

Monday AM

Plenary

PLEN1 Salon 8

Plenary

Organizer(s) - Murray Gray
Chair(s) - David Lynch

08:30 0001 *Oil Sands: Past, Present, and Future* Carter J.E.

09:30 End of Session

09:30 Coffee Break

Bioengineering - Biotechnology

BIOT1 Salon 6

Computational Bioengineering

Organizer(s) - Arin Sen
Chair(s) - Eric Jervis

10:00 0002 *The Effect of Reference Genome on the Prediction of Protein-Protein Interaction Using Phylogenetic Profiling* Sihombing R.S., ^{*}Lin Y.H.

10:20 0003 *A Computational Model for in vitro Cell-Fate Control through Directed Polarization* Verneau J., Qaqish C., ^{*}Jervis E.J.

10:40 0004 *Cell Culture Profiling by Combined LCMS and Multivariate Statistics Analyses* Michaud F.T., Garnier A., Lemieux L., Duchesne C.

11:00 0005 *Application of Metabolic Flux Analysis for Optimizing Recombinant Human Interleukin-3 Production by Streptomyces lividans* ^{*}Nowruzi K., Scharer J.M., Elkamel A., Moo-Young M.

11:20 0006 *Adaptive Binning of Metabolomic NMR Datasets Using Correlation Techniques* ^{*}Mahadevan S., Shah S.L.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Biorefining

BREF1 Salon 11

New Products from Agricultural and Forest Wastes

Organizer(s) - David Bressler and William McCaffrey
Chair(s) - David Bressler

10:00 0007 *Research Trends in the Area of Bioproducts* Lortie R.

10:40 0008 *Characterization of Secreted Carbohydrate-Active Enzymes from Fungi on Softwood Samples for Biomimetic Enzyme Applications* Mahajan S., ^{*}Master E. R.

11:00 0009 *Preparation of Cellulosic Polymers : Rheological Properties in NMMO Solutions* Zhao L., Boluk Y.

11:20 0010 *Biodegradable Protein-Based Foaming Agents from Bovine Bloodmeal* Ji B., Li J., Choi P., Yeung A., ^{*}Bressler D.C.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Chemical Reaction Engineering and Catalysis

CREA1 Salon 2

Catalyst Development and Characterization 1

Organizer(s) - Hui Wang
Chair(s) - Hui Wang and Ying Zheng

10:00 0011 *Oxidative Dehydrogenation of Propane over Nanostructured Membrane Catalyst* ^{*}Marshall C.L., Mucherie S., Kim H.S., Libera J.A., Elam J.W., Stair P.C.

10:40 0012 *Zeolites in Hydrogenation and Hydrocracking Performances of Hydrotreating Catalysts* ^{*}Zheng Y., Ding L.H., Yang H., Ring Z.

11:00 0013 *Challenges of Modelling the Rearrangement of Cyclohexylum: Implications for Modelling of Zeolite-Catalyzed Processes* Mackie I.D., Govindhakannan J., ^{*}DiLabio G.A.

11:20 0014 *Addition of Ce Promoter on VPO Catalysts: Impact of Ce on Oxygen Capacity of the Catalyst* Godefroy A., Patience G.S. PAPER WITHDRAWN

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

4th Canadian Symposium on Fuel Cell Systems

FUEL1 Salon 9

PEMFC

Organizer(s) - Partho Sarkar and Josephine Hill
Chair(s) - Biao Huang and Josephine Hill

10:00 0015 *Modeling and Parameterization of Fuel Cell Water Dynamics for Real Time Estimation and Control* ^{*}Stefanopoulou A.G.

10:40 0016 *Simulation of Dead End Anode and Self Breathing Cathode PEMFC* Lum K.W., Poh H.J.

11:00 0017 *Proton Transfer in Anhydrous Polymeric Membranes for Fuel Cells: An ab initio Study* ^{*}Paddison S.J.

11:20 0018 *Use of ¹H NMR Microscopy for the Investigation of Operating PEMFCs* Feindel K.W., Wang M., Starke D., Bergens S.H., ^{*}Wasylishen R.E.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Fundamentals

FUND1 Salon 7

Computational Fluid Dynamics

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Srinath Madhavan

10:00 0019 *Numerical Simulation of an Evaporating Gas-Liquid Jet in Gas-Solid Crossflows* ^{*}Li T., Pougatch K., ^{*}Salcudean M., Grecov D.

10:20 0020 *Thermal Cracking Studies by Design of a Pilot Plant* ^{*}Bakhshi E., ^{*}Abniki F. PAPER WITHDRAWN

10:40 0021 *Describing the Complex Hydrodynamics of Circulating Fluidized Bed Riser by CFD* Almuttahir A., ^{*}Taghipour F.

11:00 0022 *CFD Heat Transfer Simulation of a Bakery Pilot Oven* ^{*}Boulet M., ^{*}Marcos B., Dostie M., Moresoli C.

11:20 0023 *Experimental and Numerical Investigation of Transient Phenomenon Upstream of a Square Cylinder Confined in a 3D Channel Flow* ^{*}Madhavan S., Al-Jahmany Y.Y., Nandakumar K.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

FUND2 Salon 5

Thermodynamics

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Yahollah Maham

10:00 0024 *Solubility of Methane in an Aqueous Methyl-diethanolamine Solution* Schmidt K.A.G., Jou F.-Y., Mather A.E.

10:20 0025 *Dynamic Thermal Properties of Cryoprotective Solutions* Weiss A., Maham Y., Forbes J.F.

10:40 0026 *Correlation and Prediction of Density and Viscosity of Bitumen Using the Peng-Robinson Equation of State* Loria H., Pereira P., Satyro M.A.

11:00 0027 *Liquid Heat Capacities of Nitro-Organic Compounds and Application of Group Additivity Rule* Choraó C., Maham Y., Schmidt K.A.G., Nelson A.

11:20 0028 *The Margules Interaction Parameter as an Alternative to the Octanol-Water Partition in Environmental and Pharmaceutical Applications* Acosta E.J., Liang C., Samaan M., Yuan S.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Greenhouse Gas Control Technologies and Climate Change

GHGC1 Salon 10

Panel Discussion - Research Needs

Organizer(s) - Nader Mahinpey
Chair(s) - John Grace

10:00 Panel Discussion - Research Needs

PANELISTS

Ben Anthony

Rick Chalaturmyk

John Grace

Rob Seeley

P. Tontiwachwuthikul

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Improving the Quality of Air, Water and Soil

IMPQ1 Salon 3

Bioremediation Microbes

Organizer(s) - Gordon Hill
Chair(s) - Grant Allen

10:00 0029 *Identification of Microorganisms that Degrade Specific Organic Chemicals in Complex Systems* Aitken M.D.

10:40 0030 *A Study of the Microbial Community Structure of Biofilters Treating Dimethyl Sulphide* Hayes A.C., Liss S.N., Allen D.G.

11:00 0031 *On the Use of Solid-Liquid Two-Phase Partitioning Bioreactors for the Treatment of Petroleum Contaminated Soil and Water* Daugulis A.J., Prpich G.P., Rehmann L.

11:20 0032 *Groundwater Contamination by Pathogens: Examining the Role of Microaerophilic and Aerobic Environments* Castro F.D., Tufenkji N.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Celebration of the Contributions of Jacob Masliyah

MASL1 Salon 8

General 1 (joint with OSND1)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Joy Romero and Sieg Wanke

10:00 0033 *My Thirty Years of Research in Oil Sands* Masliyah J.H.

10:40 0034 *Early Events in the Scaling of Gypsum Under Sensible Heating Conditions* Fahiminia F., Watkinson A.P., Epstein N.

11:00 0035 *The Limits of Fine and Coarse Particle Flotation* Gontijo C., Fomasiero D., Ralston J.

11:20 0036 *Phase Diagram Approach to Emulsion Evaporation Path* Friberg S.E.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Mineral Processing

MINP1 Salons 15/16

Froth Flotation 1

Organizer(s) - Qi Liu
Chair(s) - Bern Klein

10:00 0037 *Flotation of Potash Ores: Flotation In Highly Concentrated Electrolyte Solutions* Laskowski J.S.

10:40 0038 *Aggregation of Starch on Quartz and Hematite Surfaces* Ma X.M.

11:00 0039 *Atomic Force Microscopy Study on Silica-Clay Interactions* Zhao H., Xu Z., Masliyah J.H.

11:20 0040 *Flotation Property Comparison of Several Collectors for Valuable Niobium-Containing Minerals* Ren H., Feifei J., Guilan S., Zhenghe X.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Nanomaterials

NANO1 Riverview

Synthesis, Properties and Characterization of Nanomaterials 1

Organizer(s) - Dave Mitlin
Chair(s) - Dave Mitlin

10:00 0041 *P-Ink: Full Color Photonic Crystal Display* Arsenault A., Puzzo D., Manners I., Ozin G.A.

10:40 0042 *Properties and Applications of Porous Thin Films Fabricated by Glancing Angle Deposition* Brett M.J.

11:00 0043 *Nanoporous Metal Organic Frameworks Dual Materials for Fuel Cell Applications* Shimizu G.K.H., Chandler B.D., Hurd J.A., Taylor J.M., Liang J.M.

11:20 0044 *Preparation of Ni Nanoparticle/Polymer Core/Shell Hybrids by Surface-Initiated Atom Transfer Radical Polymerization* Chen R., Zhu S.P., Botton G.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Oil Sands 2007 Conference

OSND1 Salon 8

General 1 (joint with MASL1)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Joy Romero and Sieg Wanke

See Celebration of the Contributions of Jacob Masliyah - MASL1

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Process Dynamics and Control

PROC1 Salons 17/18

Process Control

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Biao Huang and Bhushan Gopaluni

10:00 Keynote Lecture presented by Anna Stefanopoulou in Salon 9

10:40 0045 *Periodic Orbits and Feedback Invariants of Control Systems* Hudon N., Guay M.

11:00 0046 *Simultaneous Design and Control of Chemical Processes under Uncertainty and External Perturbations: A Robust Modelling Approach* [§]Ricardez Sandoval L.A., Budman H., Douglas P.L.

11:20 0047 *Implementation of a Particle Filter and Image Based Sensor for Interface Level Control in an Oil Sands Separation Cell* [§]Jampana P., Shah S.L., Kadali R., Kihass D.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Process Safety and Loss Management

PSLM1 Salons 13/14

Enhancing Process Safety Knowledge

Organizer(s) - Mitch Colwell
Chair(s) - Gerry Phillips

10:00 0048 *Chemical Process Safety after BP Texas City* Bresland J.S.

11:00 0049 *An Update on Proposed Amendments to the Environmental Emergency Regulations under Section 200 of CEPA 1999* Shrivs J.S., Hradecky K.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Rubber in the Energy Sector

RUBB1 Salons 19/20

Rubber in Oil Well Applications 1

Organizer(s) - Marvin Myhre and Richard Pazur
Chair(s) - Richard Pazur

10:00 0050 *Innovative Heat, Oil and Tear Resistant Elastomers* Schuster R.H.

10:40 0051 *Hydrogenated Nitrile Rubber for Use in Oilfield Applications* Dato J.E., Campomizzi E.C., Achten D., Young C.

11:20 0052 *Dynamic and Mechanical Properties Evaluated at Various Temperatures* Rau P., Anderson A.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Sustainable Operations

SUST1 Salon 4

Sustainable Operations 1

Organizer(s) - Bill Pick
Chair(s) - Bill Pick

10:00 0053 *Taking Action - Sustainable Development and Technology* Bancroft T.

10:40 0054 *Sustainability Assessment of Emerging Technologies in the Oil Sands Industry* [§]Halog A., Chan A.PAPER WITHDRAWN

11:00 0055 *Ethanol Concentration with Barley Straw* Okoye C., Sun N., [§]Niu C.H., Lin Y.H.

11:20 0056 *Life Cycle Perspectives of Biobutanol* [§]Sarathy S.M., Thomson M.J., Zhang Y., Sleep S., Maclean H.

11:40 End of Session

Transfer Time

11:45 All-Conference Event - Awards Luncheon

Monday PM

Bioengineering - Biotechnology

BIOT2 Salon 6

Stem Cell Bioprocessing

Organizer(s) - Arin Sen
Chair(s) - Alain Garnier and Michael Kallos

13:40 0057 *Expansion of Human Breast Epithelial Stem Cells and Breast Cancer Stem Cells in Suspension Bioreactors* Panchalingam K.M., Youn B.S., Shemanko C.S., Sen A., [§]Behie L.A.

14:00 0058 *Comparing the Capacity of Adult Human Pancreas and Bone Marrow Derived Mesenchymal-Type Cells to Differentiate into an Insulin Producing Phenotype* Ratanshi I., Jung S., Behie L.A., [§]Sen A.

14:20 0059 *Osteogenic Differentiation of Murine Embryonic Stem (mES) Cells in Suspension Bioreactors* Alfred R.K., Cormier J.T., zur Nieden N.I., Rancourt D.E., [§]Kallos M.S.

14:40 0060 *Expansion of Human Muscle Precursor Cells in Serum-Free Medium* Parent V.A., Sancen-Chaparro L.E., Wali Z., Lemieux L., Tremblay J.P., Garnier A.

15:00 Coffee Break

15:20 0061 *Systems-Level Analysis and Mathematical Modelling of Intercellular Signalling Networks Regulating Hematopoietic Stem Cell Expansion In Vitro* Kirouac D.C., Madlambayan G.M., Yu M., Ito C., [§]Zandstra P.W.

15:40 0062 *Development of a High-Throughput Stirred Suspension System for the Culture of Embryonic Stem Cells* Millar V.F., Rancourt D.E., [§]Kallos M.S.

16:00 0063 *A Novel Method to Control Differentiating Human Embryonic Stem Cell (hESC) Aggregate Size and Composition: Effects on Cardiomyocyte Development* Bauwens C.L., Peerani R., Niebrugge S., Kolodziejaska K., Husain M., [§]Zandstra P.W.

16:20 0064 *Expansion of Human Brain Tumour Initiating Cells (BTICs) to Identify New Therapeutics for Brain Cancer Treatment*
Chiang C.K., Youn B.S., Sen A., Dirks P.B., [§]Behie L.A.

16:40 End of Session

Biorefining

BREF2

Salon 11

Biofuels

Organizer(s) - David Bressler and William McCaffrey
Chair(s) - William McCaffrey

13:40 0065 *Enhanced Bio-Ethanol Production via Adsorption: Mass Transfer Modelling and Recovery Techniques*
Jones R., [†]Tezel F.H., [†]Thibault J.

14:00 0066 *A Chemical Kinetic Mechanism for Biobutanol Combustion*
[§]**Sarathy S.M.**, Thomson M.J.

14:20 0067 *Effect of Ethanol Concentration in the Uncatalysed Solvent Pulping of Salix schwerinii* **Macfarlane A.L.**, Farid M.M., Chen J.J.J., Lough T.J.

14:40 0068 *Study on the Bioethanol Production from Rice Straw* [§]**Sakoda A.**, Mochizuki K., Sato N., **Phan D.T.**, Ngo D.M., Cao D.K.

15:00 Coffee Break

15:20 0069 *Pyrolytic Conversion of Lipid Feeds for Biofuel and Chemical Production* **Kirkwood K.M.**, Maher K.D., Gray M.R., [§]Bressler D.C.

15:40 0070 *Fischer-Tropsch for Green Diesel Synthesis Using Plasma-Synthesized Nanocatalysts: Preliminary Results*
Blanchard J., Eslahpazir Esfandabadi R., Oudghiri-Hassani H., Gitzhofer F., [†]Abatzoglou N.

16:00 0071 *Effect of Co-Feeding Oxygenates in Fluid Catalytic Cracking Units*
[§]**Aïas J.A.** PAPER WITHDRAWN

16:20 0072 *Enzymatic Biodiesel Production in Ionic Liquids* **Ruzich N.**, Bassi A.S.

16:40 0073 *Biodiesel Production in a Membrane Reactor Using Methanol Recycling*
Cao P., [†]Dubé M.A., [§]Tremblay A.Y.

17:00 End of Session

BREFP

Hall B

Posters

Organizer(s) - David Bressler and William McCaffrey

From 17:00 until 18:40

0074 *Hydrogen from Agricultural Biomass: A Review from a Prairie Prospective*
Rajakumar B., [†]Panigrahi S.

Chemical Engineering Education

CEED1

Salon 1

Process Design and Analysis: Industrial Perspectives and Case Studies/Visual Presentation of Core Concepts

Organizer(s) - Suzanne Kresta
Chair(s) - Suzanne Kresta and Tom Marlin

13:40 0075 *An Industrial Perspective on Statistics: Case Studies to Motivate Learning*
Kresta J.V., Wong A.G.

14:20 0076 *To Achieve Robust Process Design, Build in Operability* **Marlin T.E.**

15:00 Coffee Break

15:20 0077 *Seeing and Understanding Climate Change with Computers and Candles*
Mahaffy P.G.

