



ICCEFA
2022

3rd INTERNATIONAL CONFERENCE ON CIVIL ENGINEERING FUNDAMENTALS AND APPLICATIONS (ICCEFA'22)

October 24 - 26, 2022 | Seoul, South Korea-Virtual Conference

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WELCOME MESSAGE FROM THE CONFERENCE CHAIR

On behalf of the International Academy of Science, Engineering and Technology (International ASET Inc.), the organizing committee would like to welcome you to The 3rd International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'22).

The goal of ICCEFA'22 is to provide an online space for scholars from all over the world to present advances in the relevant fields and to foster a virtual environment conducive to exchanging ideas and information. This conference will also provide an ideal environment to develop new collaborations and meet experts on the fundamentals, applications, and products of the mentioned fields.

In the third meeting of this conference, one Plenary Speaker and two keynote speakers will share their expertise with the aim of exposing participants to a wide spectrum of applications, and to foster crosspollination of ideas and develop new research interests. In addition, approximately 8 papers will be presented from professors, students, and researchers across the world.

We thank you for your participation and contribution to The 3rd International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'22). We wish you a very successful and enjoyable experience.

Dr. Zhi Chen
Concordia University, Canada
Conference Chair
ICCEFA'22

Dr. Charles Lee
The University of Newcastle, Singapore
Conference Chair
ICCEFA'22

Dr. Mehrab Mehrvar
Toronto Metropolitan University (formerly Ryerson University), Canada
Conference Chair
ICCEFA'22

ABOUT ICCEFA'22

The 3rd International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'22) aims to become the leading virtual conference in fields related to Civil Engineering Fundamentals and Applications. The goal of ICCEFA'22 is to gather scholars from all over the world to present advances in the relevant fields and to foster an environment conducive to exchanging ideas and information. This conference will also provide an ideal environment to develop new collaborations and meet experts on the fundamentals, applications, and products of the mentioned fields.

ICCEFA is an international conference will be held yearly. This conference focus on all aspects Civil Engineering Fundamentals and Applications. ICCEFA Will be held this year as a virtual conference

ICCEFA is an acronym for International Conference, on Civil Engineering Fundamentals and Applications.

- The proceedings are published in Ottawa, Canada.
- All papers were peer-reviewed
- The conference proceedings is published under an ISSN and ISBN number
- Each paper is assigned a unique DOI number by [Crossref](#)
- The conference proceedings is indexed by [Google Scholar](#)
- The proceedings is permanently archived in [Portico](#) (one of the largest community-supported digital archives in the world)



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SCIENTIFIC COMMITTEE

We would like to thank the following for accepting to act as a member of the Scientific Committee for the ICCEFA'22 Conference:



Dr. Zhi Chen

Concordia University,
Canada
Conference Chair



Dr. Charles Lee

The University of
Newcastle, Singapore
Conference Chair



Dr. Mehrab Mehrvar

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

Scientific Committee Members

- Dr. Ahmed Fahmy, AECOM, Canada
- Dr. Iman Hajirasouliha, University of Sheffield, UK
- Dr. M.D. Mathew, Saintgits College of Engineering, India
- Dr. Saber Moradi, Ryerson University, Canada
- Dr. Kasinathan Muthukkumaran, National Institute of Technology, India
- Dr. Grzegorz Sierpiński, Silesian University of Technology, Poland
- Dr. Ali Topal, Dokuz Eylul University, Turkey
- Dr. Maged A. Youssef, Western University, Canada
- Dr. Haohui Xin, Xi'an Jiaotong University, China

PLENARY & KEYNOTE SPEAKERS

The Plenary and keynote information for the 3rd International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'22) is as follows:



Plenary Speaker

[Dr. Kincho H. Law](#)

Stanford University, USA



Keynote Speaker

[Dr. Murat Saatcioglu](#)

University of Ottawa, Canada



Keynote Speaker

[Dr. Jidong Zhao](#)

The Hong Kong University of Science and Technology, Hong Kong

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PLENARY LECTURE



Title: Information Science and Computing
Technologies for Civil Infrastructural Engineering
**Dr. Kincho H. Law, Concordia University,
Canada**

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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



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.

Professor Saatcioglu is the recipient of numerous national and international research and teaching awards and medals, including the 2015 A.B. Sanderson Award of CSCE for outstanding contributions to the development and practice of structural engineering in Canada; the 2014 Whitman Wright Award of CSCE for significant contributions to the advancement of innovation and information technology in civil engineering; the 2001, 2004 and 2015 Casimir Gzowski Medals for best papers in the Canadian Journal of Civil Engineering; the 2004 Wason Medal of ACI, the 2000 Raymond C. Reese Research Prize of the American Society of Civil Engineers, the 2005 CCEDS-1 Award for Best Paper from McMaster University; and the 1989 Charles Whitney Medal of ACI. In 2021 he was listed among the World's Top 2% Scientists in all categories by Stanford University.

KEYNOTE LECTURE



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 a Chartered Engineer (CEng) in the UK and joined the School of Engineering at Cardiff University in July 2020. He obtained his PhD degree from University of Cambridge in 2014 working on MgO-bearing cementitious materials. After that he continued to work as a research associate in Cambridge on the technical and commercial development of magnesia-bearing binders for land remediation and energy infrastructure. In 2017, he joined University of Glasgow as an Assistant Professor in its Singapore campus. As an Editorial Board Member for the ICE-Environmental Geotechnics and guest editor for Environmental Pollution, he has reviewed for more than 30 international journals covering material science, geotechnical engineering and environmental engineering. He is the recipient of the Canadian Geotechnical Journal Fredlund Award in 2019 and serves as Scientific Committee Member in a number of international conferences. His research interests include: 1. Sustainable binders and reuse of waste materials; 2. Magnesia cements; 3. Alkali-activated cements; 4. Soil/water remediation.

