

**RT<sup>22</sup>  
ESE**

**6<sup>th</sup> INTERNATIONAL CONFERENCE OF  
RECENT TRENDS IN ENVIRONMENTAL  
SCIENCE AND ENGINEERING (RTESE'22)**

**IC<sup>22</sup>  
CSTE**

**7<sup>th</sup> INTERNATIONAL CONFERENCE ON  
CIVIL, STRUCTURAL AND TRANSPORTATION  
ENGINEERING (ICCSTE'22)**



**JUNE 05-07, 2022 | Niagara Falls, CANADA**

**Dr. Mehrab Mehrvar**  
Ryerson University

**Dr. Khaled Sennah**  
Ryerson University

**Dr. Zhi Chen**  
Concordia University

**CONFERENCE CHAIR, RTESE'22**

**CONFERENCE CHAIR, ICCSTE'22**

**CONFERENCE CO-CHAIR, RTESE'22**

SUNDAY, JUNE 05		3:00 PM	
		to 5:00 PM Registrations & Networking	
MONDAY, JUNE 06		TUESDAY, JUNE 07	
7:30 AM	Registration		KEYNOTE SESSION
8:30 AM	Official Opening	8:30 AM	KEYNOTE LECTURE 5: DR. CHUNJIANG AN, CONCORDIA UNIVERSITY, CANADA PAGE 12 - NIAGARA WEST
	KEYNOTE SESSION		
8:45 AM	KEYNOTE LECTURE 1: Dr. Hesham El Naggar, Western University, Canada PAGE 1 - NIAGARA WEST	09:15 AM	KEYNOTE LECTURE 6: DR. VAN THANH VAN NGUYEN, MCGILL UNIVERSITY, CANADA PAGE 12 - NIAGARA WEST
09:30 AM	KEYNOTE LECTURE 2: Dr. Liping Fu, University of Waterloo, Canada PAGE 2 - NIAGARA WEST	10:00 AM	KEYNOTE LECTURE 7: DR. HANY EL NAGGAR , DALHOUSIE UNIVERSITY, CANADA PAGE 13 - NIAGARA WEST
10:15 AM	Coffee Break		
	KEYNOTE SESSION	10:45 AM	Coffee Break
10:35 AM	KEYNOTE LECTURE 3: Dr. Alemdar Bayraktar, Karadeniz Technical University, Turkey PAGE 3 - NIAGARA WEST		MORNING PARALLEL SESSIONS
	MORNING PARALLEL SESSIONS	11:05 AM	EARTHQUAKE AND STRUCTURAL ENGINEERING I PAGE 14 - NIAGARA WEST
11:20 AM	Concrete Technology PAGE 4 - NIAGARA WEST	11:05 AM	BUILDING MATERIALS II PAGE 15 - PROMENADE SUIT
11:20 AM	Environmental Protection I PAGE 5 - PROMENADE SUIT	12:35 PM	Lunch- NIAGARA EAST
12:35 PM	Group Photo		KEYNOTE SESSION
12:40 PM	Lunch - NIAGARA EAST	01:35 PM	KEYNOTE LECTURE 8: Dr. Raul Guerrero Torres, University of Cartagena, Colombia PAGE 16 - NIAGARA WEST
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01:40 PM	KEYNOTE LECTURE 4: Dr. Jan Oleszkiewicz, University of Manitoba, Canada PAGE 6 - NIAGARA WEST	02:20 PM	ENVIRONMENTAL PROTECTION II PAGE 17 - NIAGARA WEST
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02:25 PM	GREEN BUILDING MATERIALS AND TECHNOLOGY PAGE 7 - NIAGARA WEST	03:20 PM	Coffee Break
02:25 PM	AIR AND SOIL POLLUTION AND TREATMENT I PAGE 8 - PROMENADE SUIT		AFTERNOON PARALLEL SESSIONS II
03:25 PM	Coffee Break	03:55 PM	DESTRUCTION ENGINEERING AND CIVIL ENGINEERING- PAGE 19 - NIAGARA WEST
	AFTERNOON PARALLEL SESSIONS II	03:40 PM	WATER AND WASTEWATER MANAGEMENT AND TREATMENT PAGE 19-21 - PROMENADE SUIT
04:00 PM	NANOTECHNOLOGY AND CIVIL ENGINEERIN PAGE 9 - NIAGARA WEST		AFTERNOON SESSION III
04:00 PM	AIR AND SOIL POLLUTION AND TREATMENT II PAGE 10 - PROMENADE SUIT	4:45 PM	BRIDGE AND ROAD ENGINEERING PAGE 21 - NIAGARA WEST
	AFTERNOON SESSION III		POSTER SESSION
5:00 PM	BUILDING MATERIALS I PAGE 11 - NIAGARA WEST	10:45 AM	POSTER SESSION PAGE 22 - NIAGARA WEST
		08:00 PM	BANQUET DINNER PAGE 22 - NIAGARA EAST

# **6<sup>TH</sup> INTERNATIONAL CONFERENCE OF RECENT TRENDS IN ENVIRONMENTAL SCIENCE AND ENGINEERING (RTESE'22) & 4<sup>TH</sup> INTERNATIONAL CONFERENCE ON CIVIL, STRUCTURAL AND TRANSPORTATION ENGINEERING (ICCSTE'22)**

**JUNE 05 - 07, 2022 | NIAGARA FALLS, CANADA**

The Organizing and Scientific Committees would like to welcome you to the 6<sup>th</sup> International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22) and the 7<sup>th</sup> International Conference on Civil, Structural and Transportation Engineering (ICCSTE'22).

These International Conferences (RTESE'22 and ICCSTE'22) aim to become the leading international annual events in the fields related to environmental science and engineering, and in the fields of civil, structural and transportation engineering. These Conferences will provide excellent opportunities for scientists, researchers, and industrial specialists to present their research achievements and to develop new collaborations and partnerships with experts in the fields.

The conference is organized in Niagara Falls, Ontario, which is a Canadian city at the famous waterfalls of the same name, linked with the U.S. by the Rainbow Bridge, and we hope you will have time to enjoy the ambience and hospitality of this city.

We thank you for your participation and contribution to the 6<sup>th</sup> International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22) & the 7<sup>th</sup> International Conference on Civil, Structural and Transportation Engineering (ICCSTE'22).

We wish you a very successful and enjoyable experience.