16:00 0078 *Designing Teaching Materials for Visual Learners* [§]**Kresta S.M.**

16:20 0079 *Industrial Best Practices: Things You Can't Learn from a Journal Paper*
[§]**Kresta S.M.**

16:40 General Discussion

17:00 End of Session

CEEDP

Hall B

Posters

Organizer(s) - Suzanne Kresta

From 17:00 until 18:40

0080 *Correlations for the Effective Transport Parameters in a Fixed Bed Reactor at Elevated Pressure* **Al-Meshragi M.**, [†]Ibrahim H.G.

0081 *Computer Aided Product Design and Development for Peroxide Based Disinfectants*
[§]**Omidbakhsh N.**, Duever T., Elkamel A., Reilly P.

Chemical Reaction Engineering and Catalysis

CREA2

Salon 2

Catalyst Development and Characterization 2

Organizer(s) - Hui Wang
Chair(s) - Adesoji Adesina and Ajay Dalai

13:40 0082 *A New Externally-Illuminated Photocatalytic Reactor System for the Treatment of Polluted Aqueous Media*
[§]**Adesina A.A.**

14:20 0083 *Intensifying Inter-Phase Mass Transfer in Gas-Liquid Tubular Reactors* **Azizi F.**, [§]Al Taweel A.M.

14:40 0084 *Effects of Thermal Degradation on NO_x Storage/Reduction Catalyst Performance* **AL-Harbi M.**, [†]Epling W.

15:00 Coffee Break

15:20 0085 *The Effects of Synthesis Parameters on Purity of Zeolite Y. Using Soluble Silicate (Waterglass) as a Silica Source* **Karami D.**, [†]Rohani S.

15:40 0086 *Nickel Based Catalytic Systems for Low Temperature Carbon Dioxide Reforming of Methane (CDRM)* **Kumar P.**, [†]Idem R.

16:00 0087 *Investigating Thermal Degradation on a Monolith-Supported Pt/Al₂O₃ Catalyst Using IR Thermography*
[†]Epling W., **Shakir O.**

16:20 0088 *A Quantum Chemical Study of Dealkylation of Propylcyclopentene on a Bronsted Acid Site*
Kotikalapudi C.M., Govindhakannan J., [†]Dalai A.K.

16:40 0089 *Removal of Hydrogen Sulphide from Gas Streams Using Direct Oxidation over Activated Carbon*
Azargohar R., [†]Dalai A.K.

17:00 End of Session

CREAP

Hall B

Posters

Organizer(s) - Hui Wang

From 17:00 until 18:40

0090 *Kinetics and Reactor Modeling of a High Temperature Water-Gas-Shift Reaction (WGSR) for Hydrogen Production in Packed Bed Tubular Reactor (PBTR)* **Kumar P.**, [†]Idem R., [§]Akpan E., [†]Ibrahim H.H., [†]Aboudheir A.

0091 *Modeling Studies of the Carbon Dioxide Reforming of Methane (CDRM) over a Ni/CeO₂-ZrO₂ Catalyst in a Fixed Bed Tubular Reactor* **Kumar P.**, [†]Idem R., [†]Ibrahim H.H., [§]Akpan E., [†]Aboudheir A.

0092 *Kinetic Modeling for CO₂-CH₄ Reforming over a Ni-Co Bimetallic Catalyst* Zhang J., Wang H., Dalai A.K.

0093 *The Role of Inter-Phase Mass Transfer in Immiscible Liquid-Liquid Reactions* Azzizi F., Al Taweel A.M.

0094 *Non-Oxidative Conversion of Ethane to Ethylene over Novel Chromium Catalysts Derived from Layered Metal Hydroxide Precursors* Tsyganok A., Sayari A.

0095 *Electro-Catalytic Degradation of Phenol on Several Metal-Oxide Anodes* Wang Y., Gu B., Zhang X., Xu W. PAPER WITHDRAWN

0096 *Intrinsic Kinetics Study of LPDME Process from Syngas over Bi-Functional Catalyst* Moradi G.R., Ahmadvour J., Yaripour F.

0097 *Solid-State Kinetics of Carbon Removal from Deactivated Co-Ni Steam Reforming Catalysts: Effect of Gasifying Agent* Alenazey F., Cooper C.G., Elnashaie S.S.E.H., Adesina A.A.

0098 *Effect of the Metal Counter-Ion on the Physicochemical Properties and Activity of Co-Based Fischer-Tropsch Catalyst* Nguyen T.H., Cooper C.G., Adesina A.A.

0099 *Photocatalytic Degradation of Methylene Blue Aqueous Solution by Different Synthesized Titanium Dioxide Nanocatalysts* Eslami H., Hashemipour H., Ranjbar M.

0100 *Dehydration of Methanol to DME Catalyzed by Aluminium Phosphate Catalysts* Yaripour F., Mohammadi jam S., Atashi H., Mollavali M.

0101 *Synthesis of Dimethyl Ether from Methanol over Solid Acid Catalysts* Yaripour F., Mohammadi jam M., Atashi H., Mollavali M.

0102 *Catalytic Conversion of Methanol to Dimethyl Ether (DME) over Aluminosilicate Catalysts* Yaripour F., Mohammadi jam S., Atashi H., Mollavali M.

0103 *Hydrodynamics in a Novel Circulating Turbulent Fluidized Bed* Qi X.-B., Zhu H.-Y., Zhu J.

0104 *Kinetic Studies of CH₄ Decomposition over Supported Co and Ni Catalysts* Kim H.C., Li J., Smith K.

0105 *Tar Elimination Using Local Dolomites During the Gasification of Jack Pine Sawdust* Gusta E., Dalai A.K., Sasaoka E., Uddin M.A., Eswaramoorthi I.

0106 *Modeling and Simulation of Dimethyl Ether Synthesis in a Fixed-Bed Reactor* Atashi H., Sarvayan M.

0107 *Synthesis and Characterization of TiO₂-SiO₂ Mixed Oxide Based Catalysts Using Sol-Gel Method Coupled with Hydrothermal Treatment* Nguyen T.-V., Nguyen V.-C.

0108 *Decomposition of Excess Sludge by Using Ozone Micro-Bubbles for Phosphorus Recovery* Fukaya K., Yasuda K., Yoshimatsu T., Bando Y., Sugie T., Asai T.

0109 *An Investigation of Optimisation Tools for Modelling a Diesel Oxidation Catalyst* Nien T.W., Sola C., Hayes R.E., Mmbaga J., Votsmeier M.

0110 *Kinetic and Reactor Modeling of Crude Ethanol Reforming over a Nickel-Based Commercial Catalyst in a Packed-Bed Reactor for Hydrogen Production* Akpan E., Akande A., Ibrahim H.H., Aboudheir A., Idem R.

4th Canadian Symposium on Fuel Cell Systems

FUEL2

Salon 9

SOFC 1

Organizer(s) - Partho Sarkar and Josephine Hill
Chair(s) - Viola Birss and François Gitzhofer

13:40 0111 *Solid Oxide Fuel Cells: How Low Can You Go?* Tuller H.L.

14:20 0112 *Nanostructured Materials for Intermediate Temperature Solid Oxide Fuel Cells (IT-SOFCs)* Traversa E.

14:40 0113 *Recent Progress in Solid Oxide Fuel Cell Materials Research* Thangadurai V.

15:00 Coffee Break

15:20 0114 *Relating Performances to Microstructures of SOFC Composite Electrodes: A Three-Dimensional Modeling Approach* Wen X., Ali A., Nandakumar K., Chuang K.T.

15:40 0115 *Exploring the Oxygen Reduction Reaction at the SOFC LSM/YSZ Cathode Interface Using Impedance Modelling* Kenney B., Karan K.

16:00 0116 *Active Triple Phase Boundary Measurement Using Focus Ion Beam Tomography* Rivard T., Gitzhofer F., Abatzoglou N.

16:20 0117 *1-D Dynamic Modeling of SOFC with Analytical Solution for Reacting Gas Flow Problem* Qi Y., Huang B., Luo J.L.

16:40 0118 *A Nanoscale Cathode for YSZ Solid Oxide Fuel Cell Operation at 600°C* Sarkar P., Richardson M., Yamarte L., Johanson L.

17:00 End of Session

Fundamentals

FUND3

Salon 7

Computational Fluid Dynamics/Separation Processes

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Carolina Diaz-Goano

13:40 0119 *Fictitious Domain Methods for Real Fluid Flow Problems* Bertrand F.

14:00 0120 *Nonlinear Plane-Poiseuille Flow* Ashrafi N.

14:20 0121 *Nonlinear Taylor-Couette Flow: A Model for Synovial Fluid Flow* Ashrafi N.

14:40 0122 *CFD Simulation of Oxygen Transfer in ALR* Al Taweel A.M., Appasani P., Koksai M., Ghanem A., Dabros T.

15:00 Coffee Break

15:20 0123 *Steam Fingering in Steam-Assisted Gravity Drainage* Gotawala D., Gates I.D.

15:40 0124 *Effect of Carrier Gas Flow on Behavior of Liquid Droplets Produced by Ultrasonic Atomization* Matsuoka A., Yasuda K., Bando Y., Kawase Y.

16:00 0125 *The Effects of Sand and Water Quality on Heavy Oil Emulsion Droplet Sizes and Stability During Turbulent Mixing* Angle C.W., Hamza H.A., Dabros T.

16:20 0126 *Determination of the Cation Exchange Capacity (CEC) of Kerman Bentonites by Methylene Blue and Copper Ethylenediamine Complex Adsorption* Hosseini S., Tahmooreci M.

16:40 0127 *A New Approach to Refine the Used Engine Oil. Using the Solvent Blend of n-Butyl Alcohol, Ethyl Methyl Ketone and Isopropyl Alcohol* Gautam A., Bhaskarwar A.N.

17:00 End of Session

FUND4

Salon 5

Thermodynamics/Simulation and Modeling/General

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Sultana Syeda

13:40 0128 *Vapor Pressure and Critical Constants Prediction Method for Heavy Hydrocarbons* ¹Nji G.N., ²Svrcek W.Y., Yarranton H.Y., Satyro M.A.

14:00 0129 *Correlation of Binary VLE by G^E Models: Comparison of Four Unconstrained Optimization Methods*
Andra R.P., Josyula S., Ayyalasomayajula A.K.

14:20 0130 *C3 and C4 Recovery in Absorption/Stripping Type Gas Plant*
¹Habibi S., Nava J.

14:40 0131 *Design of a Fluidized Bed Reactor for Whitewater Contaminant Removal*
Loranger E., ¹Daneault C., ²Chabot B.

15:00 Coffee Break

15:20 0132 *Stability of Air Jets in Liquids* ¹Syeda S.R., ²Ansery A.M.

15:40 0133 *Distillation Characteristics of Rotating Packed Beds for Different Structures* ¹Li X.P., Liu Y.Z., Wang J.W., Li J.H.

16:00 0134 *Studying Behavior of Coated Titanium Anodes in a Corrosive Solution*
Abniki F., ¹Bakhshi E. **PAPER WITHDRAWN**

16:20 0135 *Choosing Best Perforation Method for Reduction of Completion Costs*
¹Zadakhbar O., Anbia M., Garshasbi V. **PAPER WITHDRAWN**

16:40 End of Session

Greenhouse Gas Control Technologies and Climate Change

GHGC2 Salon 10

Panel Discussion - Policy and Regulations

Organizer(s) - Nader Mahinpey
Chair(s) - Jon Gibbins and Malcolm Wilson

13:40 0136 *Capture and Storage, a Solution or a Dream?* ¹Wilson M.

PANELISTS

John Gale

Bob Mitchell

Andy Ridge

15:00 End of Session

GHGC3 Salon 10

Panel Discussion - Industry Needs

Organizer(s) - Nader Mahinpey
Chair(s) - Jon Gibbins and Malcolm Wilson

15:20 0137 *Carbon Capture and Storage: The Ten Year Challenge* ¹Gibbins J.R.

PANELISTS

Tony Espie

Lionel Kambeitz

Bob Stobbs

Michael Whitehouse

17:00 End of Session

GHGCP Hall B

Posters

Organizer(s) - Nader Mahinpey

From **17:00** until **18:40**

0138 *Get Electricity from the Flare by Flare Gas Recovery* ¹Zadakhbar O., Vaturi A., Anbia M., Garshasbi V. **PAPER WITHDRAWN**

0139 *Flaring and Flare Gas Recovery in Iran* ¹Zadakhbar O., Vaturi A., Anbia M., Garshasbi V. **PAPER WITHDRAWN**

0140 *Increase EOR by Flare Gas Recovery*
¹Zadakhbar O., Vaturi A., Anbia M., Garshasbi V. **PAPER WITHDRAWN**

0141 *Determination of Amine Species in MEA-CO₂-H₂O System by NMR Spectroscopy: Modification of the Model of Vapor-Liquid Equilibrium (VLE)* ¹Fan G.-J., Idem R., Tortiwachwuthikul P., Wee A.G.H.

Improving the Quality of Air, Water and Soil

IMPQ2 Salon 3

Oil Contaminated Waters

Organizer(s) - Gordon Hill
Chair(s) - Bruce Peachey

13:40 0142 *Kinetics of Bioremediation of a Model Naphthenic Acid Compound*
¹Paslawski J.C., Hill G.A., Nemati M., Headley J.V.

14:00 0143 *Micellar-Enhanced Ultrafiltration Utilizing Naturally Occurring Surfactants for the Removal of Organic Contaminants from Produced Water*
Deriszadeh A., Harding T.G., Husein M.M.

14:20 0144 *Water Challenges and Reclamation Options Facing Surface Mining Oil Sands Operations in Northeastern Alberta*
¹MacKinnon M.D.

15:00 Coffee Break

15:20 0145 *Physical Remediation of Heavy Hydrocarbon Contaminated Soil*
¹Nikakhtari H., Kumar P., Nemati M., Hill G.A.

15:40 0146 *Surface Charge and Microbial Attachment to Model Crude Oil/Electrolyte Emulsions* ¹Warne Zoueki C., ²Tufenkji N., ³Ghoshal S.

16:00 0147 *Bioremediation of Polyaromatic Hydrocarbons under Fe(III)-Reducing Conditions* ¹Ramsay J.A.

16:40 0148 *Wet Air Oxidation of Benzene Enhanced by Phenol* ¹Abussaud B., Berk D., Kubes G.

17:00 End of Session

IMPQP Hall B

Posters

Organizer(s) - Gordon Hill

From **17:00** until **18:40**

0149 *Influence of Sulphate Concentration on Desulfurization of Dibenzothiophene by Rhodococcus rhodochrous (NRRL B-2149)*
¹Santos E.S., Soares Jr. A.B., Gurgel Y.K.P., Chagas B.M.E., Domingos T.B., Macedo G.R.

0150 *Environmental Current Status in Shrimp Culture and Basa Catfish Culture in Mekong Delta (Vietnam) and Solutions*
¹Nguyen Van P., Dang Vu Bich H., Nguyen Thi Thanh P., Dang Ngoc Bich L.

Celebration of the Contributions of Jacob Masliyah

MASL2 Salon 8

General 2 (joint with OSND2)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Brian Doucette and Murray Gray

13:40 0151 *Surface Characteristics of Selected Two Layer Silicate Minerals* ¹Miller J.D., Nalaskowski J., Abdul B., Hao D.

14:00 0152 *Gel Transition in Silica Nanoparticle/Kaolinite Suspensions* ¹Walz J.Y., Baird J.C.

14:20 0153 *Surface Tension Dependence on Elevation in a Gravitational Field and its Implications in Line Tension Estimation* Voitcu O., [§]Elliott J.A.W.

14:40 0154 *The Cell Model Approach in Electrodynamics, Fluid Mechanics and Colloid Science* Zholkovskiy E.K., Masliyeh J.H.

15:00 Coffee Break

Chair(s) - Barry Bara and Subir Bhattacharjee

15:20 0155 *Asymmetric Polymer Bridging between Starch-Coated Colloidal Particles and Pulp Fibers by Cationic Polyacrylamide* van de Ven T.G.M., Poraj-Kozminski A., Hill R.J.

15:40 0156 *Non-Uniform Distribution of Gas-Flow through Identical Cyclones in Parallel* Grace J.R., Cui H., Hackman L., McKnight C.

16:00 0157 *Liquid Transport in Multi-Layer and Coalescing Froths* Ireland P.M., Jameson G.J.

16:20 0158 *Influence of the Bubble Kinetic Energy on its Bouncing During Collisions with Various Interfaces* Zawala J., Krasowska M., Malysa K., Dabros T.

16:40 0626 *Water-in-Oil Emulsions Stabilized by Asphaltenes, Resins, Naphthenic Acids, Naphthenates and their Mixtures* Kilpatrick P.K.

