



ICCEFA
2022

ICESA
2022

(ICCEFA'22) & (ICESA'22) PROGRAM

October 24, 2022 - October 26, 2022| Virtual Conference

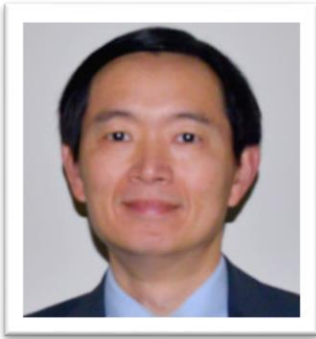
**OUR PROGRAM SCHEDULE IS BASED ON EASTERN STANDARD
TIME (EDT - OTTAWA TIME)**

October 24

October 25

October 26

ICCEFA'22 & ICESA'22 CHAIRS:



Dr. Zhi Chen

Concordia University, Canada
Conference Chair

[Website](#)



Dr. Charles Lee

The University of Newcastle, Singapore
Conference Chair

[Website](#)



Dr. Mehrab Mehrvar

Toronto Metropolitan University (formerly
Ryerson University), Canada
Conference Chair

[Website](#)

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OCTOBER 24

10:00 AM - 12:00 PM

Registrations

OCTOBER 25

7:30 AM - 8:30 AM	Registrations
8:30 AM - 8:45 AM	Official Opening
	Dr. Zhi Chen, Concordia University, Canada
8:45 AM - 09:35 AM	ICESA PLENARY LECTURE
	<u>Flexible Metal-Organic Frameworks (MOFs)/Porous Coordination Polymers (PCPs) with Fluorinated Anions</u> Dr. Shin-ichiro Noro, Hokkaido University, Japan
09:35 AM - 10:20 AM	ICCEFA KEYNOTE LECTURE
	<u>Computational Multiscale Modeling of Granular Media for Integrated Civil Engineering Analysis and Design</u> Dr. Jidong Zhao, The Hong Kong University of Science and Technology, Hong Kong
10:20 AM - 10:30 AM	Coffee Break

OCTOBER 25

10:30 AM - 11:20 PM

SESSION

Environmental Sustainability, Development
and Protection

11:20 AM - 12:00 PM

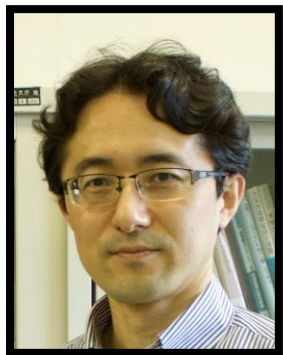
SESSION

Construction Management

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PLENARY LECTURE

OCTOBER 25 | 9:15 AM - 10:15 AM | SESSION CHAIR: DR. CHARLES LEE, THE UNIVERSITY OF NEWCASTLE, SINGAPORE



Title: Flexible Metal-Organic Frameworks (MOFs)/Porous Coordination Polymers (PCPs) with Fluorinated Anions

[Dr. Shin-ichiro Noro, Hokkaido University, Japan](#)

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2017–present: professor, Faculty of Environmental Earth Science, Hokkaido University 2010–2017: Associate professor, Research Institute for Electronic Science, Hokkaido University 2004–2010: Assistant professor, Research Institute for Electronic Science, Hokkaido University 2003–2004: Special Postdoctoral Researcher, RIKEN 2003: Ph.D., Kyoto University

ICCEFA'22 KEYNOTE LECTURE

OCTOBER 25 | 09:35 AM - 10:20 AM | SESSION CHAIR: DR. CHARLES LEE, THE UNIVERSITY OF NEWCASTLE, SINGAPORE



Title: Computational Multiscale Modeling of Granular Media for Integrated Civil Engineering Analysis and Design

[Dr. Jidong Zhao, The Hong Kong University of Science and Technology, Hong Kong](#)

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Dr. Jidong Zhao is Professor in Computational Geomechanics of Department of Civil and Environmental Engineering at HKUST and Chang Jiang Scholar Chair Professor of the Ministry of Education, China (2021-2024). He earned both his bachelor degree and Ph.D. from Tsinghua University, China. He serves as co-editor for Computers and Geotechnics (Elsevier), Editor for Granular Matter (Springer Nature), and Associate Editor for Journal of Engineering Mechanics (ASCE), and on editorial board for Acta Geotechnica (Springer Nature), International Journal for Numerical and Analytical Methods in Geomechanics (Wiley) and Science Progress (SAGE). Dr. Zhao has focused his research on developing advanced computational methodologies to capture and understand the multiscale, multiphysics nature of granular media relevant to their engineering and industrial performance in civil/geotechnical/mining/chemical engineering, energy extraction and carbon sequestration, pharmaceutical industry, and powder technology. He is the recipient of the “2018 Scott Sloan Best Paper Award” (Elsevier), “Top 5 Cited Articles Award for Granular Matter” (Springer Nature), and “University of Newcastle Research Fellowship” (2007, Australia). He has given more than 30 keynotes in various top conferences of his field, including the recent “State of the Art” Lecture at Geo-Congress 2022, Powders & Grains Conference 2021, Particles 2021, and DEM 8 (2019). He authored over 110 international journal papers, 120 conferences papers, 17 book chapters, and edited a book published by Springer.

