer(s) - Amarjeet Bassi, Hector De La Hoz Siegler, Jean-Sébastien Deschênes and Wei Liao
Chair(s) - Hector De la Hoz Siegler, Wei Liao

08:10 0299 *Dynamic Optimization of Biomass Productivity in Continuous Cultures of Microalgae through Modulation of Light Intensity* **Deschênes J-S** <Université du Québec à Rimouski>, Vande Wouwer A

08:30 0300 *Using Light-leaking Waveguides for Growing Algae as a Biofilm* ***Azimi Y** <University of Toronto>, Genin SN, Aitchison JS, *Allen DG

08:50 0301 *Combining Electrocoagulation and Algal Cultivation to Accumulate Algal Biomass and Reclaim Water from Liquid Anaerobic Digestion Effluent* Liu Z, Chen R, Liu Y, ***Liao W** <Michigan State University, USA>

09:10 0302 *Enhancement of Microalgal Growth for Carbohydrate Accumulation* Wang X, Ruan Z, Sheridan P, Boileau D, Liao W, ***Liu Y** <Michigan State University, USA>

09:30 0303 *Macroalgae: A Candidate for Wastewater Remediation and Value-added Biomass Yield for Animal Feeds and Biofuel Applications* Ge S, Qui S, Tremblay D, ***Champagne P** <Queen's University>

09:50 0304 *Carbon Dioxide Conversion to H. Pluvialis Biomass* **Balaski M** <University of Alberta>, Sorensen J, ***Jamieson MV**

10:10 0305 *Antioxidant Production in Heterotrophic Microalgal Cultures: Cultivation and Optimization Strategies* **Ibarra-Vidal M** <University of Calgary>, ***De la Hoz Siegler H**

10:30 End of Session

Special Symposia - Process Safety and Loss Management

PSM2 **204A**

Implementing PSM

Organizer(s) - François Roche and Melanie Wilson
Chair(s) - Melanie Wilson, Jean-Paul Lacoursière

08:00 0642 *A Changing Landscape: The Pipeline Industry in Canada* **Lukaniuk C** <Canadian Energy Pipeline Association>

09:00 0306 *Development and Deployment of a Process Safety Curriculum in a North American Pipeline Company* **Viloria E** <Enbridge Liquid Pipeline>, *Uy R

09:30 0307 *Revisiting How 'Acceptable Risk' and 'Social License to Operate' Become Defined: An Incorporation of Social-psychological Processes into Technical Risk Management* ***Lefsrud LM** <University of Alberta>, Gehman J, Jamieson MV

10:00 0308 *Pipeline Quantitative Risk Assessment* ***Sanati SS** <Atkins Consulting Canada>

10:30 End of Session

Special Symposia - Rheology of Complex Fluids

RCF1 **206B**

Polymer Melts and Composites (Joint with Honourary Symposium in Recognition of Professor P Carreau for Outstanding Contributions in Rheology and Polymer Nanocomposites)

Organizer(s) - Marianna Kontopoulou and Frej Mighri
Chair(s) - Marinna Kontopoulou

08:10 0309 *Exact Analytical Solution for Large-amplitude Oscillatory Shear Flow from Oldroyd 8-constant Model: Shear Stress* ***Saengow C**, ***Giacomin AJ** <Queen's University>, Kollitawong C

08:50 0310 *Thermodynamics of Phase Inversion* **Grmela M** <Polytechnique Montréal>

09:10 0529 *Modification of the Rheological and Thermal Properties of PLA by Reactive Extrusion in the Presence of a Multifunctional Coagent* **Tiway P** <Queen's University>, Saraf C, *Kontopoulou M

09:30 0312 *Enhancements in the Shear-induced Crystallization Rates of Reactively Modified Branched PLA, Studied by in-situ Rheological Measurements and Optical Microscopy* ***Najafi N** <Queen's University>, *Kontopoulou M

09:50 0313 *Thermoplastic Starch Composites Using Mature Fine Tailings as Fillers* **Moran DA** <University of Alberta>, *Soares JBP

10:10 0314 *Eccentric Cylindrical Coordinates* **Gilbert PH** <Queen's University>, Saengow C, *Giacomin AJ

10:30 End of Session

Biomedical Engineering

BME3 307B

Tissue Engineering

Organizer(s) - Corinne Hoesli and Patrick Vermette
Chair(s) - Aris Docoslis, Patrick Vermette

08:10 0315 *Microscale Tissue Engineering for Therapeutic Applications* ***Ungrin MD** <University of Calgary>

08:50 0316 *A Microfluidic Method of Synthesis of a Freestanding Collagen Membrane for Tissue Engineering Applications* **Rosella E** <Université Laval, >, Myrand-Lapierre ME, *Mantovani D, *Greener J

09:10 0317 *A Bioreactor Platform for the Assessment and Production of Functional Pancreatic Tissue* **Spitters TWGM** <Université de Sherbrooke>, Sharp J, Vermette P

09:30 0318 *Kinetics of Insulin Secretion from Pancreatic Islets: Effect of Islet Size and Glucose Concentration* **Guruswamy Damodaran R** <Université de Sherbrooke>, *Poussard A, Andersen P, *Vermette P

09:50 0319 *Mechanosensors: Microengineered Probes to Measure 3D Tissue Mechanics* ***Moraes C** <McGill University>

10:30 End of Session

Biotechnology/Bioengineering

BBE2 2101

Biofuels/Bio-energy

Organizer(s) - Bruno Gaillet and Denis Groleau
Chair(s) - Denis Groleau

08:10 0320 *Novel Method for the Separation of Biofuels from Fermentation Broths* ***Aniokete TC** <University of Aberdeen, UK>, *Euan BJ

08:30 0321 *A Kinetic Metabolic Model of Lipid Production in Chlorella protothecoides* **Ren X** <Polytechnique Montréal>, Deschenes J, Tremblay R, *Jolicoeur M

08:50 0322 *A Kinetic Model Simulating the Metabolomics of ABE (Acetone-butanol-ethanol) Fermentation Process* **Zhao X** <Polytechnique Montréal>, Peres S, *Jolicoeur M

09:10 0323 *Dehydration of Bio-alcohols by Adsorption Using Biosorbents* **Huang Q** <University of Saskatchewan>, *Niu C, *Dalai A

09:30 0324 *Bioethanol Production Using Pervaporation Membrane Bioreactor* ***Chaurasia SP** <Malaviya National Institute of Technology, India>, Jain A, Dalai AK

09:50 0325 *Techno-economic Comparison of Extractants for Use in Acetone-butanol-ethanol Fermentation* ***Dalle Ave G**, ***Adams II T** <McMaster University>

10:10 0326 *Genome-scale Simulation of Phaeodactylum Tricornutum for Biofuels Production: Impacts of CO₂ Concentration and Light Exposure* **Chamkalani AC** <Memorial University of Newfoundland>, *Zendeheboudi SZ

10:30 End of Session

Chemical Engineering Foundations

CEF1 2105

Colloids and Interfaces

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Jesse Greener, Seyed M Taghavi

08:10 0327 *Electric Field-driven, Template-free Assembly of Colloids into 3-Dimensional Structures* **Raveendran JP** <Queen's University>, Wood JA, *Docoslis A

08:30 0328 *Design and Characterization of Surface Modified Silica Nanoparticles with Stimuli-sensitive and Reversible Aggregation/Disaggregation Behavior* **Sabri F** <Polytechnique Montréal>, Berthomier K, Marion A, Fradette L, Tavares JR, *Virgilio N

08:50 0329 *Demulsification Mechanism of Water-in-heavy oil/Model Compound Emulsion at Elevated Temperature by EO-PO Copolymers* **Niu NZ** <University of Alberta>, *Xu ZX

09:10 0330 *Liquid Flow over Laser-patterned Superhydrophobic Surfaces* **Ahmed KMT** <McGill University>, *Kietzig A-M

09:30 **The Canadian Journal of Chemical Engineering Lectureship Award Lecture**

09:30 0331 *Understanding Hydrophobic Interactions at Solid/Water/Oil/Air Interfaces and Probing Surface Interaction Mechanisms of Deformable Emulsion Droplets/Air Bubbles* ***Zeng H** <University of Alberta>

10:10 End of Session

CEF4 206A

Thermodynamics and Kinetics

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Ali Lohi, Anthony Wachs

08:10 0332 *Investigation of Hydrothermal Synthesis Parameters on Characteristics of Zeolite 13X Nanocrystal Structure* ***Mirfendereski SM** <Shahid Beheshti University, Iran>, Mohammadi T

08:30 0333 *Kinetic of Polystyrene Pyrolysis in Microwave Thermogravimetric Analyzer* **Leclerc P** <Polytechnique Montréal>, Doucet J, *Chaouki J

08:50 0334 *Aqueous Electrolyte Property Prediction via Molecular Simulation* ***Smith WR**, Qi W, **Kelly B** <University of Guelph>

09:10 0335 *A New Model to Predict Carbon Dioxide and Steam Solubility in Bitumen* ***Heidaryan E**, **Jarrhian A** <University of Tehran, Iran>

09:30 0336 *Thermodynamics of Boric Acid in High Temperature Water by AC Conductivity and Raman Spectroscopy* ***Arcis H** <University of Guelph>, Ferguson JP, Applegarth LMSG, Zimmerman GH, *Tremaine PR

09:50 0337 *Numerical Study of Steady Thermal Convection in Commercial Liquid Storage Tanks* ***Pletnyov FM** <University of Calgary>, Jeje AA

10:10 0338 *Development of a Novel Silica Based Carbon Coated Receptor for High Temperature Microwave Processing Applications* **Hamzehlouia S** <Polytechnique Montréal>, Latifi M, Legros R, *Chaouki J

10:30 End of Session

Energy Resources

ENR3 205C

Fossil Energy

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Handen Tezel

08:30 0339 *Reactivity of Asphaltene at Low Temperature* **Naghizada N** <University of Alberta>, Carvalho Do Prado G, De Klerk A

08:50 0341 *Coal Beneficiation of Pakistani Coal by Sodium Hydroxide (NaOH)* ***S.Tahir MS** <University of Gujrat, Pakistan>, Haris E, Sagir MM

09:10 0343 *Pattern Recognition Insight into Drilling Optimization of Shaly Formations* **Chamkalani AC** <Memorial University of Newfoundland>, Zendeheboudi SZ, James LJ, Dusseault MD

09:30 0344 *Potential of Cation-exchanged Clinoptilolite for the Adsorption Separation of Nitrogen from Natural Gas* **Mujcin MM** <University of Ottawa>, Kennedy DA, *Tezel FH

09:50 End of Session

Environment

ENV3 204B

Waste Management and Recovery: Concepts and Solutions

Organizer(s) - Madhumita B Ray, Rafael M Santos and Peter Vanrolleghem
Chair(s) - Rafael M Santos, Emily YW Chiang

08:10 0346 *Scaling up Mineral Carbonation, Challenges and Achievements* ***Pasquier LC** <Institut National de la Recherche Scientifique>, Kemache N, Cecchi E, Blais JF, *Mercier G, Kentish S

08:50 0347 *Dry Slag Granulation: An Inherently Safe Process Creating Value in Slag By-products for the Metallurgical Sector* ***Faucher S, So LC, Mostaghel S, Mahdi MJ** <Hatch Ltd>, Oh S-Y

09:10 0348 *Creating Value from Waste: Meeting the Challenges of Sustainable Tailings Management in Oil Sands* ***Moran K** <Titanium Corporation>, Oxenford J, Nelson S

09:30 0349 *Synergistic Bioenergy Recovery from Co-digestion of Food Wastes with Biosolids* **Kim M** <Western University>, Chowdhury MMI, Nakhla G, Keleman M

09:50 0350 *Renewable Fertilizers from Digested Waste: Nutrient Recovery Techniques and End-products* ***Vaneekhaute C** <Université Laval>, Meers E, Vanrolleghem PA

10:10 0351 *Valorisation of Chicken Feathers: Characterization of Physical Properties and Morphological Structure* **Yimer TT** <University of KwaZulu-Natal, South Africa, ; Ethiopian Institute of Textile and Fashion Technology, Ethiopia, >, *Sithole BB, Ramjugernath D

10:30 End of Session

Macromolecular Sciences and Engineered Polymers

MSP3 202

Novel Functional Polymeric Materials

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Shipping Zhu

08:10 0352 *Towards Gold Nanoparticles Film Growth on Microstructured Porous Hydrogel Surfaces* **Gazil O** <Polytechnique Montréal>, Gancheva T, *Virgilio N

08:30 0353 *Multifunctional Upper Critical Solution Temperature (UCST) Polymer for the Point-of-use Treatment of Fresh Oil Sands Tailings* **Gumfekar SP** <University of Alberta>, Pennetta L, *Soares JBP

08:50 0354 *Core Cross-linked DHBC Micelles Based on Multiple Hydrogen Bonds* **Chen J** <University of Alberta>, Yan B, Thundat T, Zeng H

09:10 0355 *Sponge-based Peel-able Functionally Graded Dry Adhesives for Mounting Applications* **Liew K** <University of Waterloo>, *Shahsavani H, *Zhao B

09:30 0356 *Smart Magneto-responsive Hydrogels Triggered by Low Frequency Rotating Magnetic Fields for Controlled Release Applications* ***Boroun S** <Université Laval>, *Larachi F

09:50 0357 *Tetrazole Polyelectrolytes: Nitrogen-rich Energetic Polymers for New Explosives and Composite Propellants* **St-Charles J** <Polytechnique Montréal>, Dubois C

10:10 0358 *Microfluidics-based Synthesis of Polymeric Porous Membranes with Advanced Features* **Li M** <Ryerson University>, Keenan Research Centre for Biomedical Science - St. Michael's Hospital; Institute for Biomedical Engineering, Science and Technology (iBEST), a partnership between Ryerson University and St. Michael's Hospital>, Humayun M, Kozinski JA, *Hwang DK

10:30 End of Session

Nanomaterials and Nanotechnology

NNT1 205A

Nanomaterials: New Applications and Enhancing Conventional Processes

Organizer(s) - Trong-On Do and Aiping Yu
Chair(s) - Aiping Yu, Trong-On Do

08:10 0359 *Graphene Laminates and their Modification with Metallic Nanoparticles* ***Fanchini G** <Western University>

08:50 0360 *Multistage Membrane System for Hydrogen Recovery from Refinery Off-gases* ***Al-Rabiah AA** <King Saud University, Saudi Arabia>

09:10 0361 *Distinction of Surface-related Fluorescence of Aqueous and Powder NaGdF₄: Yb³⁺, Er³⁺ Upconverting Nanocubes* ***Zhang J** <Western University>, Chen A

09:30 0362 *Syngas Conversion to Higher Alcohols: Application of Novel K-promoted CoRhMo Catalysts Supported over Carbon Nanohorns (CNHs) and its By-products (OCP & OCPF)* ***Boahene PE, *Dalai AK, Ramaswami S** <University of Saskatchewan>

09:50 0363 *Measurement of Pore Size Distribution of Nanofibrous Electrospun Materials* **Kim Y** <McGill University>, *Liu SP, *Gostick JT

10:10 0364 *New Class of Nanocatalysts for Oxidative Cleavage of Vegetable Oil Feedstock into Valuable Products* **Enferadi Kerenkan A** <Université Laval>, Ello AS, Do T-O

10:30 End of Session

Systems and Control

SYC1 203

Advances in Systems and Control

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Nicolas Hudon, Martin Guay

08:10 0365 *Optimal Control for the Continuous Advanced Oxidation of Naphthenic Acids in Water* **Al jibouri AKH** <Ryerson University>, *Upreti SR, Wu J

08:30 0366 *Potential-based Decomposition and Stabilization of Descriptor Systems* ***Hudon N** <Queen's University>, Guay M

08:50 0367 *Domain Reduction for Joint Decomposition Based Global Optimization* **Ogbe EO** <Queen's University>, *Li XL

09:10 0368 *Nonlinear Robust Optimization Algorithm for Process Design and Operations* Yuan Y, *Li Z <University of Alberta>, Huang B

09:30 0369 *Minmax Extremum-seeking Controller with Applications to Cyber-secure Control Systems Design* *Guay M <Queen's University>, Hudon N

09:50 0370 *Challenges and Nonlinear Approaches for the Control of Plasma Fusion Tokamak Reactors* *Hudon N <Queen's University>, Guay M, Vincent B, Lefevre L, Dochain D

10:10 0371 *Distributed Extremum Seeking Control over Unknown Networks* Ebegbulem IJ <Queen's University>, *Guay M

10:30 End of Session

Tuesday PM

Plenary Lectures

PLS 2000AB

Plenary Lectures

13:00 Introductory Remarks

13:05 R. S. Jane Memorial Award Lecture

13:05 0372 *Polymer Reaction Engineering for Advanced Materials* *Zhu S <McMaster University>

Questions

14:00 End of Session

Honourary Symposia

PCS1 2105

Honourary Symposium in Recognition of Professor P Carreau for Outstanding Contributions in Rheology and Polymer Nanocomposites

Organizer(s) - Marie-Claude Heuzey and Frej Mighri
Chair(s) - Marie-Claude Heuzey, Uttandaraman Sundararaj

14:00 0373 *Research and Discontinuities in Rheology* *De Kee D <University of Toronto>

14:40 0374 *Effect of Chain Architecture on DC Electrorheological Response of Polyethylene/Organically Modified Layered Silicate Nanocomposites* *Sundararaj U <University of Calgary>, Sadeghi S, Arjmand T, Li T

15:00 0375 *Rheological Properties of the Poly(D,L-lactide) Solutions Added with Metal Oxide Nanoparticles* *Rokbani H <Polytechnique Montréal>, Ajji A

15:20 0376 *Gelling Properties of ENCC Suspensions in the Presence of Carboxymethyl Cellulose* Lenfant G <Polytechnique Montréal>, Heuzey MC, van de Ven TGM, *Carreau PJ

