2021 VIRTUAL ATLANTIC AND EASTERN CANADIAN SYMPOSIUM ON WATER QUALITY RESEARCH

November 2-3, 2021













2021 Virtual Atlantic and Eastern Canadian Symposium on Water Quality Research November 2-3, 2021

Supported by:

Canadian Association on Water Quality (CAWQ) | Carleton University – Global Water Institute Network on Persistent, Emerging, and Organic PoLlution in the Environment (PEOPLE Network) | Memorial University – NRPOP Laboratory CREATE Environmental Decontamination Technologies and Integrated Water and Wastewater Management (TEDGIEER) | Institut National de la Recherche Scientifique (INRS)





Institute









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Conference Chairs

Prof. Banu Örmeci, Carleton University

Prof. Bing Chen, Memorial University

Prof. Patrick Drogui, INRS-ETE

Conference Organizing Committee

Prof. Stephanie Guilherme, University of Ottawa

Prof. Tahir Hussain, Memorial University

Prof. Abid Hussain, Carleton University

Prof. Yeowon Kim, Carleton University

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Prof. Kripa Singh, University of New Brunswick

Prof. Cole Van De Ven, Carleton University

Prof. Thomas Walker, Carleton University

Prof. Xander Wang, University of Prince Edward Island

Prof. Helen Zhang, Memorial University

Register by Friday, October 29th: https://www.cawq.ca/en/1vae/ (English) https://www.cawq.ca/fr/1vae/ (French)

Symposium Agenda

/All times are marked as **Eastern Time**/

Tuesday, November 2

Time zone:	Salle A / Room A		
EST 8:15-8:30	W. I		
8:30-9:20	Welcome and Opening Session		
0.30-7.20	Keynote Speaker: Prof. Joan Rose		
	Professor & Homer Nowlin Chair in Water Research Departments of Fisheries & Wildlife and Plant, Soil and Microbiological Science Michigan State University, USA		
	Keynote speech: From Polio to COVID: Environmental Virology at its Best		
9:20-9:30	Morning Break		
	Salle A / Room A	Salle B / Room B	
9:30-10:45	Session A1 Drinking Water Treatment Chair: Prof. Cole Van De Ven	Session B1 Emerging Contaminants Chair: Prof. Stephanie Gora	
9:30-9:55	David Kim* o and Stephanie Gora McGill University	Nicolas Nayrac*°, Sonia Blais, Jean-Philippe Bellenger, and Pedro A. Segura Université de Sherbrooke	
	Feasibility of UV-LED POU/POE Technologies for Sustainable Water Treatment in Rural and Indigenous Communities in Canada: A Techno- Economic Perspective	Is it Possible to Identify the Polymer Type of Plastics Found in the Environment? A Case Study of Mesoplastics Found in Lake and River Beaches	
9:55-10-20	May Alherek* o and Onita Basu Carleton University	Rama Pulicharla, Pratishtha Khurana* °, and Satinder Kaur Brar York University	
	Investigating the Effect of Silver, Zinc Oxide and Copper Nanoparticles at Low Concentrations to Disinfect <i>E. Coli</i>	Rapid and Rugged Analytical Method for Long-Chain Perfluoro Carboxylic Acids (C9 And C10) in Landfill Leachate: Direct MS Injection	
10:20-10:45	Faezeh Absalan* °, Fatemeh Hatam, Michèle Prévost, Benoit Barbeau, and Françoise Bichai Polytechnique Montréal Application of a Variable Reaction Rate Model for Predicting Chlorine Decay and THM Formation in a Drinking Water Utility in Southern Quebec		

^{*} Presenters °Student/YWP (Competing for Philip H. Jones Awards and One-slide-3-minute Presentation Awards)

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Salle A / Room A One-slide-three-minute Presentations - Part 1 Chair: Prof. Patrick Drogui