17:00 End of Session

MASLP Hall B

Posters

Organizer(s) - Jan Czarnecki, Heather Dettman, Kumar Nandakumar and Zhenghe Xu

From 17:00 until 18:40

0159 *Role of Initial Placement of Surfactants on their Adsorption to Heptane-Water Interfaces: Molecular Dynamics Simulations* Kuznicki T., Bhattacharjee S., Masliyeh J.H.

0160 *Dependence of the Thermodynamic Stability of Axisymmetric Capillary Bridges on the Solid Geometry* Elliott J.A.W., Voitcu O.

0161 *Molecular Modelling of the Wetting Behaviour of Model Bitumen Molecules on Silica Surfaces* Wang X., Choi P.

Mineral Processing

MINP2 Salons 15/16

Froth Flotation 2

Organizer(s) - Qi Liu
Chair(s) - Shaoxian Song and Marek Pawlik

13:40 0162 *Frother Functions in Flotation: Some Observations Derived from Images* Finch J.A., Nasset J.E., Acuna C.

14:20 0163 *Improving the Benefication of Mineral Fines by Flocc-Flotation Process* Song S., Lopez-Valdivieso A.

14:40 0164 *The Effect of Polyethylene Oxide on the Separation Efficiency between Chalcopyrite and Quartz* Gong J., Jang H., Peng Y., Ourriban M., Yeung A., Liu Q.

15:00 Coffee Break

15:20 0165 *Flotation of High-Iron Phosphate Ores* Nanthakumar B., Pawlik M.

15:40 0166 *Suppression of Pyrite During the Flotation of Sphalerite by an N-Arylhydroxamic Acid Collector* Hamilton D., Zebroff J., Natarajan R., Nirdosh I.

16:00 0167 *An Investigation of Depression about Niobite and Dolomite* Ren H., Ji F.F., Song G.L., Xu Z.

16:20 0168 *Selection of Stirrer Speed for Improved Mineral Liberation* Klein B., Parry J., Lin D., Roufail R.

16:40 0169 *An XPS Study of Brunswick Mine Sulphide Ore Subjected to Microwave Treatment* Pratt A., Orumwense A.O.

17:00 End of Session

MINPP Hall B

Posters

Organizer(s) - Qi Liu

From 17:00 until 18:40

0170 *Comparison of the Performance of Different Impeller-Tank Configurations for Solids Suspension* Kukukova A., Kresta S.M.

0171 *Processing of the Clear Hills Ironstone* Kerr P.G., Liu Q., Etsell T.H.

Nanomaterials

NANO2 Riverview

Synthesis, Properties and Characterization of Nanomaterials 2

Organizer(s) - Dave Mitlin
Chair(s) - Dave Mitlin

13:40 0172 *TEM of Nanoparticles* Carter C.B., Nowak J.D., Basu J., Ravishankar N., Ramachandran D.

14:20 0173 *Electrodeposition of Tin-Rich, Tin-Gold Eutectic Solders for Optoelectronic Applications* Watt C., Tang W., He A., Liu Q., Ivey D.G.

14:40 0174 *Optimization and Generalization of Effective Parameters for Production of High-Quality Carbon Nanotubes* Malek Abbaslou R.M., Dalai A.K.

15:00 0663 *Chemistry of Single-Walled Carbon Nanotubes* Wang Y.A.

15:20 0175 *Neutron Reflectometry - A Unique Tool to Characterize the Chemical Structure of Thin Films* Fritzsche H., Saoudi M., Yager K.G., Tanchak O.M., Barrett C.J., Lubner E., Haagsma J., Mitlin D.

15:40 0176 *Understanding Plastic Co-Deformation in Metallic Nanocomposites* Sinclair C.W.

16:00 0177 *Hydrogen Sorption Properties and the Microstructure of Mg-Al Alloys and of MgH₂-Carbon Nanotube Composites* Mitlin D., Danaie M., Haagsma J., Shalchi B., Ophus C., Lubner E., Radmilovic V., Dahmen U.

16:20 0178 *Low Temperature Synthesis of Carbon Nanotubes by Plasma Enhanced Chemical Vapor Deposition* Yang Q., Tang Y., Yi W.W., Yang S.L., Li Y.S.

16:40 0179 *Plasma Enhanced CVD Growth of Diamond Film on Various Alloy Substrates* Li Y., Xiao C., Hirose A., Tang Y., Yang Q.

17:00 0180 *Synthesis of Tungsten and Tungsten Oxide Nanorod Films with High Purity in a Hot Filament Reactor* Yang Q., Chen W., Xiao C., Hirose A., Li Y.-s.

17:20 End of Session

NANOP Hall B

Posters

Organizer(s) - Dave Mitlin

From 17:00 until 18:40

0181 *An Innovative Method to Reduce Percolation Threshold of Carbon Black Filled Immiscible Polymer Blends* Al-Saleh M.H., Sundararaj U.

0182 *Nickel Nanoparticles with Green Chemistry* Carkner A., Berk D.

0183 *Nano Architectures for Fuel-Cell Applications* Taylor J.M., Shimizu G.K.H.

0184 *Crystalline Nanoporous Coordination Solids for Gas Storage Applications* **Liang J.**, Shimizu G.K.H.

Oil Sands 2007 Conference

OSND2 Salon 8

General 2 (joint with MASL2)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Brian Doucette and Murray Gray; Barry Bara and Subir Bhattacharjee

See Celebration of the Contributions of Jacob Masliyah - MASL1

17:00 End of Session

OSNDP Hall B

Posters

Organizer(s) - Jan Czarnecki, Heather Dettman, Kumar Nandakumar and Zhenghe Xu

From 17:00 until 18:40

0185 *Improving Vacuum Gas Oil HydroTreating Operation via a Lumped Dynamic Simulation Modeling Approach* **Remesat D.**

0186 *Inside-Out Design Approach Improves Distillation Design and Operation for Air Separation to Upgrading* **Remesat D.**

0187 *Role of Bicarbonates in Bitumen Extraction from Poor Processing Oil Sand Ores* **Zhao H.**, Xu Z., Masliyah J.H.

0188 *A Holistic Improvement in Oil Sands Processing - Mission Impossible?* **Long J.**, Li H., Xu Z., Masliyah J.H.

0189 *The Impact of Asphaltene Aggregate Size on Coke Deposition on a Commercial Hydroprocessing Catalyst* **Zhao B.**, Shaw J.M.

0190 *Bitumen Interfacial Studies at Toluene-Water Interface: Effect of De-Emulsifiers on Film Stability* **Mahavadi S.C.**, Xu Z., Masliyah J.H.

0191 *Formation and Stability of Rag Layer in Bitumen Froth* **Saadatmand M.**, Yarranton H.W.

0192 *Understanding the Effect of Weathering on Oil Sands Processability* **Ren S.**, Long J., Zhao H., Xu Z., Masliyah J.H.

0193 *Stability of Water-in-Diluted Bitumen Emulsions* **Gao S.**, Moran K., Xu Z., Masliyah J.H.

0194 *Phase Transitions in Asphaltenes Using Temperature Molded Differential Scanning Calorimetry (TMDSC)* **Tran K.**, Maham Y., Shaw J.M.

0196 *Effect of Naphthenic Acids on Interfacial Films and Stability of Water-in-Oil Emulsions Stabilized by Asphaltenes* **Baydak E.N.**, Yarranton H.W., Moran K.

0197 *Impact of Solvent Addition in Oil Sand Ore on Bitumen Recovery and Froth Quality* **Harjai S.**, Masliyah J.H., Xu Z.

0198 *Simulation of Oil Sand Conditioning During Hydrotransport: Gas Dispersion* **Podila K.**, Al Taweel A.M., Koksall M., Troshko A., Gupta Y.P.

0199 *Simulation of Oil Sand Conditioning During Hydrotransport: Bitumen Dispersion* **Naveen B.P.**, Azizi F., Al Taweel A.M., Gupta Y.P., Friesen W.

0200 *On Expanding-Solvent Steam-Assisted Gravity Drainage with Transitional Solvent Injection* **Gates I.D.**, Leskiw C.

0201 *Interaction of Single Micro Bubble with an Inclined Collector Surface* **Seyyed Najafi A.**, Masliyah J.H., Xu Z.

0202 *Sorption of Naphthenic Acids from Athabasca Tailing Pond Waters* **Mohamed M.H.**, Wilson L.D., Headley J.V.

0203 *Density-Functional Theory (DFT) Modeling of Arsenic Deactivation of NiMoS Using Representative Organoarsenic Compounds* **Yang S.**, Nelson A., McCaffrey W.C., Adjaye J.

0205 *Understanding the Mechanism of Pelleting Flocculation Induced by a Al(OH)₃-Polyacrylamide Hybrid* **Sun W.**, Long J., Xu Z., Masliyah J.H.

0206 *Using Advanced Characterization Methods to Predict Compositional and Elemental Distributions of Petroleum Fractions* **Chen J.**, Briker Y., Ring Z.

0207 *The Use of the High-Temperature, Modular-Helium Reactor for Tar Sands Oil Recovery* **Baxter A.**

0208 *Filterability of Oil Sand Tailings* **Xu Y.**

0209 *A Life Cycle Economic and Environmental Investigation of Steam, Electricity and Hydrogen Generation Options for the Alberta Oil Sands* **Bergerson J.**, McKellar J.M., MacLean H.L.

0210 *Roles of Potassium Hydroxide in Chemical Activation of Oil Sands Fluid Coke* **Maka P.**, Cai J.H., Jia C.Q.

0211 *Direct Observation of Surface Charge Heterogeneity at the Bitumen-Water Interface* **Esmaeili P.**, Long J., Yeung A.

0212 *Wettability of Solids from Oil Sands and its Relation to Oil Sands Processability* **Jha R.**, Dang-Vu T., Masliyah J.H., Xu Z., Tannant D.D.

0213 *Determining the Optimal Infrastructures for Meeting the Future Energy Demands of Carbon Constrained Oil Sands Operations* **Ordorica-Garcia G.**, Elkamel A., Douglas P.L., Croiset E., Gupta M.

0214 *Thermal Conversion of Naphthenic Acid Components in HVGO Fraction of Athabasca Bitumen* **Rahimi P.M.**, Oh Y.D., Rodgers R.P., Marshall A.G., Smith D.F.

Process Dynamics and Control

PROC2 Salons 17/18

Optimization/System Identification

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Chris Swartz and Jong-Min Lee

13:40 0215 *Real-Time Operations Optimization: Reaching Maturity* **Marlin T.E.**

14:20 0216 *Optimal Storage Level Design for Production Systems under Unit Failure Scenarios* **Davies K.M.**, Swartz C.L.E.

14:40 0221 *Data-Driven Bayesian Approach for Control Loop Diagnosis* **Qi F.**, Huang B.

15:00 Coffee Break

15:20 0218 *Approximate Dynamic Programming for Stochastic Multi-State Decision Problems: Applications to Process Scheduling and Control* **Lee J.H.**

16:00 0219 *Closed Loop Identification - Does it Work? Industrial Applications and Perspectives* **Patwardhan R.**, Brown M.

16:20 0220 *A Particle Filter Approach to Identification of Nonlinear Processes under Missing Observations* **Gopaluni R.B.**

16:40 0217 *Scheduling Plants with some Units Requiring Periodic Maintenance - An Optimization Approach* **Pula R.**, Marlin T.E.

17:00 End of Session

Process Safety and Loss Management

PSLM2 Salons 13/14

Land Use Planning

Organizer(s) - Mitch Colwell
Chair(s) - Della Wong

PSM Award Lecture presented by Ertugrul Alp

Introduction of Ertugrul Alp by Graham Creedy

14:00 0222 Risk Assessment and PSM Alp E.

15:00 Coffee Break

15:30 0223 Risk Based Land-Use Planning in the Edmonton Area McCutcheon D.J.

16:00 0224 Application of the MIACC Risk Screening Methodology as Part of Complying with Edmonton Area Land Use Bylaws Henselwood F.W.

16:30 0225 The Emperor's Tattered Suit: The Human Role in Risk Assessment and Control Creedy G.D.

17:00 End of Session

Rubber in the Energy Sector

RUBB2 Salons 19/20

Rubber in Oil Well Applications 2

Organizer(s) - Marvin Myhre and Richard Pazur
Chair(s) - Richard Pazur

13:40 Dynamic and Mechanical Properties Evaluated at Various Temperatures Rau, P. (continued)

14:00 0226 Elastomer Development and Validation for Oilfield Pump and Motor Stator Applications[§]Dunn L.J., Salazar O.

14:40 0227 Elastomer/Clay Nanocomposites for Progressing Cavity Pump Applications[§]Lakshminarayanan S.,[§]Sundararaj U., Nandakumar K., Salazar O., Dunn L.J.

15:00 Coffee Break

15:20 0228 Downhole Packers and Accessories Goodson J.

16:00 0229 Compounding HXNBR for Drill Bit Seal Applications Pazur R.J., Campomizzi E.C., Ferrari L.P., von Hellens W., Dato J.E.

16:20 0230 Adhesive Selection for Manufacturing Rubber to Metal Down Hole Bonded Components[§]Plaszczynski T., Williams R.

17:00 End of Session

Sustainable Operations

SUST2 Salon 4

Sustainable Operations 2

Organizer(s) - Bill Pick
Chair(s) - Bill Pick

13:40 0231 Is There a Future for Chemical Manufacturing in Canada? LaChance C.A.

14:20 0232 Process Intensification: A Profitable Route to Sustainability[§]Al Taweel A.M.

14:40 0233 Olefin-Paraffin Separations by Hybrid Systems Nassara R.,[§]Tezel F.H.

15:00 0234 Adsorbent Beds for Heat Storage Applications in Solar Energy Dicaire D.,[§]Tezel F.H., Lee P.

15:20 Coffee Break

15:40 0235 Environmental and Health Impact Assessments of Hydrogen Production from Natural Gas and Biomass Sources Bi X.T.,[§]Rondina M.

16:00 0236 Biohydrogen Production by Rhodobacter sphaeroides and Clostridium beijerinckii Chmiel M.T., Al-Ghoul H., Yargeau V.

16:20 0237 Studies on Melaleuca Tree Processing for a Sustainable Development in the Mekong River Delta Area of Vietnam Phan D.T., Ngo D.M.,[§]Dang T.Y.N., Le N.T.

16:40 0238 Petro-Canada Membrane Recycled Water Pipeline Project Vagi F.

17:00 End of Session

SUSTP Hall B

Posters

Organizer(s) - Bill Pick

From 17:00 until 18:40

0239 Adsorption of Water and Ethanol with Flax Shives Sun N., Okoye C.,[§]Niu C.H., Wang H.

Tuesday AM

Plenary

PLEN2 Salon 8

R.S. Jane Memorial Award

Organizer(s) - Murray Gray
Chair(s) - David Fung

08:30 0240 Asphaltenes, Gums and Coke: Deposition onto Surfaces During Processing of Hydrocarbons Watkinson A.P.

09:30 End of Session

09:30 Coffee Break

Bioengineering - Biotechnology

BIOT3 Salon 6

Bioseparations

Organizer(s) - Arin Sen
Chair(s) - Mario Jolicoeur

10:00 0241 Modeling and Simulation of Three-Stage Cascade Ultrafiltration Configurations for Monoclonal Antibody Bioseparation Mayani M., Filipe C.D.M., Ghosh R.

10:20 0242 Modeling the Biofiltration of Dimethyl Sulfide in the Presence of Methanol in Inorganic Biofilters at Steady State Zhang Y., Liss S.N., Allen D.G.

10:40 0243 Novel Approach for Monitoring Concentrations of the Milk Proteins α -LA and β -LG During Ultrafiltration Using a Fluorescence Fiber Optic Probe Elshereef R., Budman H., Moresoli C.,[§]Legge R.L.

11:00 0244 The Isolation and Extraction of the 7S and 11S Globulin Soy Proteins Using a Liquid-Solid Circulating Fluidized Bed (LSCFB) Reactor Galloway R., Bassi A.S., Zhu J.

11:20 0245 Fractionation of Antioxidant Soy Protein Hydrolysates by Dead-End Ultrafiltration Robinson M., Moresoli C.

11:40 0246 Application of Aspergillus niger Isolated from Industrial Wastewater in the Removal of Heavy Metals by Biosorption Dang Vu Bich H., Nguyen Tuyet M., Tran Linh T., Doan H.D.