15:40 Coffee Break

16:00 0377 *Self-propelling Janus Particles in Weakly Viscoelastic Fluids* *Natale G <University of British Columbia>, Datt C, Elfring G, Hatzikiriakos S

16:20 0378 *Surface Modification of Multiwall Carbon Nanotubes and its Effect on Mechanical and Through-plane Electrical Resistivity of PEMFC Bipolar Plate Nanocomposites* *Mighri F <Université Laval>, Athmouni N, Elkoun S

16:40 0379 *Effects of Cellulose Nanofibers on Rheological, Mechanical, Thermal and Optical Properties of Poly(ethylene oxide)* Safdari-Shadlou F <Polytechnique Montréal>, Carreau PJ, Heuzey MC, Kamal MR, Sain MM

17:00 0380 *Physical and Chemical Plasticization of Polylactide* *Shahbikian S <Université de Sherbrooke>, Dirany M, Huneault MA

17:20 0381 *Rheology of Complex Fluids in Nanoscale Flow Passages* *Nazemifard NN <University of Alberta>, Mozaffari SM, Tchoukov PT, Czarnecki JC

17:40 End of Session

SKS1 205B

Honourary Symposium in Recognition of Professor S Kaliaguine for Outstanding Contributions in Catalysis

Organizer(s) - Freddy Kleitz and Sébastien Royer

14:00 0382 *Membranes Derived from Soluble Intrinsically Microporous Polymers* Guiver MD <Tianjin University, China>, *Lee YM, Seong JG, Zhuang Y

14:20 0383 *Core and/or Shell Crosslinked Chitosan Aerogels for Catalysis* *Brunel D <Université Montpellier 2, France>, Euro-Mediterranean University of Fes, Morocco>, Bousmina M, El Kadib A

14:40 0384 *Fischer-Tropsch Synthesis: Stable Mesoporous Alumina Supported Cobalt Catalyst* Vosoughi V <University of Saskatchewan>, Dalai A, Badoga S, Abatzoglou N

15:00 0385 *Insight into the Activity and Selectivity of Au/Ti-KIT-6 during the Epoxidation of Propene by in situ UV-vis and XANES Spectroscopies* Talavera-Lopez A <Universidad Autónoma Metropolitana-Iztapalapa, México>, Gomez-Torres SA, Fuentes-Zurita G, Serrano-Rosales B, Nohair B, Kaliaguine S

15:20 0386 *Chitosan-based Materials and their Graphitic Versions as Sustainable Catalytic Supports in Fine Chemical Synthesis* *El Kadib A <University of Fes, Morocco>, Bousmina M

15:40 Coffee Break

16:00 0292 *SiliaCat Pd⁰ Heterogeneously Catalyzed Hydrogenation of Squalene to Squalane under Mild Conditions* Pandarus V <Université Laval; SiliCycle Inc>, BÉland F, Cirimina R, Pagliaro M, Kaliaguine S

16:20 0648 *A Kinetic Study of the Bio-Zconversion of Moringa Oleifera and Jatropha Curcas Biomass into Lignocellulosic Bioethanol: the Consolidated Bioprocessing (CBP)* *Contreras Andrade I <Universidad Autonoma de Sinaloa>

16:40 0388 *New Trends in Catalytic Reaction Engineering: The CREC Riser Simulator* *de Lasa H <Western University>

17:00 0644 *Catalytic Upgrading of Biomass-derived 5-Hydroxymethylfurfural into 2,5-Diformylfuran and 2,5-Furandicarboxylic Acid* Al Shaal M <Max-Planck-Institut für Kohlenforschung, Germany>, Metzelaars M, Sahaoui L, Palkovits R, *Schüth F

17:20 0390 *FeCralloy[®] partially oxidizes methane to syngas selectively* Ma Z <Polytechnique Montréal>, Pelegrin DC, Boffito DC, Patience GS

17:40 End of Session

Special Symposia - Carbon Capture, Utilization and Storage

CCS1 207

Advances in Carbon Capture

Organizer(s) - Éric Croiset and Maria C Iliuta
Chair(s) - Maria C Iliuta, Angeliki Lemonidou

14:00 0391 *Nonisothermal Kinetic Mechanism of CO₂ Sorption Process over Li₄SiO₄* *Quddus MR <King Fahd University of Petroleum & Minerals, Saudi Arabia>, Chowdhury MBI, de Lasa HI

14:20 0392 *Screening Tools for Adsorption Based Post-combustion CO₂ Capture* Rajagopalan A, De Pauw R, Avila A, *Rajendran A <University of Alberta>

14:40 0393 *Fluidizable KLi_3SiO_4 Sorbent for CO_2 Capture* [§]**Zhang S** <East China University of Science and Technology, China>, Chowdhury MBI, Zhang Q, [†]de Lasa HI

15:00 0394 *Enhanced CO_2 Adsorption on Activated Carbon* **Shahkarami S** <University of Saskatchewan>, [§]Dalai AK, Soltan J

15:20 0395 *New Physisorptive CO_2 Solid Sorbents that Function in Wet Gas Streams* [§]**Shimizu GKH** <University of Calgary>, Lin JB, Akhtar F, Ramaswamy P, Taylor JM

15:40 End of Session

CCS2

207

New opportunities in CO_2 Utilization/Conversion

Organizer(s) - Éric Croiset and Maria C Iliuta
Chair(s) - Maria C Iliuta, Angeliki Lemonidou

16:00 0396 *Conversion of CO_2 into Synthetic Methane in a Compact Packed Reactor* Sun D, [§]**Simakov DSA** <University of Waterloo>

16:20 0397 *Biofuel Production from Isolated Composting* [†]**Zeman FS** <Royal Military College of Canada>

16:40 0398 *Methanol Synthesis via Catalyst Conversion of CO_2* **Kuti YO** <Qatar University, Qatar>, [†]Khraisheh M, [§]Khader MM, Al Marri JM

17:00 0399 *Hydrophilic Materials for Preferential Adsorption of Water at High Temperature* **Ghodhbene M** <Université Laval>, Bougie F, Iliuta MC

17:20 0400 *Kinetic Model of Valorization of Biomass and CO_2* [§]**Cai XS** <LSPC-INSA, France>, Zheng JL, Taouk B, Leveigneur S

17:40 End of Session

Special Symposia - Challenges and Opportunities for Micro-algal Technologies

MAT1

307A

Challenges and Opportunities for Micro-algal Technologies

Organizer(s) - Amarjeet Bassi, Hector De La Hoz Siegler, Jean-Sébastien Deschênes and Wei Liao
Chair(s) - Jean-Sébastien Deschênes, Amarjit Bassi

14:00 0401 *Photo-bioreactor System for Sustainable Microalgae Cultivation* [†]**Adebusuyi A** <Grande Prairie Regional College Research & Innovation>, [§]Tan W

14:20 0402 *Intensified Green Production of Astaxanthin from *Haematococcus pluvialis** [§]**Chiang YW** <University of Guelph>, Haque F, Dutta A, Thimmanagari M

14:40 0403 *Microalgae Growth on Bicarbonate Salts for Carbon Capture* **Morisset P-O.** <Université du Québec à Rimouski>, Tremblay R., [§]Deschênes J-S.

15:00 0404 *Critical Assessment of Alternative Solutions for Microalgae-to-biodiesel Industrial Production Processes through a LCA Perspective* Collotta M, Busi L, Champagne P, [§]**Mabee W** <Queen's University>, Tomasoni G, Alberti M

15:20 0405 *Unlocking the Potential of Photosynthesis: Cultivation of Natural Alkaliphilic Halotolerant Microbial Biofilms* Kanon-Rubio K, Sharp H, Strous M, [§]**De la Hoz Siegler H** <University of Calgary>

15:40 Coffee Break

16:00 0406 *Formation Potential of Disinfection By-products after Coagulation of Algal Matters* **Hu X** <Western University>, Chen T, Zhao Z, [§]Ray MB

16:20 0407 *Process Systems Engineering for the Development and Optimization of a Microalgal CO_2 Fixation and Biomass Production System in Oil Sands Process Water* Kasiri S, Li R, Huang B, Ulrich A, [†]**Prasad V** <University of Alberta>

16:40 0408 *Investigation of Two-step Treatment for the Hydrothermal Liquefaction (HTL) of Microalgae to Bio-oil* **Hu Y** <Western University, >, [†]Bassi A, Xu C

17:00 Summary and Discussion on Future Directions for Microalgal Technologies

17:40 End of Session

Special Symposia - Fats & Oils: Sustainability and Innovation

FOS1

206B

Green Oleocatalysis in Food and Non-food Engineering

Organizer(s) - Khaled Belkacemi and Dérick Rousseau
Chair(s) - Khaled Belkacemi, Safia Hamoudi

16:00 0409 *Green Oleochemical Process Engineering of Non-edible Fats & Oils: Towards Improved Heterogeneously Catalyzed Metathesis* [§]**Belkacemi K** <Université Laval; Centre in Green Chemistry and Catalysis>

16:40 0410 *Heterogeneous Olefin-metathesis: Comparative Study of the Activity of MTO-based Catalyst with that of the Mo_2C -based Catalyst* **Hasib-ur-Rahman M** <Université Laval>, Hamoudi S, [§]Belkacemi K

17:00 0411 *Optimization of BM_3 Mutants for Industrial Applications* **Vincent T** <Université Laval>, Roseberry MO, Gaillet B, [§]Garnier A

17:20 End of Session

Special Symposia - Process Safety and Loss Management

PSM4

204A

Process Safety Management in Canada

Organizer(s) - François Roche and Melanie Wilson
Chair(s) - Guy Brouillard

14:00 0636 *Public Risk: How to Measure it and Evaluate it* **Oliverio M** <Enbridge Gas Distribution>, Ridpath A, Wong A

14:30 0412 *Process Safety Management in a Mining and Mineral Processing Context* **Busque M** <ERM Canada Groupe Conseil>, [†]Poitras D

15:00 0413 *Process Hazard Analysis Bow-Tie Methodology* **Riopel C** <Rio Tinto>, [†]Brouillard G

15:30 Coffee Break

16:00 0414 *PSM Division: An update on the Activities and Direction of the Division* **Pierorazio AJ** <BakerRisk>

16:30 0415 *Effective PSSR in Management of Change for Existing Plants in Canada* [§]**Sanati SS** <Atkins Consulting Canada>

17:00 0416 *Mechanical Integrity versus Process Safety Management Requirements* **Julien H** <GCM Consultants>

17:30 End of Session

Biotechnology/Bioengineering

BBE1

2101

Bioengineering Process Intensification

Organizer(s) - Bruno Gaillet and Denis Groleau
Chair(s) - Céline Vaneeckhaute, Denis Groleau

14:00 0417 *Drying of Gases in a Pressure Swing Adsorption Process Using Canola Meal Biosorbent* **Dhabhai R** <University of Saskatchewan>, [§]Niu CH, Dalai AK

14:20 0418 *Modeling Multiphase Loop Bioreactor for Conversion of Natural Gas to Single Cell Protein* [§]**Shah QE** <University of Trinidad and Tobago, Trinidad and Tobago>, [†]Aufderheide B, Al-Taweel AM

14:40 0419 *Microalgae in External Loop Air Lift Reactor* **Sawant S** <ICT, India>, Gosavi S, Waval A, Telli S, Mathpati CS

15:00 0420 *Gibberellic Acid Process in an Air-lift Bioreactor* **Escamilla Silva EM** <Universidad Michoacana de San Nicolás de Hidalgo, México>, [§]Chávez Parga MC

15:20 0421 *Conversion of Crude Glycerol into Microbial Lipid - A Renewable Feedstock for Biodiesel Production* **Uprey BK** <Lakehead University>, [§]Rakshit SK

15:40 Coffee Break

16:00 0422 *Enzymatic Decolorization of Dye-polluted Water Using Natural Cellular Carriers* **Mohammed I** <Technische Universität Dresden, Germany>, Schubert M, Hampel U

16:20 0423 *Amyolytic Activity of *Thermus thermophilus* HB8: Production, Optimization and Basic Characterization* **Akassou M** <Université de Sherbrooke, , >, [§]Groleau D

16:40 0424 *A Case Study of an Integrated Process Development and Scale Up of a Biosimilar Monoclonal Antibody* **Maleknia S, Ghorbani Aghdam A** <Aryogen Pharmed Inc., Iran>, Rezaei Ravesh S, Aghajani H, [§]Mahboudi F

17:00 0425 *Development of an Image Analysis Method for Probiotics Quality Control* **Bélanger PL** <Université Laval; Pfizer Inc>, Cournoyer A, Juneau PM, [§]Duchesne C, Gaillet B

17:20 0426 *A Novel Sparging Design for a Wave-induced Disposable Bioreactor to Improve its Oxygen Transfer Capacity* **Bai Y** <University of Waterloo>, [§]Anderson WA, Moo-Young M

17:40 End of Session

Catalysis and Catalytic Reaction Engineering

CCR2 205C

Catalytic Reaction Engineering

Organizer(s) - Mladen Eic and Jan Kopyscinski
Chair(s) - Jan Kopyscinski

14:00 0427 *Gas Phase Oxidation of 2-methyl-1,3-propanediol to Methacrylic Acid over Heteropolyacid Catalysts* **Darabi Mahboub MJ** <Polytechnique Montréal>, [§]Patience GS, [§]Dubois JL

14:20 0428 *Comparison Study of Different Catalysis for Steam Reforming of Pyrolysis Oil of Plastic and Vegetal Origin* **Blanchard J** <Université de Sherbrooke>, Bali A, Abatzoglou N

14:40 0429 *Evaluation of Ni-Ce-Mg-Al Hydrotalcite Monolithic Catalyst for Steam Cracking of Vacuum Gas Oil (VGO)* [§]**Roustapisheh M** <University of Calgary>, Bartolini M, Perez Zurita J, Pereira Almaso P

15:00 0430 *Catalyst Coking in a Packed Bed Sabatier Reactor: Simulation-based Study* Sun D, [§]**Simakov DSA** <University of Waterloo>

15:20 0431 *Ring-opening Metathesis Copolymerization of Dicyclopentadiene and 1, 5-cyclooctadiene* **Yue D** <Soochow University, China>, [§]Pan Q, Wang Y, Chen S

15:40 Coffee Break

16:00 0432 *Effect of Au, Ni, and Mo on Plasma-derived Co-Fe/C Bimetallic Nanocatalysts in Fischer-Tropsch Synthesis* **Aluha JL** <Université de Sherbrooke>, [§]Abatzoglou N

16:20 0433 *Wet Media Milling WO₃/TiO₂ and Vanadium Phosphorous Hemi-hydrate* **Li H** <Polytechnique Montréal>, Ndjamo A, Abdul-Nour G, [§]Patience GS

16:40 0434 *Microstructural Investigation Ni-alumina Catalyst During Dry Reforming* [§]**Braidy N** <Université de Sherbrooke>, Bastien S, Blanchard J, Achouri I, Abatzoglou N

17:00 0435 *Spray Dried Core-shell Catalysts* **Rigamonti MG** <Polytechnique Montréal>, Saadatkhah N, Song YX, Li H, Boffito DC, [§]Patience GS

17:20 0436 *A Novel Process for Production of Isopropyl Alcohol* [§]**Al-Rabiah AA** <King Saud University, Saudi Arabia>

17:40 End of Session

Chemical Engineering Foundations

CEF2 206A

Fluid Flow and Mixing in Continuous and Discrete Systems

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Seyed M Taghavi, Anthony Wachs

14:00 0437 *Mixing of Herschel-Bulkley Fluids with Coaxial Mixers: Two Different Central Impellers in Combination with an Anchor* **Kazemzadeh A** <Ryerson University>, [§]Ein-Mozaffari F, Lohi A, Pakzad I

14:20 0438 *On Film Liquid Thickness Measurements Using a Multireflection Technique* [§]**Si-Ahmed EK** <Université de Nantes, France; University of Science and Technology Houari Boumediene, Algeria>, [§]Ouldrebai H, Legrand J, Pruvost J

14:40 0439 *Numerical Study and Structure Optimization of a Multi-tube Feeding Nozzle for Slurry Bed Hydrocracking* **Wang Z** <China University of Petroleum, China; Memorial University of Newfoundland>, [§]Duan X, Lei C, [§]Tan N, Deng W

15:00 0440 *Experimental Correlation of Gas-liquid-solid Mass Transfer Coefficients in a Stirred Tank Using Response Surface Methodology* **Zhang X** <Memorial University of Newfoundland>, [§]Duan X, Muzychka Y

15:20 0441 *Multiphase Fluid Flow Modeling in Horizontal Wells* **Oluwadairo KA** <Memorial University of Newfoundland>, James LA, Johansen TE

15:40 End of Session

CEF3 206A

Physicochemical Separation

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Seyed M Taghavi, Anthony Wachs

16:00 0442 *Modeling and Site Energy Distribution Analysis of Levofloxacin Sorption by Biosorbents* **Yan B** <University of Saskatchewan>, [§]Niu C

16:20 0443 *High Permeable Zeolite W Membranes for CO₂/CH₄ Separation: Synthesis and Characterization* [§]**Mirfendereski SM** <Shahid Beheshti University, Iran>, Mohammadi T

16:40 0444 *Tailoring the Chemistry of Copolymer-based Membrane Adsorbents for Heavy Metals Removal via High-throughput Evaluation Techniques* **LaRue RJ** <McMaster University>, Dilenschneider T, Qu S, Phillip WA, [§]Latulippe DR

17:00 0445 *Investigation of Diffusion Mechanisms of Ethane in Activated Carbon Using Zero-length Column (ZLC) Technique* Makhtoumi P, [§]**Rajendran A** <University of Alberta>