#1 Eskandar Poorasgari*o and B. Örmeci

Carleton University

Relationship Between Water Fractions of Sludge During Anaerobic and Aerobic Digestion at Mesophilic and Thermophilic Temperatures

#2 Hassan Mahdi*o, F. Laqa, A. Hamze, and E. Elbeshbishy

Ryerson University

Co-Digestion of Primary Sludge and Waste Activated Sludge for Methane Production

#3 Ahmed Albahnasawi**, H. Agir, F. Cicerali, N. Ozdogan, E. Gurbulak, M. Eyvaz, Y. Mogheir, and E. Yuksel

Gebze Technical University, Turkey

Nitrate Removal from Extracted Groundwater by Nanofiltration: Performance and Co-Existing Effects

#4 Ahmed Albahnasawi, Havva Ağır*0, F. Cicerali, N. Ozdogan, E. Gurbulak, M. Eyvaz, and E. Yuksel

Gebze Technical University, Turkey

Biological Removal of Aromatic Amines: Effect of Physical-Chemical Properties

#5 Amr Ismail**, F. Kakar, E. Elbeshbishy, and G. Nakhla

Western University

Combined Thermal Hydrolysis Pretreatment and Co-Digestion of Thickened Waste Activated Sludge and Food Waste

#6 Heloisa Ehalt Macedo***, Bernhard Lehner, Jim Nicell, Usman Khan, Eili Klein, and Günther Grill

McGill University

Application of a Large-Scale High-Resolution Contaminant Fate Model to Assess the Fate of Contaminants in Canadian Surface Waters

#7 Lindsay J. Hounjet*, Stanislav R. Stoyanov, Joseph Monaghan, Larissa C. Richards, Gregory W. Vandergrift, Chris G. Gill, and Erik T. Krogh

Natural Resources Canada, CanmetENERGY Devon

Determining The Aqueous-Phase Concentrations of Petroleum Contaminants in A Range of Water Types by Direct Mass Spectrometric Analysis

#8 Umme Sharmeen Hyder*o and E. Elbeshbishy

Ryerson University

Combined Chemical Conditioning Anaerobically Digested Sludge for Improvement of Dewatering

	#9 Mitra Ebrahimi Gardeshi*0, Ali Khosravanipour, and Patrick Drogui		
	Institut national de la recherche scientifique (INRS)		
	Treatment of Runoff Water from De-Icing Salt and Environmental Aspects in Northern Countries		
	#10 Nadia Khan*o, Zahra A. Tabasi, Jiabin Liu, Elaheh Vaziri, Helen Zhang, Yuming Zhao, and Tahir Husain Memorial University Feasibility Study of Treating Decanted Oily-Water by Activated Carbons for Offshore Oil Spill Cleanup		
	#11 Milad Fakhari* ^o , Jasmin Raymond, and Richard Martel Institut national de la recherche scientifique (INRS) Assessment of Groundwater Contribution to River Water Temperature		
	#12 Hugo Alarie* O, Luc Gaudreau, Magali Houde, and Pedro A. Segura Université de Sherbrooke Baseline Levels of 20-Hydroxyecdysone in Daphnia Magna and Sub-Lethal Effects Following Chronic Exposure to the Pesticide Fenarimol		
	#13 Sana Basheer* and Xiuquan Wang University of Prince Edward Island Mapping the Land Cover and Land Use Changes for the City of Charlottetown		
11:50-12:50	Lunch Break		
12:50-14:05	Session A2 Water and Public Health Chair: Prof. Yeowon Kim	Session B2 Wastewater Treatment Chair: Prof. Abid Hussain	
12:50-13:15	Lena Carolin Bitter**, Gabriela Jimenez, Richard Kibbee, and Banu Örmeci Carleton University Wastewater Surveillance of SARS-Cov-2 at a University Campus in Canada	Elizabeth Shively*°, R. Boutin, S. Mortazavi, M. Bastien-Thibault, S. Alizadeh, M. Labrecque, and Y. Comeau Polytechnique Montréal Secondary Treatment of Concentrated Landfill Leachate by Planted Vertical Aerated Filters	