12:00 End of Session

Clean Coal Technology

COAL1 Salon 1

Coal and Environment 1

Organizer(s) - Raj Gupta
Chair(s) - Jost Wendt

10:00 0247 *Environmental Impacts of Coal Combustion: A Risk-Based Approach to Assessment of Emissions* **Nelson P.F.**

10:40 0248 *Activation of Fluid Coke for Mercury Capture from Flue Gases* **Bratu M., Wu L., *Wanke S.E.**

11:00 0249 *Removal of Gas Phase Mercury by Activated Carbons* **De M., *Dalai A.K., Shewchuk S.R.**

11:20 0250 *Mercury Vapour Adsorption Kinetics of Sulphur Impregnated Activated Carbons* ***Tong S.T., Morris E., Kirk D.W., Jia C.Q.**

11:40 0251 *A New Mercury Sorbent for a Coal-Fired Power Plant* ***Liu Y., Kelly D., Zhu Z., Xu Z., Kuznicki S.M.**

12:00 End of Session

Chemical Reaction Engineering and Catalysis

CREA3 Salon 2

Reaction Engineering 1

Organizer(s) - Hui Wang
Chair(s) - Lloyd Brown and Hui Wang

10:00 0252 *Development of the Sulfur-Iodine Thermochemical Cycles* ***Brown L.C.**

10:40 0253 *General Analysis of Isobaric Diffusion in Ceramic Membranes* **Hussain A., *Tsotsas E.**

11:00 0254 *The Kinetics of Hydrogen Production via the Partial Oxidation of Gasoline over a Ni/CeO₂ Catalyst in a Packed Bed Tubular Reactor* ***Ibrahim H.H., Idem R.**

11:20 0255 *Hydrodeoxygenation of Phenolic Model Compounds over Dispersed MoS₂ Catalysts* **Yang Y.Q., *Tye C.T., *Smith K.J.**

11:40 0256 *Designing Effective Gas-Liquid Tubular Reactors* **Podila K., *Al Taweel A.M.**

12:00 End of Session

Economics and Business Management

ECBM1 Salons 19/20

Economics and Business Management

Organizer(s) - David Fung
Chair(s) - David Fung

09:30 Introductory Remarks

09:35 0257 *Globalization and Emergence of Bio-Refineries in Canada* **Fung D.T.**

10:05 0258 *The Differences Between R & D in Industry, Academia, and Government* **Blachford J.**

10:35 0259 *BioComposites: Past, Present and Future* **Maine F.**

11:05 0260 *Biodiesel Patent Landscape in Canada* **Lawson J.**

11:35 0261 *A Bio-Hybrid Future for the Business of Chemistry in Canada* **West B.**

12:05 Closing Remarks, David Fung

12:15 End of Session

4th Canadian Symposium on Fuel Cell Systems

FUEL3 Salon 9

SOFC 2

Organizer(s) - Partho Sarkar and Josephine Hill
Chair(s) - Partho Sarkar and Jingli Luo

10:00 0262 *The Benefits of Cluster Building: Solid Oxide Fuel Cells Canada* **Birss V.I.**

10:20 0263 *Development of Solid Oxide Fuel Cells at Versa Power Systems* **Borglum B.P., Tang E.**

11:00 0264 *Preparation of SOFC Anodes Using Microemulsion-Synthesized Nickel Oxide and Ytria Stabilized Zirconia NanoCatalysts* **Ahmed S., Husein M.M., Birss V.I.**

11:20 0265 *Simulation of a Tubular SOFC Fed with Natural Gas* **Jafarian M., *Karimi G.**

11:40 0266 *Experimental and Mathematical-Modeling Investigation of Radiation Heat Transfer in a Tubular Micro-SOFC Testing Setup* **Amiri M.S., Hayes R.E., Sarkar P., Nandakumar K., Chuang K.T.**

12:00 End of Session

Fundamentals

FUND5 Salon 7

Separation Processes/Simulation and Modeling 1

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Mranal Jain

10:00 0267 *Numerical Investigation of Induced Charge Electro-Osmosis around a Conducting Cylinder in Infinite Medium* **Jain M., Yeung A., Nandakumar K.**

10:20 0268 *Transport Characteristics of Poly(phenylene oxide) for Separation of CH₄/N₂ and N₂/O₂* **Lashkari S., Wang Q., *Kruczek B.**

10:40 0269 *Optimization of a Pressure Swing Adsorption Process for Hydrogen Production from Plasma Reactor Gas* ***Huang Q., Malekian A., *Eic M.**

11:00 0270 *Design of Distillation Column Sequence by Genetic Algorithm* **Boozarjomehry R.B., Pourahmadi Laleh A., Svrcek W.Y.**

11:20 End of Session

FUND6 Salon 5

General

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Carolina Diaz-Goano

10:00 0271 *Microscopic and Electrochemical Investigations on Film Growth on Carbon Steel in Subject to Several Hydrodynamic Conditions for the Fe/CO₂ System* ***Sridharan V., *Evitts R.W.**

10:20 0272 *Hybrid Modeling versus "Winner Model" Approach for Systems Identification* ***Papadokonstantakis S., Hungerbühler K.**

10:40 0273 *Isolation and Characterization of Biosurfactant-Producing Bacteria from Western Canada Oil Reservoirs* ***Yu H., *Huang G.H., Li G.**

11:00 0274 *Enhanced Oil Recovery through CO₂ Huff-and-Puff in Light Oil Fractured Reservoirs (Experimental Results)* **Torabi F., *Asghari K.**

11:20 0275 *Environmental Effect of Sodium Hydroxide (Spent Caustic) in Gas Companies* ***Zadakhbar O., Anbia M., Garshasbi V. PAPER WITHDRAWN**

11:40 End of Session

Greenhouse Gas Control Technologies and Climate Change

GHGC4 Salon 10

Post-Combustion

Organizer(s) - Nader Mahinpey
Chair(s) - Jalal Abedi

10:00 0276 *Concentrating CO₂ Based on Cyclic Use of Calcium Sorbents* [§]Grace J.R., Sun P., Lim C.J.

10:40 0277 *Capture of Carbon Dioxide from Flue Gas Mixtures with Water Adsorbed on Silica Gel: A Clathrate Hydrate Process* [§]Adeyemo A., Kumar R., Englezos P., [§]Ripmeester J.

11:00 0278 *Carbon Dioxide Capture, Transport, and Storage* [§]Gollpudi B., Ilkiw O.

11:20 0279 *Investigation of Corrosion in CO₂ Absorption Process Using Blended Monoethanolamine and Piperazine* [§]Nainar M., [§]Veawab A.

11:40 0280 *Performance of Copper Carbonate as a Low-Toxic Corrosion Inhibitor in Amine-Based CO₂ Capture Plants* [§]Soosairakasm I., [§]Veawab A.

12:00 End of Session

Improving the Quality of Air, Water and Soil

IMPQ3 Salon 3

Air Pollutants

Organizer(s) - Gordon Hill
Chair(s) - William Anderson

10:00 0281 *Environmental Stewardship for Engineers* [§]Peachey B.R.

10:40 0282 *Photochemical and Advanced Oxidation Treatment of Gas-Phase Chlorobenzene* Weber N., Zhang L., [§]Anderson W.A.

11:00 0283 *Treatment of Waste Gases in a Gas-Fluidized Peat Granule Bioreactor* [§]Clarke K., Hill G.A., Pugsley T.

11:20 0284 *Toluene Removal Biofilter Modeling* Li G.Q., [§]De Visscher A.

11:40 0285 *Granular Filtration for Airborne Particles* [§]Golshahi L., Tan C., [§]Abedi J.

12:00 End of Session

Celebration of the Contributions of Jacob Masliyah

MASL3 Salon 8

Hydrotransport/Conditioning (joint with OSND3)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Andrew Eisenhower and Doug Cox

10:00 0286 *Modeling and Simulation of the Operability and Reliability of an Oil Sands At-Face Slurrying System* [§]Lipsett M.G., Scaffo-Migliaro A.

10:20 0287 *Surface Properties: Evolution and Coalescence of Emulsified Bitumen Droplets* [§]Moran K., Sumner R.J.

10:40 0288 *Deformation of Oil Droplet on the Solid Substrate in a Simple Shear Flow* [§]Basu S., Gupta A.K.

11:00 0289 *Determination of Particle Size Distributions for Clays from Athabasca Oil Sands* [§]Mercier P.H.J., Kingston D.M., Wang D., Kung J., Le Page Y., Kotiyar L.S.

11:20 0290 *Oil Sand Slurry Conditioning Tests in a 100 mm Pipeline Loop* [§]Sanders R.S., Schaan J., McKibben M.M.

11:40 0291 *Experimental Investigation of Gas-Liquid Flow in Horizontal Pipes* [§]Kalekudithi E., Afacan A., Sanders R.S., Nandakumar K., Masliyah J.H.

12:00 End of Session

Mineral Processing

MINP3 Salons 15/16

Fine Particles

Organizer(s) - Qi Liu
Chair(s) - Nicolas Abatzoglou

Bantrel Award Lecture presented by Jesse Zhu

Introduction of Jesse Zhu by Amarjeet Bassi

10:00 0292 *Manipulating Fine Particles for the Best Industrial Practice* [§]Zhu J.

10:40 0293 *Static Electrification of Pharmaceutical Powders* [§]Léonard G., Abatzoglou N.

11:00 0294 *Quantifying the Effect of Stabiliser Addition on Particle Aggregation with AFM* [§]Unwin P.J., Siddiqui S.W., [§]Kresta S.M.

11:20 0295 *Effect of Water Structure Makers/Breakers on the Stability of Liquid-Solid Suspensions* [§]Ma X.M.

11:40 0296 *Experimental and Computational Study of a Small-Diameter Hydrocyclone Intended for the Separation of Microorganisms* [§]Shaah-Hosseini S., [§]Rostami R. **PAPER WITHDRAWN**

12:00 End of Session

Oil Sands 2007 Conference

OSND3 Salon 8

Hydrotransport/Conditioning (joint with MASL3)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Andrew Eisenhower and Doug Cox

See Celebration of the Contributions of Jacob Masliyah - MASL3

12:00 End of Session

OSND7 Salon 11

Composition, Properties and Upgrading

Organizer(s) - Heather Dettman
Chair(s) - John Shaw and Shawn Taylor

10:00 0297 *Pyrene Derivatives of 2,2'-Bipyridine as Models for Asphaltenes: Synthesis, Characterization, and Supramolecular Organization* [§]Tan X., [§]Fenniri H., [§]Gray M.R.

10:20 0298 *Evidence for the π - π Interaction of Aromatic Compounds with Vanadyl Porphyrin Compounds in the Organic Phase by Fluorescence Spectroscopy* [§]Yin C.-X., Mullen K., Stryker J.M., [§]Gray M.R.

10:40 0299 *Accurately Predict the Viscosity of Oil Sand Derived Crudes and Blends* [§]Ha Z. (H.), [§]Koppel P.

11:00 0300 *Calorimetric Study of Phase Behavior of Maya Crude and Athabasca Bitumen* [§]Fulem M., Becerra M., Shaw J.M.

11:20 0301 *Phase Transitions for Asphaltenes Separated from Native Oils Using Normal Alkanes from Pentane to Decane* [§]Tran K., Maham Y., Becarra M., Shaw J.M.

11:40 0302 *Influence of Modifier on the Supercritical Fluid Extraction from Athabasca Oil Sands* [§]Seth D., Rahmani S., Le-Nguyen K., Uong E., [§]de Brijn T.

12:00 End of Session

Polymers

POLY1 Salon 4

Polymerization Reactions

Organizer(s) - Phillip Choi
Chair(s) - Phillip Choi

10:00 0303 *Engineering Atom Transfer Radical Polymerization: Catalysis and Reactor Technology* [§]Zhu S., Faucher S.

10:40 0304 *Atom Transfer Radical Polymerization: Breaking through the High Molecular Weight Barrier* Simms R.W., [§]Cunningham M.F.

11:00 0305 *Miniemulsion Polymerization: An Innovative Approach to Tailoring Pressure Sensitive Adhesives* Fonseca G.E., [§]Dubé M.A., McKenna T.F.

11:20 0306 *Using Cosolvents to Improve Polymer Gel Dosimeters* [§]McAuley K.B., Csaszar E.S., Koeva V., Schreiner L.J.

11:40 0307 *Synthesis of Styrene/Acrylic Acid Random Copolymers by Nitroxide Mediated Polymerization* Graffe A., Lessard B., [§]Maric M.

12:00 End of Session

Process Dynamics and Control

PROC3 Salons 17/18

Systems Biology/Pharmaceutical

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Hector Budman and Amos Ben-Zvi

10:00 0308 *Systems Biology: Potential and Pitfalls* Perrier M.

10:40 0309 *Insights into the Effect of Temperature on Platelet Production Provided by the Dynamic Mathematical Modeling of Megakaryopoiesis* Leisy-Derilou Y., Duchesne C., Pineault N., Boucher J.F., Garnier A.

11:00 0310 *Dynamical Analysis of an Integrated Signaling Network via Linear Programming* [§]Lee J.M., Gianchandani E.P., Eddy J.A., [§]Papin J.A.

11:20 0311 *Quality Control of Multi-Component Pharmaceutical Intact Tablets Using Three Different Near-Infrared Apparatuses* Cournoyer A., Cartilier L., Abatzoglou N., Simard J.-S.

11:40 0312 *In-Line Blend Homogeneity Determination of a Multicomponent Dry Pharmaceutical Formulation Using Near-Infrared Spectroscopy in a V-Blender Process (Part 2)* Lapointe-Garant P.P., Abatzoglou N., [§]Simard J.-S.

12:00 End of Session

Process Safety and Loss Management

PSLM3 Salons 13/14

Process Risk Management

Organizer(s) - Mitch Colwell
Chair(s) - Ralph Smeding

10:00 0313 *Meeting Today's Societal Expectations: Process Risk Management Programs of the Dow Chemical Company* Overton T.A.

11:00 0314 *U. S. Chemical Facility Anti-Terrorism Standards* [§]Moore D.A., Kellogg D.

11:30 0315 *Resources and Metrics to Address Current Process Safety Issues - A CCPS Overview* Overton T.A., Berger S.

12:00 End of Session

Tuesday PM

Chair's Event

CHEV1 Salon 12

Energy Roundtable

Organizer(s) - Milena Sejnoha and Christian Detellier
Chair(s) - Milena Sejnoha

13:40 Opening Remarks - Christian Detellier

13:50 0316 *The Role of Chemical Engineering in the Future of Energy* Tanguy P.A.

14:20 0317 *Some Thoughts on Canadian Energy Perspectives in a Carbon-Constrained Future* Grace J.R.

14:50 Coffee Break

15:00 0318 *(Determining) and Reducing the Ecological Footprint from Accelerated Biofuel Development in Canada - A Prospectus* McIntyre T.

15:30 0319 *Nuclear Power: An Essential Component for Global CO₂ Emission Reduction* Miller A.I.

16:00 Announcement and Discussion - Allan Gilbert

16:30 End of Session

Bioengineering - Biomedical Engineering

BIOMP

Hall B

Posters

Organizer(s) - Hasan Uludag

From 17:00 until 18:40

0320 *Expansion of Human Neural Precursor Cells in Large-Scale Bioreactors for the Treatment of Neurodegenerative Disorders* Baghbaderani B.A., Mukhida K., Sen A., Mendez I., [§]Behie L.A.

0321 *A Dynamic Compression-Relaxation Model for Lung Surfactants* Saad S., [§]Acosta E.J., Wong G., Policova Z., Neumann A.W.

0322 *Design of Sub-100 nm Albumin Nanoparticles as Carrier for Protein Drugs* Wang G., Zhang S., Uludag H.

0323 *Electrospinning of Collagen and Elastin for Vascular Tissue Engineering* Laughren D.L., [§]Woodhouse K.A.

0324 *Controlled Drug Release from Stimuli Responsive Polymers* [§]Salehi R., Entezami A.A., Nowruzi K.

0325 *Predictive Multisolute Solution Equations for Biological Solutions Containing Electrolytes* Prickett R.C., [§]Elliott J.A.W., McGann L.E.

0326 *Neural Stem Cell Differentiation and the Effects of Substrate Stiffness* Leipzig N.D., [§]Shoichet M.S.

0327 *Diffusion Modeling in Soft Tissues to Describe Weight Loss and Contraction-Expansion Behavior when Exposed to Hypertonic Solutions* Abazari A., Law G., [§]Elliott J.A.W., McGann L.E., Jomha N.

0328 *Islet Transformation: Discovering the Dynamic Histology* Moogk D., Blaylock A., Hanley S., Rosenberg L., [§]Jervis E.J.

0329 *Transfecting Bone Marrow Stromal Cells with Non-Viral Vectors* [§]Uludag H., Kucharski C., Lin X.

Bioengineering - Biotechnology

BIOT4

Salon 6

Cell Culture

Organizer(s) - Arin Sen
Chair(s) - Arin Sen and Jamie Piret

13:40 0330 *A New Dawn of Chemical Reaction Engineering in Biotechnology* [§]Hu W.-S.

14:20 0331 *A 24-Well System for Screening and Optimizing Process Parameters for Mammalian Cell Culture* Chaudhry M.A.S., Jardon M., Kim D.Y., [§]Piret J.M.

14:40 0332 *A High-Rate Perfusion Bioreactor for Plant Cells Allowing Continuous Extraction of Secreted Proteins* Jolicoeur M., Hisiger S., Cloutier M., Perrier M., Legros R., De Crescenzo G.