LIST OF PAPERS

The Following Papers Were Presented At The 3rd International Conference On Civil Engineering Fundamentals And Applications (ICCEFA'22) :

Construction Management

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

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

Incidence of the Change of Cutters on the Costs of MTBM Pipe Jacking Excavation Method

Authors: A. Suárez Argüelles, R. Rodríguez Díez

Impact of Using Wood as Material for Building Renovation – Taking Research Building in NTUST as Example

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

LIST OF PAPERS

Concrete Technology

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

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

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

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

New Technology, Methods and Techniques in Civil Engineering

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

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

Use of UAV to Facilitate Manual Inspection of Underground Support Works

Authors: I-Tung Yang, Chien-Hsuan Lin

SPONSORS

International ASET Inc. would like to thank the following sponsors for their support of ICCEFA'22:



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ICCEFA'23

The 4th International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'23) will be held in December 04 - 06, 2023 | Dubai, United Arab Emirates.



4th International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'23)

December 04 - 06, 2023 | Dubai, United Arab Emirates.

<https://2023.iccefa.com>

For inquiries and to obtain further information on the congress, please visit the [website](https://2023.iccefa.com)

You can also email info@iccefa.com or call us at: +1-613-834-9999

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ETHICS & MALPRACTICE

At International ASET Inc., we take matters that relate to ethics in publishing very seriously. We believe that the peer-review publication process is a vital building block of academia, and its integrity must be maintained at all costs, which is why every article will be peer-reviewed by several experts in the field. Under peer-review, experts in the related fields are required to provide opinions and comments on the improvements of the submissions.

We are pleased to announce that Avestia Publishing (a publisher of International ASET Inc.) has been approved by the [Committee on Publication Ethics \(COPE\)](#). We are proud of our efforts towards abiding by the guidelines of ethics, integrity, and high standards in publishing.

Following are the ethics guidelines set by the organizers for the authors and the reviewers of the conference:

Scientific Committees

Scientific committees consisting of experts in the fields are established. The committees oversee the peer-review and publication process. To see the scientific committee members, please follow the link: [Scientific Committee](#)

Equality and Decisions

One or more reviewer, scientific committee member, or chair, (internal or external), are responsible for evaluating the relevance of the submitted manuscripts to the proceedings, technical and scientific merit, originally, and impact. These evaluations are to be carried out regardless of ethnicity, religion, gender, sexual orientation, political beliefs, and institutions. Successive to peer-review, the Chair has full authority and is solely responsible for the published content and the process thereof.

Confidentiality

Scientific committee member(s) and publishing staff may not disclose manuscripts or their content, directly or indirectly, to anyone other than individuals invited to review the manuscript (whether they accept or not), other reviewers of the same publications, and publishing staff.

Conflicts of Interest

Scientific committee member(s) and publishing staff may not utilize the contents of submitted manuscripts whether accepted or rejected, directly or indirectly for their own research purposes without prior written consent by the authors.

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Reviewers

Contribution to Decisions

In order for final decisions to be made regarding acceptance or rejection of papers, we rely on peer-review. Peer-review is the process of experts in the field reading, understanding, and objectively commenting on submitted papers. Through peer-review, scholars give back to the academic and scientific community by helping the chair(s) make decisions regarding manuscripts.

Promptness

Reviewers should promptly notify the chair(s) if they are unable or unqualified to carry out their reviewing duties. Reviewers should do their best to provide the reviews to the chair(s) as promptly as possible, and within the designated time-frame.

Acknowledgment of Source

The reviewer should notify the chair(s) if they find any similarities in the paper being reviewed and any other work that has been published previously.

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Invited reviewers should immediately inform the chair(s) in case of a conflict of interest based on competitive, collaborative, personal, family, and other relationships with the authors or people involved in the work.

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Authors

Reporting Standards

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Authorship

Only persons who have significantly contributed to the work and the manuscript can be named authors on a paper. These contributions include the idea/concept, design, experiments, evaluation, analysis, drafting or revision of the manuscript, and others. Authors must all have agreed to be named as such and for the manuscript to be submitted. Anyone who has contributed based on the above, but the level of contribution is not significant, may appear in the acknowledgement section of the manuscript.

Acknowledgement of Source

Acknowledgement to other's work being used in the paper must be given at all times. Authors of the paper should give comprehensive credit where it is necessary, by citing the work, they use for supporting their own research.

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Authors should describe their work and the results of their work accurately and in full. The level of provided accuracy and detail should be such that a reader can replicate the work independently. Inaccurate, incomplete, fraudulent, and misleading statements are considered unacceptable and unethical. Direct or indirect use of other people's work is not allowed, unless properly cited. Previous works that have influenced the current work should also be cited. Presenting someone else's work as one's own is strictly prohibited and is considered plagiarism.

Data and Material

Authors are encouraged to share their data, software, or other sharable material online, provided copyright and ownership laws surrounding that particular project permit. Authors may also be asked to share such material with the chair(s), and/or reviewers, and must be willing to do so if asked.

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Authors must notify the chair(s) at the time of submission, if any factor outside the scope of the research has influenced any step of the work and manuscript writing. Examples of such factors include but are not limited to funding, grants, advisory and consultancy, stock ownership, current or past employment, and memberships, among others. All funding sources should be disclosed in the manuscript.

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Hazardous Material

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ETHICS & MALPRACTICE

Publisher

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Schedule:

This conference proceeding accompanies the conference, meaning a new proceedings will be published every year for the corresponding annual conference of this series.

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