***Dr. Mehrab Mehrvar  
Ryerson University, Canada  
Conference Chair  
RTESE'22***

***Dr. Khaled Sennah  
Ryerson University, Canada  
Conference Chair  
ICCSTE'22***

***Dr. Zhi Chen  
Concordia University, Canada  
Conference Co-Chair  
RTESE'22***

## **6<sup>th</sup> International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22)**

The Organizing Committee of the 6<sup>th</sup> International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

*Dr. Christopher Y H Chao, The Hong Kong Polytechnic University, Hong Kong*

*Dr. Paul Christodoulides, Cyprus University of Technology, Cyprus*

*Dr. Dimitris Damigos, National Technical Univ. of Athens, Greece*

*Dr. Wayne T. Davis, University of Tennessee, USA*

*Dr. Haoran Duan, The University of Queensland, Australia*

*Dr. Fredrik Gröndahl, Royal Institute of Technology, Sweden*

*Dr. Mehdi Kargar, Ryerson University, Canada*

*Dr. Younggy Kim, McMaster university, Canada*

*Dr. Phoebe Koundouri, Athens University of Economics and Business, Greece*

*Dr. Jianbing Li, University of Northern British Columbia, Canada*

*Dr. Chavalit Ratanatamskul, Chulalongkorn University, Thailand*

*Dr. Qiuyan Yuan, University of Manitoba, Canada*

## **7<sup>th</sup> International Conference on Civil, Structural and Transportation Engineering (ICCSTE'22)**

The Organizing Committee of the 7<sup>th</sup> International Conference on Civil, Structural and Transportation Engineering (ICCSTE'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

*Dr. Francis Au, University of Hong Kong, Hong Kong*

*Dr. Bruno Briseghella, Fuzhou University, China*

*Dr. João Paulo Correia Rodrigues, University of Coimbra, Portugal*

*Dr. Saïd Easa, Ryerson University, Canada*

*Dr. Massimo Fragiaco, University of L'Aquila, Italy*

*Dr. Johann Facciorusso, University of Florence, Italy*

*Dr. Rajeshwar Goodary, Université des Mascareignes, Mauritius*

*Dr. Jasmin Jelovica, University of British Columbia, Canada*

*Dr. Nizar Lajnef, Michigan State University, USA*

*Dr. Hosein Naderpour, Semnan University, Iran*

*Dr. Elżbieta Macioszek, Silesian University of Technology, Poland*

*Dr. Iraj H.P. Mamaghani, University of North Dakota, USA*

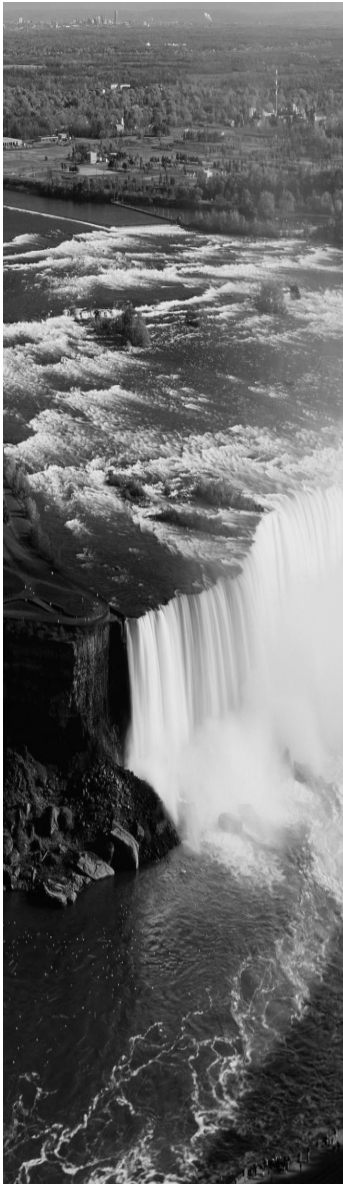
*Dr. Ayman M. OKEIL, Louisiana State University, USA*

*Dr. Luigi Di Sarno, University of Liverpool, UK*

*Dr. Mohamed Shahin, Curtin University, Australia*

*Dr. Yongze Song, Curtin University, Australia*

*Dr. Maged A. Youssef, University of Western Ontario, Canada*



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Dr. Hesham El Naggar,  
Western University, Canada

**Advancing Transportation Safety and Sustainability Using Big Data and Machine Learning** Page 2

Dr. Liping Fu,  
University of Waterloo, Canada

**In-Service Structural Condition Assessment of Cable-Stayed Bridges Using Strain Monitoring Data under Environmental Effects** Page 3

Dr. Alemdar Bayraktar,  
Karadeniz Technical University, Turkey

## MORNING PARALLEL SESSIONS

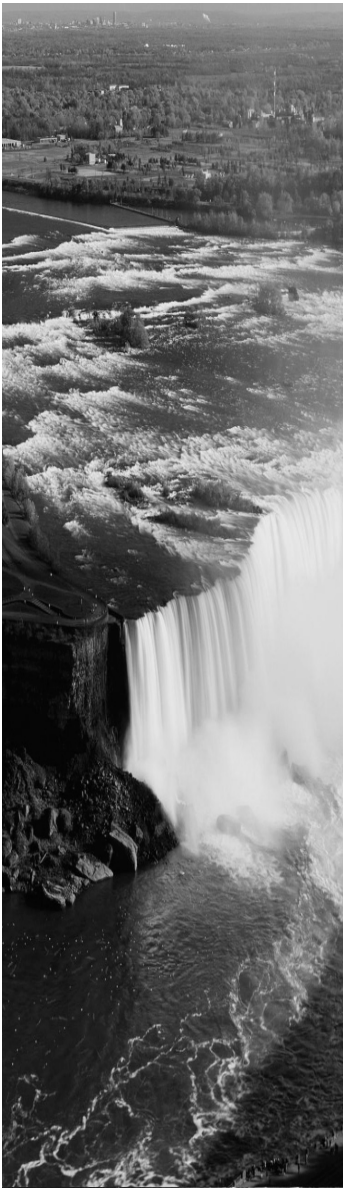
**Concrete Technology** Page 4

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## KEYNOTE SESSION

**Recent Trends in Wastewater Treatment and Resulting Research Needs** Page 6

Dr. Jan Oleszkiewicz,  
University of Manitoba, Canada



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TUESDAY, JUNE 07, 2022

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### Shoreline Washing Agents for Oil Spill Response

Dr. Chunjiang An,  
Concordia University, Canada

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### Linking Climate Change to Environmental Impact and Adaptation Studies: Recent Advances and Shortcomings in Modeling of Extreme Hydrologic Processes

Dr. Van Thanh Van Nguyen,  
McGill University, Canada

Page 12

### Soil-Structure Interaction Modeling of Integral Abutment Bridges

Dr. Hany El Naggar ,  
Dalhousie University, Canada

Page 13

## MORNING PARALLEL SESSIONS

### Earthquake and Structural Engineering I

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7:30 AM - 8:30 AM

**Registration - Niagara West**

8:30 AM - 8:45 AM

Niagara West

**Official Opening***Dr. Mehrab Mehrvar,**Ryerson University, Canada, RTESE'22, Chair**Dr. Khaled Sennah**Ryerson University, Canada, ICCSTE'22, Chair*