15:00 0333 *Process Strategies for High Yield Production of Adeno-Associated Viruses in Insect Cells* Aucoin M.G., Perrier M., Kamen A.A.

15:20 Coffee Break

15:40 0334 *Enhanced Growth of Cold-Adapted CHO Cells Increases Recombinant Glycoprotein Expression under Hypothermic Conditions* Sunley K., Thamalingam T., [§]Butler M.

16:00 0335 *Recombinant Protein Production by Cytopore Microcarriers is Further Enhanced under Hypothermic Culture Conditions* Tharmalingam T., Sunley K., [§]Butler M.

16:20 0336 *Pichia Pastoris Fermentation for Phytase Production Using Low-Grade Glycerol as the Carbon Source* Tang S., Zhang Z.

16:40 0337 *Kinetics of the Ferrous Iron Biooxidation by a Free Suspended Culture of Leptospirillum Ferriphilium* Penev K., Karamanev D.

17:00 End of Session

BIOTP Hall B

Posters

Organizer(s) - Arin Sen

From 17:00 until 18:40

0338 *Synthesis and Characterization of Environment-Responsive Filters and Membranes* Huang R.X., Kostanski L.K., Filipe C.D.M., Ghosh R.

0339 *Bacterial Attachment to Oil and Its Role on Biodegradation of Polyaromatic Hydrocarbons* Abbasnezhad H., Gray M.R., Foght J.M.

0340 *The Effect of Urea Supplementation on the Gene Alternation of an Industrial Saccharomyces cerevisiae* Cheng C.H., Yang D.M., [§]Lin Y.H.

0341 *Food-Grade Biotechnology: An Innovative Concept for Novel Food and Drug Production* Razvi A., Basso J., [§]San C.Q.

0342 *Characterisation of Fermentation Broth Using Multiple-Scattered Light in the Near-Infrared Region* Dzhongova E.Z., [§]Thennadil S.N., Harwood C.R. PAPER WITHDRAWN

0343 *Diesel Biodesulfurization Activity of Rhodococcus rhodochrous IGTS8 in the Presence of Ionic Liquids* Soleimani M., Bassi A.S., Margaritis A.

0344 *Lipase-Catalyzed Kinetic Resolution of Anti-Inflammatory Drugs in Non-Standard Organic Solvents* [§]Ghanem A.

0345 *Function Inference of Interacting Proteins Using Protein Signature Profiling* Mahdavi M.A., [§]Lin Y.H.

Clean Coal Technology

COAL2 Salon 1

Gasification and Coal Cleaning

Organizer(s) - Raj Gupta
Chair(s) - Amar Amamath

13:40 0346 *Gasification: A Key Technology Platform for Western Canada* du Plessis D.

14:20 0347 *The Gasification of New Zealand Coals: A Comparative Simulation Study* Nathen S.V., Kirkpatrick R.D., [§]Young B.R.

14:40 0348 *Catalytic Gasification of Peat in Supercritical Water* [§]Xu C., Donald J.

15:00 0349 *Gasification Reactivity of K₂CO₃ Catalyzed HyperCoal and Coal under Steam at 775-700 °C for H₂ Production* Sharma A., Saito I., Takanohashi T.

15:20 Coffee Break

15:40 0350 *New Development of Coal Utilization Technology: HyperCoal (Ash-Free Coal)* Saito I.

16:20 0351 *Effect of Adding HyperCoal on Strength of Coal Blends* [§]Takanohashi T., Shishido T., Saito I.

16:40 0352 *Properties of Inorganic Elements in the Clean Coal Generated by Solvent Extraction* Zhang L., [§]Takanohashi T., Saito I. PAPER WITHDRAWN

17:00 End of Session

Chemical Reaction Engineering and Catalysis

CREA4 Salon 2

Reaction Engineering 2

Organizer(s) - Hui Wang
Chair(s) - Robert Hayes and Xavier Vitart

13:40 0353 *A General Survey of the Potential and Main Issues of Thermochemical Cycles, Sulfur-Iodine Cycle in Particular, for Hydrogen Production Using Nuclear Heat* Vitart X., Carles P., Yvon P.

14:20 0354 *Liquid-Phase Catalytic Decarboxylation of Naphthenic Acids* Yang L., Nelson A.R., Gray M.R.

14:40 0355 *Catalytic Radiant Heaters for Fugitive Methane and BTEX Combustion* Mannan T.M., Jodeiri N., Mmbaga J., [§]Hayes R.E., Wanke S.E.

15:00 0356 *Modelling Catalytic Radiant Heaters for Combustion of Fugitive VOC* Jodeiri N., Mmbaga J., Hayes R.E., Mannan T.M., Wanke S.E.

15:20 Coffee Break

15:40 0357 *CFD Simulation of a Flat Plate Photocatalytic Reactor in a Serpentine Geometry* Jarandehi A., Karimi Golpayegani M., [§]De Visscher A.

16:00 0358 *A Novel Chemical Cycle of H₂S Splitting for H₂ Production* [§]Wang H., Chuang K.T.

16:20 0359 *Dry Reforming of Methane by a Dielectric Barrier Discharge* [§]Nsungui A.J., Abatzoglou N., Gitzhofer F.

16:40 0360 *Simulation of a Fluidized-Bed Photocatalytic Reactor* Karimi Golpayegani M., Jarandehi A., [§]De Visscher A.

17:00 End of Session

4th Canadian Symposium on Fuel Cell Systems

FUEL4 Salon 9

Alternate Fuel/Hydrogen Storage

Organizer(s) - Partho Sarkar and Josephine Hill
Chair(s) - Kunal Karan and Christopher Thurgood

13:40 0361 *Electrochemical Oxidation of Methanol and Ethanol on Ni-CeO₂, Cu-CeO₂ and La_{0.7}Sr_{0.3}Cr_{0.5}Mn_{0.5}O_{3.8} Anodes* Cimenti M., Hill J.M.

14:00 0362 *A Study on Process Parameters of Direct Ethanol Fuel Cell* [§]Basu S., Pramanik H.

14:20 0363 *Generating Electricity from Petroleum Coke* *[§]Kouchachvili L., Ikura M.

14:40 0364 *Density Functional Theory Studies of Methane Dissociation on Anode Catalysts in Solid-Oxide Fuel Cells: Suggestions for Coke Reduction* Knapp D., *[§]Ziegler T., Galea N., Shishkin M.

15:00 0365 *Growth Kinetics of a Photosynthetic Microorganism and its Use in a Fuel Cell* Powell E.E., Mapiour M.L., Evitts R.W., Hill G.A.

15:20 Coffee Break

15:40 0366 *Experiments and Modelling for an H₂S Fuelled SOFC* Monder D., *[§]Nandakumar K., Vorontsov V., Luo J.L., Chuang K.T.

16:00 0367 *Modeling of Palladium Containing Activated Carbon Fiber Using Car-Parrinello Molecular Dynamics* *[§]Mushrif S.H., Rey A.D. PAPER WITHDRAWN

16:20 0368 *Life Cycle Assessment of Stack Production and Fuelling of Fuel Cells* Dhanushkodi S.R., *[§]Mahinpey N., Wilson M.

16:40 End of Session

FUELP Hall B

Posters

Organizer(s) - Partho Sarkar and Josephine Hill

From 17:00 until 18:40

0369 *Development of a Direct Alcohol Alkaline Fuel Cell* *[§]Basu S., Verma A.

0370 *2-D Dynamic Modeling and Experimental Validation of SOFC Button Cell* *[§]Mo Z., Huang B., Nandakumar K.

0371 *Gas Phase Reactions of Methanol and Ethanol in the Anodic Compartment of Solid Oxide Fuel Cells: Experiments and Simulation* Cimenti M., Hill J.M.

0372 *Anodic Electrodeposition of Mn-Co Oxide Coatings (Doped with Ce and Y) for Stainless Steel Interconnects Utilized in SOFC* Wei W., Chen W., *[§]Ivey D.G.

0373 *Metal-Organic Frameworks: A New Class of Electrolyte Materials for Intermediate Temperature PEM Fuel Cells* Hurd J.A., Thangadurai V., *[§]Shimizu G.K.H.

0374 *Module Construction of Dye-Sensitized Solar Cells by Using Chemical Etching* *[§]Nguyen T.-V., Yang O.-B.

0375 *Tubular Micro-Solid Oxide Fuel Cell* *[§]Sarkar P., Yamarte L., Richardson M., Johanson L.

0376 *Proton Conducting Metal Organic Polymers* Vaidhyanathan R., Hurd J.A., Thangadurai V., Shimizu G.K.H.

0377 *Novel Procedure for High-Density Electrolyte Deposition Using Glycine-Nitrate Powders* Rivard T., Jia L., *[§]Gitzhofer F., Abatzoglou N.

0378 *The Study of Gold Nano Particles Supported on MoS₂ Catalysts for SOFC Using H₂S-Containing Synthesis Gas* *[§]Xu Z., Luo J.L., Chuang K.T.

0379 *Preparation and Characterization of Silica Added PVA/PSSA-MA Crosslinked Ion Exchange Membranes for Fuel Cell Applications* *[§]Rhim J.W., Kim D.H., Cho H.I., Moon G.Y., Nam S.Y., Byun H.S.

0380 *Novel Anode Material for a Sour Natural Gas Solid Oxide Fuel Cell* Danilovic N., Luo J.L., Chuang K.T.

Fundamentals

FUND7 Salon 7

Separation Processes/Simulation and Modeling 2

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Mohamed Sayed

13:40 0381 *Study on the Effect of Using Liquid/Gas Coalescer Cartridge Surface Treatment on Separation Efficiency* *[§]Zadakar O., Vatani A., Anbia M., Garshasbi V. PAPER WITHDRAWN

14:00 0382 *Wellhead Separation Equipment for Parsian Gas Field, Selection and Design* *[§]Zadakar O., Vatani A., Anbia M., Garshasbi V. PAPER WITHDRAWN

14:20 0383 *Optimal Design of Heat-Integrated Separation and Refrigeration Systems* Farrokhpahanah S., Smith R., Jobson M. PAPER WITHDRAWN

14:40 0384 *Simulation of Two-Phase Liquid-Particle Flow Using a Particle Model* Laux H., *[§]Sayed M.

15:00 0385 *A Quantum Chemical Study of Kinetics of Ring Opening of Cyclohexene on a Brønsted Acid Site* *[§]Govindhakannan J., Mackie I.D., DiLabio G.A.

15:20 Coffee Break

15:40 0386 *Numerical Upscaling of Reacting Flow from Fine to Coarse Scale* Hassanzadeh H., *[§]Abedi J., Pouladi-Darvish M.

16:00 0387 *Hydrodynamics of Progressive Cavity Pumps: Flow Visualizations and CFD Simulations* *[§]Alemaskin K., Nandakumar K., Sundararaj U.

16:20 0388 *Numerical Simulations of Two-Phase Solids-Gas Flow through Bins* *[§]Sayed M., *[§]Laux H.

16:40 0389 *Modeling of the Suspension of Dispersed and Ultradispersed Particles in the Cross-Section of Horizontal Cylindrical Channels* Loria H., Pereira P., Scott C.

17:00 End of Session

FUNDP Hall B

Posters

Organizer(s) - Carolina Diaz-Goano

From 17:00 until 18:40

0390 *Study of Transition Velocities from Bubbling to Turbulent Fluidization by Wavelet Multi-Resolution Analysis on Absolute Pressure Fluctuations* Leu L.-p., *[§]Yang T.-Y.

0391 *Removal of Carbon Dioxide by Absorption in a Cross-Flow Rotating Packed Bed* Lin C.-C., Chen B.-C.

0392 *Energy Storage by Modeling a Cooling System* Abniki F., Bakhshi E. PAPER WITHDRAWN

0393 *Hydrodynamics of Bubbling Fluidized Bed by Computational Fluid Dynamics (CFD)* Hosseini S.H., *[§]Rahimi R.

0394 *Modeling and Analysis of Gas Holdup in Bubble Columns with Newtonian and Non-Newtonian Fluids* Rahimi R., *[§]Mahdavi S.M.

0395 *Investigation on Forced Water Components and Suitable Doses for the Petroleum Recovery Application at Oil Fields* Phan D.T., Lam Q.H., *[§]Hoang D.T.

0396 *Reliable Determination of Phosphorus in Crude Oil and Fractions* Schmidt K.J., Janzen K.E., Lesage K.

Greenhouse Gas Control Technologies and Climate Change

GHGC5 Salon 10

Post-Combustion and Technologies for Greenhouse Gas Emissions Reduction

Organizer(s) - Nader Mahinpey
Chair(s) - Koorosh Asghari and Raphael Idem

13:40 0397 *Characterization of Foaming Behavior in Amine-Based CO₂ Capture Plants*
Thitakamol B., ^SVeawab A.

14:00 0398 *Kinetics of CO₂ Absorption into MEA-AMP Blended Solution*
Sakwattanapong R., ^SAroonwilas A., Veawab A.

14:20 0399 *Experimental and Modeling Studies of the Molar Excess Enthalpies for Various Aqueous Amine Systems*
Narayanaswamy K., Mundhwa M., Henni A.

14:40 0400 *Kinetic Study of the Absorption of Carbon Dioxide in Various Promising Aqueous and Non-Aqueous Chemical Solutions*
Kadiwala S., Li J., Henni A.

15:00 0401 *Progress on the Gas Hydrate Process for Post Combustion Capture of Carbon Dioxide from a Flue Gas Mixture*
Linga P., Kumar R., Adeyemo A., Ripmeester J., Englezos P.

15:20 Coffee Break

15:40 0402 *Development of Degradation Inhibitor Additives for Amines During the Capture of Carbon Dioxide from Power Plant Flue Gases*
Pitipuech P., Supap T., ^SIdem R., ^STontiwachwuthikul P., Saiwan C.

16:00 0403 *Studies of SO₂ Induced Corrosion During CO₂ Capture from Coal Fired Power Plant Flue Gases Using Aqueous MEA*
Kladkaew N., Pitipuech P., Supap T., ^SIdem R., ^STontiwachwuthikul P., Saiwan C.

16:20 0404 *Comparing the Absorption Performance of Polypropylene (PP), Polytetrafluoroethylene (PTFE) and Poly(vinylidene fluoride) (PVDF) Hollow Fiber Membranes in Membrane Contactor*
Khaisri S., Yang A., ^STontiwachwuthikul P., deMontigny D., Jiraratananon R.

16:40 0405 *Physical and Transport Properties of Synthetic Aqueous Amino Alcohol Solutions for CO₂ Absorption from Flue Gas Streams*
Maneeintr K., ^SIdem R., ^STontiwachwuthikul P., Wee A.G.H.

17:00 0406 *Statistical Modeling and Analysis of Data from a Carbon Dioxide Capture Process*
Zhou Q., ^SChan C., ^STontiwachwuthikul P.

17:20 End of Session

Improving the Quality of Air, Water and Soil

IMPQ4

Salon 3

Sulfur Remediation and Modeling

Organizer(s) - Gordon Hill
Chair(s) - Hui Wang

13:40 0407 *A Safer H₂S Disposal Method to Eliminate Flaring Acid Gas in Natural Gas Processing: Kinetic Study of H₂S Adsorption on Iron Oxide*
Wang D.M., ^SWang H., Chuang K.T.

14:00 0408 *Substrate Utilization Rate Model of Denitrification Processes of Bioreactors*
Xu A., ^SYoung S.

14:20 0409 *Sulphur Bacteria: Little Devils at Work in Oil Fields and Mines*
Nemati M.

15:00 0410 *Remediation for PCE Contamination*
Qin X.S., Huang G.H.

15:20 Coffee Break

15:40 0411 *Development of a CFD-Based Model for the Simulation of Immobilized Photocatalytic Reactors*
Duran J.E., ^SMohseni M., Taghipour F.

16:00 0412 *Microbial Desulphurization and Denitrification of a Waste Stream, in an Immobilized Cell Bioreactor*
Tang K.M., Nemati M.

16:20 0413 *Optimal Waste Allocation under Uncertainty through an Inexact Multiobjective Optimization Method*
Zhang X., Huang G.H.

16:40 0414 *A Study of Thiosalt Oxidation*
Vongporm Y., Hawboldt K., Coles C., ^SBottaro C.

17:00 End of Session

Celebration of the Contributions of Jacob Masliyah

MASL4

Salon 8

Bitumen Production (joint with OSND4)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Garry Foulds and Tadek Dabros

13:40 0415 *A Comparison of Mineral and Oil Sands Flotation Systems*
Xu Z.

14:20 0416 *Determining Surface Potential of the Bitumen-Water Interface at Nanoscale Resolution Using Atomic Force Microscopy*
Drelich J., Long J., Yeung A.

14:40 0417 *Effect of Operating Temperature on Water-Based Oil Sands Processing*
Long J., Drelich J., Xu Z., Masliyah J.H.

