



## THURSDAY, MAY 29<sup>th</sup>

### CSCE MEETINGS

2:00PM – 3:30PM	Foundation Trustees Halifax (B)
4:00PM – 5:30PM	Foundation Advisory Board Halifax (B)
5:30PM – 7:00PM	Innovation and IT Technical Committee Acadia 'B'
5:30PM – 7:00PM	Construction Division Council Sable 'B'

### YOUNG PROFESSIONALS PROGRAM

9:00AM – 10:30AM	Career Panel Halifax 'C'
2:00PM – 3:30PM	Designing for Durability Halifax 'C'
5:00PM – 7:00PM	Dinner (RSVP Required) Salty's- 1869 Upper Water Street
7:30PM – 9:30PM	YP: Halifax Ghost Tour (RSVP Required) Meet at Town Clock (Corner of Charmichael and Brunswick)
9:30PM	YP: Pub Night Old Triangle 5136 Prince Street

### SOCIAL EVENTS AND MEALS

7:00AM – 9:00AM	Opening Ceremonies Breakfast Nova Scotia Ballroom
10:30AM – 11:00AM	Refreshment Break Second Floor Foyer
12:00PM – 2:00PM	Lunch Nova Scotia Ballroom
3:30PM – 4:00PM	Refreshment Break Second Floor Foyer
6:30PM – 11:30PM	Social Evening Pier 21

### SESSIONS/TOURS

8:00AM – 9:00AM	Plenary Session Nova Scotia Ballroom
10:00AM – 10:30AM	Technical Sessions
11:00AM – 12:00PM	Technical Sessions
2:00PM – 3:30PM	Technical Sessions
3:30PM – 6:00PM	Technical Tours Meet in Main Lobby
4:00PM – 5:00PM	NSERC Session Acadia 'A'

### Plenary Session Details

Conference Opening – Local Organizing Committee  
 Welcoming Address – Councillor Wayne Mason, HRM  
 Keynote Address: State of the Art Water Loss Control: A Practitioner's Testimony – Carl D. Yates, MASc, P.Eng., General Manager, Halifax Water

#### GENERAL

General Conference

#### ENVIRONMENTAL

13th International Environmental Specialty Conference

#### STRUCTURAL

4th International Structural Specialty Conference

#### TRANSPORTATION

10th International Transportation Specialty Conference

## Acadia A

### G01 HYDROTECHNICAL

Time: 9:10 AM - 10:30 AM

**A Review of the State-of-the-Art of Produced Water Fate/Transport Models**  
Haibo Niu, Dalhousie University (Canada) (3)

**Challenges in the Design of Stormwater Ponds: A SAGD Experience**  
Ali Roshanfekr (Canada) (75)

**A Laboratory Study of the Impact of Crest Length on the Characteristics of Downstream Submerged Hydraulic Jumps on Low-Head Dam Structures**  
Marta de los Dolores Lopez Egea, University of Ottawa (Canada) (100)

**Local Scour Development around Structures Caused by Supercritical Hydraulic Bores**  
Alexandra Lavictoire, University of Ottawa (Canada) (110)

### G09 SUSTAINABLE INFRASTRUCTURE

Time: 11:00 AM - 12:00 PM

**Multidisciplinary Decision Making for Sustainable Municipal Infrastructure**  
Salmon Arm Pilot Case Study  
Amy Vaillancourt, University of New Brunswick (Canada) (14)

Halifax Water Integrated Resource Plan  
**Valerie Williams, Halifax Water (Canada) (42)**

**Challenges and Obstacles for Small Municipalities Seeking to Reduce Illicit Stormwater Discharges**  
Thomas Korman, California Polytechnic State University, San Luis Obispo (United States) (47)

### G17 EMERGING TECHNOLOGIES AND INNOVATION

Time: 2:00 PM - 3:20 PM

**Light Weight Foam Concrete as MSE Backfill Material**  
Daniel Calatrava, Reinforced Earth Company Ltd. (Canada) (70)

**Automated Productivity Assessment of Loader-Trucks Earthmoving Operations**  
Magdy Ibrahim, Concordia University (Canada) (127)