13:15-13:40	Emalie K. Hayes*, Crystal L. Sweeney, Lindsay E. Anderson, Jessica L. Bennett, Bofu Li, Genevieve B. Erjavec, Madison T. Gouthro*, Wendy H. Krkosek, Amina K. Stoddart, and Graham A. Gagnon Dalhousie University A Novel Passive Sampling Approach for SARS-Cov2 in Wastewater in a Canadian Province with Low Prevalence of COVID-19	Younès El Yagoubi*°, Pedro A. Segura, and Hubert Cabana Université de Sherbrooke Les laccases produites par le champignon à pourriture blanche <i>Trametes hirsuta</i> : Évaluation Et Caractérisation Des Principales Isoenzymes Responsables De La Bioremédiation Des Eaux Usées	
13:40-14:05	Amitesh Malhotra*° and Banu Örmeci Carleton University Monitoring of Cyanobacteria Using Derivative Spectrophotometry and Improvement of Method Detection Limit by Changing Pathlength	Sasan Fazeli* Concordia University The effect of moderate organic load on the oxygen uptake rate (OUR) and COD removal in a membrane electrochemical bio reactor (MEBR)	
14:05-14:15	Afternoon Break		
14:15-15:30	Session A3 Surface Water Quality and Protection Chair: Prof. Baiyu (Helen) Zhang	Session B3 Nutrient Removal Chair: Prof. Onita Basu	
14:15-14:40	7hilms Charke and Charling As		
	Zhikun Chen*° and Chunjiang An Concordia University Exploring the Relationship Between Land Use Pattern and Stream Water Quality: A Case Study in Southern Alberta, Canada	Shruti Tanga*°, C. Kinsley, A. Crolla, and B. Lebeau University of Ottawa Nitrogen Attenuation in a Pond – Wetland System Treating Cropping System Runoff and Drainage at Saint Isidore, Ontario, Canada	
14:40-15:05	Concordia University Exploring the Relationship Between Land Use Pattern and Stream Water	University of Ottawa Nitrogen Attenuation in a Pond – Wetland System Treating Cropping System Runoff	

Wednesday, November 3

Time zone: EST	Salle A / Room A		
8:20-8:30	Welcome and announcements		
8:30-9:20	Keynote Speaker: Prof. Pascale Champagne Director General, Energy Mining and Environment (EME), National Research Council (NRC)		
	Adjunct Professor, Department of Chemistry, Queen's University Scientific Director, Contaminants of Emerging Concern Research Excellence Network (CEC-REN)		
	Keynote speech: Photosynthetically-Enhanced Eco-Engineered Treatment Systems		
9:20-9:30	Morning Break		
	Salle A / Room A Salle B / Room B		
9:30-10:45	Session A4 Climate Change Impact and Adaptation Chair: Prof. Xiuquan (Xander) Wang	Session B4 Sludge Treatment Chair: Prof. Chris Kinsley	
9:30-9:55	Prof. Yeowon Kim* and Nancy B. Grimm Carleton University Urban Flood Resilience: Lessons from Failures	Salomeh Chegini*° and E. Elbeshbishy Ryerson University Process Optimization of Combined Thermochemical Pre-Treatment of Thickened Waste Activated Sludge (TWAS) to Improve Methane Production	
9:55-10:20	Suad Kamla* o and Negin Ficzkowski McMaster University Exploring Oyster Reef Restoration for Sea Level Rise Protection in Maritime Coastal Region	Eskandar Poorasgari* o and Banu Örmeci Carleton University Relationship Between Variations of Ultraviolet-Visible Spectra and Soluble Chemical Oxygen Demand in Liquid Phase of Wastewater Sludge During Biological Digestion Under Mesophilic and Thermophilic Conditions	
10:20-10:45	Katie Sonier*° and Xiuquan (Xander) Wang University of Prince Edward Island Mapping The Past 50-Year Precipitation Patterns of Prince Edward Island	Frances Okoye*°, Farokhlaqa Kakar, and Elsayed Elbeshbishy Ryerson University Combined Pretreatment of Municipal Sludge with Free Nitrous Acid and Ultrasonication	

