



ICESA 2023

4th International Conference On Environmental Science And Applications (ICESA'23)

DECEMBER 4 - 6, 2023 | LISBON, PORTUGAL

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INTRODUCTION

On behalf of the International Academy of Science, Engineering and Technology (International ASET Inc.), the organizing committee would like to welcome you to The 4th International Conference on Environmental Science and Applications (ICESA 2023).

ICCEFA 2023 is aimed to become one of the leading international annual conferences in the fields related to environmental science and applications. This conference will provide excellent opportunities to the scientists, researchers, industrial engineers, and university students to present their research achievements and to develop new collaborations and partnerships with experts in the field.

In the fourth meeting of this conference, three 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 13 papers will be presented from professors, students, and researchers across the world.

We thank you for your participation and contribution to The **4th International Conference on Environmental Science and Applications (ICESA 2023)**. We wish you a very successful and enjoyable experience.

Dr. Mehrab Mehrvar
Toronto Metropolitan University, Canada
Conference Chair
ICESA 2023

Dr. Zhi Chen
Concordia University, Canada
Conference Chair
ICESA 2023

Dr. Charles Lee
The University of Newcastle, Singapore
Conference Chair
ICESA 2023

ABOUT ICESA'23

The 4th International Conference on Environmental Science and Applications (ICESA 2023) aims to become the leading conference in fields related to Environmental Science and Applications. The goal of ICESA 2023 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.

ICESA is an international conference will be held yearly. This conference focus on all aspects Environmental Science and Applications. ICESA Will be held this year as a hybrid conference

ICESA is an acronym for **I**nternational **C**onference, on **E**nvironmental **S**cience and **A**pplications.

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)

Google Scholar

Crossref


PORTICO

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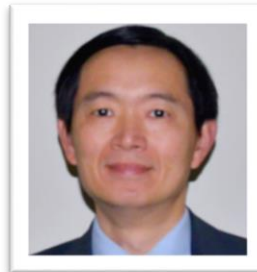
SCIENTIFIC COMMITTEE

We would like to thank the following for accepting to act as a member of the Scientific Committee for the ICESA'23 Conference:



Dr. Charles Lee

The University of
Newcastle, Singapore
Conference Chair



Dr. Zhi Chen

Concordia University,
Canada
Conference Chair



Dr. Mehrab Mehrvar

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

Scientific Committee Members

- **Dr. Isaac "Dennis" Amoah**, University of Arizona, USA
- **Dr. Zunaira Asif**, Concordia University, Canada
- **Dr. Ghazi Al-Khateeb**, Jordan University of Science and Technology, Jordan
- **Dr. Bing Chen**, Memorial University of Newfoundland, Canada
- **Dr. Ahmed Daabo**, The University of Mosul, Iraq
- **Dr. Shadi Hassan**, Khalifa University of Science and Technology, UAE
- **Dr. Antonio Vicente Herrera Herrera**, Universidad de La Laguna, Spain
- **Dr. Gordon Huang**, University of Regina, Canada
- **Dr. Maatouk Khoukhi**, United Arab Emirates University, UAE
- **Dr. Woo Hyung Lee**, University of Central Florida, USA
- **Dr. Scott Pegau**, Prince William Sound Science Center, USA
- **Dr. Lucy Semerjian**, University of Sharjah, UAE

PLENARY & KEYNOTE SPEAKERS

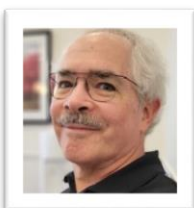
The plenary and keynote information for The 4th International Conference on Environmental Science and Applications (ICESA'23) is as follows:

Plenary Speakers



Dr. Mehrab Mehrvar
Toronto Metropolitan University, Canada

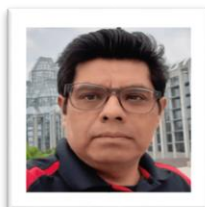
Keynote Speakers



Dr. William A. Anderson
University of Waterloo, Canada



Dr. Elsayed Elbeshbishy
Toronto Metropolitan University,
Canada



Dr. Vicente Rodríguez-González
Institute for Scientific and
Technological Research of San Luis
Potosi, Mexico