17:20 End of Session

Electrochemistry and Electrochemical Engineering

EEE2 307B

Electrochemical Sensors and Electro-analysis

Organizer(s) - Zhongwei Chen and Elöd Gyenge
Chair(s) - Jesse Greener, Jeff Gostick

14:00 0446 *Electrochemical Imaging for Microfluidics: A Full System Approach*
***Greener J** <Université Laval>, Taghavi SM, Kara A, Mathault J, Miled A

14:20 0447 *Transport Properties of Thin Fibrous Materials by Poro-elastic Response*
Unno J <McGill University>, *Gostick J

14:40 0448 *Detection and Measurement of Arsenic(III) by Anodic Stripping Voltammetry and Surface Plasmon Resonance*
***Sarkar P** <University of Calcutta, India>, *Saha S

15:00 0449 *A Third Generation Xanthine Enzymatic Biosensor with Electrode Modified by Electrodeposited MWCNT on Nano-gold Polymer Composite Film*
***Sarkar P** <University of Calcutta, India>, *Sen S

15:20 End of Session

Energy Resources

ENR3

307B

Fossil Energy

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Japan Trivedi

16:00 0450 *Preparing Carbon Molecular Sieve Membrane for Natural Gas Separation*
Khan S <The Petroleum Institute, United Arab Emirates>, *Wang K, *Wang K

16:20 0451 *Integration of Data Driven Proxy Models with Assisted History Matching Algorithm for Efficient and Fast Track History Matching of SAGD Reservoirs*
Jain T <University of Alberta>, Patel R, *Trivedi J

16:40 0453 *Settling Rates of Asphaltenes and Solids from Diluted Bitumen*
Casas YA <University of Calgary>, Schoeggl FF, *Yarranton HW

17:00 0454 *Scale-up of a Modified Soxhlet Apparatus for Extraction of Crotalaria juncea Seed Oil using Dimensional Analysis*
*Dutta R, *Sarkar U <Jadavpur University, India>

17:20 End of Session

Environment

ENV1

204B

Industrial Ecology and Resources Conservation

Organizer(s) - Madhumita B Ray, Rafael M Santos and Peter Vanrolleghem
Chair(s) - Rafael M Santos, Emily YW Chiang

14:00 0455 *Tools in Support of Energy Use Decisions*
McKellar JM <University of Ontario Institute of Technology>

14:20 0456 *Using Hazard Identification, Risk Assessment, and the Sustainable Design Process to Evolve Environmental Regulations*
***Jamieson MV** <University of Alberta>, Lefsrud LM

14:40 0457 *Uncertainty in Life Cycle Assessments of Well-to-wheel Greenhouse Gas Emissions of Transportation Fuels Derived from North American Crudes*
Di Lullo G <University of Alberta>, Zhang H, *Kumar A

15:00 0568 *Optimization and Economical Study of Integrating Biological and Advanced Oxidation Processes for the Treatment of an Actual Slaughterhouse Wastewater*
Bustillo-Lecompte CF <Ryerson University>, Mehrvar M

15:20 0459 *Life Cycle Sustainability Assessment (LCSA): A Comparison of Oxymethyle Ether (OME) Pathway from Two Different Types of Forest Biomass*
Mahbub N <University of Alberta>, Zhang H, Oyedun AC, *Kumar A, Poganietz WR

15:40 Coffee Break

16:00 0460 *Development of a Predictive Tool Based on Material Flow Analysis for Waste Management Decision-making*
Tanguay-Rioux F <Polytechnique Montréal>, Legros R, Spreutels L

16:20 0461 *Greenhouse Gas Impacts of Alternative Pathways for Future Marine Fuel Desulfurization Standards*
Guo J <University of Calgary>, *Bergerson J

16:40 0462 *Adsorption of CH₄ and N₂O from Livestock Using ZIF-8*
***Delgado B** <Université Laval; Université Claude Bernard Lyon1, France; IRDA>, Avalos Ramirez A, Lagace R, Giroir-Fendler A, Godbout S

17:00 0463 *Mitigation of Ammonia and Hydrogen Sulphide Emissions Using TiO₂ and ZnO Nanoparticles*
Kumar S <University of Saskatchewan>, Azar R, *Nemati M, Predicala B

17:20 0464 *Synthesis and Characterization of Plasmonic and Magnetically Separable Ag/AgCl-Bi₂WO₆@Fe₃O₄@SiO₂ Core-shell Composites for Visible Light-induced Detoxification*
Meng X <University of Ottawa>, Li Z, *Zhang Z

17:40 End of Session

Macromolecular Sciences and Engineered Polymers

MSP5

202

Polymer Reaction Engineering

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Marc Dubé, Robin Hutchinson

14:00 0465 *Simulation-aided Design of Liquid Crystal Elastomer-based Actuators*
Neufeld RAE, Shahsavan H, Zhao B, ***Abukhdeir NM** <University of Waterloo>

14:20 0466 *Switchable Biomimetic Fibrillar Adhesives Based on Liquid Crystal Networks*
Shahsavan H <University of Waterloo; Kent State University, USA>, Salili SM, Jákli A, *Zhao B

14:40 0467 *CO₂-switchable, Smart Polymers for Dewatering of Oil Sands Tailings*
Nittala AK <University of Alberta>, Gumfekar SP, *Soares JBP

15:00 0468 *The Importance of Functional Group Distribution in Polymeric Dispersants*
Zhang M <Queen's University>, *Yang W, *Hutchinson RA

15:20 0470 *Simulation of Nylon 6/6,6 Copolymerization in a Batch Reactor and Comparisons with Homopolymerization*
Liu FF <Queen's University>, *McAuley KB, Hurley JB

15:40 Coffee Break

16:00 0469 *Applying Multi-Dimensional Method of Moments for Modeling and Estimating Parameters for Arborescent Polyisobutylene Production in Batch Reactor*
Zhao YR, Arriola DJ, Puskas JE, ***McAuley KB** <Queen's University>

16:20 0471 *Hydrophobic Polymer Exclusion Nets*
Berard A, ***Tavares JR** <Polytechnique Montréal>, Patience GS, Chouinard G

16:40 0472 *Synthesis of Polydicyclopentadiene via Catalytic Polymerization and Thermal Polymerization Routes*
Wang Y <Shandong Yuhuang Chemical (Group) Co. Ltd., China; College of Chemistry, Chemical Engineering and Material Science, China>, Chen S, Pan Q

17:00 0473 *Adhesive Property Modification Using Cellulose Nanocrystals*
Dastjerdi Z <University of Ottawa>, ***Dubé MA**, Kedzior S, Cranston ED

17:20 End of Session

Nanomaterials and Nanotechnology

NNT1

205A

Nanomaterials: New Applications and Enhancing Conventional Processes

Organizer(s) - Trong-On Do and Aiping Yu
Chair(s) - Safia Hamoudi, Trong-On Do

14:00 0475 *Synthesis of Magnetic Hydrophobic Nanoscrolls MHNS-and their Potential Application for Oil Spillage Clean Up* [§]Ramirez-Leyva JH <University of Calgary>, ^{*}Nassar NN, Vitale G

14:20 0476 *Synthesis of Ternary TEMPO-oxidized Nano-fibrillated Cellulose/ Nickel Ferrite/ Titanium Dioxide (TNFC@NiFe₂O₄@TNPs) Nanocomposites and their Application in the Photocatalytic Hydrogen Generation* An X <University of New Brunswick; Tianjin University of Science and Technology, China>

14:40 0477 *Copper-platinum Supported Reduced Ca₂Ta₃O₁₀ Perovskite Nano-sheets for Sunlight-driven Conversion of CO₂ into Fuels* Vu N-Ng <Université Laval>, ^{*}Nguyen C-C, [§]Do T-O

15:00 0478 *Effects of Coating Layer Thickness and Substrate Porosity on the Structure and Performance of SiO₂ Nanocomposite Polyvinylidene fluoride Membranes for Membrane Vacuum Distillation* Viyash M <University of Ottawa>, Baghbanzadeh M, Rana D, [§]Lan C, Matsuura T

15:20 0479 *Study on Thermal Cracking of Vacuum Residue (VR) in Presence of Nanoparticles or Drill Cuttings* Eshraghian AE <University of Calgary>, ^{*}Husein MH

15:40 Coffee Break

16:00 0480 *Toward a Mechanistic Understanding of Oil-water Interfacial Tension Reduction by Nanoparticles for Enhanced Oil Recovery* Jafari Daghlilan Sofla S <Memorial University of Newfoundland>, ^{*}James L

16:20 0481 *Post-calcined Carbon Nitride Nanosheets as an Efficient Photocatalyst for Hydrogen Production under Visible Light Irradiation* Gholipour M <Université Laval>, BÉland F, ^{*}Do T

16:40 0482 *Stabilizing Silicon Dioxide Nanoparticles in Seawater Using Hydrochloric Acid with Application to Offshore Production* Kim H <Memorial University of Newfoundland>, Sivira D, Jafari S, ^{*}James L, Johansen T

17:00 0483 *Hollow Rh/Sr-codoped TiO₂ Photocatalyst for Efficient Sunlight-driven Organic Pollutant Degradation* Nguyen C-C <Université Laval>, ^{*}Do T-O

17:20 0484 *Advanced Molecular Characterization of Cellulose Nanomaterials Employing Latest Advances in Triple Detection Size Exclusion Chromatography* Landry E <PolyAnalytik>, Alassuity A, Ebied AE, Koerbe D, Wan W, Karamd S

17:40 End of Session

Systems and Control

SYC2

203

Applied Statistics and Multivariate Methods in Process Systems

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Carl Duchesne, Yuri Shardt

14:00 D. G. Fisher Award Lecture

14:00 0485 *Data Driven Value Creation* Nomikos P <INVISTA Canada>

14:40 0486 *Probabilistic Optimality Assessment for non-Gaussian Multi-mode processes* ^{*}Sedghi S <University of Alberta>, Huang B

15:00 0487 *Parameter and State Estimation of an Agro-hydrological System* Nahar J <University of Alberta>, ^{*}Liu J, [§]Shah SL

15:20 0488 *Mathematical Modeling and Parameter Estimation for a Side-fired Ethane Pyrolysis Furnace* [§]Karimi H, Cowperthwaite EV, Olayiwola B, Farag H, ^{*}McAuley KB <Queen's University>

15:40 Coffee Break

16:00 0489 *Uncertainty Analysis of a Stochastic Non-closed-form Multiscale System Using Power Series and Polynomial Chaos Expansions: A Comparison* Kimaev G <University of Waterloo>, ^{*}Ricardez-Sandoval LA

16:20 0490 *Real Time Monitoring of Feed Frame Powder Blends in the Near Infrared: Comparing Spectroscopy to Imaging* Dalvi H <Université de Sherbrooke>, Guay JM, ^{*}Abatzoglou N, [§]Gosselin R

16:40 0491 *Data-driven Generation of Online Reaction Monitoring Schemes* Tefera DT, Jaramillo LMY, Sattari F, de Klerk A, ^{*}Prasad V <University of Alberta>

17:00 0492 *A New Analytical Method Using Fluorescence to Determine the Concentration of an API Residue on Equipment Surfaces after Cleaning* Guay M <Université Laval>, Salvat J, [§]Duchesne C, Simard J-S

17:20 End of Session

Wednesday AM

Honourary Symposia

SKS1

204A

Honourary Symposium in Recognition of Professor S Kaliaguine for Outstanding Contributions in Catalysis

Organizer(s) - Freddy Kleitz and Sébastien Royer

08:00 0493 *Process Intensification at Molecular Level through Cascade Engineered Catalytic Reactions* ^{*}Yadav GD, ^{*}Patankar SC <University of British Columbia>

08:20 0494 *Thiophenic Species Removal over a New Zn-Offretite Zeolite via Selective Adsorption for FCC Processes* Aponte Y <Western University>, ^{*}de Lasa H

08:40 0495 *From Pellets to Monoliths as New Catalyst Supports for Green Propulsion Applications - European H2020 Project Reform* ^{*}Kappenstein C <Université de Poitiers, France>, [§]Maleix C, Brahmi R, Batonneau Y, Beauchet R, Schwentenwein M

09:00 0496 *Methanol Conversion into Olefins (MTO): Link between Coke and Light Paraffin Formation* Castellanos-Beltran IJ <Université de Sherbrooke>, Assima GP, Marie-Rose S, ^{*}Lavoie JM

09:20 0497 *Hot Gas Catalytic Clean-up of Biomass Gasification: From the Lab to the Process Intensification* Zamboni IR, Virgine M, Courson C, ^{*}Kiennemann A <Université de Strasbourg, France>

09:40 0498 *Zeolites for Etherification Reactions* Lanzafame P, Barbera K, Parathoner S, Centi G, Aloise A, Catizzone E, Migliori M, Nagy JB, ^{*}Giordano G <University of Calabria, Italy>

10:00 Coffee Break

10:20 0499 *Metal Oxide/Quantum Dot Composite Photocatalysts* ^{*}Balkus KJ <University of Texas at Dallas, USA>

11:00 0201 *Synthesis of Boron-modified Hierarchical Nanocrystalline ZSM-5 Zeolite for Methanol to Propylene* [§]Hu Z, Zhang H, Shen W, ^{*}Tang Y, ^{*}Xu H <Fudan University, China>

11:20 0500 *A Potpourri of Recent Works from my Laboratory* Kaliaguine S <Université Laval>

12:00 End of Session

Special Symposia - Carbon Capture, Utilization and Storage

CCS1

207

Advances in Carbon Capture

Organizer(s) - Éric Croiset and Maria C Iliuta
Chair(s) - Éric Croiset, Maria C Iliuta

08:00 0501 *Separation of CO₂ from Syngas Using PDMS and Mixed Matrix Membranes* ^{*}Rose L, [§]Tezel FH <University of Ottawa>

08:20 0502 *Crosslinking between Polymers and Fillers to Improve the Gas Separation Properties of Polymer Membranes* **Tien Binh N** <Université Laval>, Vinh Thang H, Kaliaguine S, Rodrigue D

08:40 0503 *Ilmenite-based Chemical Looping Combustion: Comparison of Kinetic-diffusion and Thermodynamic Models* **Khakpoor N** <University of Calgary, >, Sieglar HDH, Mostafavi E, Mahinpey N

09:00 0504 *Capture Of NOx Using Fixed Bed Packed with Activated Carbon* **Almeshragi M** <Al-Merghab University, Libya>, Ibrahim H, Amer F

09:40 0505 *A Novel Approach for the Preparation of Regenerated Cellulose Films in Organic Electrolytic Solutions Followed by Controlled Precipitation of Nanosized Calcium Carbonate* **Cheng D** <University of New Brunswick; Tianjin University of Science and Technology, China>, Ni Y

10:00 End of Session

Special Symposia - Fats & Oils: Sustainability and Innovation

FOS2

307A

Moving from Synthetic to Natural Ingredients

Organizer(s) - Khaled Belkacemi and Dérick Rousseau
Chair(s) - Khaled Belkacemi, Safia Hamoudi

08:00 0506 *An Efficient Method for High-purity Anthocyanin Isomers Isolation from Wild Blueberries and their Radical Scavenging Activity* **Chorfa N** <Université Laval>, Savard S, Belkacemi K

08:20 0507 *Shrinkage and Porosity Evolution during Air-drying of Model Foods: Impact of Glass Transition from Shrinkage/Collapse Mathematical Modelling* **Nguyen K** <Université Laval, >, Khalloufi S, Mondor M, Ratti C

08:40 0508 *Influence of Cold Storage on the Separation of Vegetal Wax-like Materials from Flax and Wheat Straw* **Canizares D** <Université Laval>, Angers P, Ratti C

09:00 End of Session

Special Symposia - Process Safety and Loss Management

PSM5

205B

Risk Control

Organizer(s) - François Roche and Melanie Wilson
Chair(s) - Jean-Paul Lacoursière

08:00 0509 *Applying Functional Safety Engineering Technique to Optimize Defensive Fire Protection Strategy* **Sanati SS** <Atkins Consulting Canada>

08:30 0510 *An Innovative Risk-based Fire Analysis and Passive Fire Protection Optimization for Safer and Economical Design* **Sari A** <Genesis Oil and Gas, UK>, Dara S, Azimov U

09:00 0511 *Risk-based Approach to Building Designs and Decision Making* **Raibagkar A** <Baker Engineering and Risk Consultants>

09:30 0637 *Selection of Parameters to Ensure Coherent and Reproducible Quantitative Risk Assessment* **Lacoursière J-P** <Université de Sherbrooke>

10:00 Coffee Break

10:30 0512 *Risk-based Blast Design for Safer Occupied Buildings in Industrial Facilities* **Sari A** <Technip, France>, Azimov U, Sahasakul W

11:00 Process Safety Management Award

11:00 0513 *Implementation of PSM Systems Rely on Strong Leadership Commitment to Succeed. Often the Need to Incorporate Strong Technical Capabilities is Forgotten* **Piette R** <Suncor Energy Inc>

12:00 End of Session

Special Symposia - Rheology of Complex Fluids

RCF2

206B

Solutions, Suspensions, Emulsions and Colloids

Organizer(s) - Marianna Kontopoulou and Frej Mighri
Chair(s) - Arun Ramachandran, Nick Virgilio

08:00 0514 *The Effect of Inorganic Solids on Asphaltene-stabilized Water-in-oil Emulsions* **McGurn M** <University of Calgary>, Baydak EN, Yarranton HW

08:20 0516 *Adsorption Kinetics of Asphaltenes at Oil/Water Interface at Elevated Temperature* **Zhang S** <University of Alberta>, Zeng H

08:40 0517 *The Relationship between Contact Pressure and Coalescence Time for Water-in-Bitumen Emulsions* **Goel S, Ng S, Ramachandran A** <University of Toronto>

09:00 0518 *Build up of Yield Stress over Time in Mineral Slurries* **Kresta SM** <University of Alberta>, Ulrich D, Machado MB