15:00 0418 *Role of Solids in Oil Sands Processability*
Dang-Vu T., Wu S.Y., Jha R., Masliyah J.H., Xu Z.

15:20 Coffee Break

Chair(s) - Surindar Singh and Shawn Taylor

15:40 0419 *Rapid Characterization of Oil Sand Properties Using Near-Infrared and Thermal Infrared Reflectance Spectroscopy*
Rivard B., Feng J., Lyder D., Gallie A., Cloutis E.

16:00 0420 *High Performance Control of Oilsands Hydrotransport*
Garcia O., Shardt Y., Diaz-Goano C., Forbes J.F., Sanders S.

16:20 0421 *Potential Strategies to Enhance Oil Recovery Using Vapex*
Imran M.

16:40 0422 *Hybrid SAGD-ISC Bitumen Recovery Processes for Athabasca Reservoir*
Sadeghi M., Gates I.D.

17:00 End of Session

Nanomaterials

NANO3

Salons 15/16

Synthesis, Properties and Characterization of Nanomaterials 3

Organizer(s) - Dave Mitlin
Chair(s) - Dave Mitlin

13:40 0423 *Synthesis and Applications of Metal Sulfide Nanoparticles Produced by Xanthate Precursors*
Apblett A.W., Piquette A., Leeds J.

14:00 0424 *Modification of Plasma Produced Fumed Silica Surface Properties by Post Treatment*
Munz R.J., Pristavita R., Addona T.

14:20 0425 *Micro-Mixing and Nanoparticle Production in Confined Impinging Jet Reactor*
Siddiqui S.W., Unwin P., Kresta S.M.

14:40 0426 *Interpenetrating Polymer Networks (IPN) Templated by Bicontinuous Microemulsions*
Acosta E.J., **Wang B.**, Chu M., Huh B., Cheng Y.-L.

15:00 0427 *Melt Mixing of Polymer-Copper Nanocomposites Using Compatibilizers* Li H., [§]Sundraraj U.

15:20 0428 *Electrical and Rheological Percolation of Polymer Nanocomposites Containing Chemically Modified Metal Nanowires* [§]Gelvels G.A., Haber J.A., [§]Sundraraj U.

15:40 Coffee Break

16:00 0429 *Production of Nano Composite Particles from Zr-V-Fe Alloy Ingot by a Transferred DC Plasma Jet* Jeong M.H., Oh C.S., Han C.S., [§]Kim H.C.

16:20 0430 *Cubic Boron Nitride Thin Films Deposited by Ion Beam Deposition on Diamond Interlayer* [§]Tang Y., Li Y.S., Yang S.L., Yi W.W., Yang Q., Hirose A.

16:40 0431 *Atomistic Simulation of Hydrogen Embrittlement of Polycrystalline Iron Structure* [§]Telitchev I., [§]Vinogradov O. PAPER WITHDRAWN

17:00 0432 *Electrodeposition of Sn-Cu Solder Films* Han C., Liu Q., [§]Ivey D.G.

17:20 End of Session

Oil Sands 2007 Conference

OSND4

Salon 8

Bitumen Production (joint with MASL4)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Garry Foulds and Tadek Dabros; Surindar Singh and Shawn Taylor

See Celebration of the Contributions of Jacob Masliyah - MASL4

17:00 End of Session

OSND8

Salon 11

Upgrader Fouling, Corrosion and Coker Concerns

Organizer(s) - Heather Dettman
Chair(s) - Paul Watkinson and Craig McKnight

13:40 0433 *Fouling Investigation of Light Crudes* Rahimi P.M., Wiehe I., Oh Y.D.

14:00 0434 *Investigation of Cold Lake Asphaltene Adsorption on Metal Surface* Rudrake A., Karan K.

14:20 0435 *Structural Characterization of the Naphthenic Acids in Crude Oil: Gaining Insight into the Corrosive Nature of the Species* Heerze L.D., Heshka A., Zinz D., Salmon S., Dettman H.

14:40 0436 *Evaluating the Hydrophobic/Hydrophilic Nature of Asphaltenes and Naphthenates Using Model Microemulsions* [§]Acosta E.J., Bhakta A., Bakian G., Kiran S., Moran K.

15:00 0437 *Naphthenic Acid Removal by Catalytic Decarboxylation on MgO and CaO Catalysts* [§]Ding L.H., Yang H., Rahimi P.M., Chen J.W., Ring Z.

15:20 Coffee Break

15:40 0438 *Composition and Size Distribution of Coherent Nanostructures in Athabasca Bitumen and Maya Crude Oil* Zhao B., Shaw J.M.

16:00 0439 *Diffusion of Vanadium Compounds from Asphaltene Aggregates* [§]Dechaine G.P., [§]Gray M.R.

16:20 0440 *Ultimate Coke Yield in Bitumen-Coke Agglomerates* [§]Ali M., Courtney M., Chan E., [§]Gray M.R.

16:40 0441 *Effect of Liquid Phase Severity on Upgrading* [§]McCaffrey W.C., [§]Brown W.A., Pinchuk R.

17:00 End of Session

Polymers

POLY2

Salon 4

Polymer Processing

Organizer(s) - Phillip Choi
Chair(s) - Costas Tzoganakis

13:40 0442 *Micro- and Nano-Processing of Polymer Systems* [§]Kamal M.R.

14:20 0443 *Free-Withdrawal Coating with UV-Curing TiO₂ Filled Resins - Modeling and Die Design* Pope M., [§]Hrymak A.N., Kostanski L.K.

14:40 0444 *Morphology Development for Single-Site Ethylene Copolymers* Xu H., [§]Bellehumeur C.T.

15:00 0445 *Visualization of Viscoelastic Drop Deformation and Breakup in Simple Shear Flow* Li H., [§]Sundraraj U.

15:20 Coffee Break

15:40 0446 *Dimensional Stability of Single-Site Ethylene Copolymers* [§]Medina A., Xu H., [§]Bellehumeur C.T.

16:00 0447 *A Comparative Study of Physical and Mechanical Properties of Glass and Natural Fibre Reinforcing Composites* [§]Panigrahi S., Tripathy A., Panigrahy B.

16:20 0448 *Thermal Residual Stress Development for Semi-Crystalline Polymers in Rotational Molding* Xu H., [§]Bellehumeur C.T.

16:40 0449 *Identification and Control of Plasticating Twin Screw Extruder* Iqbal M., [§]Sundraraj U., Shah S.L.

17:00 End of Session

POLYP

Hall B

Posters

Organizer(s) - Phillip Choi

From 17:00 until 18:40

0450 *Biodiesel: A Green Polymerization Solvent* [§]Salehpour S., [§]Dubé M.A.

0451 *A Computational Study of the Ludwig-Soret Effect on the Thermal-Induced Phase Separation Process in Polymer Solutions* [§]Kukadiya S.B., [§]Chan P.K., [§]Mehrvar M. PAPER WITHDRAWN

0452 *Comparison of Synthetic Routes to Produce Poly(styrene)-Poly(lactide) (PS-PLA) Diblock Copolymers by Nitroxide Mediated Polymerization* [§]Graffe A., [§]Morton K., [§]Jabbar R., [§]Maric M.

0453 *Synthesis of Hydroxyl Terminated Poly(styrene-random-vinylcarbazole) Copolymers by Nitroxide Mediated Polymerization* [§]Graffe A., [§]Morton K., [§]Maric M.

0454 *Improving Consistency and Reliability of a Catalyst Feeding System for Gas-Phase Polyethylene Production* [§]Shaw B.M.

Process Dynamics and Control

PROC4

Salons 17/18

Process Control/Model Predictive Control

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Michel Perrier and Helen Shang

Syn crude Canada Innovation Award Lecture presented by Martin Guay

Introduction of Martin Guay by James McLellan

13:40 0455 *Adaptive Optimization Techniques for Control and Estimation* [§]Guay M.

14:20 0456 *Analysis of a Smelting Furnace Off-Gas System* [§]Shang H., Dillabough M., Nelson P., Salt B.

14:40 0457 *Optimal Selection of Decentralized MPC Structure for Interconnected Chemical Processes* Al-Gherwi W.A., Budman H., [§]Elkamel A.

15:00 0458 *Advanced Control of an Industrial Wastewater Treatment Plant* [§]Young B.R., Board T.R., Murphy R.B., Kecman V.

15:20 Coffee Break

D.G. Fisher Award Lecture presented by Barry Cott

Introduction of Barry Cott by Tom Marlin

15:40 0459 *Unit-Wide Model Predictive Control with SMOCP^{ro}* Cott B.J.

16:20 0460 *Improving the Operation of Refinery Desulphurization Units Using Advanced Process Control Technology* [§]Twana C.S., McIntosh A.R.

16:40 0461 *LQ Approach for Coordination of Decentralized Large Scale Process Control Problems* Marcos N.I., Dallagi A., Forbes J.F., Guay M.

17:00 End of Session

PROCP Hall B

Posters

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Jong-Min Lee and Helen Shang

From 17:00 until 18:40

0462 *Identification of Mixed-Logic Dynamical Systems Using Particle Filtering* Li Q., Lee J.M., Ben-Zvi A.

0463 *Bayesian Approach for MPC Constraint Analysis* Akande D.O., Huang B.

0464 *A Note on the Selection of Timescale for Real-Time Optimization of Processes* [§]Razzaghi K., Shahraki F.

0465 *A Survey for the Selection of Control Structure for Distillation Columns* [§]Razzaghi K., Shahraki F.

0466 *Feasibility and Stability of Steady-State Target Calculation of Model Predictive Control* Forbes J.F., Al-Shammari A.A.

0467 *Industrial Batch Reactor Swelling: Constrained Level Control* [§]Simon L.L., Nagy Z.K., Hungerbühler K.

Process Safety and Loss Management

PSLM4 Salons 13/14

Managing the Consequences of Process Safety Incidents

Organizer(s) - Mitch Colwell
Chair(s) - Graham Creedy

13:30 0468 *Using a Risk-Based Approach to Emergency Planning Resources* McCutcheon D.J.

14:00 0469 *Risk Based Decision Aid* Wong D.

14:30 0470 *Land Use Planning and Process Safety* [§]Moore D.A., Fuller B.A., Kellogg D.

15:00 0471 *Managing the Intolerable* Henselwood F.W., Phillips K.G.

15:30 Coffee Break

16:00 0472 *Alberta Environmental Protection Commission Outcomes* McCutcheon D.J.

16:30 0473 *Effective Investigation and Analysis of Major Incidents in an Industrial Setting that will Produce the Most Valuable Outcomes* [§]Wilson L., Romanyk T.

17:00 End of Session

PSLMP Hall B

Posters

Organizer(s) - Mitch Colwell

From 17:00 until 18:40

0474 *Industrial Health, Safety and Environmental Protection: A Synergetic Approach* Tiwari D.P.

Unconventional Resources

UNCN1 Salon 5

Unconventional Gas/Cold Energy and Landfills

Organizer(s) - Bruce Peachey
Chair(s) - Bruce Peachey

13:40 0475 *Molecular Level Study on sH Methane Hydrate* [§]Susilo R., Ripmeester J., Englezos P.

14:00 0476 *Thermodynamic Evidence for Hydrate Structure Change in the Methane-Carbon Dioxide-Neohexane and Water System* [§]Beltran J.G., Servio P.

14:20 0477 *Effects of Ionic Surfactants on Tetrahydrofuran Hydrate Formation* [§]Al-Garyani S., Yuet P.K.

14:40 0478 *Thermodynamic Conditions for Gas Hydrates Formation in Water in Oil Microemulsions* Giraldo C.A., Clarke M.

15:00 0479 *Detecting Adsorbed Gas in Coal Using Low-Field NMR* [§]Guo R., Kantzas A.

15:20 Coffee Break

15:40 0480 *An Overview of Unconventional Oil and Gas in Canada* Peachey B.R.

16:00 0481 *Utilizing the Cold Potential of LNG Regasification Terminals* [§]Al Taweel A.M., Cote R., Curry T.

16:20 0482 *Cold Energy - Potential Applications in Canada* [§]Peachey B.R., Godin M., Heidrick T.

16:40 0483 *Warm Water Geothermal Energy In Western Canada* [§]Peachey B.R., Godin M.

17:00 End of Session

Wednesday AM

Plenary

PLEN3 Salon 8

Plenary

Organizer(s) - Murray Gray
Chair(s) - Bruce Peachey

08:30 0484 *Water: Our Next Big Economic and Social Challenge* Sturgess P.K.

09:30 End of Session

09:30 Coffee Break

Bioengineering - Biomedical Engineering

BIOM1 Salon 5

Therapeutic Delivery

Organizer(s) - Hasan Uludag
Chair(s) - Hasan Uludag

10:00 0485 *Nonviral Gene Transfer Mediated by DNA Nanoparticles* Leong K.W.

10:40 0486 *Binding and Entry Kinetics of GALV-Enveloped Retroviral Vector into Mammalian Cells* [§]Tayi V.S., Beauchesne P.R., Bowen B.D., [§]Piret J.M.

11:00 0487 *Palmitoylation as a Means to Enhance the Effectiveness of Cationic Polymers in Non-Viral Gene Delivery*
Abbasi M., Incani V., Lin X., Uludag H.

11:20 0488 *Polyethylenimine-Coated Albumin Nanoparticles as Carriers for Protein Drug Delivery* Zhang S., Wang G., Lin X., Uludag H.

11:40 0489 *Optimizing the Use of Ultrasound to Deliver Chemotherapeutic Agents to Cancer Cells from Polymeric Micelles* Abdel-Jabbar N.M., Hussein G.A., Mjalli F.S., Al-Mousa A., Pitt W.G.

12:00 End of Session

Clean Coal Technology

COAL3 Salon 1

Coal and Environment 2

Organizer(s) - Raj Gupta
Chair(s) - Mick Moore

10:00 0490 *Health Effects of Particulate Matter from Coal and Biomass Combustion*
Wendt J.O.L., Linak W.P.

10:40 0491 *Opportunity for Concurrent Capture of Mercury and CO₂ from Coal-Fired Power Plant Flue Gas in Amine-Based Absorption Process* Cui Z., Veawab A., Aroonwilas A.

11:00 0492 *Temperature Effects on Mercury Vapour Adsorption onto Sulphur Impregnated Activated Carbons* Mehta H., Tong S.T., Jia C.Q.

11:20 0493 *Sulphur in Sulphur Impregnated Activated Carbon and Its Roles in Aqueous Hg (II) Adsorption* Cai J.H., Tong S.T., Jia C.Q.

11:40 0494 *Aqueous Mercury and Lead Removal with Activated Carbons Derived from High Sulfur Carbonaceous Materials* Tong S.T., Wu X.Q., Cai J.H., Chiu L., Jia C.Q., Kirk D.W., Zhang S.Q.

12:00 End of Session

Chemical Reaction Engineering and Catalysis

CREA5 Salon 2

Reactor Design

Organizer(s) - Hui Wang
Chair(s) - Todd Pugsley and Jesse Zhu

10:00 0495 *Hydrodynamics of Fluidized Bed Reactors* Pugsley T.

10:40 0496 *Kinetic and 2-D Reactor Modeling for Simulation of the Catalytic reduction of NO_x over V₂O₅/TiO₂ by the Honey Comb Reactor* Dhanushkodi S.R., Mahinpey N., Murugan P., Wilson M.

11:00 0497 *Application of an Auto-Cyclic Reactor for the Removal of Unburned Methane from Emissions of Natural Gas Engines* Zanoletti M., Klvana D., Kirchnerova J., Perrier M., Guy C.

11:20 0498 *Study of Holdup and Solid Propagation Velocity in Liquid-Solid Circulating Fluidized Bed Using Electrical Resistance Tomography (ERT)* Razzak S.A., Barghi S., Zhu J.

11:40 0499 *Segregation of Gas-Polyethylene Fluidized Bed with Broad Size Distribution* Zhang Q.Z., Chen J.W., Kantzas A., Bellehumeur C.T.

12:00 End of Session

4th Canadian Symposium on Fuel Cell Systems

FUEL5 Salon 9

SOFC 3

Organizer(s) - Partho Sarkar and Josephine Hill
Chair(s) - Nicolas Abatzoglou and V. Thangadurai

10:00 0500 *Studying Reduction in SOFC Activity with Density Functional Theory: Effects of Hydrogen Sulfide Adsorption on Nickel Anode Surface* Galea N., Ziegler T.

10:20 0501 *Ternary Transition Sulfides as Novel Anode Materials for a Hydrogen Sulfide Solid Oxide Fuel Cell* Vorontsov V., Luo J.L., Chuang K.T.

10:40 0502 *Use of Spinel-Coated Ferritic Stainless Steel to Improve SOFC Cathode Performance* Paulson S.C., Bateni M.R., Wei P., Petric A., Birss V.I.