PLENARY SPEAKER

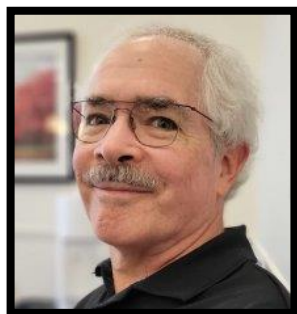


Title: Water and Wastewater Engineering:
Advancements, Challenges, and Future Needs
Dr. Mehrab Mehrvar, Toronto Metropolitan

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Dr. Mehrab Mehrvar, Ph.D., P.Eng., joined Toronto Metropolitan University, Canada, in 1998, where he is now Full Professor and Associate Chair, Graduate Studies, in the Department of Chemical Engineering. He earned his PhD in Chemical Engineering from University of Waterloo, Canada. Dr. Mehrvar has a strong commitment to research. His main research interests include the integration of advanced oxidation technologies and biological processes for the treatment of water and wastewater as well as photochemical reaction engineering. Recently, he was awarded two Canadian Queen Elizabeth II Diamond Jubilee Scholarships funds (QES); the first one in 2017 and second one in 2023, for a total of more than \$800,000, in collaboration with the University of Cartagena, Colombia, to work on the effects of climate change on the quality of water in northern Colombia. He has authored/co-authored more than 127 refereed journal papers, 6 book chapters, 36 papers in conference proceedings, and more than 200 presentations/abstracts; and conducted more than 30 international invited seminars and workshops. He has also supervised/co-supervised more than 50 graduate students in both master's and doctoral levels as well as more than 70 research assistants, exchange students, postdocs, and visiting scholars. He has been the guest editor and the editorial board member of several refereed journals. Dr. Mehrvar has served as the chair as well as organizing and scientific committee member of several international conferences. He has taught many courses in Chemical and Environmental Engineering in both undergraduate and graduate levels and served as the Chair of the Department for a couple of years. Dr. Mehrvar was the recipient of several prestigious teaching and research awards at both University of Waterloo and Toronto Metropolitan University.

KEYNOTE SPEAKER



Title: Decarbonizing Surgeries: Anesthetic Gas Mitigation Strategies

Dr. William A. Anderson, University of Waterloo, Canada

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William A. Anderson is a Professor Emeritus of Chemical Engineering at the University of Waterloo. His research activities have frequently concentrated on photochemical and biological processes for environmental control and contamination detection, especially in the field of air pollution control. His recent research projects focus on photochemical air treatment, fluorocarbon emissions mitigation, antimicrobial materials and UV disinfection for infection transmission reduction, and the treatment of microplastics pollutants. He is an editorial board member of the journal *Environments* and consults for several established and start-up companies on technology innovation for environmental control and pathogen detection.

KEYNOTE SPEAKER



Title: Organic Wastes: Is It Really Waste?

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Dr. Elsayed Elbeshbishy, Toronto
Metropolitan University, Canada

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Dr. Elsayed Elbeshbishy is an Associate Professor and the Associate chair of the undergraduate program at Civil Engineering Department at Toronto Metropolitan University. He is the President of the Canadian Association on Water Quality (CAWQ) and a member of the Canadian National Committee of the International Water Association (CNC/IWA). He is a Governing Member-IWA Canada. Dr. Elbeshbishy has extensive experience on developing new technologies for value-added products recovery from wastes. His areas of expertise include wastewater treatment processes, anaerobic digestion, pretreatment technologies, fermentation process, and solid waste management. He is the director of Water Research for Resource Recovery (WR3) Group at Toronto Metropolitan University.