SESSION

ENVIRONMENTAL SUSTAINABILITY, DEVELOPMENT AND PROTECTION

OCTOBER 25 | 10:30 AM - 11:20 PM | SESSION CHAIR: DR. MEHRAB MEHRVAR, TORONTO METROPOLITAN UNIVERSITY (FORMERLY RYERSON UNIVERSITY), CANADA

Title: Characteristics of Winds and Evaluation of Typhoon Wind Reduction by Pandanus Trees on Saint Martin's Island, Bangladesh

ICESA 137

Time: 10:30 AM - 10:45 AM

Presenter: Tomoko Minagawa, Kumamoto University, Japan

Authors: Shakila Kayum, Tomoko Minagawa

Title: A Feasibility Study Of a Net Zero Energy HDB House in Singapore

ICESA 139

Time: 10:45 AM - 11:00 AM

Presenter: Wen Da Tan, Newcastle Australia Institute of Higher Education, Australia

Authors: Wen Da Tan, Yit Yan Koh, Chiang Liang Kok

Title: Foresting The Urban Environment Through Living Walls Autonomously Maintained By Symbiotic Autonomous Systems

ICESA 112

Time: 11:00 AM - 11:15 PM

Presenter: Kok Chiang Liang, Newcastle Australia Institute of Higher Education, Australia

Authors: Kenichi Kato, Chiang Liang Kok, Yit Yan Koh, Liter Siek

Title: The Impact of Changes in Climate-friendly Behaviour, Climate Change Concern and Personal Responsibility on Heating/cooling Activities GHG Emissions in EU Households

ICESA 117

Time: 11:15 AM - 11:20 AM

Presenter: Miglė Jakučionytė-Skodienė, Vytautas Magnus University Agriculture Academy, Lithuania

Authors: Miglė Jakučionytė-Skodienė, Genovaitė Liobikienė

SESSION

CONSTRUCTION MANAGEMENT

OCTOBER 25 | 11:20 AM - 12:00 PM | SESSION CHAIR: DR. MEHRAB MEHRVAR, TORONTO METROPOLITAN UNIVERSITY (FORMERLY RYERSON UNIVERSITY), CANADA

Title: Regression Analysis to Determine the Minimum Time Value in the Cost-Plus-Time Bidding Method

ICCEFA 124

Time: 11:20 AM - 11:35 AM

Presenter: Ferdinan Nikson Liem, National Yunlin University of Science and Technology, Taiwan

Authors: Ferdinan Nikson Liem, Wei Tong Chen, Theresia Avila Bria

Title: Review of Toxicokinetics of Nanogold through in Vivo and in Vitro Studies

ICCEFA 127

Time: 11:35 AM - 11:40 AM

Presenter: Reza Jamalpour, Islamic Azad University Karaj Branch, Iran

Authors: Mohammad Hosein Asadi Yazdi, Reza Jamalpour, Parviz Aalipour

Title: Using a Novel Swampy Forest System as a Strategy to Meet Coal Mine Wastewater Discharge Compliance in Indonesia

ICCEFA 133

Time: 11:40 AM - 11:55 AM

Presenter: R. Rodríguez Díez, University of Oviedo, Spain

Authors: A. Suárez Argüelles, R. Rodríguez Díez

Title: Using a Novel Swampy Forest System as a Strategy to Meet Coal Mine Wastewater Discharge Compliance in Indonesia

ICCEFA 135

Time: 11:55 AM - 12:00 PM

Presenter: Meng-Ting Tsai, National Taiwan University of Science and Technology, Taiwan

Authors: Martin Binder, Chih-chien Wang, Yu-Peng Lu, Mahad Moussa Houssein, Jui-Te Lin, Chin Chu, Meng-Ting Tsai

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OCTOBER 26

9:00 AM - 9:50 AM

ICCEFA'22 KEYNOTE LECTURE

Information Science and Computing
Technologies for Civil Infrastructural
Engineering