11:00 0503 *Structure and Oxidation Behaviour of Ni-LaCrO₃ Composite Coatings for Ferritic Stainless Steels used as Interconnects in Solid Oxide Fuel Cells* Shaigan N., Chen W., Ivey D.G.

11:20 0504 *Scale-Up of a Copper-Chlorine Thermochemical Cycle for Hydrogen Production* Naterer G.F., Gravelins R.J., Gabriel K.S., Rosen M.A.

11:40 Closing Remarks

11:45 End of Session

Fundamentals

FUND8 Salon 7

Simulation and Modeling/Transport Phenomena

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Glyn Kennell

10:00 0505 *Modeling Crevice Corrosion by Combining Critical Crevice Solution Theory and IR Drop Theory Using the Electrode Coupling Balance* Kennell G.F.S., Evitts R.W., Heppner K.L.

10:20 0506 *A Model for Stresses and Oscillations of a Resonant Cavity Wall* Dehra H.

10:40 0507 *Gelation of Wax-Solvent Mixtures with Radial Heat Transfer under Static Conditions* Bidmus H.O., Mehrotra A.K.

11:00 0508 *Viscous Fingering of Chemically Reactive Flows in Hele-Shaw Cells* Hejazi S.H., Ghesmat K., Azaiez J.

11:20 0509 *Accurate Measurements of Diffusivity and Permeability Coefficients in Membranes Using a Constant Volume System* Lashkari S., Yao Y., Kruczek B.

11:40 0510 *Saffman-Taylor Instability of Non-Isothermal Flows in Homogeneous Porous Media* Islam M.N., Azaiez J., Maini B.

12:00 End of Session

Greenhouse Gas Control Technologies and Climate Change

GHGC6 Salon 10

Biomass Energy

Organizer(s) - Nader Mahinpey
Chair(s) - Maen Husain

10:00 0511 *Gasification in Canada* Anthony E.J.

10:40 0512 *Biomass and Ionic Liquids* Johnson K., Mahinpey N., Murugan P.

11:00 0513 *Techno-Economics of Biohydrogen Production in Western Canada* Sarkar S., Kumar A.

11:20 0514 *Performance Evaluation of Biodiesel Production from Waste Cooking Oil* Zhou L., Aroonwilas A., Veawab A.

11:40 0515 *An Economical Analysis of BC's Wood Pellet Opportunities* Peng J.H., Hogue M., Bi X.T., Sokhansanj S., Melin S.

12:00 End of Session

GHGC7 Salon 12

CO2 Sequestration

Organizer(s) - Nader Mahinpey
Chair(s) - Amornvadee Veawaab and Andy Aroonwilas

10:00 0516 *The Effect of Critical Micelle Concentration on CO₂ Foam Performance as a Mobility Agent in Enhanced Oil Recovery* **Han Y.K.**, Romero-Zeron L.

10:20 0517 *Accelerated Concrete Curing by Carbonation: A CO₂ Sequestration Technology* **Kashef-Haghighi S.**,
*Ghoshal S.

10:40 0518 *Multi-Criteria Evaluation of Locations for CO₂ Sequestration and Storage under Uncertainty* ***Tan Q.**, *Huang G.H., Cai Y.P.

11:00 0519 *Stability and Integrity of Cement in Wellbores used for CO₂ Storage* **Condor J.T.**, *Asghari K.

11:20 0520 *CO₂ Storage and EOR in Fractured Porous Media (Experimental Results)* **Torabi F.**, *Asghari K.

11:40 0521 *Sequestration of CO₂ in Geological Formations: Application of Bovine Carbonic Anhydrase Enzyme* **Asghari K.**, Mahinpey N., Mirjafari P.

12:00 End of Session

Improving the Quality of Air, Water and Soil

IMPQ5 Salon 3

Adsorption and Innovative Treatment Strategies

Organizer(s) - Gordon Hill
Chair(s) - Mehdi Nemati

10:00 0522 *Equilibrium and Kinetics of Cd²⁺ and Cu²⁺ Adsorption by Wheat Straw* **Dang V.B.H.**, Doan H.D., Dang-Vu T., Lohi A.

10:20 0523 *Kinetics and Equilibrium of Nickel Biosorption* **Thevannan A.**, *Niu C.H.

10:40 0524 *Treatment of Evaporator Condensate Using Thermophilic and Mesophilic Sequencing Batch Reactors* **Zheng M.R.**, Ratana-Rueangsri L., Langevin S.P., *Liao B.Q.

11:00 0525 *Sustainable Groundwater Cleanup at a Former Herbicides Production Facility Using Phytoremediation* **Creber C.E.**, *Gatlief E.G., West J.E., Manale F.A., Wandor D.G.

11:20 0526 *Mass Transfer and Bioremediation of Aromatics from NAPL in a Rotary, Baffled Bioreactor* ***Nikakhtari H.**, Kumar P., Nemati M., Hill G.A.

11:40 End of Session

Celebration of the Contributions of Jacob Masliyah

MASL5 Salon 8

Tailings (joint with OSND5)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Roger Melley and Kevin Moran

10:00 0527 *Methane Flux from Oil Sands Tailings: Source and Prediction* **Siddique T.**, Fedorak P.M., *Foght J.M., Mackinnon M.D.

10:20 0528 *Horizon Oil Sands Thickener Design* **Paradis T.**

10:40 0529 *Effect of Particle Size on the Viscosity of Athabasca Clay Suspensions* **Samiei S.**, Adeyinka O.B., Xu Z., Masliyah J.H.

11:00 0530 *Comparison of Clay Minerals in Oil Sands Froth and Tailings* **Kaminsky H.A.W.**, Etsell T.H., Ivey D.G., Omotoso O.E.

11:20 0531 *TEM Investigation of "Leucoxene" Particles in Oil Sands Froth* Kaminsky H.A.W., Etsell T.H., **Ivey D.G.**, Omotoso O.E.

11:40 0532 *Kaolinite-Bitumen Interaction in Aqueous Solutions Containing Multivalent Metal Cations* ***Gan W.**, *Liu Q.

12:00 End of Session

Nanomaterials

NANO4 Salon 6

Synthesis, Properties and Characterization of Nanomaterials 4

Organizer(s) - Dave Mitlin
Chair(s) - Dave Mitlin

10:00 0533 *Nanoscale Patterning of Functional Metallic Structures on Semiconductor Interfaces via Polymer Self-Assembly* ***Buriak J.M.**, Aizawa M., Chai J.

10:20 0534 *One-Dimensional Molecular Sieves for Hydrocarbon Cold Start Emission Control: Influence of Isomorphous Metal Substitution* **Ilyas A.**, Zahedi-Niaki H.M., *Eic M., *Kaliaguine S.

10:40 0535 *XPS Characterization of Silver Exchanged ETS-10, Chabazite and Mordenite Molecular Sieves* **Ansón A.**, *Maham^o Y., Kuznicki S.M.

11:00 0536 *Development of Nanocomposite Materials for Gas Separation Membranes* **Sadeghi F.**, Kruczek B., *Tremblay A.Y.

11:20 0537 *Single-Microemulsions for the Preparation of High Surface Area Colloidal Nanocatalysts* **Nassar N.N.**, *Husein M.M.

11:40 0538 *Copper and Cobalt Nanoparticles Generated by Colloidal Synthesis* **Dadgostar N.**, Henneke D.E.

12:00 0539 *Growing Multi-Wall Carbon Nanotubes on Ambient Substrate by Remote Spark Discharge under Atmospheric Pressure* **Niu W.W.**, Yang Y., *Whidden T.K.

12:20 End of Session

Oil Sands 2007 Conference

OSND5 Salon 8

Tailings (joint with MASL5)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Roger Melley and Kevin Moran

See Celebration of the Contributions of Jacob Masliyah - MASL5

12:00 End of Session

OSND9 Salon 11

Catalytic Upgrading

Organizer(s) - Heather Dettman
Chair(s) - Josephine Hill and Jacques Dirx

10:00 0540 *Hydroprocessing of Bitumen-Derived Distillates and Gas Oils* **Ewert W.M.**, Bares J.E., Johnson B.G., Zarnitz R.M., Alvarez W.E.

10:20 0541 *Advances in Albemarle's Heavy Oil Upgrading Catalysts* **Toshima H.**, Sedlacek Z., Mayo S., Avery C., Plantenga F., **Adkins B.**

10:40 0542 *Filtration of Suspensions in Trickle-Bed and Monolith Reactors: Cyclic Operation and Catalytic Reaction Studies* ***Hamidipour M.**, ***Larachi F.**, Ring Z.

11:00 0543 *A Study of Acidity and Carbon Deposition over Mo₂C/HY Catalysts used for Selective Ring Opening (SRO) of Naphthalene* **Liu X.**, Smith K.J.

11:20 0544 *Hydrotreating of Oil-Sands Derived Coker Gas Oil over P Promoted Trimetallic Ni-Mo-W₁₇-Al₂O₃ Sulfide Catalysts* Sundaramurthy V., Sigurdson S., Dalai A.K., Adjaye J.

11:40 0545 *Yield Patterns from Cracking Heavy Gas Oils for Production of Light Olefins and Aromatics in Different Reaction Systems* Ng S., Nakajima N., Mutyala S., Kuehler C., Yui S.

12:00 End of Session

Polymers

POLY3 Salon 4

Polymer Properties

Organizer(s) - Phillip Choi
Chair(s) - Céline Bellehumeur

10:00 0546 *Thermal Diffusivity Measurement for Flax Fiber-HDPE Biocomposites* Panigrahi S., Li X., Tabil L.

10:20 0547 *Confined Diffusion of Polyelectrolyte in Nanotubes* Gu H., Zhu S.

10:40 0548 *Determination of Gas Diffusivity in Polymers* Tendulkar J., Upreti S.R., Lohi A.

11:00 0549 *Investigating the Sorption and Diffusion of Aqueous Solutions on the Performance of a Polyurethane Biopolymer Derived from Castor Oil* Mortley A., Bonin H.W., Bui V.T.

11:20 0550 *Simplified Model for Prediction of Molecular Weight Distributions in Ethylene-Hexene Copolymers Using Ziegler-Natta Catalysts* Thompson D.E., McAuley K.B., McLellan P.J.

11:40 0551 *Intermolecular Branch Frequency Distribution Dependence of the Size and Orientations of Lamellae in Single-Site Linear Low-Density Polyethylene Blown Films* Choi P., Zhang Y., Zhao H., Ho K.

12:00 End of Session

Process Dynamics and Control

PROC5 Salons 15/16

Model Predictive Control

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Brent Young and Prashant Mhaskar

10:40 0552 *Adaptive Model Predictive Control for Constrained Nonlinear Systems* Guay M., Adetola V.

11:00 0553 *Enhancing the Stability Region Estimates of Nonlinear Process Systems Using Model Predictive Control* Mahmood M., Mhaskar P.

11:20 0554 *A Novel Approach for Block Model Predictive Control* Olvera-Salazar A.J., Marlin T.E.

11:40 0555 *A Model Predictive Control Strategy for Crystallizer Temperature Control* Mortazavi-Manesh S., Svrcek W.Y.

12:00 End of Session

PROC6 Salons 17/18

Statistical Methods

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Jim McLellan and Bhushan Gopaluni

10:00 0556 *The Statistical Analysis of Simplified or Misspecified Models* Harris T.J., McAuley K.B., Wu S.

10:40 0557 *Parameter Estimation in Continuous-Time Dynamic Models with Uncertainty* Varziri M.S., McAuley K.B., McLellan P.J.

11:00 0558 *Quality Control of PE/PS Polymer Films through Multivariate Image Analysis* Gosselin R., Duchesne C., Rodrigue D., González Nuñez R.

11:20 0559 *SQC of Alarm Events* Hugo A.J.

11:40 0560 *Application of Support Vector Regression Machine for Nonlinear System Identification* Saneer B.C., Shah S.L.

12:00 End of Session

Process Safety and Loss Management

PSLM5 Salons 13/14

Process Safety Education and Societal Expectations

Organizer(s) - Mitch Colwell
Chair(s) - Adrian Pierorazio

10:00 0561 *Chemical Engineers: A Trusted Voice on Technical Matters of Public Concern, or Not?* Alp E., Boughner R.T.

11:00 0562 *Incorporating Risk Concepts Into Engineering Education* McCutcheon D.J.

11:30 0563 *Development of a Process Safety Culture for a Newly Graduated Chemical Engineer* Lacoursière J.-P.

12:00 End of Session

Wednesday PM

Bioengineering - Biomedical Engineering

BIOM2 Salon 5

Biomaterials and Tissue Engineering

Organizer(s) - Hasan Uludag
Chair(s) - Kim Woodhouse

13:40 0564 *High Protein-Resistant Biomaterials Prepared by Surface Initiated Atom Transfer Radical Polymerization of Water-Soluble Polymers* Jin M.Z., Feng W., Brash J.L., Zhu S.

14:00 0565 *An Elastin-Like Polypeptide as a Non-Toxic Crosslinker: Synthesis and Characterization of a Hyaluronan Hydrogel for Intervertebral Disc Regeneration* Windisch L.M., Woodhouse K.A.

14:20 0566 *In situ Characterization of the Adsorption of Concanavalin A on Germanium Surface at Various pH* Dong J., Mielczarski J.A., Mielczarski E., Xu Z.

14:40 0567 *Simulations of Low Temperature Cellular Responses: Role of Nucleation Heat* Ross-Rodriguez L.U., Elliott J.A.W., McGann L.E.

15:00 0568 *A Mechanistic Evaluation of Cranberry Proanthocyanidin Mediated Inhibition of Bacterial Adhesion to Biomaterials* Eydelnant I.A., Hamidy K., Tufenkji N.

15:20 Coffee Break

Chairperson(s) - Nathalie Tufenkji

15:40 0569 *In Vitro Expansion and Induction of Human Islet-Like Structures from Pancreatic Tissue: A Novel Treatment for Type 1 Diabetes* Tadros M., Jung S., Panchalingam K.M., Sen A., Behie L.A.

16:00 0570 *Recruitment of Endogenous Circulating Progenitor Cells for Cardiac Regeneration Using Injectable Gels* Melhuish A., Suuronen E., Cao X.

16:20 0571 *In Vitro Fluid Shear Stress Alteration of Vascular Cell Glycocalyx* Tehranian S., Shepherd R.D., Rinker K.D.

16:40 0572 *Can We Control Cell Differentiation with Scaffolds: Changes Associated with Scaffold Architecture and Stem Cells* Woodhouse K.A.

17:00 End of Session

Bioengineering - Biotechnology

BIOT5 Salon 6

Biosystems

Organizer(s) - Arin Sen
Chair(s) - Amarjeet Bassi and Marc Aucoin

13:40 0573 *Investigation of Enzymatic Degradation of Polyurethane Plastics*
Gautam R., Bassi A.S., Yanful E.K.

14:00 0574 *Development of a QCM-D Based Biosensor for Detection of E. coli O157:H7*
Poitras C., [§]Tufenkji N.

14:20 0575 *Nanoscale Investigation of Bacterial Adhesion in Terms of Classical DLVO Theory*
Dorobantu L.S., Bhattacharjee S., Foght J.M., Gray M.R.

14:40 0576 *Elasticity of Hexadecane-Water Interfaces with Adsorbed Hydrophobic Bacteria*
Kang Z., Yeung A., Foght J.M., Gray M.R.

15:00 0577 *Use of Genetically Modified Saccharomyces cerevisiae to Convert Soluble Starch Directly to Ethanol*
Liao B., [§]Roesler W.J., Hill G.A.

15:20 Coffee Break

15:40 0578 *Towards the Development of Metabolic Engineering Tools for the On-Line Monitoring of Cell Potentials*
Jolicoeur M., De Crescenzo G., Perrier M.

16:00 0579 *Overexpression of Recombinant Pseudozyma Antarctica Lipase in Escherichia coli*
Xu Y., [†]Chou C.P., Scharer J., Moo-Young M. **PAPER WITHDRAWN**

16:20 0580 *Extraction and Uses of Biopolymers from Wastewater Sludge*
Garcia Becerra F.Y., Allen D.G., Acosta E.J., Xuan X.Y., Maniyali Y.

16:40 0581 *Biological Hydrogen Production Using Sewage Sludge as Microbial Seed*
Baghchehsaraee B., Nakhla G., [†]Karamanev D., Margaritis A.

17:00 End of Session

Clean Coal Technology

COAL4 Salon 1

Advanced Combustion Technologies

Organizer(s) - Raj Gupta
Chair(s) - Peter Nelson

13:40 0582 *Advanced Oxy-Fuel Combustion Systems for Near-Zero Emission Fossil Fuel Power Plants*
Zanganeh K.

14:20 0583 *Systematic Studies on Coal Jet Ignition under Oxy-Fuel Combustion Conditions*
Zhang J., Eddings E.G., [†]Wendt J.O.L.

14:40 0584 *Oxygen Production Methods for Oxy-Firing: A Review*
Fitter K., [†]Gupta R.P.