8:45 AM - 9:30 AM

Niagara West

**Keynote Lecture****SESSION CHAIR:** Dr. Khaled Sennah, Ryerson University, Canada**Numerical Investigation of the Imposed Earth Pressures on Three-Sided Reinforced Concrete Culverts Supported on Non-Yielding Foundation Soil***Dr. Hesham El Naggar,**Western University, Canada*

Dr. El Naggar is a Distinguished University Professor of Western University, Canada. He is Editor-In-Chief of Soil Dynamics and Earthquake Engineering and past Associate Editor of the Canadian Geotechnical Journal. He published more than 500 technical papers/book chapters on foundations, soil-structure interaction and geotechnical earthquake engineering; and consulted on major projects worldwide. Dr. El Naggar attracted more than \$20M of research funding and graduated 100 PhD and MEng students. He received numerous awards including: Geosynthetics, Stermac, Meyerhof, Canadian Geotechnical Colloquium Speaker, Western University Distinguished Professorship, Faculty Scholar Award, Outstanding Teaching, and Research Excellence Awards as well as the 2015 Ontario Professional Engineers Medal for Engineering Research & Development. He is an elected Fellow of Canadian Academy of Engineers, Engineering Institute of Canada and the American Society for Civil Engineers.

9:30 AM - 10:15 AM

Niagara West

Keynote Lecture

SESSION CHAIR: Dr. Khaled Sennah, Ryerson University, Canada



Advancing Transportation Safety and Sustainability Using Big Data and Machine Learning

Dr. Liping Fu,  
University of Waterloo, Canada

Dr. Liping Fu is a Professor in the Department of Civil and Environmental Engineering and Director of the Innovative Transportation System Solutions (iTSS) Lab at the University of Waterloo. He is a Fellow of Canadian Society for Civil Engineering and the past Chair of Transportation of Division of CSCE. Dr. Fu received Transportation Association of Canada (TAC)’s Academic Merit Award (2011) sponsored by Transport Canada for his long-term contribution to the advancement of the academic field and to the development of tomorrow’s transportation leaders. His was also the recipient of Engineering Research Excellence Award (2021) and Excellence in Graduate Supervision (2017). Dr. Fu’s research interest specifically focuses on evaluation and optimisation of large, complex traffic and transportation service systems where uncertainty and dynamics play a major role, and on the development of decision support tools for use in managing these systems. He has a long track record of research contributions to the areas of intelligent transportation systems, public transit, road safety, and winter road maintenance. Dr. Fu holds several international patent and software copyrights. Currently, Dr. Fu is leading a number of projects funded by NSERC, Transport Canada, Ministry of Transportation Ontario, City of Toronto, Region of Waterloo, Go Transit, and many industrial partners. He has served on numerous technical committees of various professional organizations, including Transportation Research Board’s Committee, Editorial

10:15 AM - 10:35 AM    COFFEE BREAK

10:35 AM - 11:20 AM

Niagara West

## Keynote Lecture

SESSION CHAIR: Dr. Khaled Sennah, Ryerson University, Canada



### In-Service Structural Condition Assessment of Cable-Stayed Bridges Using Strain Monitoring Data under Environmental Effects

*Dr. Alemdar Bayraktar,  
Karadeniz Technical University, Turkey*

Dr. Bayraktar received his Ph.D. in Structural Engineering from Karadeniz Technical University in Turkey in 1995 and has been serving as a professor since 2003. His research interests are Structural Engineering, Earthquake Engineering, and Structural Health Monitoring. He has 172 international journal papers and over 300 other publications, national and international research and application projects, journal editorial board and conference scientific committee members, and invited speakers. He has successfully supervised many MSc and Ph.D. theses. Dr. Bayraktar was selected as the most productive scientist between 2007-2011 in Karadeniz Technical University by Elsevier. He was awarded the Science Award in 2012 by the Association of Dam Safety in Turkey, Paper Award in 2009 by Roads Turkish National Committee, and Faculty High-Performance Awards in 2009, 2010, 2011, 2012, 2014. He is ranked among the top 1.4% of scientists in Civil Engineering in accordance with the Global Database produced by Stanford University (Top 2% scientists-2020 and 2021). Between 2004-2007 and 2007-2013, he was served as Head of the Department of Civil Engineering and Dean of Engineering Faculty at Karadeniz Technical University, respectively.

## MORNING PARALLEL SESSION - Niagara West (ICCSTE)

11:20 AM - 12:35 PM  
Niagara West

### Concrete Technology

**SESSION CHAIR:** Dr. Khaled Sennah, Ryerson University, Canada  
& Dr. Ahmed Farouk Deifalla, Future University in Egypt, Egypt

ICCSTE 209

**Assessing the Performance of RAP Based Precast Concrete Paver Block Mixes Exposed To Continuous and Intermittent Water Curing Regimes**

11:20 - 11:35

*Sumit Nandi, Indian Institute of Technology Roorkee, India*

*Authors:* Sumit Nandi, G.D.R.N. Ransinchung

ICCSTE 217

**Efficacy of Polymeric Coatings to Protect Concrete from Physical Salt Attack**

11:35 - 11:50

*Moustafa Abuzeid, University of Manitoba, Canada*

*Authors:* M. A. Abuzeid, M. R. Sakr, M. T. Bassuoni

ICCSTE 225

**Effect of Corrosion and Transverse Reinforcement on Flexural Response of 3D Finite Element Reinforced Concrete Beams**

11:50 - 12:05

*Safdar Naveed Amini, Indian Institute of Technology Ropar, India*

*Authors:* Safdar Naveed Amini , Aditya Singh Rajput

ICCSTE 122

**Shear Strengthening of Concrete Deep Beams with Geopolymer-Based Fabric-Reinforced Matrix Composites**

12:05 - 12:20

*Tamer El-Maaddawy, United Arab Emirates University, UAE*

*Authors:* Nour Khir Allah, Tamer El-Maaddawy, Hilal El-Hassan

ICCSTE 164

**Development of High Strength Geopolymer Concrete Using Silica Fume-Based Activating Solution**

12:20 - 12:35

*Samir H. Alameri, University Putra Malaysia, Malaysia*

*Authors:* Samir H. Alameri, Mohd Saleh Jaafar

## MORNING PARALLEL SESSION - Promenade Suit (RTESE)

**Environmental Protection I**11:20 PM - 12:35 PM  
Promenade Suit**SESSION CHAIR:** Dr. Mohammad Hany Yassin, The Australian University, Kuwait & Dr. Goodary Rajeshwar, Université des Mascareignes, Mauritius**RTESE 190** **Impact of a low-income informal settlement in a headwater area at high-risk of erosion in Brazil**