09:20 0515 *Rheological Study of Coal Water Slurry and Effect of Dispersant* **Tahir M** <University of Gujrat, Pakistan>, Amin N

09:40 0519 *Polymer Chase Water for Micellar EOR in Bhogpara Oil Field of Upper Assam Basin, India* **Gogoi SB** <Dibrugarh University, India, >, Kakoty M, Abdulaziz WMA, Hazarika K

10:00 Coffee Break

10:20 0520 *Using Sulfonated Nanocellulose to Improve Anti-oxidation Stability of Encapsulated Tea Polyphenols* **Sun B** <University of New Brunswick; Tianjin University of Science and Technology, China>, Zhang M, Si C, Liu R, Wu T

10:40 0521 *Synergistic Gelling Properties of Mixed Gelatin B and Xanthan Gum Solutions: Effects of Gelatin Concentration and Bloom Index* **Wang C-S** <Polytechnique Montréal>, Virgilio N, Wood-Adams P, Heuzey M-C

11:00 0522 *Rheological Behaviour of Sesame (Sesamum indicum L.) Proteins in Solution* **Escamilla Silva EM** <Instituto Tecnológico de Celaya, México>, Gómez Arellano A

11:20 0523 *Rheology and Drag Reduction Characterization of Poly (Ethylene Oxide)-water Solution Using a Rotating Disk Apparatus* **Zhang X** <Memorial University of Newfoundland>, Duan X, Muzychka Y, Wang Z

11:40 0524 *New Viscoelastic Model for Predicting Polymer Behaviour in Porous Media Using Capillary Breakup Extensional Rheological Data* **Sahib A** <University of Alberta>, Trivedi J, Dalsania Y

12:00 End of Session

Biotechnology/Bioengineering

BBE3

2101

Engineered Biological Systems

Organizer(s) - Bruno Gaillet and Denis Groleau
Chair(s) - Jean-Sébastien Deschênes

08:00 0525 *Microbial Degradation of Petroleum Hydrocarbons* **Uzukwu C** <University of Aberdeen, UK>, Dionisi D

08:20 0526 *Analysis of Single Bacterial Cells Using Conductive Scanning Probe Microscopy and Microfluidic Platforms* **Berthelot R** <University of Guelph>, Neethirajan S

08:40 0527 *Evaluation of Immobilized Cytochrome P450 BM3 from Bacillus megaterium for Hydroxylation of 10-pNCA* **Bahrami A** <Université Laval>, Garnier A, Larachi F, Iliuta MC

09:00 0528 *Utilizing Legacy Underground Mines as Low Cost Bioreactors for Municipalities* **Peachey BR** <New Paradigm Engineering Ltd>, Theriault Y

09:20 0530 *A Handheld Device for Rapid Detection of Food Adulterants Using Bulk Acoustic Wave Biosensors* **Lissemore M** <University of Guelph>, Hayward G, Neethirajan S

09:40 End of Session

Catalysis and Catalytic Reaction Engineering

CCR2 205C

Catalytic Reaction Engineering

Organizer(s) - Mladen Eic and Jan Kopyscinski

Chair(s) - Jan Kopyscinski, Gregory Patience

08:00 0531 *Synthesis and Hydrogenation of Polydicyclopentadiene* **Zhou F** <Soochow University, China>, Pan Q

08:20 0532 *The Kinetics and Chemistry of Syngas Photo-initiated Chemical Vapor Deposition* **Farhanian D** <Polytechnique Montréal>, De Crescenzo G, Tavares JR

08:40 0533 *Modeling and Optimization of a Diesel Catalytic Dewaxing Unit Using Single Event Kinetics for H-ZSM5 Catalysts* **Turco Neto E** <Memorial University of Newfoundland>, Imtiazi S, Ahmed S

09:00 0534 *Development of Catalyst Coating for an Optically Accessible Plate Reactor* **Jiang J** <McGill University>, Kopyscinski J

09:20 0535 *A Parametric Study of Biodiesel Production under Ultrasounds* **Shinde K** <Université Laval>, Kaliaguine S

09:40 0536 *Oxidative Dehydrogenation of Propane to Propylene over $VO_x/CaO-Al_2O_3$ Catalysts* **Hossain MM** <King Fahd University of Petroleum & Minerals, Saudi Arabia>

10:00 Coffee Break

10:20 0537 *Investigation of Waste Plastic Hydrocracking Using Mesoporous Composite USY Catalysts* **Munir D** <University of the Punjab, Pakistan>, Usman MR

10:40 0538 *The Effect of Diffusion on Cracking Reactions and Its Correlation with Heavy Oil Conversion over FCC Catalysts* **Song H** <SINOPEC Research Institute of Petroleum Processing, China>, Zheng X, Da Z, Jiang Q, Wang P, Tian H

11:00 0539 *In-situ Formed Cationic Palladium(II) Catalyzed Addition of Arylboronic Acids to Imines* **Yang Z** <Soochow University, China>, Lin S, Pan Q

11:20 0540 *A Novel Computational Approach in Modelling Fixed Beds: Aspects of Hydrodynamics and Heat Transfer* **Moghaddam EM** <London South Bank University, UK>, Fomeny EA

11:40 0541 *Validity of a Novel Approach for Generating Random Packing Structures* **Farbod A** <University of New Castle, Australia>, Moghaddam EM

12:00 End of Session

Chemical Engineering Foundations

CEF2 2101

Fluid Flow and Mixing in Continuous and Discrete Systems

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Seyed M Taghavi

10:20 0542 *Study the Hydrodynamics Behavior on Different Size Particles in LSCFB Riser and Modeling using Multigene Genetic Programming* **Razzak SA** <King Fahd University of Petroleum & Minerals, Saudi Arabia>

10:40 0124 *Mixing Energy as a Possible Scaling Variable for Drop Break-up across Geometries and from Batch to Continuous Processing* **Kresta SM** <University of Alberta>, Safari-Alamuti F, Machado MB, Komrakova A

11:00 0544 *Fluid Flow and Heat Transfer Characterization in a Plate-and-frame Separation System* **Amarante RCA** <Dalhousie University>, Donaldson AA

11:20 0545 *CFD-DEM Simulation of Particle Suspension in a Stirred Tank* **Tran C** <Ryerson University>, Ebrahimi M, Ein-Mozaffari F, Lohi A

11:40 End of Session

CEF3 206A

Physicochemical Separation

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Amir Motamed Dashliborun, Anthony Wachs

10:20 0552 *Disentangling the Effects of Silver and Sulphide Minerals on Gold Cyanidation* **Khalid M** <Université Laval>, Larachi F

10:40 0553 *Separation of Complex Isomeric Mixture of a Potential Liquid Organic Hydrogen Carrier* **Aslam R** <University of the Punjab, Pakistan>, Arlt W

11:00 0554 *Surface Modification to Alleviate PVDF Membrane Fouling during Milk Protein Adjustment* **Mirriahi D** <Ryerson University>, Doan H

11:20 0555 *Elucidation of Fouling Mechanisms of Hollow-fiber Membranes via High-throughput Testing* **Kazemi AS** <McMaster University>, Boivin L, Latulippe DR

11:40 0556 *Understanding the Dynamics of High Purity Oxygen Separation Using Silver Exchanged Titanosilicates* **Hosseinzadeh Hejazi SA**, Estupinan Perez L, Teruo Maruyama R, Rajendran A <University of Alberta>, Kuznicki S

12:00 End of Session

CEF4 206A

Thermodynamics and Kinetics

Organizer(s) - Seyed M Taghavi and Anthony Wachs
Chair(s) - Amir Motamed Dashliborun, Anthony Wachs

08:00 0546 *An Exponential Expression for Gas Heat Capacity, Enthalpy, and Entropy* **Bruel C**, Chiron F-X, Tavares J, Patience G <Polytechnique Montréal>

08:20 0548 *The Phase Behavior of Heavy Oil and Propane Mixtures* **Mancilla-Polanco A** <University of Calgary>, Schoeggl FF, Johnston K, Yarranton HW

08:40 0550 *Vapour-liquid Equilibria and Solvent Recovery from Oil Sands Froth Treatment Tailings Streams* **Moran K** <Titanium Corporation>, Peng DY

09:00 0551 *Uncertainty Analysis Applied to SAGD Plants* **Hajipour S** <Process Ecology Inc>, Khoshkbarchi M, Alva-Argaez A

09:20 End of Session

Energy Resources

ENR1 307B

Computational Engineered-Energy Concepts

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Naoko Ellis, Céline Vaneekhaute

08:00 0557 *Pore-scale Characterization of Travis Peak Formation* **Mohammadmoradi P** <University of Calgary>, Kantzas A

08:20 0558 *Energy Consumption and Greenhouse Gas (GHG) Emissions from the New Oil Sands Extraction Process: N-Solv* **Soiket MIH** <University of Alberta>, Zhang H, Oni AO, ***Kumar A**

08:40 0559 *Development of a Bitumen Upgrading and Refining Model for Estimation of Energy Consumptions and GHG Emissions* **Oni AO** <University of Alberta>, ***Kumar A**

09:00 0560 *Unveiling New Software for Petroleum Refining Production Planning and Scheduling (Implement Combination of Genetic Algorithm, Tabu Search and MILP as Novel Optimization Algorithm)* ***Azarmi M**, **Vakili S** <Hamian Sanaat Kimia Co.Ltd., Iran; Iran University of Science and Technology, Iran>

09:20 0561 *Sulfur Speciation and Partition in Gasoline Desulfurization Process* ***Ha HZ** <Fluor Canada Ltd>, Stang P, Dronamraju R, Sirjue R

09:40 0562 *Characterization of Silicalite Membranes Using Maxwell-Stefan Model* **Carter D** <University of Ottawa>, Kennedy DA, Jin W, Kruczek B, ***Tezel FH**

10:00 End of Session

ENR5 307B

Thermochemical Conversion

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Naoko Ellis

10:20 0563 *Quantification of the Synergism/Antagonism Effect during Co-gasification of Potassium Rich Biomass with Non-biomass Feedstock* **Fernandes R**, Hill JM, ***Kopyscinski J** <McGill University>

10:40 0564 *Hydrothermal Liquefaction of a Wastewater-native Chlorella sp.-bacteria Consortium: Biocrude Production and Characterization* ***Boëns B** <Université du Québec à Trois-Rivières>, Pilon G, Bourdeau N, Adjallé K, Barnabé S

11:00 0565 *Red Mud as a Catalyst for Improving Bio-oil and Biochar Properties in Microwave-assisted Pyrolysis of Biomass* ***Mohamed BA**, **Ellis N** <University of British Columbia, >, Kim CS, ***Bi X**

11:20 0566 *Development of Carbon Free Large-scale Hydrogen Production Processes at CNL* **Vega A** <Canadian Nuclear Laboratories>, Ryland D, Li H, Suppiah S

11:40 0567 *Polysaccharide Based Polymers for EOR in High Temperature and High Salinity Carbonate Reservoirs* ***Shoab MS** <The Petroleum Institute, United Arab Emirates>, AlSumaiti AA, Quadri SMR

12:00 End of Session

Environment

ENV2 204B

Trends in Wastewater Mitigation and Water Quality

Organizer(s) - Madhumita B Ray, Rafael M Santos and Peter Vanrolleghem
Chair(s) - Madhumita B Ray, Mehrab Mehrvar

08:40 0569 *Sequestration of Metallic Ions and Silver Nanoparticles in Aqueous Media Using Immobilized Chitosan Derivatives* ***Gagnon J** <Université du Québec à Rimouski>

09:00 0570 *Development and Evaluation of Hyperbranched Functionalized Polyethylenes (HBjPE) for Flocculation of Oil Sands Tailings* ***Botha L**, Nguyen B, **Davey S** <University of Alberta>, ***Soares J**

09:20 0571 *Acrylamide-diallyldimethylammonium Chloride (AAM-co-DADMAC) Copolymers as Flocculants for Dewatering Oil Sands Mature Fine Tailings (MFTs): Effect of Copolymer Composition* ***Vajihinejad V** <University of Alberta>, Guillermo R, Soares J

09:40 0572 *Biodegradation of Organic Xenobiotics with open Mixed Microbial Cultures* ***Etteh CC** <University of Aberdeen, UK>, ***Dionisi D**

10:00 Coffee Break

10:20 0574 *Comparison of Two Preparation Methods for Nitrogen Doped TiO₂ Photocatalyst along with the Effect of Light Intensity and Light Wavelength in Degradation of Aqueous Organics* ***Nasirian M** <Ryerson University>, Lin YP, Mehrvar M

10:40 0575 *Solar Photocatalytic Degradation of Acesulfame K with Titanium Dioxide* **Ghosh M** <Western University>, Ray AK

11:00 0577 *Optimization of Advanced Oxidation Process for Dynamically Varying Industrial WW via Integration of LC-OCD Analysis* **Bowie D**, **Csordas M**, **Aghasadeghi K** <McMaster University>, Mhaskar P, ***Latulippe DR**

11:20 End of Session

Macromolecular Sciences and Engineered Polymers

MSP4 202

Polymer Characterization and Testing

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Michael Cunningham

10:20 0578 *Effect of Chemical Blowing Agent Concentration on the Morphological and Mechanical Properties of Linear Low Density Extruded Polyethylene Foams*

Razzaz Z <Université Laval; CREPEC>, ***Rodrigue D**

10:40 0579 *Effect of Hemp Fibers Surface Modification on the Interfacial and Mechanical Behavior of Polyethylene Based Composites* **Chimeni-Yomeni D** <Université Laval>, Dubois C, ***Rodrigue D**

11:00 0580 *Polymer Failure Analysis: A Problem-solving Approach* ***Rouison D** <Kinectrics Inc>, ***Riahinezhad M**

11:20 0581 *Direct Determination of Degree of Deacetylation of Powder Chitosan Using FT-NIR* ***Alhulaymi A** <Dalhousie University>, Donaldson A

11:40 0582 *Effect of Acetylation on Chain Dynamics of Starch* **Nasseri R** <University of Waterloo>, ***Moresoli C**, Yu A, Yuan Z, Xu C

12:00 End of Session

MSP5 202

Polymer Reaction Engineering

Organizer(s) - Josée Brisson, Denis Rodrigue and João Soares
Chair(s) - Michael Cunningham

08:00 0583 *Mathematical Modeling of Chain Shuttling Copolymerization in a Semi-batch Reactor Using a Dual Catalyst: Comparison between Dynamic Monte Carlo Simulation and Method of Moments* **Maafa I** <University of Waterloo, >, ***Soares J**

08:20 0584 *Crystalline Nanocellulose Functionalization and Polymer Grafting via Surface Initiated Living Radical Polymerization* **Arredondo J**, Garcia-Valdez O, Glasing J, Jessop PG, Champagne P, ***Cunningham MF** <Queen's University>

08:40 0585 *Thermoresponsive Catalysts in Transition Metal Mediated Miniemulsion Polymerization* **Bultz E**, Sawamoto M, Ouchi M, Terashima T, Nishizawa K, ***Cunningham MF** <Queen's University>

09:00 0586 *Synthesis, Micellar Radical Polymerization Kinetics, and Performance of Cationic Hydrolytically Degradable Flocculants* **Rooney TR** <Queen's University>, Gumpfekar SP, Lacik I, Soares JBP, ***Hutchinson RA**

09:20 0587 *Coupling of Computational Fluid Dynamics and Population Balance Modelling for Emulsion Polymerization Process* **Aryafar S** <CNRS/ESCEPE-Lyon, France>, ***Othman N**, ***McKenna T**

09:40 0588 *Comparative Analysis of Mixing Effect on Batch and Semibatch Miniemulsion Polymerization of Methyl Methacrylate* **Fathi Roudsari S** <Ryerson University, >, ***Ein-Mozaffari F**, Dhib R

10:00 End of Session

Nanomaterials and Nanotechnology

NNT1 **205A**

Nanomaterials: New Applications and Enhancing Conventional Processes

Organizer(s) - Trong-On Do and Aiping Yu
Chair(s) - Trong-On Do, Aiping Yu

08:00 0589 *Stability of Silica Nanoparticles (SiO₂) Dispersed in Seawater over Time at Hebron Field Reservoir Temperature for Enhanced Oil Recovery Application.* **Sivira D** <Memorial University of Newfoundland>, Kim H, Jafary S, ***James L**

08:20 0590 *Fabrication of Oleophobic/Oleophilic Ultrathin Silica Nano-membranes* **Ghuzi M** <University of Alberta>, *Liu Q

08:40 0591 *Functionalized Graphene for Glyphosate Removal from Water* **Ueda Yamaguchi N, Bergamasco R, *Hamoudi S** <Université Laval>

09:00 0592 *Characterization of Ultrasonically Exfoliated Graphite in Surfactant-water Mixtures* **Giglio C** <Queen's University>, Kontopoulou M, ***Docoslis A**

09:20 End of Session

Systems and Control

SYC2 **205A**

Applied Statistics and Multivariate Methods in Process Systems

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Carl Duchesne

10:20 0593 *Monitoring of Multivitamin Blends by PAT Tools in a Tablet Press* ***Duroo P** <Université de Sherbrooke>, Lefebvre CF, Guay JM, Abatzoglou N, ***Gosselin R**

10:40 0594 *Fluid Bed Coating of Microspheres for Pediatric Dosage Forms* ***Santos Silva B, Gosselin R** <Université de Sherbrooke>, Lapointe-Garant PP, Santangelo M, Bartlett JA

11:00 0595 *Fault Detection and Isolation and Optimal Parking for HVAC Systems* **Shahnazari H** <McMaster University>, ***Mhaskar P, House J, Salisbury T**

11:20 End of Session

SYC3 **203**

Process Optimization and Predictive Control

Organizer(s) - Carl Duchesne and Luis Ricardez-Sandoval
Chair(s) - Yuri Shardt, Prashant Mhaskar