Dr. Kincho H. Law, Stanford University, USA

9:50 AM - 10:35 AM

ICESA'22 KEYNOTE LECTURE

Multi-Omics Approach on the Ecotoxicological
Assessment of Microplastics

Dr. Bae Sung Woo, National University of
Singapore, Singapore

10:35 AM - 10:45 AM

Coffee Break

10:45 AM - 11:30 AM

ICCEFA'22 KEYNOTE LECTURE

Protection of Critical Building Infrastructure
against Blast Loads

Dr. Murat Saatcioglu, University of Ottawa,
Canada

11:30 AM - 11:55 AM

SESSION
Concrete Technology

11:55 AM - 12:30 PM

SESSION
Air and Water Pollution and Treatment

OCTOBER 26

12:30 PM - 01:00 PM	Lunch Break
01:00 PM - 01:20 PM	SESSION <u>Pollution and Health Issues</u>
01:20 PM - 01:50 PM	SESSION <u>New Technology, Methods and Techniques in Civil Engineering</u>

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KEYNOTE LECTURE

OCTOBER 26 | 9:00 AM - 9:50 AM | SESSION CHAIR: DR. NICHOLAS KIPROTICH CHERUIYOT, ,
CHENG SHIU UNIVERSITY, TAIWAN



Title: Information Science and Computing
Technologies for Civil Infrastructural Engineering
[Dr. Kincho H. Law, Stanford University, USA](#)

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Dr. Kincho H. Law is Professor of Civil and Environmental Engineering at Stanford University. He received his B.Sc. in Civil Engineering and B.A. in Mathematics from the University of Hawaii in 1976, and M.S. and Ph.D. in Civil Engineering from Carnegie Mellon University in 1979 and 1981, respectively. After serving as Assistant Professor at Rensselaer Polytechnic Institute from 1982 to 1988, he joined Stanford University in 1988. Prof. Law's research interests focus on computational and information science in engineering. His research has dealt with various aspects of high performance computing; sensing, monitoring and control of engineering systems; legal and engineering informatics; smart manufacturing; web services, cloud and Internet computing.

Prof. Law was the recipient of the ASCE Computing in Civil Engineering Award in 2011. He has received best paper awards from the American Society of Civil Engineers (ASCE), American Society of Mechanical Engineers (ASME), the Institute of Electrical and Electronics Engineers (IEEE) and Digital Government Society. Prof. Law was elected Distinguished Member of ASCE in 2017, Fellow of ASME in 2017, Life Member of ASCE in 2018, and Senior Member of IEEE in 2019.

KEYNOTE LECTURE

OCTOBER 26 | 9:50 AM - 10:35 AM | SESSION CHAIR: DR. NICHOLAS KIPROTICH CHERUIYOT,
, CHENG SHIU UNIVERSITY, TAIWAN



Title: Multi-Omics Approach on the Ecotoxicological Assessment of Microplastics
[Dr. Bae Sung Woo, National University of Singapore, Singapore](#)

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Dr. Sungwoo Bae is an assistant professor in the Department of Civil and Environmental Engineering at the National University of Singapore (NUS). Before joining t NUS, he was a postdoctoral researcher in the Department of Civil, Architectural, and Environmental Engineering at The University of Texas at Austin. Dr. Bae received his Ph.D. (Major: Environmental Engineering, Minor: Microbiology) from the University of California, Davis in 2010. Dr. Bae has studied the application of molecular biology in environmental science and gained skills in ecotoxicology through his research. His previous studies of ecotoxicogenomic and metabolomic analysis of zebrafish embryos exposed to triclosan have provided underlying information on triclosan's toxicity at the molecular level in the aquatic ecosystem. He has expertise in molecular biology and extensive research experiences in the application of molecular biological techniques (e.g., PCR, qPCR, RT-qPCR, Next-generation sequencing, and bioinformatics) to aquatic toxicology. Particularly, Dr. Bae is interested in the multi-omics approach, including metabolomics, transcriptomics, gut microbiomes, and its role in system biology to explore complex biological networks or systems and understand the dynamics of the genome, transcriptome, and metabolome in engineered and natural environments.

KEYNOTE LECTURE

OCTOBER 26 | 10:45 AM - 11:30 AM | SESSION CHAIR: DR. NICHOLAS KIPROTICH CHERUIYOT ,
CHENG SHIU UNIVERSITY, TAIWAN



Title: Protection of Critical Building Infrastructure
against Blast Loads

[Dr. Murat Saatcioglu, University of Ottawa,
Canada](#)

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Dr. Murat Saatcioglu is Distinguished University Professor in the Department of Civil Engineering of the University of Ottawa, Ottawa, Canada. He received his B.S. in Civil Engineering from the Middle East Technical University, Ankara Turkey, his MASc. in Structural Engineering from the University of Toronto, Toronto, Canada, and his Ph.D. in Structural Engineering from Northwestern University, Evanston, Ill., USA. He is a Fellow of the Canadian Academy of Engineers, Engineering Institute of Canada, American Concrete Institute (ACI), and the Canadian Society for Civil Engineering (CSCE). Dr. Saatcioglu's research interests include analysis, design, and retrofit of structures subjected to extreme loads, including those caused by earthquakes and bomb blasts. He has conducted extensive experimental and analytical research on earthquake and blast resistant structures, and contributed towards the development of codes and standards, nationally and internationally.