1:20 - 11:35

*Maria Thereza Fonseca de Souza, Federal University of Minas Gerais, Brazil**Authors:* Maria Thereza Fonseca, Renan Lima, Samuel L. L. Silva, Hugo Luiz M. de Paula, Jonatas Ferreira da Cruz, Arthur Antão, Juni Cordeiro, Luiz Alberto I. Saenz, Maria Rita Scotti**RTESE 203** **Assessment of Coastal Sensitivity to Oil Spill Based on Ecosystem Services Valuation**

11:35 - 11:50

*Qi Feng, Concordia University, Canada**Author:* Qi Feng**RTESE 175** **Contributions to Keep the Atmosphere Balanced: Unsuitable-Reductions of HC and CO Emissions from Mobile-Sources, Using COBMA, Impact Atmospheric Balance.**

11:50 - 12:05

*Raul Guerrero Torres, University of Cartagena, Colombia**Authors:* Raúl Guerrero Torres, Mehrab Mehrvar**RTESE 204** **Assessment of the End-of-Life Alternatives for Post-Consumer Waste Asphalt Shingle**

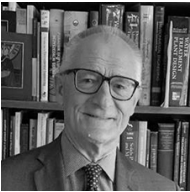
12:05 - 12:20

*Zhikun Chen, Concordia University, Canada**Authors:* Zhikun Chen, Chunjiang An, Xuelin Tian**RTESE 140** **Water Pollution and Its Impact on the Environment**

12:20 - 12:35

*Raymond Anyasi, University of South Africa, South Africa**Authors:* Joyce Onyenaturuchi Anyasi Raymond, Raymond Anyasi, Michael Ikpefua, Stephen Chidi Okafor

12:35 PM - 12:40 PM	GROUP PHOTO
12:40 PM - 01:40 PM	LUNCH BREAK
01:40 PM - 02:25 PM	<b>Keynote Lecture</b> <b>SESSION CHAIR:</b> Dr. Mehrab Mehrvar, Ryerson University, Canada



**Recent Trends in Wastewater Treatment and Resulting Research Needs**

*Dr. Jan Oleszkiewicz,  
University of Manitoba, Canad*

Dr Jan A. Oleszkiewicz is a Distinguished Professor Emeritus in Environmental Engineering at the University of Manitoba and President of JAAO Environmental Engineering Ltd. His expertise is in advanced municipal wastewater treatment and biosolids processing, specializing in nutrient removal and recovery and anaerobic processes for wastewater and sludge. He has advised over forty municipalities on a variety of wastewater treatment plans with flows ranging from 2 MLD to 1,000 MLD, in Canada, USA, Australia and Europe. He has continuous hands-on experience with the conversion to nutrient removal of the three wastewater treatment plants in Winnipeg MB. He has inspected over one hundred wastewater treatment plants around the world and conducted wastewater operator training for over 600 operators. He has published over 580 journal papers and conference proceedings and has 8 patents. He is a Fellow of Canadian Academy of Engineering, Fellow of CSCE and Fellow of Water Environment Federation. He is a Fellow of International Water Association (IWA) and member of Management Committee of IWA Specialist Groups: SG Nutrient Removal & Recovery, and SG Design, Operation & Economics of Large Wastewater Treatment Plants. He is Vice-President of the Canadian Association on Water Quality. He is Professional Engineer (PEng), Board Certified Environmental Engineer (USA) and Chartered Engineer (UK).

## AFTERNOON PARALLEL SESSION I - Niagara West (ICCSTE)

02:25 PM - 03:45 PM  
Niagara West

## Green Building Materials and Technology

**SESSION CHAIR:** Dr. Mehrab Mehrvar, Ryerson University, Canada & Dr. Tamer El-Maaddawy, UAE University, UAE

ICCSTE 131

### Effect of PET Plastic Cut Pieces' Aspect Ratio on Fresh and Mechanical Properties of Cement Mortar

02:25 - 02:40

*Sifatullah Bahij, University of Strasbourg, France*

**Authors:** Sifatullah Bahij, Safiullah Omary, Francoise Feugeas, Amanullah Faqiri

ICCSTE 207

### Influence of Blend Ratio on Compressive Strength of Soda Ash Activated Fly Ash and Copper Slag Pastes

02:40 - 02:55

*Ibukunoluwa Olubusola Erunkulu, Botswana International University of Science and Technology, Botswana*

**Authors:** I.O. Erunkulu, G. Malumbela, and O.P. Oladijo

ICCSTE 134

### The Natural Flow of Stress in Shell Structures

02:55 - 03:10

*Mitchell Gohnert, University of the Witwatersrand, South Africa*

**Author:** Mitchell Gohnert

ICCSTE 186

### Effect of Rock Dust on the Geotechnical Properties of Dark Magnesium Clay

03:10 - 03:25

*Goodary Rajeshwar, Université des Mascareignes, Mauritius*

**Authors:** Goodary Rajeshwar, Aujayeb Anoop, Sudoollah Aqiil, Sowambur Harshini, Yeshvin Goodary

ICCSTE 203

### Data Driven Appraisal for One-way and Two-way Shear Design of Lightweight Concrete and FRP-reinforced Concrete Elements

03:25 - 03:40

*Ahmed Farouk Deifalla, Future University, Egypt*

**Author:** Ahmed Farouk Deifalla

ICCSTE 216

### Feasibility of Bulk Utilization of Industrial Wastes to Replace Granular Layers in the Flexible Pavements

03:40 - 03:45

*Mayuresh Bakhare, Indian Institute of Technology, India*

**Author:** M. D. Bakare, R. R. Pai, S. Patel, J. T. Shahu



## AFTERNOON PARALLEL SESSION I - Promenade Suit (RTESE)

### Air and Soil Pollution and Treatment I

02:25 PM - 03:40 PM

Promenade Suit

**SESSION CHAIR:** DR. Goodary Rajeshwar, Université des Mascareignes, Mauritius & Dr. Mohammad Hany Yassin, The Australian University, Kuwait

RTESE 113

02:25 - 02:40

**Enhanced Phytoremediation of Petroleum Hydrocarbon-Contaminated Soil by Chromolaena Odorata Containing bacteria-Endophyte**

*Raymond Oriebe Anyasi, University of South Africa, South Africa*

*Authors:* Raymond Oriebe Anyasi, Harrison Ifeanyichukwu Atagana, Atagana Atagana, Joyce Onyenaturuchi Anyasi Raymond

RTESE 192

02:40 - 02:55

**Copper Slag Valorisation: Recovery of Cobalt by Sulfurization and Flotation**

*Willie Nheta, University of Johannesburg , South Africa*

*Authors:* Sipho Ngema, Willie Nheta, Michel Wa Kalenga

RTESE 139

02:55 - 03:10

**Characterisation of PAH-degrading endophytes isolated from plants growing around a sludge dam**

*Raymond Oriebe Anyasi, University of South Africa, South Africa*

*Authors:* Raymond Oriebe Anyasi, Harrison Ifeanyichukwu Atagana, Joyce Onyenaaturuchi Anyasi Raymond