KEYNOTE SPEAKER



Title: The Potential of Nanomaterials in Agriculture

Dr. Vicente Rodríguez-González

Institute for Scientific and Technological Research of San Luis Potosi, Mexico

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Dr. Vicente is Senior Researcher at IPICYT (Instituto Potosino de Investigación Científica y Tecnológica A.C.). He has published more than 135 papers, cited 2845 times H index 32 scopus (cited 3345 times H index 34 google scholar), directed 5 postdoctoral fellows, 8 PhD thesis, 15 M.Sc. thesis, 5 review papers and 5-chapter book.

Research Interests: New nanostructures for green chemistry: heterogeneous catalysis, AOPs for water treatment; renewable energy and environment; Photocatalysis; nanomaterials for inactivation of pathogens and agricultural applications. He is a member of the editorial board of the Chemical Engineering Journal and was guest editor for journals such as Catalysis Today, Topics in Catalysis, and the Journal of Hazardous Materials.

LIST OF PAPERS

The following papers were presented at the 4th International Conference on Environmental Science and Applications (ICESA'23):

Environmental Science

Secil Group – Cement Towards Decarbonization and Sustainability

Authors: Lília Alexandre, Nuno Ramos

Investigation of Coagulation/Flocculation Process for the Removal of Specific Micro-Pollutants

Authors: Mhd. Saleh Alnahhas, Nikolaos Tzoupanos, Matthias Barjenbruch

A Compact, accurate, low-power ASIC implementation for sensor data augmentation for economically sustainable Water Quality Monitoring.

Authors: Abheek Gupta, Anu Gupta, Rajiv Gupta

Synthesis of graphitic crude glycerol-based carbon for potential energy conversion and storage based material

Authors: Rukayat S.B. Zakari, Gerardo D.J. Pena, Prabhu Azhagapillai, Ranjith Bose, Abhijeet Raj, Mohamed I. Hassan Ali , Mirella Elkadi

Applying the Theory of Planned Behavior to Study Tap and Bottled Water Consumption: Analysis of the Effects of Pro-Environmental Measures Adopted in a HEI

Authors: Sara Sousa, Elisabete Correia, Manuela Larguinho, Clara Viseu

Assessment of Surface Collapse Risk Considering Forest Management Information in the Aso Region

Authors: Hiroki Asada, Asada Minagawa

LIST OF PAPERS

Environmental Science

Modification of Wastewater Treatment in Mine Workshop Area

Authors: Farisatul Amanah, Danang Widiyanto, Koko Prayitno, Endik Riyanto

Applying the Theory of Planned Behavior to Study Tap and Bottled Water Consumption: Analysis of the Effects of Pro-Environmental Measures Adopted in a HEI

Authors: Sara Sousa, Elisabete Correia, Manuela Larguinho, Clara Viseu

The COVID-19 Pandemic Impacts in the Cycling Sector: An Exploratory Research of the Consumer`s Behaviour in Portugal

Authors: Sara Sousa, Fernanda Alberto, Paula López

Recycling Acid Mine Drainage into a Source of Clean Water

Authors: Rozzaq Al Hanif Islamudin, Trio Aris Chrisdianto, Dini Sabila, Mursal

Regional Environmental Impacts Of The Explosive Growth Of Wind Power

Authors: Qiang Wang, Song Chen, Jianren Fan

Green Bioethanol Production from Delignified Rice Straw Using Statistically Designed Crude Recombinant Enzyme Cocktail

Authors: Maibam Premeshwarii Devi, Arun Goyal

Formulation of a Novel Tailor-Made Enzyme Cocktail Playing a Synergistic Role in the Production of Fermentable Sugar from Pretreated Elephant Grass

Authors: Aishwarya Aishwarya, Arun Goyal

LIST OF PAPERS

Environmental Science

Removal of Pharmaceuticals from Single and Multicomponent Wastewater by Activated Carbon