08:00 0596 *Data-driven versus Model-based Control: Implications and Observations* **Shardt YAW** <University of Duisburg-Essen, Germany; University of Waterloo>, Hao L, Ding SX

08:40 0598 *Nonlinear Model Predictive Control with Explicit Performance Specification* **Kheradmandi M** <McMaster University>, ***Mhaskar P**

09:00 0599 *Real-time Production Optimization Using Non-linear Model-predictive-control: A SAGD Field Case Study* ***Patel R** <University of Alberta>, Trivedi J

09:20 0600 *On the Utilization of Closed-loop Prediction for Dynamic Real-time Optimization* ***Jamaludin MZ, Swartz CLE** <McMaster University>

09:40 0601 *Data-driven Predictive Control of a Seeded Batch Crystallizer* ***Garg A** <McMaster University>, ***Mhaskar P**

10:00 Coffee Break

10:20 0602 *High Fidelity and Reduced Order Data-driven Modeling of Hydrogen Plant* ***Garg A** <McMaster University>, Corbett B, ***Mhaskar P, Hu G, Flores-Cerrillo J**

10:40 0603 *Subspace Based Quality Control of Variable Duration Batch Processes* **Corbett B** <McMaster University>, ***Mhaskar P**

11:00 0604 *Control with Soft Sensors and Multiple Operating Points* **Shardt YAW** <University of Duisburg-Essen, Germany; University of Waterloo>, Mehrkanoon S, Zhang K, Yang X, Suykens J, Ding SX, Peng K

11:20 0605 *Mixture of Experts with Dynamic Gating Network in Process Data Analytics* **Ma Y** <University of Alberta>, ***Huang B**

11:40 End of Session

Wednesday PM

Special Symposia - Process Safety and Loss Management

PSM3 **205B**

Process Risk Assessment

Organizer(s) - François Roche and Melanie Wilson
Chair(s) - Mireille Busque

13:00 0606 *Risk Based Process Safety - Making a Step Change Improvement* *Sustainable Operational Excellence* ***Hawkins S, Corbit C** <ERM, Inc>

13:30 0607 *Driving Consistency in the Estimation of Severity Levels in PHA Studies* ***Guindon M, Piette R** <Suncor Energy Inc>, Wells C

14:00 0608 *Simultaneous State and Input Estimation of Non-linear Process with Unknown Inputs Using Expectation Maximization Particle Filter (EM-PF) Algorithm* **Khan MA** <Memorial University of Newfoundland>, ***Intiaz S, Khan F**

14:30 Coffee Break

15:30 0610 *A Novel Approach for Risk Assessment of Large Oil Storage Tanks* ***Sari A** <Genesis Oil and Gas, UK>, Arablouei A, Azimov U, Sahasakul W, Dara S

16:00 0612 *CSCHE Chemical Spill Environmental/ Ecological Risk Assessment Guideline Development Status* **Marta M** <Independent Process Safety Specialist>

16:30 End of Session

Energy Resources

ENR3 **205C**

Fossil Energy

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Gregory Patience, Nicolas Abatzoglou

16:00 0613 *A Fundamental Approach to Assessing the Energy Intensity and GHG Emissions from Oil Sands Bitumen Upgrading and Petroleum Refining* ***Alvarez-Majmutov A** <Natural Resources Canada>, Chen J

16:20 0616 *Atomistic Modeling of Structure II Gas Hydrate Mechanics: Compressibility and Equations of State* **Vlasic TM** <McGill University>, Servio P, ***Rey AD**

16:40 0617 *Multiscale Modelling of Methane Hydrate Mechanical Properties for Energy Applications* **Jendi Z** <McGill University>, Servio P, ***Rey A**

17:00 End of Session

ENR4 **205C**

Harvesting Renewable Energy

Organizer(s) - Nicolas Abatzoglou, Cédric Briens and Jinwen Chen
Chair(s) - Gregory Patience, Nicolas Abatzoglou

13:00 Canadian Green Chemistry and Engineering Award (Individual) Lecture

13:00 0618 *Three Decades of Innovative and Engineered Green Chemistry*
***Gaudreault R** <TGWT Clean Technologies Inc>

13:40 0619 *Simulation of Dry Reforming of Methane in a Conventional Downfired Reformer* Zhao YR, Latham DA, ***Peppley BA**, **McAuley KB** <Queen's University>, Wang H, LeHoux R

14:00 0620 *Consolidated Bioprocessing (CBP)* **Fonseca JM** <Universidad Autónoma de Sinaloa, Mexico>, ***Pérez-Angel R**, ***Contreras-Andrade I**, **Picos-Corrales L**, **Cuevas-Rodríguez E**

14:20 0621 *Adsorbent Screening for Thermal Energy Storage Application* **Amyot P** <University of Ottawa>, **Lefebvre D**, **Godin A**, ***Tezel FH**

14:40 End of Session

Environment

ENV2 204B

Trends in Wastewater Mitigation and Water Quality

Organizer(s) - **Madhumita B Ray**, **Rafael M Santos** and **Peter Vanrolleghem**
Chair(s) - **Madhumita B Ray**, **Mehrab Mehrvar**

13:00 0622 *Air Injection for Flux Enhancement and Membrane Fouling Reduction in Ultrafiltration of the Latex Solution* ***Abdelrasoul A** <Ryerson University>, ***Doan H**, **Lohi A**, **Cheng C-H**

13:20 0624 *Computational Fluid Dynamic CFD Modelling of the Multiphase Influences in Ultrafiltration of Latex Effluent Using Air Injection* ***Abdelrasoul A** <Ryerson University>, ***Doan H**, **Lohi A**, **Cheng C-H**

13:40 0573 *Development of a Novel Photocatalyst for the Photocatalytic Wastewater Treatment Using the Hydrothermal UV Assisted Method* **Nasirian M** <Ryerson University>, **Mehrvar M**

14:00 0627 *Plant Uptake of Benzalkonium Chlorides in a Hydroponic System* ***Khan AH**, **Winnick D**, **Libby M**, **Sumarah M**, **Macfie SM**, ***Ray MB** <Western University>

14:20 0626 *New Pathways for Oxy-cracking of Solid Waste Hydrocarbons* **Manasrah A** <University of Calgary>, ***Nassar N**

14:40 0623 *Study on Desalination by Vacuum Membrane Distillation Using a Tubular Polypropylene Membrane*
***Chaurasia SP** <Malaviya National Institute of Technology, India>, **Dhyani V**, **Singh J**, **Upadhyaya S**, **Gupta AB**

15:00 End of Session

Macromolecular Sciences and Engineered Polymers

MSP4 202

Polymer Characterization and Testing

Organizer(s) - **Josée Brisson**, **Denis Rodrigue** and **João Soares**
Chair(s) - **João Soares**

13:00 0628 *Effect of Clay Particle Size on Behavior of its Polymer-based Flocculation* **Gaikwad R** <University of Alberta>, **Gumfekar SP**, ***Soares JBP**

13:20 0629 *Ultra-large Sized Graphene Nano-platelets (GnPs) Incorporated Polypropylene (PP)/GnP Composites Engineered by Melt Compounding and its Thermal, Mechanical, and Electrical Properties* ***Jun YS** <University of Waterloo>, **Um JG**, ***Yu A**

13:40 0630 *Models Physical for Asphaltenes: Synthesis and Characterization* ***da Silva MA** <University of Alberta>, **Soares JB**

14:00 0631 *Development of Cellulose Microfiber/Short Carbon Fiber-reinforced Biopolyamide Hybrid Composites for High Performance Applications* ***Armioun S** <University of Toronto>, **Panthapulakkal S**, **Tjong J**, ***Sain M**

14:20 0633 *Enhancements in the Crystalline Structure and Mechanical Properties of Reactively Modified Polypropylene* **Tiwary P** <Queen's University>, **Gui H**, **Ferreira PL**, ***Kontopoulou M**

14:40 Coffee Break

15:20 0634 *Synthesis of "Green" Polymeric Membrane for Organic Solvent Filtration* ***Zaviska F** <Université de Montpellier, France>, ***Bouyer D**

15:40 0635 *Impact of Temperature on Twin Screw Wet Granulation* ***Liu Y** <McMaster University>, ***Thompson M**, **O'Donnell K**

16:00 End of Session

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Ahmed, S	533	CCR2	Atkinson, M	121	CEF2	Bertrand, F	33	CEF2	Chabot, B	230	POS
Ahmed, S	533	CCR2	Aubé, M	112	CEE1	Bertrand, O	33	CEF2	Chaib, O	32	CEF2
Ahmed, S	533	CCR2	Aufderheide, B	418	BBE1	Bethi, A	35	CEF5	Chamkalani, AC	326	BBE2
Ahmed, S	533	CCR2	Austrins, L	262	POS	Bezerra, VMF	236	POS	Chamkalani, AC	343	ENR3
Ahmed, S	533	CCR2	Avalos Ramirez, A	462	ENV1	Bi, X	565	ENR5	Chamoumi, M	102	CCR1
Ahmed, S	533	CCR2	Avila, A	392	CCS1	Blais, XB	22	CCR1	Champagne, P	303	MAT1
Ahmed, S	533	CCR2	Awad, G	238	POS	Blais, B	33	CEF2	Champagne, P	404	MAT1
Ahmed, S	533	CCR2	Azar, R	463	ENV1	Blais, JF	346	ENV3	Champagne, P	584	MSP5
Ahmed, S	533	CCR2	Azargohar, R	101	CCR1	Blais, S	172	SYC2	Chang, XF	141	ENR2
Ahmed, S	533	CCR2	Azarmehr, A	5	CCS1	Blanchard, J	428	CCR2	Chang, XF	227	POS
Ahmed, S	533	CCR2	Azarmi, M	560	ENR1	Blanchard, J	434	CCR2	Chaouki, J	70	PLS
Ahmed, S	533	CCR2	Azimi, A	5	CCS1	Boahene, PE	362	NNT1	Chaouki, J	333	CEF4
Ahmed, S	533	CCR2	Azimi, Y	300	MAT1	Boëns, B	564	ENR5	Chaouki, J	338	CEF4
Ahmed, S	533	CCR2	Azimov, U	510	PSM5	Boffito, DC	390	SKS1	Chaurasia, SP	324	BBE2
Ahmed, S	533	CCR2	Azimov, U	512	PSM5	Boffito, DC	435	CCR2	Chaurasia, SP	623	ENV2
Ahmed, S	533	CCR2	Azimov, U	610	PSM3	Boffito, DC	638	POS	Chávez Parga, MC	420	BBE1
Ahmed, S	533	CCR2	Azimzada, AA	144	ENV2	Boileau, D	302	MAT1	Chen, A	12	BME1
Ahmed, S	533	CCR2	Azizi, D	118	CEF1	Boivin, L	555	CEF3	Chen, A	361	NNT1
Ahmed, S	533	CCR2	Badoga, S	384	SKS1	Bonneviot, LHR	289	SKS1	Chen, J	91	BBE4
Ahmed, S	533	CCR2	Baghbanzadeh, M	265	POS	Boparai, H	262	POS	Chen, J	141	ENR2
Ahmed, S	533	CCR2	Baghbanzadeh, M	478	NNT1	Borou, S	17	BBE3	Chen, J	227	POS
Ahmed, S	533	CCR2	Bahrami, A	191	POS	Botha, L	237	POS	Chen, J	354	MSP3
Ahmed, S	533	CCR2	Bahrami, A	527	BBE3	Botha, L	570	ENV2	Chen, J	613	ENR3
Ahmed, S	533	CCR2	Bai, X	125	CEF2	Boubée, F	85	BME2	Chen, L	270	POS
Ahmed, S	533	CCR2	Bai, Y	426	BBE1	Boudreau, D	9	BME1	Chen, LY	12	BME1
Ahmed, S	533	CCR2	Baig, KS	194	POS	Bougie, F	272	POS	Chen, R	301	MAT1
Ahmed, S	533	CCR2	Balaski, M	304	MAT1	Bougie, F	275	POS	Chen, S	431	CCR2
Ahmed, S	533	CCR2	Bali, A	428	CCR2	Bougie, F	399	CCS2	Chen, S	472	MSP5
Ahmed, S	533	CCR2	Balkus, KJ	499	SKS1	Boulanger, M	82	BME2	Chen, T	406	MAT1
Ahmed, S	533	CCR2	Ballerat-Busserolles, K	3	CCS1	Boulanger, M	84	BME2	Chen, X	141	ENR2
Ahmed, S	533	CCR2	Banat, F	152	ENV2	Bourdeau, N	564	ENR5			
						Bousmina, M	383	SKS1			
						Bousmina, M	386	SKS1			
						Bouyer, D	634	MSP4			