RTESE 171

03:10 - 03:25

**Conversion of NO on Cerium Dioxide – Computational Modeling**

*Georgi Vayssilov, University of Sofia, Bulgaria*

*Authors:* Georgi Vayssilov, Hristiyan Aleksandrov, Petko Petkov

RTESE 174

03:25 - 03:40

**Efficient Green Method For The Synthesis Of 3,4-Disubstituted Coumarin Derivatives**

*Rositca Nikolova, Sofia University “St. Kliment Ohridski”, Bulgaria-*

*Authors:* Rositca Nikolova, Ana Koleva, Nevena Petkova

3:25 PM - 04:00 PM

COFFEE BREAK

AFTERNOON PARALLEL SESSION II - Niagara West (ICCSTE)

04:00 PM - 05:00 PM

Niagara West

Nanotechnology and Civil Engineering

**SESSION CHAIR:** Dr. Ahmed Farouk Deifalla, Future University in Egypt, Egypt & Dr. Tamer El-Maaddawy, UAE University, UAE

ICCSTE 156

4:00 - 04:15

**Pull-out of Basalt Fibre Pellets from Cementitious Composites**

*Riham Elhadary, University of Manitoba, Canada*

*Authors:* R. Elhadary and M. T. Bassuoni

ICCSTE 157

04:15 - 04:30

**Bond Strength of Nano-Modified Concrete under Freezing Temperature using Hybrid Protection**

*Mohamed Bassuoni, University of Manitoba, Canada*

*Authors:* A. M. Yasien, M. T. Bassuoni

ICCSTE 160

04:30 - 04:45

**Nano-Modified Cementitious Composites Reinforced with Basalt Fiber Pellets for Repair/Overlay applications**

*Ahmed M. H. I. Azzam, University of Manitoba and Ain Shams University, Canada*

*Authors:* Ahmed Azzam, Mohamed T. Bassuoni, Ahmed Shalaby

ICCSTE 224

04:45 - 05:00

**Enhancing the Durability Properties of Soft Clay Using Nano-Modified Cementitious Additives**

*Abdalla Eissa, University of Manitoba, Canada*

*Authors:* A. Eissa, M. T. Bassuoni, A. Ghazy, and M. Alfaro

AFTERNOON PARALLEL SESSION II - Promenade Suit (RTESE)

04:00 PM - 05:00 PM

Promenade Suit

Air and Soil Pollution and Treatment II

**SESSION CHAIR:** Dr. Shamsoon Fareed, NED University of Engineering & Technology, Pakistan & Dr. Mohammad Hany Yassin, The Australian University, Kuwait

RTESE 206

4:00 - 04:15

Dispersion of Particulate Matter From Oil Spill Response in the Arctic Region

*Zheng Wang, Concordia University, Canada*

*Authors:* Zheng Wang, Chunjiang An, Qi Feng

RTESE 205

04:15 - 04:30

Change of NO2 emissions from Canadian thermal power plants

*Xuelin Tian, Concordia Univeristy, Canada*

*Authors:* Xuelin Tian, Chunjiang An, Zhikun Chen

RTESE 131

04:30 - 04:45

Optimization, Characterization and Implementation of Immobilized Cladophora Sp Alga Biosorbents of Mercury from Aqueous Solutions

*Ewa Cukrowska, University of the Witwatersrand, South Africa*

*Authors:* Ewa M. Cukrowska, Joy G. Mokone, Hlanganani Tutu, Luke Chimuka

RTESE 220

04:45 - 05:00

Kinetic And Hydrodynamic Study Of Horizontal Subsurface Flow Constructed Wetlands Under Tropical Conditions

*Ximena María Vargas-Ramírez, Universidad del Atlántico, Colombia-*

*Authors:* Eduardo Escobar-Alvareza, Ximena María Vargas-Ramírez, Aracelly Caselles-Osorioa and Henry Casierra-Martínez

## AFTERNOON SESSION III - Niagara West (ICCSTE)

05:00 PM - 05:45 PM

Niagara West

**Building Materials I**

**SESSION CHAIR:** DR. Goodary Rajeshwar, Université des Mascareignes, Mauritius & Dr. Willie Nheta, UNIVERSITY OF JOHANNESBURG, South Africa & Dr. Ewa Cukrowska, Wits University, South Africa

ICCSTE 235

5:00 - 05:15

**Comparison Of Mechanical Properties Of Clayey Soil Stabilized With GGBS And Flyash Using Geopolymerisation Process**

*Shashi Kant Sharma, Dr B R Ambedkar National Institute of Technology Jalandhar, India*

*Authors:* Shashi Kant Sharma, Neeraj Kumar

ICCSTE 234

05:15 - 05:30

**Effects of Varying Roof Slope and Wind Direction on Single and Multi-Span Mono-Slope Canopy Roof**

*Neelam Rani, Dr. B R Ambedkar National Institute of Technology, India*

*Authors:* Neelam Rani, Ajay Pratap

ICCSTE 233

05:30 - 05:45

**Influence of Coal Bottom Ash and Copper Slag on Permeation of Fly Ash Based Geopolymer Concrete**

*Navdeep Singh, Dr B R Ambedkar National Institute of Technology, India*

*Authors:* Navdeep Singh, Nitin Ankur, MD Marghoobul Haque, Akshit Gupta

Niagara West  
8:30 AM - 9:15 AM

## Keynote Lecture

SESSION CHAIR: Dr. Khaled Sennah, Ryerson University, Canada



### Shoreline Washing Agents for Oil Spill Response

*Dr. Chunjiang An,  
Concordia University, Canada*

Dr. Chunjiang An is an Assistant Professor in the Department of Building, Civil, and Environmental Engineering at Concordia University, and Concordia University Research Chair in Spill Response and Remediation. His research interests include a broad range of topics related to pollution control, risk assessment and systems analysis. Dr. An is a licensed Professional Engineer, associate editor and editorial board member of eight international journals, and the guest editor for seven special issues in some international journals. Dr. An has published over 120 peer-reviewed journal articles. Dr. An's interdisciplinary activities have been supported by some research grants from Natural Sciences and Engineering Research Council of Canada, Fisheries and Oceans Canada, Environment and Climate Change Canada, etc.

Niagara West  
09:15 AM - 10:00 AM

## Keynote Lecture

SESSION CHAIR: Dr. Khaled Sennah, Ryerson University, Canada



### Linking Climate Change to Environmental Impact and Adaptation Studies: Recent Advances and Shortcomings in Modeling of Extreme Hydrologic Processes

*Dr. Van Thanh Van Nguyen,  
McGill University, Canada*

Dr. Nguyen is Brace Endowed Chair Professor of Civil Engineering at McGill University, Canada. He has been Chair of Civil Engineering Department, Director of Brace Centre for Water Resources Management, and Associate Director of Global Environmental and Climate Change Centre at McGill. His research contributions over 40 years have been in the areas of climate change impact and adaptation and sustainable water management. He has served in several national/international expert committees to develop some of the most influential technical guidelines in engineering practice in Canada and in the world (e.g., technical guides by the Canadian Dam Safety Association and Canadian Standards Association; and "Guide to Hydrological Practices" by the World Meteorological Organization).