Salle A / Room A One-slide-three-minute Presentations – Part 2 Chair: Prof. Banu Örmeci

#1 Mégane Moreau*0, Pascal Lemoine, Pedro Ramirez, and Pedro Alejandro Segura

Université de Sherbrooke

Élimination Des Composés Pharmaceutiques Des Effluents Hospitaliers Grâce À L'oxydation En Voie Humide: Évaluation De La Toxicité

#2 Ryan Guild*o and Xiuquan (Xander) Wang

University of Prince Edward Island

Investigating Climate Change Impacts on Endangered Species – A Case Study for Piping Plovers in Prince Edward Island

#3 Farhan Aziz*o and Xiuquan (Xander) Wang

University of Prince Edward Island

Vulnerability of Existing Wastewater Infrastructure to Climate & Anthropogenic Changes

#4 Shraddha Chavan*0, Bhoomika Yadav, R.D. Tyagi, and Patrick Drogui

Institut national de la recherche scientifique (INRS)

Isolation, Identification and Characterisation of Thermophilic and Thermotolerant PHA Producing Bacteria Using Waste Feedstocks: An Insight into the Extremophiles

#5 Amitesh Malhotra*o and Banu Örmeci

Carleton University

Rapid Spectrophotometry-Based Detection and Monitoring of Cr (Vi) in Different Water Matrices Using Longer Pathlengths and Derivative Spectrophotometry

#6 Ariane E. Marais*0, Manuel J. Rodriguez, Roxane Lavoie, and Irène Abi-Zeid

Université Laval

A Multicriteria Risk Assessment Approach to Support Decision-Making for Urban Planning in a Drinking Water Supply Watershed

#7 Anusha Atmakuri**, Bhagyashree Tiwari, Bhoomika Yadav, Patrick Drogui, and R.D. Tyagi

Institut national de la recherche scientifique (INRS)

EPS Production Using Paper Mill Sludge with Crude Glycerol as Carbon Substrate

#8 Rafael Garduño, Myron Smith, Elena Baranova, and Chris Kinsley

University of Ottawa

Brewery Wastewater Bioremediation by Fungal Pre-Treatment and Dark Fermentation and Simultaneous Hydrogen Production

	 #9 Nicolas Nayrac***, Sonia Blais, Jean-Philippe Bellenger, and Pedro A. Segura Université de Sherbrooke Is It Possible to Identify the Polymer Type of Plastics Found in the Environment? A Case Study of Mesoplastics Found in Lake and River Beaches #10 Sameer Pokhrel***, P. Drogui, and R. Tyagi Institut national de la recherche scientifique (INRS) 		
	Recycling of Waste Streams Produced during the Chemical Extraction of Microbial Synthesized Bioplastics (Polyhydroxyalkanoates)		
	#11 Sushil Kumar***, Ali Khosravanipour Mostafazadeh, Bhagyashee Tiwari, Patrick Drogui, R D Tyagi Institut national de la recherche scientifique (INRS) Treatment of Commercial Laundry Wastewater Using Extracellular Polymer Substances (EPS)		
	#12 Fatima Ibsaine* , Lan Huong Tran, Lucie Coudert, Louis-Cesar Pasquier, and Jean-François Blais Institut national de la recherche scientifique (INRS) Évaluation Comparative De La Capacité De Sorption De Zéolites Produites À Partir D'aluminosilicates Issus De L'extraction Du Lithium Par Différentes Voies		
	#13 Yifu Chen* ^o , Bing Chen, Min Yang, Xiaying Xin, Qiao Kang, Xudong Ye, and Baiyu Zhang Memorial University An Integrated Framework of Convolutional Neural Networks for Classifying Oil-Mixed Microplastics		
11:50-12:50	Lunch Break		
12:50-14:05	Session A5 Industrial Wastewater Treatment Chair: Prof. Kripa Singh	Session B5 Resource Recovery Chair: Prof. Peter Vanrolleghem	
12:50-13:15	Mahdieh Khajvand*°, Ali Khosravanipour Mostafazadeh, Patrick Drogui, My Ali El Khakani, Rajeshwar Dayal Tyagi, and Emmanuel Brien Institut national de la recherche scientifique (INRS) Treatment and Reuse of Commercial Laundry Wastewater by Adsorption	Bhoomika Yadav*°, R.D. Tyagi, and Patrick Drogui Institut national de la recherche scientifique (INRS) Concomitant Production of Value-Added Products with Polyhydroxyalkanoate (PHA) Synthesis Using Wastes: A Circular Bioeconomy Approach	
13:15-13:40	Niloufar Nekouei Marnani*°, Onita Basu, and F. Handan Tezel Carleton University Enhanced Removal of Cationic Dyes Utilizing Graphene Oxide in Comparison to Granular Activated Carbon and Zeolite Nay	Gyana Prakash Bhoi*° and Kripa S. Singh University of New Brunswick Phosphorus Recovery from Anaerobic Bioreactor Effluent Using a Batch Monopolar Electrocoagulation System	