For more information please visit: <https://iccefa.com/program>

SESSION

CONCRETE TECHNOLOGY

OCTOBER 26 | 11:30 AM - 11:55 AM | SESSION CHAIR: DR. NICHOLAS KIPROTICH
CHERUIYOT, , CHENG SHIU UNIVERSITY, TAIWAN

Title: Analysis of Hydration Heat in Cement Pastes with Addition of Sodium Silicate Microcapsules by Isothermal Calorimetry

ICCEFA 139

Time: 11:30 AM - 11:45 AM

Presenter: Erica M. Magnago, Universidade Federal da Bahia, Brazil

Authors: Erica M. Magnago, Ana C. M. Mascarenhas, Jardel P. Gonçalves¹ e Elaine C. M. Cabral-Albuquerque

Title: Production of Biopolymeric Microcapsules containing Sodium Silicate for Self-Healing in Cementitious Materials

ICCEFA 138

Time: 11:45 AM - 11:55 AM

Presenter: Ana C. M. Mascarenhas, Universidade Federal da Bahia, Brazil

Authors: Ana C. M. Mascarenhas, Erica M. Magnago, Jardel P. Gonçalves¹ e Elaine C. M. Cabral-Albuquerque

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SESSION

AIR AND WATER POLLUTION AND TREATMENT

OCTOBER 26 | 11:55 AM - 12:30 PM | SESSION CHAIR: DR. BAE SUNG WOO, NATIONAL UNIVERSITY OF SINGAPORE, SINGAPORE

Title: Development of Air Filter by Porous Glass Filter Coated With Nano Titanium Dioxide

ICESA 127

Time: 11:55 AM - 12:10 PM

Presenter: Patcharamai Huajaipet, Chiang Mai University, Thailand

Authors: Patcharamai Huajaipet, Wan Wiriya

Title: UV/Persulfate and UV/VUV/Persulfate Methods for Removal Trimethoprim from Waters - Special Attention to the Effect of Matrix Components

ICESA 128

Time: 12:10 PM - 12:25 PM

Presenter: Tunde Alapi, University of Szeged, Hungary

Authors: Tünde Alapi, Luca Farkas, Adrienn Szirmai

Title: Investigation on the Concentrations of PM_{2.5} in Expressway Tunnels

ICESA 119

Time: 12:25 PM - 12:30 PM

Presenter: Hyejin Kang, Korea Expressway Corporation Research Institute, South Korea

Authors: Hyejin Kang

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SESSION

POLLUTION AND HEALTH ISSUES

OCTOBER 26 | 01:00 PM - 01:20 PM | SESSION CHAIR: DR. CHARLES LEE, THE UNIVERSITY OF NEWCASTLE, SINGAPORE

Title: Compound identified from the marine Sea Urchin (*Diadema savignyi*) as potential anti-cancer drug candidate against human colorectal cancer by targeting nuclear transport receptor (Importin-11)

ICESA 141

Time: 01:00 PM - 01:15 PM

Presenter: Mohammed O. Aljahdali, King Abdulaziz University, KSA

Authors: *Mohammed O. Aljahdali, Muhamad Habib Rahman Molla*

Title: Atmospheric Total Suspended Particle-bound Organophosphate Esters from an Industrial Area

ICESA 135

Time: 01:15 PM - 01:20 PM

Presenter: Nicholas Cheruiyot, Cheng Shiu University, Taiwan

Authors: Nicholas Cheruiyot, Guo-Ping Chang-Chien, Chien-Er Huang, Chien-Yuan Yu

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SESSION

NEW TECHNOLOGY, METHODS AND TECHNIQUES IN CIVIL ENGINEERING

OCTOBER 26 | 01:20 AM - 01:50 PM | SESSION CHAIR: DR. JIDONG ZHAO, THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY, HONG KONG

Title: A Machine Learning-Based Geometry Optimization for an Elevated Beachfront House under Typhoon Wind Conditions using Numerical Simulations

ICCEFA 115

Time: 01:20 PM - 01:35 PM

Presenter: Jamie Townsend, Southwest Jiaotong University, China

Authors: Jamie F. Townsend, Jinsheng Wang, Tom-Robin Teschner, Guoji Xu

Title: Use of UAV to Facilitate Manual Inspection of Underground Support Works

ICCEFA 134

Time: 01:35 PM - 01:50 PM

Presenter: I-Tung Yang

Authors: I-Tung Yang, Chien-Hsuan Lin

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