Niagara West  
10:00 AM - 10:45 AM

## Keynote Lecture

SESSION CHAIR: Dr. Khaled Sennah, Ryerson University, Canada

### Soil-Structure Interaction Modelling of Integral Abutment Bridges

*Dr. Hany E Naggar,  
Dalhousie University, Canada*



Dr. Hany El Naggar, Ph.D., P.Eng., is a Professor of GeoStructural/Geo-technical Engineering at Dalhousie University with more than 25 years of experience in civil construction, geotechnical and structural engineering and research in Canada and overseas. He has participated in several geotechnical and structural investigations and is experienced in the analysis and design of foundations and soil-structure interaction of buried infrastructure. Dr. El Naggar and his research team have investigated the SSI effects around buried infrastructure and explored innovative uses of tire derived aggregate (TDA) as a buffer zone to create stress arching and reduce demand on rigid pipes and culverts. They also proposed an earth pressure reduction system using a geogrid reinforced platform bridging system to reduce stresses on buried utilities and studied the effects of high-rise buildings on pre-existing tunnels. Likewise, they conducted several slope stability assessments for high embankments and dams and developed a new sand-coated glass fibre reinforced polymer (GFRP) pile with an enhanced friction performance. Dr. El Naggar's research findings have been reported in more than 170 technical publications covering both experimental and numerical work in the fields of SSI, resilient buried infrastructure, and concrete pipes. His research work on the seismic performance of corrugated metal culverts led to changing the seismic provisions of the new version of the Canadian Highway Bridge Design Code (2019) to include rigorous dynamic analysis for flexible buried structures in high seismicity zones. Besides, his work on the modelling of rigid pipes is featured in the CHBDC (2019) as an example of the best practice in modelling buried concrete structures.

10:45 AM - 11:05 AM COFFEE BREAK

## MORNING PARALLEL SESSION - Niagara West (ICCSTE)

11:05 AM - 12:35 PM

**Earthquake and Structural Engineering I**

**SESSION CHAIR:** Dr. Khaled Sennah, Ryerson University, Canada  
& Dr. Abdelgadir Abbas, Wood Canada Ltd, Canada

ICCSTE 182

**Experimental Study Of The Effect Of Tensile Strain On The Cracking Of Ultra Highly-Reinforced R/C Components**

11:05 - 11:20

*Theodoros Chrysanidis, Aristotle University of Thessaloniki, Greece**Authors:* Theodoros Chrysanidis, Denise-Penelope N. Kontoni

ICCSTE 210

**Composite Cold-Formed Steel Rubberised Concrete Building Framed Systems**

11:20 - 11:35

*Dieudonne Iraguha, Özyeğin University, Turkey**Authors:* Dieudonne Iraguha, Derya Deniz, Alireza Bagheri Sabbagh, Shahabeddin Torabian, Naeimeh Jafarifar

ICCSTE 158

**Detecting Cracks in Isotropic Plates Using Contact Acoustic Nonlinearity**

11:35 - 11:50

*Sayed Mohamad Soleimani, Australian University, Kuwait**Authors:* Reza Soleimanpour, Sayed Mohamad Soleimani

ICCSTE 214

**Structure Health Monitoring Of Concrete Structures Using Magnetic Flux Leakage**

11:50 - 12:05

*Yihan Zhang, Durham University, UK**Authors:* Yihan Zhang, Qing Wang, Songling Huang

ICCSTE 228

**Long Span Steel Structures: Structural Typology Optimization and Enhancement- The Conceptual Design of an Aircraft Hangar**

12:05 - 12:20

*Mohammad Khalil, Polytechnic University of Bari, Italy**Author:* Mohammad Khalil

ICCSTE 192

**Evaluation of Pre-tensioned Prestressed Concrete Beam Behavior by Finite Element Analysis Using ATENA 3D**

12:20 - 12:35

*Zaher Alkurdi, Budapest University of Technology and Economics, Hungary**Author:* Zaher Alkurdi

## MORNING PARALLEL SESSION - Promenade Suit (ICCSTE)

**Building Materials II**

11:05 AM - 12:35 PM

**SESSION CHAIR:** Dr. Willie Nheta, UNIVERSITY OF JOHANNESBURG, South Africa & Dr. Ewa Cukrowska, Wits University, South Africa

ICCSTE 218

**Behavior and Design of Circular Concrete-Filled Double Steel Tubular Slender Columns under Axial Loading**

11:05 - 11:20

*Mizan Ahmed, Curtin University, Australia*

**Authors:** Junchang Ci, Mizan Ahmed, Qing Quan Liang, Shicai Chen, Wensu Chen, Khaled Sennah, Ahmed Hamoda

ICCSTE 221

**Numerical Analysis Of Circular Concrete-Filled Stainless Steel Tubular Short Columns Under Axial Loading**

11:20 - 11:35

*Mizan Ahmed, Curtin University, Australia*

**Authors:** Mizan Ahmed, Soheil Gohari, Khaled Sennah, Wensu Chen

ICCSTE 188

**Experimental Study on the Thermal Characterization of PTF Concrete**

11:35 - 11:50

*Mohammad Hany Yassin, The Australian University, Kuwait*

**Authors:** Mohammad Hany Yassin, Zainab Al Hjjaj , Rana Ezzedin. Lakys

ICCSTE 189

**Preliminary Study on the Effect of Adding Palm Tree Fronds to Concrete**

11:50 - 12:05

*Mohammad Hany Yassin, The Australian University, Kuwait*

**Authors:** Rana Ezzdine Lakys, Mohammad Hany Yassin, Zein-Eddine Merouani

ICCSTE 154

**Reliability-Based Evaluation of Two-way Shear Design Reinforced Concrete Slabs with FRP Reinforcements**

12:05 - 12:20

*Ahmed Farouk Deifalla, Future University, Egypt*

**Authors:** Ahmed Farouk Deifalla, Niveen Badra



ICCSTE 177  
12:20 - 12:35

Dynamics Thermal Effect on Thermal Conductivity of  
EPS Insulation by Using Computational Modeling of Heat  
Transport

*Maatouk Khoukhi*  
*Author:* Maatouk Khoukhi

12:35 PM - 01:35 PM    **LUNCH BREAK**

Niagara West  
01:35 PM - 02:20 PM

**Keynote Lecture**

**SESSION CHAIR:** Dr. Khaled Sennah, Ryerson University, Canada



Suitable Abating of Global Air Pollution Controlling CO2  
Emissions from Mobile Sources by Magnetic Action