Chen, X	227	POS	Darabi Mahboub, M	427	CCR2	Duan, X	440	CEF2	Fathi Roudsari, S	588	MSP5
Chen, YP	218	POS	Dastjerdi, Z	473	MSP5	Duan, X	523	RCF2	Faucher, S	347	ENV3
Chen, ZT	36	CEF5	Datt, C	377	PCS1	Dubé, MA	155	MSP2	Faucheux, N	83	BME2
Cheng, C-H	52	ENV2	Davey, S	237	POS	Dubé, MA	156	MSP2	Faucheux, N	186	POS
Cheng, C-H	228	POS	Davey, S	570	ENV2	Dubois, C	473	MSP5	Fauteux-Lefebvre, C		
Cheng, C-H	622	ENV2	Dawidziuk, K	250	POS	Dubois, C	234	POS		175	SYC2
Cheng, C-H	624	ENV2	de Boer, C	262	POS	Dubois, C	357	MSP3	Feilizadeh, M	23	CCR1
Cheng, D	87	BME2	De Crescenzo, G	86	BME2	Dubois, C	579	MSP4	Fenech, M	81	BME2
Cheng, D	505	CCS1	De Crescenzo, G	183	POS	Dubois, J-L	1	PLS	Feng, C	241	POS
Chiang, YW	246	POS	De Crescenzo, G	532	CCR2	Dubois, J-L	202	POS	Feng, C	264	POS
Chiang, YW	247	POS	De Kee, D	373	PCS1	Dubois, JL	427	CCR2	Feng, X	57	ENV2
Chiang, YW	402	MAT1	De Klerk, A	339	ENR3	Dubois, P	157	MSP2	Ferguson, JP	336	CEF4
Chimeni-Yomeni, D			De Klerk, A	491	SYC2	Dubois, P	249	POS	Feriani, M	269	POS
	579	MSP4	De la Hoz Siegler, H			Duchesne, C	170	SYC2	Fernandes, R	563	ENR5
Chiron, F-X	546	CEF4				Duchesne, C	177	SYC2	Ferreira, PL	633	MSP4
Choi, K	117	CEF1	De la Hoz Siegler, H			Duchesne, C	425	BBE1	Ferrer, A	169	SYC2
Chol, CG	640	POS				Duchesne, C	492	SYC2	Flores-Cerrillo, J	602	SYC3
Chorfa, N	506	FOS2				Duever, T	62	MSP1	Fongarland, P	272	POS
Chou, CP	14	BBE3				Durao, P	593	SYC2	Fongarland, P	275	POS
Chouinard, G	471	MSP5	de Lasa, H	388	SKS1	Dusseault, MD	343	ENR3	Fonseca, JM	620	ENR4
Chowdhury, A	262	POS	de Lasa, H	494	SKS1	Dutta, A	247	POS	Forbes, JF	67	SYC3
Chowdhury, MBI	391	CCS1	de Lasa, HI	391	CCS1	Dutta, A	402	MAT1	Fortier, C	183	POS
Chowdhury, MBI	393	CCS1	de Lasa, HI	393	CCS1	Dutta, A	641	POS	Foumeny, EA	540	CCR2
Chowdhury, MMI	349	ENV3	De Pauw, R	392	CCS1	Dutta, R	454	ENR3	Fradette, L	31	CEF2
Chung, W-J	261	POS	De Winter, J	93	BBE4	Ebgbulem, IJ	371	SYC1	Fradette, L	33	CEF2
Cicoira, F	85	BME2	Delgado, B	462	ENV1	Ebied, AE	484	NNT1	Fradette, L	112	CEE1
Cirimina, R	292	SKS1	Delgado, L	133	EEE3	Ebrahimi, M	122	CEF2	Fradette, L	138	ENR2
Collotta, M	404	MAT1	DelGuidice, T	17	BBE3	Ebrahimi, M	545	CEF2	Fradette, L	328	CEF1
Contreras Andrade, I			Deng, W	439	CEF2	Edathil, A	152	ENV2	Freitas, HFS	236	POS
	648	SKS1	DePippo, K	19	CCR1	Eic, M	291	SKS1	Fu, F	38	CEF5
Contreras-Andrade, I			Deschenes, J	321	BBE2	Ein-Mozaffari, F	122	CEF2	Fuentez-Zurita, G	385	SKS1
	620	ENR4	Deschênes, J-S	56	ENV2	Ein-Mozaffari, F	123	CEF2	Fukatsu, N	213	POS
Corbett, B	602	SYC3	Deschênes, J-S	230	POS	Ein-Mozaffari, F	136	ENR2	Gabayet, J	262	POS
Corbett, B	603	SYC3	Deschênes, J-S	299	MAT1	Ein-Mozaffari, F	437	CEF2	Gabhi, RS	131	EEE3
Corbit, C	606	PSM3	Deschênes, J-S	403	MAT1	Ein-Mozaffari, F	545	CEF2	Gagnon, J	56	ENV2
Costales, D	93	BBE4	Detrembleur, C	157	MSP2	Ein-Mozaffari, F	588	MSP5	Gagnon, J	230	POS
Côté, A	97	BBE4	Dhabhai, R	417	BBE1	El Bachawati, MB	223	POS	Gagnon, J	569	ENV2
Coulier, Y	2	CCS1	Dhib, R	62	MSP1	El Kadib, A	383	SKS1	Gaikwad, R	628	MSP4
Coulier, Y	3	CCS1	Dhib, R	588	MSP5	El Kadib, A	386	SKS1	Gaillet, B	17	BBE3
Coumoyer, A	170	SYC2	Dhyani, V	623	ENV2	El Zakhem, H	115	CEE1	Gaillet, B	97	BBE4
Courmoyer, A	425	BBE1	Di Lullo, G	457	ENV1	El Zakhem, HZ	223	POS	Gaillet, B	411	FOS1
Courson, C	497	SKS1	Díaz-Trujillo, LA	106	CCR1	El-Diwany, AI	238	POS	Gaillet, B	425	BBE1
Cowperthwaite, EV	488	SYC2	Dies, H	13	BME1	Elfring, G	377	PCS1	Gallerneault, M	119	CEF1
Cox, J	4	CCS1	Dies, H	185	POS	Elkhodiry, M	82	BME2	Gamgoum, R	247	POS
Coxam, J-Y	2	CCS1	Dilenschneider, T	444	CEF3	Elkhodiry, MA	84	BME2	Gan, QJ	139	ENR2
Coxam, J-Y	3	CCS1	Ding, SX	596	SYC3	Elkoun, S	378	PCS1	Gancheva, T	160	MSP3
Cranston, ED	473	MSP5	Ding, SX	604	SYC3	Ellis, N	565	ENR5	Gancheva, T	352	MSP3
Croiset, E	199	POS	Ding, Y	134	EEE3	Ellis, NE	22	CCR1	Gao, L	646	POS
Crudden, CM	288	SKS1	Dionisi, D	525	BBE3	Ello, AS	364	NNT1	Gao, Y	161	MSP3
Csordas, M	577	ENV2	Dionisi, D	572	ENV2	Enferadi Kerenkan, A			Garcia-Valdez, O	584	MSP5
Cuevas-Rodriguez, E			Dirany, M	380	PCS1		364	NNT1	Garg, A	601	SYC3
	620	ENR4	Do, T	481	NNT1	Entezari Zarandi, A	73	CCS2	Garg, A	602	SYC3
Cui, Y	36	CEF5	Do, T-O	364	NNT1	Escamilla Silva, EM			Garnier, A	17	BBE3
Cunningham, MF	584	MSP5	Do, T-O	477	NNT1		420	BBE1	Garnier, A	97	BBE4
Cunningham, MF	585	MSP5	Do, T-O	483	NNT1	Escamilla Silva, EM			Garnier, A	191	POS
Czarnecki, JC	381	PCS1	Doan, H	52	ENV2		522	RCF2	Garnier, A	411	FOS1
da Silva, MA	630	MSP4	Doan, H	194	POS	Escobedo, C	13	BME1	Garnier, A	527	BBE3
Da, Z	538	CCR2	Doan, H	228	POS	Escobedo, C	185	POS	Gaudreault, R	618	ENR4
Dabir, B	150	ENV2	Doan, H	554	CEF3	Eshraghian, AE	479	NNT1	Gazil, O	352	MSP3
Dabir, B	153	ENV2	Doan, H	622	ENV2	Eslami, A	116	CEF1	Ge, S	303	MAT1
Dabros, T	135	ENR2	Doan, H	624	ENV2	Estupinan Perez, L	556	CEF3	Gehman, J	307	PSM2
Dadvar, M	153	ENV2	Dochain, D	370	SYC1	Ette, CC	572	ENV2	Genin, SN	300	MAT1
Dai, L	87	BME2	Docoslis, A	13	BME1	Euan, BJ	320	BBE2	Georgakopoulos, E		
Dalai, A	323	BBE2	Docoslis, A	119	CEF1	Evitts, R	134	EEE3		246	POS
Dalai, A	384	SKS1	Docoslis, A	185	POS	Fadic, A	639	POS	Gerbaut, P	93	BBE4
Dalai, AK	21	CCR1	Docoslis, A	327	CEF1	Falcón, A	93	BBE4	Ghanem, A	37	CEF5
Dalai, AK	101	CCR1	Docoslis, A	592	NNT1	Fanchini, G	359	NNT1	Ghasemzadeh-Barvarz, M		
Dalai, AK	104	CCR1	Donaldson, A	128	CEF2	Fandiño Torres, O	4	CCS1		170	SYC2
Dalai, AK	324	BBE2	Donaldson, A	158	MSP2	Fang, L	289	SKS1	Ghodhbene, M	399	CCS2
Dalai, AK	362	NNT1	Donaldson, A	268	POS	Farag, H	488	SYC2	Gholipour, M	481	NNT1
Dalai, AK	394	CCS1	Donaldson, A	581	MSP4	Farand, P	112	CEE1	Ghorbani Aghdam, A		
Dalai, AK	417	BBE1	Donaldson, AA	544	CEF2	Farbod, A	541	CCR2		424	BBE1
Dalai, AK	640	POS	Doucet, J	333	CEF4	Farhanian, D	532	CCR2	Ghosh, M	575	ENV2
Dalle Ave, G	325	BBE2	Doxsee, K	10	BME1	Farnood, R	203	POS	Ghuzi, M	590	NNT1
Dalsania, Y	524	RCF2	Drevelle, O	83	BME2	Farnood, R	264	POS	Giacomin, AJ	309	RCF1
Dalvi, H	490	SYC2	Drevelle, O	186	POS	Farnood, RR	241	POS	Giacomin, AJ	314	RCF1
Dancey, JJ	76	PSM1	Drolet, P	78	PSM1	Farrauto, R	99	CCR1	Giglio, C	119	CEF1
Dara, S	510	PSM5	Dronamraju, R	561	ENR1	Farrauto, RJ	647	SKS1	Giglio, C	592	NNT1
Dara, S	610	PSM3	Duan, X	439	CEF2	Fasahati, P	181	SYC4	Gilani, B	140	ENR2

Gilbert, PH	314	RCF1	Han, L	195	POS	Iliuta, MC	191	POS	Kaliaguine, S	270	POS
Giordano, G	498	SKS1	Hao, L	596	SYC3	Iliuta, MC	272	POS	Kaliaguine, S	292	SKS1
Girard, C	242	POS	Haque, F	402	MAT1	Iliuta, MC	275	POS	Kaliaguine, S	385	SKS1
Giroir-Fendler, A ..	462	ENV1	Haris, E	341	ENR3	Iliuta, MC	294	CCS1	Kaliaguine, S	500	SKS1
Glasing, J	584	MSP5	Hart, B	39	CEF5	Iliuta, MC	399	CCS2	Kaliaguine, S	502	CCS1
Godbout, S	462	ENV1	Hasib-ur-Rahman, M			Iliuta, MC	527	BBE3	Kaliaguine, S	535	CCR2
Godin, A	621	ENR4	.....	410	FOS1	Imasaka, S	211	POS	Kalliaguine, S	205	POS
Goel, S	517	RCF2	Hatzikiriakos, S ..	377	PCS1	Imbault, AL	203	POS	Kalsoom, S	8	BME1
Goettler, L	30	CEE2	Hawkins, S	606	PSM3	Imtiaz, S	533	CCR2	Kamal, MR	379	PCS1
Gogoi, SB	519	RCF2	Hayes, RE	639	POS	Imtiaz, S	608	PSM3	Kamen, A	18	BBE3
Gómez Arellano, A ..	522	RCF2	Hayward, G	530	BBE3	Ipsakis, D	274	POS	Kanagalakshmi, S		
Gomez-Torres, SA ..	385	SKS1	Hazarika, K	519	RCF2	Irvine, Y	80	PSM1	.....	267	POS
Gong, M	279	POS	He, C	59	MSP1	Ishii, H	211	POS	Kang, K	101	CCR1
González, L	93	BBE4	He, MY	289	SKS1	Ismail, AA	139	ENR2	Kanon-Rubio, K ..	405	MAT1
Gosavi, S	419	BBE1	Heidaryan, E	335	CEF4	Ivanov, SY	143	ENR2	Kantzaz, A	595	ENR1
Gosselin, R	171	SYC2	Hejazi, SH	120	CEF1	Jafarikojoour, M ..	153	ENV2	Kappenstein, C ..	457	SKS1
Gosselin, R	172	SYC2	Henni, A	7	CCS1	Jafari Daghljan Sofia, S			Kara, A	446	EEE2
Gosselin, R	175	SYC2	Heracleous, E	274	POS	.....	480	NNT1	Karamd, S	484	NNT1
Gosselin, R	176	SYC2	Hernández-Escoto, H			Jafari, S	482	NNT1	Karami, D	296	CCS1
Gosselin, R	490	SYC2	.....	106	CCR1	Jafarikojoour, M ..	150	ENV2	Karami, D	297	CCS1
Gosselin, R	593	SYC2	Herrera, J	262	POS	Jafary, S	589	NNT1	Karimi Estahbanati, MR		
Gosselin, R	594	SYC2	Herrera, JE	105	CCR1	Jain, A	324	BBE2	.....	23	CCR1
Gostick, J	41	EEE1	Herrera, JE	145	ENV2	Jain, T	451	ENR3	Karimi, H	488	SYC2
Gostick, J	43	EEE1	Heuzey, M-C	521	RCF2	Jákli, A	466	MSP5	Kasiri, S	407	MAT1
Gostick, J	447	EEE2	Heuzey, MC	376	PCS1	Jalalinejad, F	129	CEF2	Kaushik, P	20	CCR1
Gostick, JT	40	CEF5	Heuzey, MC	379	PCS1	Jamaludin, MZ	600	SYC3	Kawamura, K	212	POS
Gostick, JT	45	EEE1	Hidalgo, G	95	BBE4	James, L	480	NNT1	Kazemi, AS	555	CEF3
Gostick, JT	363	NNT1	Hill, JM	563	ENR5	James, L	482	NNT1	Kazemzadeh, A ..	437	CEF2
Grace, JG	22	CCR1	Hille, R	66	SYC3	James, L	589	NNT1	Kedzior, Z	473	MSP5
Gravel, O	39	CEF5	Hoang, V-T	205	POS	James, LA	441	CEF2	Keleman, M	349	ENV3
Greener, J	9	BME1	Hodges, RS	183	POS	James, LJ	71	CCS2	Kelly, B	74	CCS2
Greener, J	11	BME1	Hoesli, C	82	BME2	James, LJ	343	ENR3	Kelly, B	334	CEF4
Greener, J	116	CEF1	Hoesli, CA	84	BME2	Jamieson, MV	27	CEE2	Kemache, N	346	ENV3
Greener, J	193	POS	Homem, NC	232	POS	Jamieson, MV	29	CEE2	Kennedy, DA	344	ENR3
Greener, J	196	POS	Horikawa, D	212	POS	Jamieson, MV	30	CEE2	Kennedy, DA	562	ENR1
Greener, J	220	POS	Horoiva, TA	254	POS	Jamieson, MV	111	CEE1	Kennell, G	134	EEE3
Greener, J	221	POS	Hossain, MM	536	CCR2	Jamieson, MV	304	MAT1	Kentish, S	346	ENV3
Greener, J	316	BME3	Hosseinzadeh Hejazi, SA			Jamieson, MV	307	PSM2	Kerin, T	643	PSM6
Greener, J	446	EEE2	.....	556	CEF3	Jamieson, MV	456	ENV1	Khader, MM	398	CCS2
Grignard, B	157	MSP2	Houache, O	79	PSM1	Jaramillo, LMY	491	SYC2	Khafhafera, AK ..	276	POS
Grmela, M	310	RCF1	House, J	595	SYC2	Jarrhian, A	335	CEF4	Khakpoor, N	295	CCS1
Groleau, D	423	BBE1	Hu, G	602	SYC3	Jarvis, V	164	NNT1	Khakpoor, N	503	CCS1
Guay, D	17	BBE3	Hu, N-X	164	NNT1	Jeaidi, J	140	ENR2	Khalid, M	552	CEF3
Guay, J-M	175	SYC2	Hu, X	406	MAT1	Jegatheeswaran, S			Khalloufi, S	507	FOS2
Guay, JM	490	SYC2	Hu, Y	408	MAT1	.....	123	CEF2	Khan, AH	627	ENV2
Guay, JM	593	SYC2	Hu, Z	201	SKS1	Jeje, AA	337	CEF4	Khan, F	608	PSM3
Guay, M	68	SYC3	Huang, B	174	SYC2	Jendi, Z	617	ENR3	Khan, FI	80	PSM1
Guay, M	366	SYC1	Huang, B	368	SYC1	Jessop, PG	584	MSP5	Khan, MA	608	PSM3
Guay, M	369	SYC1	Huang, B	407	MAT1	Jia, CQ	130	EEE3	Khan, S	450	ENR3
Guay, M	370	SYC1	Huang, B	486	SYC2	Jia, CQ	131	EEE3	Kheradmandi, M	598	SYC3
Guay, M	371	SYC1	Huang, B	605	SYC3	Jia, CQ	132	EEE3	Khodaei Booran, S		
Guay, M	492	SYC2	Huang, J	195	POS	Jiang, J	534	CCR2	.....	136	ENR2
Gui, H	633	MSP4	Huang, Q	323	BBE2	Jiang, Q	538	CCR2	Khoshkbarchi, M ..	551	CEF4
Guilhaume, N	275	POS	Hudon, N	366	SYC1	Jiménez-García, G ..	106	CCR1	Khraisheh, M	398	CCS2
Guillermo, R	571	ENV2	Hudon, N	369	SYC1	Jin, W	562	ENR1	Kiennemann, A ..	497	SKS1
Guindon, M	607	PSM3	Hudon, N	370	SYC1	Joao, S	28	CEE2	Kietzig, A-M	330	CEF1
Guiver, MD	59	MSP1	Huirache-Acuña, R ..	290	SKS1	Joao, S	112	CEE1	Kikongi, P	172	SYC2
Guiver, MD	382	SKS1	Humayun, M	358	MSP3	Johansen, T	482	NNT1	Kim, CS	565	ENR5
Gumfekar, SP	353	MSP3	Huneault, MA	380	PCS1	Johansen, TE	441	CEF2	Kim, H	482	NNT1
Gumfekar, SP	467	MSP5	Hurley, JB	470	MSP5	Johnson, E	53	ENV2	Kim, H	589	NNT1
Gumfekar, SP	586	MSP5	Husein, MH	479	NNT1	Johnson, R	262	POS	Kim, M	349	ENV3
Gumfekar, SP	628	MSP4	Hussein, M	268	POS	Johnston, K	548	CEF4	Kim, Y	261	POS
Guo, D	145	ENV2	Hutchinson, RA ..	154	MSP2	Jolicoeur, M	86	BME2	Kim, Y	363	NNT1
Guo, J	461	ENV1	Hutchinson, RA ..	468	MSP5	Jolicoeur, M	183	POS	Kimaev, G	489	SYC2
Gupta, AB	623	ENV2	Hutchinson, RA ..	586	MSP5	Jolicoeur, M	321	BBE2	Kirk, DW	131	EEE3
Guruswamy Damodaran, R			Hwang, DK	162	MSP3	Jolicoeur, M	322	BBE2	Kirk, DW	132	EEE3
.....	318	BME3	Hwang, DK	285	POS	Jones, SG	285	POS	Kocur, C	262	POS
Ha, HZ	561	ENR1	Hwang, DK	358	MSP3	Julien, H	416	PSM4	Kodamana, H	174	SYC2
Hajipour, S	551	CEF4	Ibarra-Vidal, M ..	305	MAT1	Jun, YS	263	POS	Koerber, D	484	NNT1
Hamidipour, M	34	CEF2	Ibrahim, F	174	SYC2	Jun, YS	629	MSP4	Kok, MD R	41	EEE1
Hamoudi, S	233	POS	Ibrahim, H	7	CCS1	Juneau, PM	97	BBE4	Kolitawong, C	309	RCF1
Hamoudi, S	239	POS	Ibrahim, H	20	CCR1	Juneau, PM	425	BBE1	Kollar, J	154	MSP2
Hamoudi, S	255	POS	Ibrahim, H	504	CCS1	Jung, D	162	MSP3	Komrakova, A	124	CEF2
Hamoudi, S	257	POS	Idhbeaa, AO	37	CEF5	Kabir, A	92	BBE4	Kontopoulou, M ..	250	POS
Hamoudi, S	269	POS	Iliuta, I	272	POS	Kakoty, M	519	RCF2	Kontopoulou, M ..	312	RCF1
Hamoudi, S	410	FOS1	Iliuta, I	275	POS	Kaliaguine, S	59	MSP1	Kontopoulou, M ..	529	RCF1
Hamoudi, S	591	NNT1	Iliuta, MC	23	CCR1	Kaliaguine, S	60	MSP1	Kontopoulou, M ..	592	NNT1
Hampel, U	422	BBE1	Iliuta, MC	100	CCR1	Kaliaguine, S	202	POS	Kontopoulou, M ..	633	MSP4
Hamzehlouia, S ..	338	CEF4	Iliuta, MC	102	CCR1	Kaliaguine, S	207	POS	Kopyscinski, J	534	CCR2