13:40-14:05 14:05-14:15	Leandri Dekker*°, Seteno Ntwampe, Frans Waanders, and Ruveix Van Coller North West University in South Africa Kinetic Modelling, Isotherm Determination and pH Effects on the Adsorption of Selected Heavy Metals Prevalent in Mine Drainage onto Clinoptilolite Aftern	Miriam Saba*°, F. Kakar, and E. Elbeshbishy Ryerson University The Effect of Chemical, Thermal, and Mechanical Pretreatment of TWAS On Biomethane Recovery When Co-Digested with Food Waste oon Break
14:15-15:30	Session A6 Oil Separation and Treatment Chair: Prof. Bing Chen	Session B6 Wastewater Treatment Optimization Chair: Prof. Shoeleh Shams
14:15-14:40	Bo Liu, Bing Chen, Jingjing Ling, Guihua Dong* °, Ethan J. Matchinski, Fei Wu, and Baiyu Zhang Memorial University Evaluation of Gravity Settling on Crude Oil-Water Emulsion Separation	David Kovacs*°, Zhong Li, Brian W. Baetz, Youngseck Hong, and Huihuang Ding McMaster University Predicting Membrane Fouling in a Municipal Wastewater Treatment Plant with a Random Forest Model
14:40-15:05	Parisa Keyvan Hosseini**, Mahsa Keyvan Hosseini, Anisha Bhattacharyya, and Lei Liu Dalhousie University Response Surface Methodology (RSM) Application in The Optimization of Organoclay Adsorption from Oily Wastewater	Reilly Pickard**, Sydney B. Lowe, Lindsay Anderson, Amina Stoddart, and Graham Gagnon Dalhousie University Development of an Interactive Dashboard Application to Aid in the Optimization of Chemically Enhanced Wastewater Treatment to Meet WSER
15:05-15:30	Fei Wu*°, Jingjing Ling, Baiyu Zhang, Bo Liu, Yuming Zhao, and Bing Chen Memorial University Chemical Demulsifiers Assisted Gravity Separation for Rapid Mechanical Recovery During Marine Oil Spill Responses	Majid Gholami Shirkoohi*°, Rajeshwar Tyagi, Peter Vanrolleghem, and Patrick Drogui Institut national de la recherche scientifique (INRS) Removal of Caffeine from Water by Electrochemical Oxidation Process: A Comparative Study Between Response Surface Methodology (RSM) and Adaptive Neuro-Fuzzy Inference System (ANFIS)
15:30-15:45	Closing and Award Ceremony	
	Salle A	/ Room A