*Dr. Raul Guerrero Torres,*  
*University of Cartagena, Colombia*

Professor Raul Guerrero Torres is a Civil Engineer from the Civil Engineering program of Universidad de Cartagena (U of C) and Specialist in Physical Sciences from the Faculty of Sciences of Universidad Nacional de Colombia in Bogotá. His professional experience can be summarized in a considerable number of important Engineering works in the city of Cartagena de Indias, Colombia, as managing engineer or contractor, research activities such as corrosion and geoelectric prospecting, with professional engineering activity. He was the head of the Physics Central Department of U of C for eight years and a Full Professor of U of C: Teaching Physics in the the Faculty of Exact and Natural Sciences programs and the Faculty of Engineering programs; occupying administrative academic positions as, Head of the Graduate Center and External Relationships, Dean of the Faculty of Sciences and Engineering, Academic Vice-President and finally, five times, Acting President of U of C. He has been a representative of U of C in several cooperation agreements and U of C Liaison in the Cooperation Agreement between Ryerson University and U of C. He has been a member of several professional and academic associations. He has several international publications in the Academic field and internat

## AFTERNOON PARALLEL SESSION I - Niagara West (RTESE)

02:20 PM - 03:35 PM

**Environmental Protection II**

**SESSION CHAIR:** Dr. Goodary Rajeshwar, Université des Mascareignes, Mauritius

**RTESE 173 Carbon Dioxide Adsorbents on the Base of Fly Ash Zeolite X**

**02:20 - 02:35** *Yuri Kalvachev, Institute of Catalysis, Bulgarian Academy of Sciences, Bulgaria*

*Authors:* Yuri Kalvachev, Totka Todorova, Borislav Barbov

**RTESE 176 Contributions to Keep Atmosphere Balanced: Anthropogenic Climate-Change Comprehension from Atmosphere Balance and CO2 Emissions Pattern**

**02:35 - 02:50**

*Raul Guerrero Torres, University of Cartagena, Colombia*

*Authors:* Raul Guerrero Torres, Mehrab Mehrvar

**RTESE 177 Contributions to Keep the Atmosphere Balanced: Suitable-Reductions of HC and CO Emissions Controlling CO2 from Mobile Sources, Using COBMA**

**02:50 - 03:05**

*Raul Guerrero Torres, University of Cartagena, Colombia*

*Authors:* Raul Guerrero Torres, Mehrab Mehrvar

**RTESE 170 Pops in Groundwater: Exposure Profiles of Pahs and Ocps at an Agricultural Site of a North Indian Terai Region**

**03:05 - 03:20**

*Amit Masih, St. Andrew's College, India*

*Authors:* Amit Masih and J.K. Lal

**RTESE 217 Identification of Chemotaxis Parameters Using Microchannel For Bioremediation Applications**

**03:20 - 03:35**

*Marjan Khatami, Concordia University, Canada*

*Authors:* Marjan Khatami, Zhi Chen

## AFTERNOON PARALLEL SESSION I - Promenade Suit (ICCSTE)

**Earthquake and Structural Engineering II**

02:20 PM - 03:20 PM

**SESSION CHAIR:** Dr. Mohammad Hany Yassin, The Australian University, Kuwait & Dr. Ahmed Farouk Deifalla, Future University in Egypt, Egypt

ICCSTE 159

02:20 - 02:35

**Novel Dissipative Technologies for Earthquake Resistance of Structures with Tensegrity Structure and Super Elastic Characteristics***Narinder Singh, University of Salerno, Italy**Authors:* Narinder Singh, Ada Amendola

ICCSTE 162

02:35 - 02:50

**Semi-Active Control of Building Frames subjected to Earthquakes using Smart Tendons composed of Shape Memory Alloys***Alok Madan, Indian Institute of Technology, India**Authors:* Alok Madan, Vimal K. Gupta, Arvind K. Jain

ICCSTE 229

02:50 - 03:05

**Non-Linear Pushover Analysis of Tall Buildings with Post-Tensioned Slabs and Rigid Core Designed Under Peruvian Codes***Cristhian Eduardo Cruces, Peruvian University of Applied Sciences UPC, Peru**Authors:* Cristhian Cruces, Franco Lescano, Guillermo Huaco

ICCSTE 111

03:05 - 03:20

**Impedance of Vertically Oscillating Circular Rigid Grillage Foundation on Half-Space***Abdelgadir Abbas, Wood Canada Ltd, Canada**Authors:* Zeyad Elsherbiny, Abdelgadir Abbas, M. Hesham El Naggar

03:20 PM - 03:55 PM

**COFFEE BREAK**

AFTERNOON PARALLEL SESSION II - Niagara West (ICCSTE)		
<b>Destruction Engineering and Civil Engineering</b>		
03:55 PM - 04:45 PM	<b>SESSION CHAIR:</b> Dr. Sayed Mohamad Soleimani, Australian University, Kuwait	
ICCSTE 101	<b>Assessing the Use of By-Product Foundry Sand in Asphalt Mixtures</b>	
03:55 - 04:10	<i>Dina Kuttah, Swedish National Road and Transport Research Institute, Sweden</i> <i>Author:</i> Dina Kuttah	
ICCSTE 146	<b>Parametric Investigation on the Performance of RC Slabs Subjected to Accidental Impact Loadings</b>	
04:10 - 04:25	<i>Shamsoon Fareed, NED University of Engineering &amp; Technology, Pakistan</i> <i>Authors:</i> Shamsoon Fareed, Asad-ur-Rehman Khan	
ICCSTE 215	<b>Experimental Study of the Evolution of the Breach and the Discharge through the Breach Resulting from Piping due to Seepage at the Earth-Fill Dam Bottom</b>	
04:25 - 04:40	<i>Emre Dumlu, İzmir Institute of Technology, Turkey</i> <i>Authors:</i> Mehmet Sukru Guney, Emre Dumlu, Merve Okan1, Aslı Bor, Pelin Aklik, Gökmen Tayfur	
ICCSTE 211	<b>Laying Rigid Large Diameter Buried Pipelines: A Case Study Of Different Approaches</b>	
04:40 - 04:45	<i>Pranjal Mandhaniya, Research Scholar, IIT Delhi, India</i> <i>Authors:</i> Pranjal Mandhaniya, M.D. Bakare, and J.T. Shahu	
AFTERNOON PARALLEL SESSION II - Promenade Suit (RTESE & ICCSTE)		
<b>Water and Wastewater Management and Treatment</b>		
03:40 PM - 05:50 PM	<b>SESSION CHAIR:</b> Dr. Mohammad Hany Yassin, The Australian University, Kuwait & Dr. Ahmed Farouk Deifalla, Future University in Egypt, Egypt	
RTESE 191	<b>The Effect of Water Circulation on Bulk Flotation Performance of a Polymetallic Sulphide Ore</b>	
03:40 - 03:55	<i>Willie Nheta, University of Johannesburg, South Africa</i> <i>Authors:</i> Tintswalo B. Z. Baloyi, Willie Nheta	