Authors: Mina Aheghmoalla, Mehrab Mehrvar

Green Bioethanol Production from Delignified Rice Straw Using Statistically Designed Crude Recombinant Enzyme Cocktail

Authors: Premeshworii Devi Maibam, Arun Goyal

Design of a Process Control for the Degradation of Polyvinyl Alcohol (PVA) in a UV/H₂O₂ Photoreactor

Authors: Zahra Parsa, Ramdhane Dhib, Mehrab Mehrvar

Design and Construction of a Contact Chamber for Bioaerosol Studies

Authors: Lidia Alicia López Vega, María Teresa Orta Ledesma, Cesar Alejandro Villaseñor Ríos, Isaura Yáñez Noguez, Ignacio Monje Ramírez

Application of Atmospheric-pressure Non-equilibrium Microwave Discharge Plasma Jet for Linear Alkylbenzene Sulfonates in Aqueous Solution

Authors: Toshifumi Yuji, Kenichi Nakabayashi, Wittawat Poonthong, Yoshifumi Suzaki

Investigating the Effects of Sea Ice Melting on Oceanic Warming in the Arctic

Authors: Ved Srivathsa, Zhe Li

SPONSORS

International ASET Inc. would like to thank the following sponsors for their support of ICESA'23:



**Department of
Chemical Engineering**
Faculty of Engineering
& Architectural Science

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ICESA 2024

The 5th International Conference on Environmental Science and Applications (ICESA 2024) will be held on November 18 - 20, 2024 in Lisbon, Portugal.



For inquiries and to obtain further information on the congress, please visit the [website](https://2024.esaconference.com)

You can also email info@esaconference.com or call us at:

+1-613-834-9999

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JOURNAL PUBLICATION

Selected articles from the conference will be published in the International Journal of Environmental Pollution and Remediation (IJEPR)

This journal has adopted to the open-access model, meaning all free access to the journal's articles and content with no need for subscription. This ensures larger audience and therefore higher citations.

All published papers of IJEPR will be submitted to Google Scholar. Additionally, they will be permanently archived in Portico (one of the largest community-supported digital archives in the world) and will be assigned unique DOIs.

Please visit the following website for the respected journal:
IJEPR: <https://ijepr.avestia.com/>

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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 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.

Confidentiality

Reviewers must not share the contents of the manuscripts they receive for review, regardless of their decision to review or contents of the review, directly or indirectly, with anyone other than the person who has assigned the review.

Fairness

Reviewers should review manuscripts fairly and objectively, with supporting evidence or arguments, regardless of personal feelings or biases.

Conflicts of Interest:

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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Reporting Standards

The paper being submitted for the proceedings should be based on clear objective, discussion, and references. The findings, data, and the arguments being used in the paper should be accurate. It is author's responsibility to guarantee the authenticity of the data in the paper.

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.

Accuracy, Originality, and Plagiarism

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.

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Dual Submissions

Submitting a manuscript to more than one venue (conference, journal, etc) simultaneously is not allowed. Presenting previously published work to be considered as a new submission, without a significant new interpretation or analysis, is prohibited.

Conflicts of Interest

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.

Animal and Human Subjects

Works involving human and/or animal subjects must ensure that the work has abided by institutional guidelines, and pre-approved by required bodies. Moreover, consent must be acquired from participants, and privacy of subjects must be ensured. All of the above must be specified with clear statements in the manuscript.

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It should clearly be identified in the manuscripts if the works have involved hazardous chemicals and material, or devices that can be harmful.

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ETHICS & MALPRACTICE

Publisher

Errata and Retractions

The publisher takes the necessary steps to prevent mistakes, academic and scientific misconduct, and unethical behavior, both intended and unintended. When mistakes are reported, the publisher works with chair(s) and authors to publish an erratum clarifying the issue. In cases where the mistakes are severe and significant, the paper might be retracted. If unethical behavior, plagiarism, academic and scientific misconduct, or other such activities are proven to have taken place by an author or authors, the publisher will retract the paper.

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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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