Kopyscinski, J	563	ENR5	Leveneur, S	.....	400	CCS2	Maheux, M	.....	192	POS	Mirfendereski, SM	332	CEF4		
Kozinski, JA	.....	162	MSP3	Li, B	.....	199	POS	Mahinpey, N	.....	295	CCS1	Mirfendereski, SM	.....	443	CEF3
Kozinski, JA	.....	358	MSP3	Li, C	.....	289	SKS1	Mahinpey, N	.....	296	CCS1	Mirriahi, D	.....	554	CEF3
Krela, M	.....	49	ENR3	Li, DL	.....	65	SYC3	Mahinpey, N	.....	297	CCS1	Mirzawei, M	.....	153	ENV2
Kresta, SM	.....	110	CEE1	Li, H	.....	90	BBE4	Mahinpey, N	.....	503	CCS1	Mkandawire, M	.....	48	ENR3
Kresta, SM	.....	124	CEF2	Li, H	.....	433	CCR2	Mahmood, N	.....	90	BBE4	Moghaddam, EM	.....	540	CCR2
Kresta, SM	.....	518	RCF2	Li, H	.....	435	CCR2	Mahmood, N	.....	92	BBE4	Moghaddam, EM	.....	541	CCR2
Krithivasan, H	.....	251	POS	Li, H	.....	566	ENR5	Maisuria, V	.....	95	BBE4	Mohamed, BA	.....	565	ENR5
Kruczek, B	.....	562	ENR1	Li, M	.....	159	MSP3	Makhtoumi, P	.....	445	CEF3	Mohamed, EF	.....	238	POS
Kuboki, T	.....	92	BBE4	Li, M	.....	162	MSP3	Maleix, C	.....	495	SKS1	Mohamedali, ME	.....	7	CCS1
Kumar, A	.....	51	ENR3	Li, M	.....	358	MSP3	Maleknia, S	.....	424	BBE1	Mohammadi, T	.....	166	NNT1
Kumar, A	.....	457	ENV1	Li, R	.....	407	MAT1	Manafi Rasi, N	.....	295	CCS1	Mohammadi, T	.....	332	CEF4
Kumar, A	.....	459	ENV1	Li, T	.....	374	PCS1	Manamalli, D	.....	267	POS	Mohammadi, T	.....	443	CEF3
Kumar, A	.....	558	ENR1	Li, XL	.....	65	SYC3	Manasrah, A	.....	626	ENV2	Mohammadmoradi, P	.....	557	ENR1
Kumar, A	.....	559	ENR1	Li, XL	.....	367	SYC1	Mancilla-Polanco, A	.....	548	CEF4	.....	.....	422	BBE1
Kumar, P	.....	85	BME2	Li, Z	.....	178	SYC4	Mandur, J	.....	66	SYC3	Mohammed, I	.....	154	MSP2
Kumar, S	.....	463	ENV1	Li, Z	.....	368	SYC1	Manneh, R	.....	115	CEE1	Monascek, J	.....	507	FOS2
Kurhade, AH	.....	21	CCR1	Li, Z	.....	464	ENV1	Manneh, RM	.....	223	POS	Mondor, M	.....	14	BBE3
Kuti, YO	.....	398	CCS2	Liao, W	.....	301	MAT1	Manohar, C	.....	96	BBE4	Moo-Young, M	.....	426	BBE1
Kuznicki, S	.....	556	CEF3	Liao, W	.....	302	MAT1	Manohar, M	.....	98	BBE4	Moo-Young, M	.....	285	POS
Lacik, I	.....	154	MSP2	Libby, M	.....	627	ENV2	Manovic, V	.....	246	POS	Moraes, BU	.....	319	BME3
Lacik, I	.....	586	MSP5	Liegey, S	.....	264	POS	Mansoorneejad, M	.....	140	ENR2	Moran, DA	.....	313	RCF1
Lacoursière, J-P	.....	637	PSM5	Liew, K	.....	355	MSP3	Mantovani, D	.....	316	BME3	Moran, K	.....	348	ENV3
Lagace, R	.....	462	ENV1	Lin, F	.....	135	ENR2	Marcotte, E	.....	112	CEE1	Moran, K	.....	550	CEF4
Lan, C	.....	53	ENV2	Lin, JB	.....	395	CCS1	Mariage, J	.....	249	POS	Moresoli, C	.....	582	MSP4
Lan, C	.....	225	POS	Lin, S	.....	107	CCR1	Marie-Rose, S	.....	496	SKS1	Morrisset, P-O.	.....	403	MAT1
Lan, C	.....	265	POS	Lin, S	.....	539	CCR2	Marin, GB	.....	287	PLS	Mostafavi, E	.....	295	CCS1
Lan, C	.....	478	NNT1	Lin, YP	.....	574	ENV2	Marin, P	.....	239	POS	Mostafavi, E	.....	503	CCS1
Landry, E	.....	484	NNT1	Lissemore, M	.....	530	BBE3	Marion, A	.....	328	CEF1	Mostaghel, S	.....	347	ENV3
Lanzafame, P	.....	498	SKS1	Liu, A	.....	30	CEE2	Marta, M	.....	612	PSM3	Motamed Dashliborun, A	.....	34	CEF2
Lapointe-Garant, PP	.....	594	SYC2	Liu, CJ	.....	72	CCS2	Marsiyah, J	.....	137	ENR2	.....	.....	381	PCS1
Larachi, F	.....	34	CEF2	Liu, FF	.....	470	MSP5	Massicotte, E	.....	62	MSP1	Mozaffari, SM	.....	344	ENR3
Larachi, F	.....	39	CEF5	Liu, J	.....	67	SYC3	Mathault, J	.....	446	EEE2	Munir, D	.....	537	CCR2
Larachi, F	.....	73	CCS2	Liu, J	.....	173	SYC2	Mathpati, CS	.....	419	BBE1	Murayyan, A	.....	96	BBE4
Larachi, F	.....	100	CCR1	Liu, J	.....	487	SYC2	Matsuno, H	.....	209	POS	Murayyan, A	.....	98	BBE4
Larachi, F	.....	102	CCR1	Liu, JJ	.....	181	SYC4	Matsuura, T	.....	53	ENV2	Murayyan, A	.....	189	POS
Larachi, F	.....	118	CEF1	Liu, Q	.....	590	NNT1	Matsuura, T	.....	167	NNT1	Murphy, M	.....	25	CEE2
Larachi, F	.....	191	POS	Liu, R	.....	50	ENR3	Matsuura, T	.....	225	POS	Murschel, F	.....	86	BME2
Larachi, F	.....	191	POS	Liu, R	.....	107	CCR1	Matsuura, T	.....	261	POS	Murschel, F	.....	183	POS
Larachi, F	.....	356	MSP3	Liu, R	.....	520	RCF2	Matsuura, T	.....	265	POS	Muteki, K	.....	171	SYC2
Larachi, F	.....	527	BBE3	Liu, SP	.....	43	EEE1	Matsuura, T	.....	478	NNT1	Muzychka, Y	.....	440	CEF2
Larachi, F	.....	543	CEF2	Liu, SP	.....	363	NNT1	Matsuura, T	.....	106	CCR1	Muzychka, Y	.....	523	RCF2
Larachi, F	.....	552	CEF3	Liu, W	.....	161	MSP3	Maya-Yescas, R	.....	290	SKS1	Myrand-Lapierre, ME	.....	316	BME3
Laroche, G	.....	82	BME2	Liu, Y	.....	301	MAT1	Maya-Yescas, R	.....	488	SYC2	Nadeau, B	.....	87	BME2
Laroche, G	.....	84	BME2	Liu, Y	.....	302	MAT1	McAuley, KB	.....	469	MSP5	Naderi, KV	.....	625	ENV2
LaRue, RJ	.....	444	CEF3	Liu, Y	.....	635	MSP4	McAuley, KB	.....	470	MSP5	Nafie, G	.....	55	ENV2
Latham, DA	.....	619	ENR4	Liu, Z	.....	174	SYC2	McAuley, KB	.....	619	ENR4	Naghi, M	.....	259	POS
Latifi, M	.....	338	CEF4	Liu, Z	.....	301	MAT1	McAuley, KB	.....	619	ENR4	Naghizada, N	.....	339	ENR3
Latreche, S	.....	184	POS	Ljubic, D	.....	164	NNT1	McGregor, C	.....	4	CCS1	Nagy, JB	.....	498	SKS1
Latulippe, DR	.....	444	CEF3	Lohi, A	.....	52	ENV2	McGurn, M	.....	514	RCF2	Nahar, J	.....	487	SYC2
Latulippe, DR	.....	555	CEF3	Lohi, A	.....	122	CEF2	McKellar, JM	.....	455	ENV1	Najafi, N	.....	312	RCF1
Latulippe, DR	.....	577	ENV2	Lohi, A	.....	228	POS	McKenna, T	.....	587	MSP5	Nakhla, G	.....	349	ENV3
Lavoie, FB	.....	171	SYC2	Lohi, A	.....	437	CEF2	Meers, E	.....	350	ENV3	Nandakumar, K	.....	126	CEF2
Lavoie, FB	.....	176	SYC2	Lohi, A	.....	545	CEF2	Mehrani, P	.....	142	ENR2	Napoles, MC	.....	93	BBE4
Lavoie, JM	.....	496	SKS1	Lohi, A	.....	622	ENV2	Mehrkanoon, S	.....	604	SYC3	Narain, R	.....	252	POS
Leclerc, P	.....	333	CEF4	Lohi, A	.....	624	ENV2	Mehrvar, M	.....	568	ENV1	Nasirian, M	.....	573	ENV2
Lee, P	.....	72	CCS2	Louyot, P	.....	638	POS	Mehrvar, M	.....	573	ENV2	Nasirian, M	.....	574	ENV2
Lee, YM	.....	382	SKS1	Low, AR	.....	3	CCS1	Mehrvar, M	.....	574	ENV2	Nassar, N	.....	55	ENV2
Lefebvre, CF	.....	593	SYC2	Lowry, BJ	.....	26	CEE2	Mehrvar, M	.....	625	ENV2	Nassar, N	.....	626	ENV2
Lefebvre, D	.....	621	ENR4	Lu, P	.....	72	CCS2	Mehta, S	.....	179	SYC4	Nassar, NN	.....	475	NNT1
Lefevre, L	.....	370	SYC1	Lu, S	.....	15	BBE3	Meng, X	.....	464	ENV1	Nasseri, R	.....	582	MSP4
Lefsrud, LM	.....	282	POS	Luk, S	.....	154	MSP2	Meouch, O	.....	645	POS	Natale, G	.....	377	PCS1
Lefsrud, LM	.....	307	PSM2	Lukaniuk, C	.....	642	PSM2	Mercier, G	.....	346	ENV3	Nazemifard, NN	.....	381	PCS1
Lefsrud, LM	.....	456	ENV1	Ma, Y	.....	605	SYC3	Meshkat, S	.....	60	MSP1	Ndjamo, A	.....	433	CCR2
Legrand, J	.....	127	CEF2	Ma, Z	.....	390	SKS1	Metzelaars, M	.....	644	SKS1	Neagoe, C	.....	638	POS
Legrand, J	.....	184	POS	Maafa, I	.....	583	MSP5	Mhaskar, P	.....	69	SYC3	Neethirajan, S	.....	10	BME1
Legrand, J	.....	438	CEF2	Mabee, W	.....	404	MAT1	Mhaskar, P	.....	577	ENV2	Neethirajan, S	.....	96	BBE4
Legros, R	.....	242	POS	Macfie, SM	.....	627	ENV2	Mhaskar, P	.....	595	SYC2	Neethirajan, S	.....	98	BBE4
Legros, R	.....	338	CEF4	Machado, MB	.....	124	CEF2	Mhaskar, P	.....	598	SYC3	Neethirajan, S	.....	189	POS
Legros, R	.....	460	ENV1	Machado, MB	.....	518	RCF2	Mhaskar, P	.....	601	SYC3	Neethirajan, S	.....	526	BBE3
LeHoux, R	.....	619	ENR4	MacIntyre, S	.....	121	CEF2	Mhaskar, P	.....	602	SYC3	Neethirajan, S	.....	530	BBE3
Lei, C	.....	439	CEF2	Madadhkani, SM	.....	22	CCR1	Mhaskar, P	.....	603	SYC3	Nelson, R	.....	135	ENR2
Lei, L	.....	163	MSP3	Mageshwari, S	.....	267	POS	Mhaskar, P	.....	603	SYC3	Nelson, S	.....	348	ENV3
Lemonidou, A	.....	293	CCS1	Mahadevan, K	.....	15	BBE3	Mighri, F	.....	59	MSP1	Nemati, M	.....	147	ENV2
Lemonidou, AA	.....	274	POS	Mahadevan, R	.....	94	BBE4	Mighri, F	.....	378	PCS1				
Lenfant, G	.....	376	PCS1	Mahalec, V	.....	64	SYC3	Mighri, N	.....	205	POS				
Lepetit-Stoffaes, JP	.....	17	BBE3	Mahboudi, F	.....	424	BBE1	Migliori, M	.....	498	SKS1				
Leung, C	.....	30	CEE2	Mahub, N	.....	459	ENV1	Miled, A	.....	446	EEE2				
				Mahdi, MJ	.....	347	ENV3	Mirfendereski, SM	.....	166	NNT1				