**Moving Surface Resistivity into Field use for Concrete Quality Control**  
Michelle Nokken, Concordia University (Canada) (156)

## Acadia B

### G02 ENGINEERING MATERIALS

Time: 9:10 AM - 10:30 AM

**Self-Sealing Ability of Cracked Concrete- An Innovative Test Method for its Quantification**  
Rishi Gupta, University of Victoria (Canada) (1)

**Research on the Modulus of Elasticity of Concrete at Early Age by Impact Resonance Test**  
Jie Gao, Tongji University (China) (16)

**Effect of Microcracking and Type of Cementitious Materials on the Chloride Ion Permeability of Concrete**  
Mustafa Sahmaran (24)

### G10 HYDROTECHNICAL

Time: 11:00 AM - 12:00 PM

**Turbulent Bursting in Open Channel Flow with Seepage**  
Abdullah Faruque, Rochester Institute of Technology (United States) (143)

**Development of a Simple River Flow Quantity Index for Water Resources Management in Alberta**  
Zahidul Islam, Alberta Environment and Sustainable Resource Development (Canada) (169)

### G18 CONSTRUCTION ENGINEERING

Time: 2:00 PM - 3:20 PM

**Image-Based Comparison Tools and Techniques for Construction Projects**  
Sara Rankohi (Canada) (13)

**Adopting KM Tools in Construction Non-profit Volunteer Organisations (CONVOs)**  
Anna Perreira, University of New Brunswick (Canada) (15)

**Knowledge Enabled Tangible Capital Asset Reporting Using Asset Information Integrator System in Infrastructure Management**  
Thomas Froese, University of British Columbia (Canada) (17)

## Acadia C

### G03 ENGINEERING MECHANICS

Time: 9:10 AM - 10:30 AM

**Finite Element Study on Crack Width of Reinforced Concrete Walls**  
Hossein Matinmanesh, Ryerson University (Canada) (103)

**The Interaction of Normal Faults with Pipelines: Experimental Observation and Numerical Modeling**  
Pengpeng Ni, Billed to Dalhousie University (Canada) (108)

**Finite Element Mesh Optimization Using Local P-Refinement for Stress Analysis of Prismatic Tunnels in 3D**  
Attila Michael Zsaki, Concordia University (Canada) (111)

**Assessing the Design of Reinforced Concrete Pipes**  
Katrina MacDougall, Billed to Dalhousie University (Canada) (117)

### G11 CONSTRUCTION ENGINEERING

Time: 11:00 AM - 12:00 PM

**Evaluation of the STM Model for FRP-Reinforced Concrete Deep Beams by an Experimental Study**  
Fawzi Latosh, Concordia University (Canada) (9)

**Vibration Analysis in New York City Bedrock**  
Mahmoud Sepehrmanesh, AECOM (United States) (11)

**Large Rock Caverns Construction in Manhattan**  
Arman Farajollahi, AECOM (United States) (12)

### G19 ENGINEERING MATERIALS

Time: 2:00 PM - 3:20 PM

**An Accelerated Test for Physical Salt Attack on Concrete**  
Md. Mahbubur Rahman, University of Manitoba (Canada) (36)

**Nano-modified Mortar: A New Approach for Cold Weather Masonry Construction**  
Hooman Kazempour, University of Manitoba (Canada) (37)

**Properties of Bacteria-Induced Self-Healing Mortar**  
Amr Fathy (Egypt) (56)

## Halifax A

### S01-TA1: STRUCTURES - STEEL DESIGN AND ANALYSIS 1

Time: 9:10 AM - 10:30 AM

**Numerical Study on the Effect of Time-Dependent Material Properties on the Welding-induced Residual Stress and Distortion Fields of Aluminum Stiffened Plates**  
Vahid Farajkhah, Dalhousie University (Canada) (114)

**Distortional Stresses in Wide Flange Steel Sections**  
Payam Pezeshky, University of Ottawa (Canada) (140)

**Numerical Algorithm for Developing Upper Bound Plastic Interaction Relations for Steel Elliptical Hollow Sections**  
Farhood Nowzartash, Giffin Koerth Inc. (Canada) (5)