15:00 0585 *Evaluation and Emission Characteristics for Co-Combustion of Petroleum Coke and Coal*
Luo Y., Gupta R.P., Cai S.

15:20 Coffee Break

15:40 0586 *Clean Coal Research Program at University of Alberta*
Xu Z.

16:00 0587 *A Study on the Mercury Releasing Characters of Different Rank Coals During Mild Pyrolysis*
Zhang C., Chen G., Gupta R.P., Xu Z.

16:20 0588 *Advanced Clean Coal Burners*
Bilhete L., Bilhete C., **Gu G.**

16:40 0589 *Radiative Heat Transfer in Advanced Coal Utilisation Technologies*
Gupta R.P., Vyas R., Arvind G.

17:00 End of Session

Chemical Reaction Engineering and Catalysis

CREA6 Salon 2

Reactor Design and Catalytic Processes

Organizer(s) - Hui Wang
Chair(s) - Craig McKnight and Hui Wang

13:40 0590 *Aspects of Industrial Reaction Engineering: Fluid Dynamics, Reaction Kinetics, and Catalysis*
McKnight C.A., Hackman L.P.

14:20 0591 *Study of the Effect of Distributor Partial Blockage on the Overall Mixing in a Fluidized Bed Using Electrical Capacitance Tomography*
Karimipour S., Pugsley T.

14:40 0592 *Design and Performance Evaluation of a Heterogeneous Solid/Liquid Batch Reactor for Production of Zirconium Nitrate Feed for Extraction*
Asnani C.K., Ravikanth M.V.S.R., Arasu S.T., Nandi D., Jayaraj R.N.

15:00 0593 *Development of Airlift Bubble Column with Immobilizing Carrier of Carbonized Textile for Biological Nitrogen Removal in Wastewater*
Yoshimatsu T., Yasuda K., [†]Bando Y.

15:20 Coffee Break

15:40 0594 *Esterification Kinetics of Stigmastrol with Maleic Anhydride Catalysed by p-Toluenesulphonic Acid*
Xu W., Ji M., Cao Y., Wang Y., Wang Y. **PAPER WITHDRAWN**

16:00 0595 *Kinetics of Toluene Hydrogenation on Modified γ -Al₂O₃ Supported Catalysts with H₂ Spillover*
Boateng K.A., [§]Hill J.M.

16:20 0596 *Process Intensification Using Solid Phosphoric Acid Catalysis*
de Klerk A.

16:40 End of Session

Fundamentals

FUND9 Salon 7

Transport Phenomena/General

Organizer(s) - Carolina Diaz-Goano
Chair(s) - Shahram Navaee-Ardeh

13:40 0597 *1-D Distributed Model of a Continuous Biodrying Process and Comparison with Experimental Results*
Navaee-Ardeh S., Bertrand F., Stuart P.R.

14:00 0598 *Interfacial Mass Transfer Phenomena in Microemulsions*
Acosta E.J., Yuan S., Yip A., Gerber M.

14:20 0599 *3D Velocity Profile of a Free-Rising Buoyant Sphere*
Kryst K., [†]Karamanev D.

14:40 0600 *The Development of a Protein-Based Low pH Soft Drink Using Yellow Mustard Protein Isolate*
Lorenzo L.K.

15:00 0601 *Flowability of Moist Pharmaceutical Powders*
Emery E., Oliver J., Pugsley T., Zhou J.

15:20 Coffee Break

15:40 0602 *A Computational Study of NO_x and Noise Production in a Pulse Combustor*
Mujumdar A.S., [†]Wu Z.H.

16:00 0603 *Getting Fuel Gas from the Flare by a Flare Gas Recovery System*
Zadakbar O., Vatani A., Anbia M., Garshasbi V. **PAPER WITHDRAWN**

16:20 End of Session

Greenhouse Gas Control Technologies and Climate Change

GHGC8 Salon 10

Biomass Energy and Technologies for Greenhouse Gas Emissions Reduction

Organizer(s) - Nader Mahinpey
Chair(s) - Amr Henni and Amit Kumar

13:40 0604 *Oxy-Fuel Firing: The Transition to Pressurized Systems for Efficiency Optimization* [§]**Clements B.R.**

14:20 0605 *Sustainability and Green Engineering: Concepts in Biomass Gasification* [§]**Mahinpey N.**, Wilson M., Dhanushkodi S.R.

14:40 0606 *Preparation of Active Carbons from Biomass by Chemical Activation for the Adsorbed Natural Gas Storage* **Bagheri N.**, [§]**Abedi J.**

15:00 0607 *Biofuels from Microalgae: Making Green Energy Production Sustainable* Li Y.Q., Horsman M., Wu N., [§]**Lan C.Q.**

15:20 Coffee Break

15:40 0608 *Absorption Performance of Hybrid Monoethanolamine and Methanol Solvents for CO₂ Capture* **Usubharatana P.**, [§]Tontiwachwuthikul P., Veawab A.

16:00 0609 *Non-Thermal Plasma Technologies for Environmental Protection: Treatment of VOC Emissions Using a Corona Reactor* **Derakhshesh M.**, [§]**Abedi J.**

16:20 0610 *Reactivity and Stability of a Ni/Al₂O₃ Oxygen Carrier for Fluidized Bed Chemical-Looping Combustion* **Sedor K.E.**, Hossain M.M., de Lasa H.I.

16:40 0611 *Optical Infrared Fugitive Emission Detection and Measurement Pilot Study* **Trefiak T.W.**

17:00 End of Session

GHGC9

Salon 12

GHG Modeling and Analysis and Technologies for Greenhouse Gas Emissions Reduction

Organizer(s) - Nader Mahinpey
Chair(s) - David deMontigny and Nader Mahinpey

13:40 0612 *Effect of Different Species of Mg and P Salts on Reduction Ammonia Release in Food Waste Composting Process* **Yu H.**, Huang G.H., Li Y. **PAPER WITHDRAWN**

14:00 0613 *Energy Alternatives for Sustainable Prosperity* **Miller A.I.**, [§]Duffey R.B.

14:20 0614 *Emissions from Producing Hydrogen for Fuelling a Transit Bus: A Comparative Study of a Plasma Technology and Four Conventional Processes* [§]**Supa-Amornkul S.**, Lister D.H.

14:40 0615 *Progress on the Gas Hydrate Process for Pre-Combustion Capture of Carbon Dioxide from a Fuel Gas Mixture* **Kumar R.**, Linga P., Ripmeester J., [§]Englezos P.

15:00 0616 *Numerical Simulation of Contaminant Dispersion around a Single Cubical Building Using the LES Turbulent Model* **Omidyeganeh M.**, [§]**Abedi J.**

15:20 Coffee Break

15:40 0617 *Annual Variability of Surface Ozone at an Urban Coastal Site* **Murugan P.**, Dhanushkodi S.R., [§]**Mahinpey N.**, Subramanian S.

16:00 0618 *Simulation of the Absorption of Carbon Dioxide into Mixed Aqueous Solutions of MDEA/MEA* [§]**Edali M.A.**, Aboudheir A., Ramachandran N., Idem R., Tontiwachwuthikul P.

16:20 0619 *An Optimization Model Based Approach for Evaluating Effects of Policies and Strategies on Mitigation of GHG Emissions Resulting from Energy Activities* [§]**Cai Y.P.**, [§]Huang G.H., Tan Q., Lin Q.G.

16:40 0620 *Evaluation of GHG Mitigation Options in Transportation Sector through Development of a Multicriteria Assessment Model* **Tichkowsky G.**, **Mohamadabadi H.S.**, [§]**Kumar A.**

17:00 End of Session

Improving the Quality of Air, Water and Soil

IMPQ6

Salon 3

Adsorption and Oil/Gas Remediation

Organizer(s) - Gordon Hill
Chair(s) - Huu Doan

13:40 0621 *Adsorption of Zn⁺⁺ and Ni⁺⁺ in a Fixed Bed of Wheat Straw* **Dang V.B.H.**, [§]Doan H.D., Lohi A., Dang-Vu T.

14:00 0622 *Life Cycle Assessment of CO₂ Enhanced Oil Recovery and Storage* [§]**Suebsiri J.**, Wilson M., Manuilova A., Tontiwachwuthikul P.

14:20 0623 *Technology for Arsenic Removal from Water* [§]**Apblett A.W.**, Piquette A., Brown J.E., Bagabas A.

14:40 0624 *Environmental Effects of Solid and Liquid Wastes of Oil Wells* [§]**Zadakbar O.**, Anbia M., Garshasbi V. **PAPER WITHDRAWN**

15:00 0625 *Conversion of Dibenzoithiophene to 2-Hydroxybiphenyl by Rhodococcus rhodochrous (NRRL B-2149)* [§]**Santos E.S.**, Gurgel Y.K.P., Soares Jr. A.B., Chagas B.M.E., Domingos T.B., Macedo G.R.

15:20 End of Session

Celebration of the Contributions of Jacob Masliyah

MASL6

Salon 8

Froth Treatment (joint with OSND6)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Bill Power and Vince Wallwork

13:40 0204 *Asphaltene Precipitation in Crude Oils with Emulsified Water* **Tharanivasan A.K.**, Svrcek W.Y., Yarranton H.W., Taylor S.D.

14:00 0195 *Dynamics of Asphaltene Aggregation* **Wang S.**, Long J., Xu Z., [§]**Masliyah J.H.**

14:20 0627 *The Effect of Resins on Asphaltene Self-Association and Solubility* [§]**Yarranton H.W.**, Fox W.A., Svrcek W.Y.

14:40 0628 *Multi-Scale Observations of the Separation of Solids-Stabilized Diluted Bitumen Emulsions* **Jiang T.**, [§]**Hirasaki G.J.**, [§]Miller C.A., Moran K.

15:00 0629 *Role of Dynamic Interfacial Properties in the Dewatering of Diluted Bitumen* **Venkataram R.**, [§]**Al Taweel A.M.**, Dabros T., Yuet P.K.

15:20 Coffee Break

Chair(s) - Edward Maharajh and Harvey Yarranton

15:40 0630 *Electric Breakdown of Thin Films: A New Approach for Stability Measurement of Water in Oil Emulsion Films* **Mostowfi F.**, [§]**Bhattacharjee S.**, Czamecki J., Masliyah J.H.

16:00 0631 *Stability of Water/Toluene Interfaces Saturated with Adsorbed Naphthenic Acids - A Molecular Dynamics Study* **Li C.**, Li Z., [§]**Choi P.**

16:20 0632 *Stability of Water-in-Oil Emulsion Effect of Asphaltenes* [§]**Xu Y.**, Dabros T.

16:40 0633 *On the So-Called 'Rag Layer' and Diluted Bitumen Dewatering* **Czarnecki J.**, Moran K., Yang X.

17:00 End of Session

Oil Sands 2007 Conference

OSND6 Salon 8

Froth Treatment (joint with MASL6)

Organizer(s) - Jan Czarnecki, Kumar Nandakumar and Zhenghe Xu
Chair(s) - Bill Power and Vince Wallwork; Edward Maharajh and Harvey Yarranton

See Celebration of the Contributions of Jacob Masliyah - MASL6

17:00 End of Session

OSN10 Salon 11

Upgrading Approaches, Concepts and Modeling

Organizer(s) - Heather Dettman
Chair(s) - Ajay Dalai and Mark Johnston

13:40 0634 *Advances in Natural Zeolite Bitumen Cracking* **Kuznicki S.M.**, McCaffrey W.C., Junaid A.S.M., Yin H., Koenig A., Swenson P., Bian J., Kuznicki T.

14:00 0635 *Upgrading of Athabasca Vacuum Tower Bottoms (VTB) in Supercritical Hydrocarbon Solvents with Activated Carbon-Supported Metallic Catalysts* **Xu C.**, Hamilton S., Mallik A.

14:20 0636 *Ultrasound Assisted Transfer Hydrogenation/Hydrogenolysis of Gas Oil* **Gopinath R.**, Dalai A., John A.

14:40 0637 *Thermal Cracking of Sulfur Compounds: Experimental Study and Kinetic Calculation* **Li N.**, Luo J.L., Dettman H.

15:00 0638 *Process Design for Hydrogen Production from H₂S Chemical Splitting* **Bromstad M.L.**, Wang H.

15:20 Coffee Break

15:40 0639 *A Cascaded Population Balance Approach for Modeling the Evolution of Coker Feed Sprays* **Kirpalani D.M.**

16:00 0640 *Residue Molecules: Molecular Representations and Thermal Reactivity!* **Sheremata J.M.**, McCaffrey W.C., Gray M.R., Dettman H.

16:20 0641 *Mathematical Modeling of Visbreaking Using Carbon Types* **Saxena A.**, Diaz-Goano C., Dettman H.

16:40 End of Session

Polymers

POLY4 Salon 4

Specialized Polymers

Organizer(s) - Phillip Choi
Chair(s) - Phillip Choi

13:40 0642 *Poly(ether block polyamide) Membranes for Gas Separations and Pervaporation* **Feng X.**

14:20 0643 *Development of Microporous PVDF Hollow Fibre Membranes for Soluble Gas Absorption* **Yang A.**, Young S., Tontiwachwuthikul P., deMontigny D.

14:40 0644 *Synthesis and Characterization of Stimuli-Responsive Poly[oligo(ethylene glycol) methacrylate]-Block-Poly(methyl methacrylate) Copolymer Brushes on a Flat Surface* **Gao S.**, Feng W., Zhu S., Brash J.L., Sheardown H.

15:00 0645 *Study of the Compatibility between Poly(ethylene oxide)-b-Poly(ϵ -caprolactone) and Two Water Insoluble Drugs Using Molecular Dynamics Simulation* **Patel S.**, Lavasanifar A., Choi P.

15:20 Coffee Break

15:40 0646 *Use of Atom Transfer Radical Polymerization to Tune Matrix Properties of Block Copolymer Templates* **Graffe A.**, Desai R., Hallen S., Maric M.

16:00 0647 *Thermoplastic Elastomer Composite made from Recycled Polyethylene, Devulcanized Rubber and Hemp Fibres* **Leduc S.**, González-Núñez R., Rodrigue D.

16:20 0648 *Grafting Polymers from Flat Copper and Nickel Surfaces by Surface-Initiated Atom Transfer Radical Polymerization* **Chen R.**, Zhu S.P., Botton G.

16:40 0649 *Imaging of Polymer Flooding Using MRI* **Ongsurakul S.**, Romero-Zerón L., Li L., Balcom B.

17:00 End of Session

Process Dynamics and Control

PROC7 Salons 17/18

Process Control/Statistical Methods

Organizer(s) - Biao Huang and Helen Shang
Chair(s) - Rohit Patwardhan and Amos Ben-Zvi

13:40 0650 *Control of Catalytic Flow Reversal Reactors* **Fuxman A.M.**, Aksikas I., Forbes J.F., Hayes R.E.

14:00 0651 *Application of Inductive Monitoring System (IMS) for Monitoring Industrial Processes* **Halim E.**, Raghavan H., Shah S.L.

14:20 0652 *Multivariate Data Analysis for Black Liquor Evaporator Performance Improvement* **Amazouz M.**, Platon R.

14:40 0653 *Transition from Batch to Continuous Operation in Bio-Reactors Using Model Predictive Control* **Aumi S.**, Mhaskar P.

15:00 0654 *Local Identifiability and Parameter Estimability in a Fuel Cell Model* **Jayasankar B.r.**, Ben Zvi A., Huang B.

15:20 Coffee Break

15:40 0655 *Multivariate Statistical Analysis of the Impact of Carbon Anodes and Alumina Quality on Primary Aluminium Production* **Tessier J.**, Duchesne C., Gauthier C., Dufour G.

16:00 0656 *Chemical Processes are Low Pass Filters. Why and When?* **Choudhury M.A.A.**, Shah S.L.

16:20 0657 *Diagnosis of Plant-Wide Oscillations Using Adjacency Matrix* **Jiang H.**, Patwardhan R., Shah S.L.

16:40 0658 *Model-Free Learning Approach for Control of Uncertain Systems* **Nosair H.**, Lee J.M.

17:00 End of Session

Process Safety and Loss Management

PSLM6 Salons 13/14

Safeguarding Design

Organizer(s) - Mitch Colwell
Chair(s) - Ertugrul Alp

13:30 0659 *Building Blast Shields: An Overview* **Pierorazio A.J.**

14:00 0660 *Considerations for the Process Safety Design of Sulfur Tanks and Collection Vessels* **Sourisseau K.**

14:30 0661 *Quantifying the Risk of Gas-Phase Autoignition in the Selective Oxidation of Propane to Acrylic Acid in a Fluidized Bed Reactor* **Lavolette J.-P.**, Patience G.S., Chaouki J.

15:00 Coffee Break

15:30 0662 *Fires and Explosions: What You Need to Know to Prevent Them* **Phillips K.G.**, Nibber S.P.S.

17:00 End of Session