RTESE 200 **The Impact of Frother Type on the Concentration of Coal by Flotation Process**

03:55 - 04:10

*Willie Nheta, University of Johannesburg, South Africa*

*Authors:* Tsumbo Nethamba, Willie Nheta

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RTESE 120 **Cyanobacteria And Their Phages Revealed Through Metagenomic Analysis In A Freshwater Lake**

04:10 - 04:25

*Shang Shen, Kyoto University, Japan*

*Authors:* Shang Shen, Kento Tominaga, Kenji Tsuchiya, Tomonari Matsuda, Takashi Yoshida, and Yoshihisa Shimizu

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ICCSTE 163 **Effect of River Improvement on Flow and Sedimentation in Shirakawa River, Japan**

04:25 - 04:30

*Ryuichi Hirakawa, Maebashi Institute of Technology, Japan*

*Authors:* Ryuichi Hirakawa, Terunori Ohmoto, Xian Chen

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ICCSTE 173 **A Fundamental Study on the Interaction between Driftwood and Free-surface Flow in an Open Channel**

04:30 - 04:45

*Ohmoto Terunori, Kumamoto University, Japan*

*Authors:* Ohmoto Terunori, Hirotaka Une

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ICCSTE 140 **Integral Regulation of Sedimentational Processes in Technoparks Waste Waters at Global Warming Conditions**

04:45 - 05:00

*Alexey Nazarenko, National Univercity Zaporizhzhya Politechnic, Ukraine*

*Authors:* Nazarenko Oleksiy; Nazarenko Iryna; Sunichuk Sergiy; Ischenko Olena; Kulik Mikhailo

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RTESE 207 **Improving Membranes Distillation For Desalination Technologies To The Environmental Impact Of Brine Discharge In Context Of Climate Change For The Caribbean Coastal Aquifers.**

05:00 - 05:15

*Jaime Arturo Lopez Neira, Universidad Nacional de Colombia, Colombia*

*Authors:* Jaime Arturo Lopez Neira, Mehrab Mehrvar, Andres Felipe Suarez Escobar, Edgar Quinones, Carmen Maria, Romero Izasa

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- RTESE 230 **Dynamic and Equilibrium Adsorption Studies on Treatment of Pharmaceutical Wastewater using Commercial Charcoal based Activated Carbon**  
05:15 - 05:30

*Mina Asheghmoalla, Ryerson University, Canada*

*Author: Mina Asheghmoalla*

- RTESE 231 **Modelling and Optimization Study on Biodegradability Enhancement of PVA-Contained Wastewater in a Continuous UV/H<sub>2</sub>O<sub>2</sub> Photoreactor**  
05:30 - 05:45

*Zahra Parsa, Ryerson University, Canada*

*Author: Zahra Parsa*

- RTESE 209 **Degradation of Tetracycline Degradation by a Mercury UV Lamp Coupled with an Ultrafine-Bubbles Ozone Gas Producer**  
05:45 - 05:50

*Chikang Wang, Yuanpei University of Medical Technology, Taiwan*

*Authors: Chikang Wang, Hui-Ni Chen, Huan-Wei Li*

### AFTERNOON SESSION III - Niagara West (ICCSTE)

04:45 PM - 06:15 PM

## Bridge and Road Engineering

**SESSION CHAIR:** Dr. Sayed Mohamad Soleimani, Australian University, Kuwait

- ICCSTE 213 **Detuning Effect of Multiple Tuned Mass Damper System in Vibration Control of Rail Bridge Girder**  
04:45 - 05:00

*Shubhang Jain, Indian Institute of Technology Palakkad, India*

*Authors: Shubhang Jain, Sanjukta Chakraborty*

- ICCSTE 237 **Experimental Investigations of Axially Loaded Square Concrete-filled Double Steel Tubular Slender Columns with inner Circular Tube**  
05:00 - 05:15

*Mizan Ahmed, Curtin University, Australia*

*Authors: Shicai Chen, Mizan Ahmed, Junchang Ci, Wensu Chen, Khaled Sennah*

ICCSTE 105	<b>CFRP Sheets for Retrofitting Prestressed Concrete Bridge Girders</b>
05:15 - 05:30	<i>Hardi Hussein, University of Koya, Iraq</i> <i>Authors:</i> Herish Hussein, Hardi Hussein
ICCSTE 152	<b>Analysis of Displacement Characteristics for a Road in a Fill Sope due to Execution Twin Tunnels: A Case Study</b>
05:30 - 05:45	<i>Lojain Suliman, Chongqing University, National Joint Engineering Research Center of Geohazards Prevention in the Reservoir Areas, China</i> <i>Authors:</i> Xinrong Liu, Lojain Suliman, Xiaohan Zhou, Ahmed abdelmageed
ICCSTE 117	<b>Inelastic Behavior of Thin-walled Circular Steel Tubular Columns Under Pushover and Cyclic Loading</b>
05:45 - 06:00	<i>Iraj H.P. Mamaghani, University of North Dakota, USA</i> <i>Authors:</i> Njiru Mwaura, Iraj H.P. Mamaghani
ICCSTE 118	<b>A Method for Track Buckling Prevention of Continuously Welded Rails</b>
06:00 - 06:15	<i>Iraj H.P. Mamaghani, University of North Dakota, USA</i> <i>Authors:</i> Iraj H.P. Mamaghani, Njiru Mwaura, Catherine Cruz, Anthony Kaiser, Matthew McNeil, Lucas Morrison
POSTER SESSION	
10:45 AM - 11:05 AM	<b>Poster Session</b>
ICCSTE 161	<b>A Study on Augmented Reality Remote Maintenance Support System for Ships and Offshore Structures</b>
10:45 - 11:05	<i>Young-Soo Han, Inha University, Korea</i> <i>Authors:</i> Young-Soo Han, Kyung Ho Lee, Yang Ouk Kim, Young Su Kim, Hyun Bin Yeo
RTESE 212	<b>Life Cycle Assessment of the Wood Pellet Supply Chain with a Consideration of Bioenergy for Remote Communities in Canada</b>
10:45 - 11:05	<i>Saghar Sadaghiani, Concordia University, Canada</i> <i>Authors:</i> Saghar Sadaghiani, Fereshteh Mafakheri, Zhi Chen
8:00 PM - 10:00 PM	<b>BANQUET DINNER - NIAGRA EAST</b>



# **The 7<sup>th</sup> International Conference of Recent Trends in Environmental Science and Engineering (RTESE'23)**

**&**

# **The 8<sup>th</sup> International Conference on Civil, Structural and Transportation Engineering (ICCSTE'23)**

**JUNE 04 - 06, 2023 | Canada**

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## NOTES

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