**Strength of cold-formed steel flexural members with edge stiffened slotted utility opening**  
Quzzafi Rehman, Ryerson University (Canada) (3)

### S02-TA2: STRUCTURES - STEEL DESIGN AND ANALYSIS 2

Time: 11:00 AM - 12:00 PM

**Bolted Angle Connections Subjected to Tension**  
Yanglin Gong, Lakehead University (Canada) (16)

**Rehabilitated Built-Up Hybrid Steel Compression Members**  
Morgan Herrell, Western University (Canada) (112)

**Blast Induced Roof Loads in Building Structures - Comparison with Empirical Formulations**  
Danesh Nourzadeh, Carleton University (Canada) (151)

### S07-TP1: STRUCTURES - CONCRETE 1

Time: 2:00 PM - 3:20 PM

**Strengthening of Axially Loaded Circular Concrete Columns Using Externally Bonded GFRP Lateral Confinement and Near Surface Mounted Technique**  
Ahmed Elsayed, Menoufia University (Egypt) (19)

**Experimental Study of Circular Concrete Columns Reinforced with FRP-Bars**  
Hamdy M. Mohamed, University of Sherbrooke (Canada) (159)

**Effect of Concrete Strength and Reinforcement Ratio on the Punching Shear Behaviour of GFRP-Reinforced Interior Slab-Column Connections**  
Ahmed Gouda, University of Manitoba (Canada) (64)



## Sable A

### E1 INNOVATIVE ENVIRONMENTAL TECHNOLOGIES

Time: 9:10 AM - 10:30 AM

#### Preparation and Characterization of Polymer/Carbon Nanotube (CNT) Composite Nanoparticles and Nanofibers Through Electrospinning

Md. Shahidul Islam, Concordia University (Canada) (5)

#### Surface Modification of Reverse Osmosis Membranes via Grafting Patterned Polymer Brushes

Saifur Rahaman, Building, Civil and Environmental Engineering Department, Concordia University (Canada) (7)

#### Sustainable Energy Recovery from Waste: A Waste Degradation Enhancement Approach

Patrick Hettiaratchi, University of Calgary (Canada) (18)

#### Eliminating Activated Sludge Blowers and Diffusers with a Rotating Aeration Wheel

Fraser Kent, H2O Innovation (Canada) (49)

### E2 ENVIRONMENTAL MODELING

Time: 11:00 AM - 12:00 PM

#### Environmental Modelling for Residential Health Effects from Mold and Dampness

Craig Hostland P. Eng. FEC, Healthy Homes IAQ (Canada) (12)

#### Dynamic Simulation of In-Storage-Psychrophilic- Anaerobic Digestion to Treat Swine Manure

Mahsa Madani Hosseini, Concordia University (Canada) (16)

#### Analysis of PCBs Fate and Transport Mechanism through Case Study of Transformer Oil Leakage in Montreal

Zunaira Asif, Concordia University (Canada) (43)

### E3 WATER DISTRIBUTION AND WASTEWATER COLLECTION

Time: 2:00 PM - 2:40 PM

#### Effect of High Chloride Concentrations on Chlorine Disinfection Efficacy in Distribution System

Masoumeh Sharafimasoooleh, Billed to Dalhousie University (Canada) (31)

#### Optimization of Orthophosphate Dose for the Control of Lead Release to Drinking Water

Benjamin Trueman, Billed to Dalhousie University (Canada) (32)

### E4 LANDFILLS AND SOLID WASTE MANAGEMENT

Time: 2:40 PM - 3:00 PM

#### Methane Biofilter Performance under Varying Climatic Conditions in Closed Landfills

Patrick Hettiaratchi, University of Calgary (Canada) (17)

## Sable B

### T08 TRANSPORTATION I

Time: 9:10 AM - 10:30 AM

#### Developing a Time-Space Model for Real-Time Queue Estimation based on the Deterministic Queuing Theory

Tony Qiu, University of Alberta (Canada) (30)

#### A Testing Protocol and Performance Evaluation of Mobile Traffic Data Collection Technologies in an Urban Context

Joshua Stipanovic, McGill University (Canada) (46)