Nemati, M	148	ENV2	Parvinzadeh Gashti, M	9	BME1	Ramirez-Leyva, JH		Sahasakkul, W	512	PSM5	
Nemati, M	463	ENV1	Parvinzadeh Gashti, M			Ramjugernath, D	351	ENV3	610	PSM3	
Neufeld, RAE	465	MSP5				Ramsden, M	77	PSM1	524	RCF2	
Ng, S	517	RCF2		116	CEF1	Rana, D	53	ENV2	644	SKS1	
Ngan, A	130	EEE3	Pasha, M	283	POS	Rana, D	167	NNT1	Saied, M	128	CEF2
Nguyen, B	237	POS	Pasquier, LC	346	ENV3	Rana, D	225	POS	Sain, M	631	MSP4
Nguyen, B	570	ENV2	Patankar, SC	493	SKS1	Rana, D	261	POS	Sain, MM	379	PCS1
Nguyen, C-C	477	NNT1	Patel, R	451	ENR3	Rana, D	265	POS	Sailili, SM	466	MSP5
Nguyen, C-C	483	NNT1	Patel, R	599	SYC3	Rana, D	478	NNT1	Salsbury, T	595	SYC2
Nguyen, K	507	FOS2	Patience, G	546	CEF4	Rangel-Segura, R	290	SKS1	Salvas, J	172	SYC2
Nguyen, T	640	POS	Patience, GS	103	CCR1	Rangu, V	141	ENR2	Salvas, J	492	SYC2
Ni, Y	87	BME2	Patience, GS	390	SKS1	Raquez, JM	157	MSP2	Sanati, SS	308	PSM2
Ni, Y	505	CCS1	Patience, GS	427	CCR2	Raquez, JM	249	POS	Sanati, SS	415	PSM4
Nikdel, A	16	BBE3	Patience, GS	433	CCR2	Rasenthiram, L	263	POS	Sanati, SS	509	PSM5
Nishizawa, K	585	MSP5	Patience, GS	471	MSP5	Rashid, MM	69	SYC3	Santangelo, M	594	SYC2
Nittala, AK	467	MSP5	Patience, GS	638	POS	Ratti, C	507	FOS2	Santos Silva, B	594	SYC2
Niu, C	323	BBE2	Paulo, JBA	236	POS	Ratti, C	508	FOS2	Santos, RM	246	POS
Niu, C	442	CEF3	Peace, C	262	POS	Raveendran, JP	327	CEF1	Santos, RM	247	POS
Niu, CH	417	BBE1	Peachey, BR	48	ENR3	Ray, AK	143	ENR2	Santos, TRT	232	POS
Niu, NZ	329	CEF1	Peachey, BR	72	CCS2	Ray, AK	575	ENV2	Santos, TRT	233	POS
Noel, S	86	BME2	Peachey, BR	528	BBE3	Ray, MB	406	MAT1	Santos, TRT	240	POS
Nohair, B	385	SKS1	Pelegrin, DC	390	SKS1	Ray, MB	627	ENV2	Santos, TRT	255	POS
Nomikos, P	485	SYC2	Peng, DY	550	CEF4	Razzak, SA	542	CEF2	Santos, TRT	257	POS
Nui, P X	88	BME2	Peng, K	604	SYC3	Razzaz, Z	578	MSP4	Sapkota, K	51	ENR3
Nunez Garcia, A	262	POS	Penner, G	4	CCS1	Reck, IM	240	POS	Saraf, C	529	RCF1
Nychka, JA	108	CEE1	Pennetta, L	353	MSP3	Reda, M	165	NNT1	Sarazin, P	83	BME2
O'Carroll, DM	262	POS	Peppley, B	19	CCR1	Reda, M	229	POS	Sarazin, P	186	POS
O'Donnell, K	635	MSP4	Peppley, BA	619	ENR4	Reda, M	298	CCS1	Sari, A	510	PSM5
O'May, C	95	BBE4	Pereira Almaso, P	429	CCR2	Regmi, B	641	POS	Sari, A	512	PSM5
Ogbe, EO	367	SYC1	Peres, S	322	BBE2	Rempel, G	57	ENV2	Sari, A	610	PSM3
Oh, S-Y	347	ENV3	Perez Zurita, J	429	CCR2	Ren, S	156	MSP2	Sarkar, P	448	EEE2
Okeke, EO	182	SYC4	Pérez-Angel, R	620	ENR4	Ren, X	321	BBE2	Sarkar, P	449	EEE2
Okoli, CO	180	SYC4	Perrier, M	91	BBE4	Rey, A	617	ENR3	Sarkar, U	63	MSP1
Olasanmi, IO	151	ENV2	Perrier, M	112	CEE1	Rey, AD	616	ENR3	Sarkar, U	454	ENR3
Olayiwola, B	488	SYC2	Pettit, G	77	PSM1	Rezaei Ravesh, S	424	BBE1	Sato, T	208	POS
Oliveria, AM	254	POS	Phillip, WA	444	CEF3	Rezaei Zare, E	5	CCS1	Sattari, F	491	SYC2
Oliverio, M	636	PSM4	Picos-Corrales, L	620	ENR4	Riahinezhad, M	580	MSP4	Savard, S	506	FOS2
Oluwadairo, KA	441	CEF2	Pierorazio, AJ	414	PSM4	Riazi, MR	46	ENR3	Sawamoto, M	585	MSP5
Omelon, S	645	POS	Piette, R	513	PSM5	Ricardez-Sandoval, L			Sawant, S	419	BBE1
Omelon, S	646	POS	Piette, R	607	PSM3	Ricardez-Sandoval, L	179	SYC4	Schlüter, M	37	CEF5
Onderwater, RCA	93	BBE4	Pilon, G	564	ENR5	Ricardez-Sandoval, LA			Schoegggl, FF	453	ENR3
Oni, AO	51	ENR3	Pjontek, D	121	CEF2		489	SYC2	Schoegggl, FF	548	CEF4
Oni, AO	558	ENR1	Plante, B	73	CCS2	Ridpath, A	636	PSM4	Schubert, M	422	BBE1
Oni, AO	559	ENR1	Pletnyov, FM	337	CEF4	Rigamonti, MG	435	CCR2	Schüh, F	644	SKS1
Oribayo, S	57	ENV2	Poganietz, WR	459	ENV1	Riopel, C	413	PSM4	Schwentenwein, M	495	SKS1
Orsat, V	192	POS	Poitras, D	412	PSM4	Roberge, J	17	BBE3	Sciortino, M	73	CCS2
Osazuwa, O	119	CEF1	Potvin, G	25	CEE2	Roberge, S	155	MSP2	Sedghi, S	486	SYC2
Ostojic, S	235	POS	Poussard, A	318	BME3	Robertson, V	4	CCS1	Sedghkerdar, M	297	CCS1
Othman, N	587	MSP5	Poussard, L	157	MSP2	Robinson, C	145	ENV2	Sen, S	449	EEE2
Ouchi, M	585	MSP5	Poussard, L	249	POS	Roche, F	75	PSM1	Sénéchal, T	249	POS
Ouldrebai, H	438	CEF2	Pousti, M	196	POS	Rodrigue, D	60	MSP1	Seong, JG	382	SKS1
Outhwaite, A	158	MSP2	Prasad, V	407	MAT1	Rodrigue, D	177	SYC2	Serrano-Rosales, B		
Oxenford, J	348	ENV3	Prasad, V	491	SYC2	Rodrigue, D	502	CCS1		385	SKS1
Oyedun, AC	459	ENV1	Predicala, B	463	ENV1	Rodrigue, D	578	MSP4	Servio, P	616	ENR3
Page, DJYS	24	CCR1	Pruvost, J	438	CEF2	Rodrigue, D	579	MSP4	Servio, P	617	ENR3
Pagliari, M	292	SKS1	Puskas, JE	469	MSP5	Roemer, C	30	CEE2	Shah, M	49	ENR3
Paixão, RM	240	POS	Qi, W	74	CCS2	Rokbani, H	375	PCS1	Shah, QE	418	BBE1
Pakzad, I	437	CEF2	Qi, W	334	CEF4	Rooney, TR	586	MSP5	Shah, SL	487	SYC2
Pal, P	152	ENV2	Qiuqiao, J	198	POS	Rose, L	501	CCS1	Shahandeh, H	178	SYC4
Palkovits, R	644	SKS1	Qu, S	444	CEF3	Roseberry, MO	411	FOS1	Shahbikian, S	380	PCS1
Pan, Q	57	ENV2	Quadri, SMR	567	ENR5	Rosella, E	316	BME3	Shahkarami, S	394	CCS1
Pan, Q	107	CCR1	Quddus, MR	391	CCS1	Rouison, D	580	MSP4	Shahnazari, H	595	SYC2
Pan, Q	431	CCR2	Qui, S	303	MAT1	Roustapishah, M	429	CCR2	Shahsavan, H	355	MSP3
Pan, Q	472	MSP5	Quintana, P	290	SKS1	Royae, SJ	150	ENV2	Shahsavan, H	465	MSP5
Pan, Q	531	CCR2	Rachid, RZ	42	EEE1	Ruan, Z	302	MAT1	Shahsavan, H	466	MSP5
Pan, Q	539	CCR2	Radfarnia, HR	294	CCS1	Ryland, D	566	ENR5	Shardt, YAW	596	SYC3
Pandarus, V	292	SKS1	Rafiei, M	179	SYC4	Saadatkah, N	435	CCR2	Shardt, YAW	604	SYC3
Paniagua-Rodriguez, JC			Rahimian Esfahani, P			Sabri, F	328	CEF1	Sharif Rohani, A	142	ENR2
	290	SKS1		44	EEE1	Sadeghi, M	40	CEF5	Sharma, RI	72	CCS2
Panthapulakkal, S	631	MSP4	Raibagkar, A	511	PSM5	Sadeghi, S	374	PCS1	Sharp, H	405	MAT1
Paquet-Mercier, F	11	BME1	Rajagopalan, A	392	CCS1	Sadhukhan, S	63	MSP1	Sharp, J	317	BME3
Paquet-Mercier, F	116	CEF1	Rajendran, A	392	CCS1	Saengow, C	309	RCF1	Shaw, JM	27	CEE2
Paquet-Mercier, F	196	POS	Rajendran, A	445	CEF3	Saengow, C	314	RCF1	Shaw, JM	29	CEE2
Paraiso, PR	239	POS	Rajendran, A	556	CEF3	Safari-Alamuti, F	124	CEF2	Shaw, JM	111	CEE1
Parathoner, S	498	SKS1	Rakshit, SK	421	BBE1	Safdari-Shadlou, F			Shen, W	201	SKS1
Parent, J	250	POS	Ramachandran, A	517	RCF2		379	PCS1	Sheridan, P	302	MAT1
Paris, J	91	BBE4	Ramaswami, S	362	NNT1	Sagir, MM	341	ENR3	Shi, J	98	BBE4
Park, CB	157	MSP2	Ramaswamy, P	395	CCS1	Saha, S	448	EEE2	Shimizu, GKH	395	CCS1

Shirani, B	291	SKS1	Tan, ZT	200	POS	Upreti, SR	365	SYC1	Wu, J	365	SYC1
Shoab, MS	567	ENR5	Tang, L	187	POS	Uprety, BK	421	BBE1	Wu, P	289	SKS1
Shokrollahi Yancheshmeh, M	294	CCS1	Tang, M	218	POS	Usman, MR	537	CCR2	Wu, T	520	RCF2
Si, C	520	RCF2	Tang, Y	201	SKS1	Uy, R	306	PSM2	Wu, Y	164	NNT1
Si-Ahmed, E-K	127	CEF2	Tanghe, A	93	BBE4	Uzukwu, C	525	BBE3	Xi, L	58	MSP1
Si-Ahmed, E-K	184	POS	Tanguay, JF	82	BME2	Vajihinejad, V	571	ENV2	Xi, L	125	CEF2
Si-Ahmed, EK	438	CEF2	Tanguay, JF	84	BME2	Vakili, S	560	ENR1	Xu, C	90	BBE4
Sidthiphol, S	28	CEE2	Tanguay-Rioux, F	460	ENV1	Valdes Labrada, G	147	ENV2	Xu, C	92	BBE4
Siegler, HDH	503	CCS1	Taouk, B	400	CCS2	Valéro, JR	259	POS	Xu, C	408	MAT1
Silvester, L	274	POS	Tavares, J	546	CEF4	Valitova, I	85	BME2	Xu, C	582	MSP4
Simakov, DSA	396	CCS2	Tavares, JR	112	CEE1	van de Ven, TGM	376	PCS1	Xu, H	201	SKS1
Simakov, DSA	430	CCR2	Tavares, JR	328	CEF1	Van Geem, KM	287	PLS	Xu, Y	135	ENR2
Simard, J-S	172	SYC2	Tavares, JR	471	MSP5	Vande Wouwer, A	299	MAT1	Xu, Z	135	ENR2
Simard, J-S	492	SYC2	Tavares, JR	532	CCR2	Vaneekhouthe, C	350	ENV3	Xu, Z	137	ENR2
Singh, J	623	ENV2	Taylor, JM	395	CCS1	Vanrolleghem, PA	350	ENV3	Xu, ZX	329	CEF1
Sirjue, R	561	ENR1	Tchoukov, PT	381	PCS1	Vanslambrouck, S	82	BME2	Xue, J	98	BBE4
Sithole, BB	351	ENV3	Tefera, DT	491	SYC2	Vashisht, D	72	CCS2	Yadav, GD	493	SKS1
Sivira, D	482	NNT1	Telli, S	419	BBE1	Vega, A	566	ENR5	Yamamoto, H	208	POS
Sivira, D	589	NNT1	Terashima, T	585	MSP5	Veldandi, P	35	CEF5	Yamamoto, H	209	POS
Skoko, S	68	SYC3	Teruo Maruyama, R	556	CEF3	Venkatesan, K	94	BBE4	Yamamoto, H	210	POS
Smith, WR	74	CCS2	Tezel, FH	344	ENR3	Verma, M	259	POS	Yamamoto, H	211	POS
Smith, WR	334	CEF4	Tezel, FH	501	CCS1	Vermette, P	317	BME3	Yamamoto, H	212	POS
Smithson, CS	164	NNT1	Tezel, FH	562	ENR1	Vermette, P	318	BME3	Yamamoto, H	213	POS
So, LC	347	ENV3	Tezel, FH	621	ENR4	Vicent-Langlois, R	196	POS	Yamamoto, H	214	POS
Soares, J	237	POS	Thanh-Binh, N	202	POS	Vieira, AMS	240	POS	Yamamoto, H	215	POS
Soares, J	570	ENV2	Therault, Y	528	BBE3	Vieira, MF	232	POS	Yamane, S	210	POS
Soares, J	571	ENV2	Thevathasan, I	189	POS	Vieira, MF	240	POS	Yan, B	195	POS
Soares, J	583	MSP5	Thi, T	88	BME2	Vieira, MF	257	POS	Yan, B	354	MSP3
Soares, JB	630	MSP4	Thibault, J	142	ENR2	Viloria, E	306	PSM2	Yan, B	442	CEF3
Soares, JBP	313	RCF1	Thimmanagari, M	402	MAT1	Vincent, B	370	SYC1	Yang, B	289	SKS1
Soares, JBP	353	MSP3	Thompson, M	635	MSP4	Vincent, T	411	FOS1	Yang, W	468	MSP5
Soares, JBP	467	MSP5	Thring, RW	151	ENV2	Vinh Thang, H	502	CCS1	Yang, X	604	SYC3
Soares, JBP	586	MSP5	Thundat, T	252	POS	Virgilio, N	83	BME2	Yang, Y	225	POS
Soares, JBP	628	MSP4	Thundat, T	354	MSP3	Virgilio, N	160	MSP3	Yang, Z	197	POS
Soberman, MJ	241	POS	Tian, H	538	CCR2	Virgilio, N	186	POS	Yang, Z	539	CCR2
Sohrabi, M	150	ENV2	Tien Binh, N	502	CCS1	Virgilio, N	328	CEF1	Yaraghi, A	122	CEF2
Soiket, MIH	558	ENR1	Tiwary, P	529	RCF1	Virgilio, N	352	MSP3	Yarranton, HW	453	ENR3
Soleimanisalim, A H	297	CCS1	Tiwary, P	633	MSP4	Virgilio, N	521	RCF2	Yarranton, HW	514	RCF2
Soleimanisalim, AH	296	CCS1	Tjandra, R	263	POS	Virgine, M	497	SKS1	Yarranton, HW	548	CEF4
Soltan, J	394	CCS1	Tjong, J	631	MSP4	Vitale, G	55	ENV2	Yi, Z	85	BME2
Son, LV	88	BME2	Toledo-Chávez, G	106	CCR1	Vitale, G	475	NNT1	Yimer, TT	351	ENV3
Song, H	538	CCR2	Tolouei, M	134	EEE3	Viyash, M	478	NNT1	Yousefi, N	54	ENV2
Song, YX	435	CCR2	Tomasello, G	85	BME2	Vlasic, TM	616	ENR3	Yu, A	251	POS
Sorensen, J	304	MAT1	Tomasoni, G	404	MAT1	Vosoughi, V	384	SKS1	Yu, A	263	POS
Sowinski, A	113	CEE1	Toyozono, S	214	POS	Votsmeier, M	639	POS	Yu, A	582	MSP4
Spiteri, RJ	129	CEF2	Trajano, HL	141	ENR2	Vu, N-Ng	477	NNT1	Yu, A	629	MSP4
Spitters, TWGM	317	BME3	Trajano, HL	227	POS	Walsh, M	37	CEF5	Yuan, Y	368	SYC1
Spreutels, L	460	ENV1	Tran, C	545	CEF2	Wan, B	138	ENR2	Yuan, Z	90	BBE4
St-Charles, J	357	MSP3	Tremaine, PR	4	CCS1	Wan, W	484	NNT1	Yuan, Z	582	MSP4
Stang, P	561	ENR1	Tremaine, PR	336	CEF4	Wang, C-S	521	RCF2	Yue, D	431	CCR2
Strous, M	405	MAT1	Tremblay, D	303	MAT1	Wang, H	101	CCR1	Yun, DM	105	CCR1
Stumpf, TR	187	POS	Tremblay, R	321	BBE2	Wang, H	619	ENR4	Zaimi, A	86	BME2
Sumarah, M	627	ENV2	Tremblay, R.	403	MAT1	Wang, J	209	POS	Zamboni, IR	497	SKS1
Sun, B	520	RCF2	Trenblay, J	97	BBE4	Wang, K	450	ENR3	Zarabadi, MP	220	POS
Sun, D	396	CCS2	Trivedi, J	451	ENR3	Wang, K	450	ENR3	Zarabadi, MP	221	POS
Sun, D	430	CCR2	Trivedi, J	524	RCF2	Wang, P	538	CCR2	Zaviska, F	133	EEE3
Sundararaj, U	374	PCS1	Trivedi, J	599	SYC3	Wang, X	302	MAT1	Zaviska, F	634	MSP4
Suppiah, S	566	ENR5	Truica-Marasescu, F	119	CEF1	Wang, Y	431	CCR2	Zeman, F	235	POS
Surampalli, RY	259	POS	Tsabet, É	31	CEF2	Wang, Y	472	MSP5	Zeman, FS	397	CCS2
Suykens, J	604	SYC3	Tsai, SH	285	POS	Wang, YB	72	CCS2	Zendehboudi, S	6	CCS1
Swartz, CLE	69	SYC3	Tufenkji, N	54	ENV2	Wang, Z	439	CEF2	Zendehboudi, SZ	71	CCS2
Swartz, CLE	600	SYC3	Tufenkji, N	95	BBE4	Wang, Z	523	RCF2	Zendehboudi, SZ	326	BBE2
Sy, S	263	POS	Tufenkji, NT	144	ENV2	Wassila, A	188	POS	Zendehboudi, SZ	343	ENR3
Taghavi, SM	116	CEF1	Turco Neto, E	533	CCR2	Wattiez, R	93	BBE4	Zeng, H	195	POS
Taghavi, SM	446	EEE2	Turcotte, G	194	POS	Waval, A	419	BBE1	Zeng, H	331	CEF1
Taghavi, SM	543	CEF2	Ueda Yamaguchi, N	591	NNT1	Wégria, G	93	BBE4	Zeng, H	354	MSP3
Taghavivand, M	117	CEF1	Ulrich, A	407	MAT1	Wei, Q	90	BBE4	Zeng, H	516	RCF2
Taghipour, F	149	ENV2	Ulrich, D	518	RCF2	Wells, C	607	PSM3	Zhang, B	641	POS
Taheran, M	259	POS	Um, JG	251	POS	Wen, J	199	POS	Zhang, D	252	POS
Tahir, M	515	RCF2	Um, JG	629	MSP4	Weng, X	10	BME1	Zhang, H	201	SKS1
Tahir, MS	8	BME1	Umme, AM	282	POS	Westbrook, AW	14	BBE3	Zhang, H	457	ENV1
Tahir, MS	341	ENR3	Ungrin, MD	315	BME3	Wilkinson, KJW	144	ENV2	Zhang, H	459	ENV1
Talavera-Lopez, A	385	SKS1	Unno, J	447	EEE2	Winnick, D	627	ENV2	Zhang, H	558	ENR1
Tamura, E	212	POS	Upadhyaya, S	623	ENV2	Wong, A	636	PSM4	Zhang, J	12	BME1
Tan, N	439	CEF2	Upreti, S	114	CEE1	Wong, KKW	54	ENV2	Zhang, J	361	NNT1
Tan, W	401	MAT1	Upreti, SR	136	ENR2	Wood, JA	327	CEF1	Zhang, K	604	SYC3
						Wood-Adams, P	521	RCF2	Zhang, L	44	EEE1
						Wu, J	123	CEF2	Zhang, L	117	CEF1

Zhang, L	129	CEF2
Zhang, M	468	MSP5
Zhang, M	520	RCF2
Zhang, Q	159	MSP3
Zhang, Q	393	CCS1
Zhang, S	58	MSP1
Zhang, S	85	BME2
Zhang, S	393	CCS1
Zhang, S	516	RCF2
Zhang, X	440	CEF2
Zhang, X	523	RCF2
Zhang, Z	197	POS
Zhang, Z	464	ENV1
Zhao, B	355	MSP3
Zhao, B	465	MSP5
Zhao, B	466	MSP5
Zhao, X	322	BBE2
Zhao, YR	469	MSP5
Zhao, YR	619	ENR4
Zhao, Z	406	MAT1
Zheng, JL	400	CCS2
Zheng, X	538	CCR2
Zheng, Y	289	SKS1
Zhou, F	531	CCR2
Zhou, Y	148	ENV2
Zhu, N	44	EEE1
Zhu, S	159	MSP3
Zhu, S	161	MSP3
Zhu, S	163	MSP3
Zhu, S	164	NNT1
Zhu, S	372	PLS
Zhu, Y	137	ENR2
Zhuang, Y	382	SKS1
Zimmerman, GH	336	CEF4