### T16 TRANSPORTATION II

Time: 11:00 AM - 12:00 PM

#### Effect of Road Humps on Performance Measures and Characteristics of Traffic Stream

Hozayen Hozayen, Cairo University (Egypt) (26)

#### An Ordered Response Model for Examining Pedestrian Injury Severity in Halifax Regional Municipality (HRM)

Muhammad Habib, Dalhousie University (Canada) (52)

#### An Injury Severity Study of Bicycle-Motor Vehicle Crashes

Mubassira Khan, The University of Texas at Austin (United States) (32)

### T24 TRANSPORTATION III

Time: 2:00 PM - 3:20 PM

#### Transit Demand Forecasting Model Development for HRM

Mahbubur Rahman, Dalhousie University (Canada) (10)

#### Real Time Optimization of Passenger Collection for Commuter Rail Systems

Yao Yu, University of Texas at Austin (United States) (34)



## Sable C

### S03-TA1: BRIDGES 1

Time: 9:10 AM - 10:30 AM

#### Creating a Gateway to the Cape Breton Highlands through Innovative Design and Construction Methods

Robbie Fraser, Harbourside Engineering Consultants (Canada) (179)

#### Structural Analysis and Design of 3 Continuous Spans Semi-Integral Abutment Bridge with Skewed Abutment

Masrra Jajjawi, Structure and Foundation Engineering Inc. (Canada) (92)

#### Macdonald Suspension Bridge Deck Replacement: Engineering Challenges and Solutions

Keith Kirkwood, Buckland & Taylor (Canada) (97)

#### Development of Empirical Expressions for the Design Transverse Moment and Tensile Force in Bridge Cantilever Deck Slabs due to Horizontal Railing Loads

Hamidreza Khederzadeh, Ryerson University (Canada) (190)

### S04-TA2: STRUCTURES - BRIDGES 2

Time: 11:00 AM - 12:00 PM

#### MacKay Suspension Bridge Hanger Replacement and Main Cable Inspection

Ahsan Chowdhury, Halifax Harbour Bridges (Canada) (74)

#### Joint Movement Models for the A.L. MacDonald Suspension Bridge

Phil Vickers, Dalhousie University (Canada) (129)

#### Development of a Generic Connector System for Attaching Conventional Traffic Barrier to Orthotropic Steel Decks

Yannick Martin, Université Laval (Canada) (94)

### S08-TP1: STRUCTURES - STEEL 3

Time: 2:00 PM - 3:20 PM

#### Experimental and Parametric Study to Investigate the Flexural Capacity of Deteriorated Steel Girders

Hany Seif Eldin, Concordia University (Canada) (181)

#### Experimental Study on the Vibration Characteristics and Ultimate Strength of Cold-Formed Steel I-Shape Joists

Quzzafi Rehman, Ryerson University (Canada) (4)

#### Objective Deformational Measures for Characterizing Distortion in Wide Flange Steel Sections

Payam Pezeshky, University of Ottawa (Canada) (139)

#### Impact of Laminar Properties on Stress Intensity Factor and Laminar Stresses in Cracked Steel Plates Repaired with Carbon Fiber Reinforced Polymers

Syed Mobeen, University of Alberta (Canada) (127)



## Sable D

### S05-TA1: STRUCTURES - SEISMIC 1

Time: 9:10 AM - 10:30 AM

#### Seismic Performance of Eccentrically Braced Frames Designed According to Current Canadian Seismic Provisions

Anjan Bhowmick, Concordia University (Canada) (105)

#### Seismic Behaviour of Multi-Storey Buildings with Asymmetric Setback - the Effect of the Degree and Level f Setback

Jean-Sébastien Matte (Canada) (106)

#### Evaluation de la Vulnérabilité Sismique des Bâtiments de Maçonnerie de Pierre dans la Direction Hors-Plan: Application aux Quartiers du Vieux-Québec et du Vieux-Montréal

Guillaume Antunez, École de Technologie Supérieure de Montréal (Canada) (17)

#### Seismic Fragility Analysis of Masonry Infilled Reinforced Concrete Frame Buildings in Eastern Canada

Ahmad Abo El Ezz, École de Technologie Supérieure (Canada) (39)

