



ICESA
2021

**2ND INTERNATIONAL CONFERENCE ON
ENVIRONMENTAL SCIENCE AND
APPLICATIONS (ICESA'21)**

November 21 - 23, 2021 | ~~Seoul, South Korea~~ Virtual Conference

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ISBN: 978-1-927877-96-8 | ISSN: 2563-5298

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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 2nd International Conference on Environmental Science and Applications (ICESA'21).

The goal of ICESA'21 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 second meeting of this conference, two plenary speakers 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 15 papers will be presented from professors, students, and researchers across the world.

We thank you for your participation and contribution to The 2nd International Conference on Environmental Science and Applications (ICESA'21). We wish you a very successful and enjoyable experience.

Dr. Zhi Chen

Concordia University, Canada

Conference Chair

ICESA'21

Dr. Charles Lee

The University of Newcastle, Singapore

Conference Chair

ICESA'21

ABOUT ICESA'21

The 2nd International Conference on Environmental Science and Applications (ICESA'21) aims to become the leading virtual conference in fields related to Environmental Science and Applications. The goal of ICESA'21 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 in Virtual 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)



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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'21 Conference:



Dr. Zhi Chen

Concordia University,
Canada
Conference Chair



Dr. Charles Lee

The University of
Newcastle, Singapore
Conference Chair

Scientific Committee Members

- **Dr. James Ball**, University of Technology Sydney, Australia
- **Dr. Luiza Campos**, University College London, UK
- **Dr. Bing Chen**, Memorial University of Newfoundland, Canada
- **Dr. Mohamed Gamal El-Din**, University of Alberta, Canada
- **Dr. Gordon Huang**, University of Regina, Canada
- **Dr. Rajan Jose**, University Malaysia Pahang, Malaysia
- **Dr. Charles Lee**, The University of Newcastle, Singapore
- **Dr. Woo Hyoung Lee**, University of Central Florida, USA
- **Dr. Kavitha Palaniappan**, University of Newcastle, Australia
- **Dr. Yu (Frank) Yang**, University of Nevada, USA

PLENARY & KEYNOTE SPEAKERS

The plenary and keynote information for The 2nd International Conference on Environmental Science and Applications (ICESA'21) is as follows:

Plenary Speakers

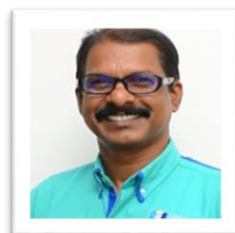


Dr. John Gulliver
University of Minnesota, USA



Dr. Peter Jaffé
Princeton University, USA

Keynote Speakers



Dr. Rajan Jose
University Malaysia Pahang,
Malaysia



**Dr. Mohamed
Gamal El-Din**
University of Alberta,
Canada

PLENARY SPEAKER



Title: Practical Implementation of Green Infrastructure Strategies

Dr. John Gulliver, University of Minnesota, USA

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John Gulliver is a Professor of Civil, Environmental and Geo- Engineering at the University of Minnesota, performing his research at the St. Anthony Falls Laboratory. His major research interests are mass transport in environmental systems and stormwater pollution prevention. Current research involves the development of technology to treat stormwater runoff, an assessment of stormwater infiltration practices, the prediction of runoff from small, urban watersheds and remediation of internal phosphorus loading in stormwater ponds.

Much of Dr. Gulliver's research, in conjunction with other faculty, involves the development of new technology for the treatment of road runoff and assessment of field performance of stormwater treatment practices, including the SAFL Baffle, the Iron-Enhanced Sand Filter, and the MPD Infiltrometer. He is a co-author of the book, *Optimizing Stormwater Treatment Practices: A Handbook of Assessment and Maintenance*, published by Springer.

PLENARY SPEAKER



Title: Harnessing the Novel Feammox Bacterium, *Acidimicrobium* sp. Strain A6, for PFAS Defluorination: The Path from Discovery to Applications

[Dr. Peter Jaffé, Princeton University, USA](#)

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Prof. Peter Jaffé joined the Department of Civil and Environmental Engineering at Princeton University in 1985, and has three concurrent appointments with the Princeton Environmental Institute, the Andlinger Center for Energy and the Environment and the Princeton Institute for the Science and Technology of Materials. He served as chair of the Department of Civil and Environmental Engineering from 1999 to 2005 and was director of graduate studies in the same department from 2009 to 2012.

His research interests relate to the physical, chemical, and biological processes that govern the transport and transformation of pollutants in the environment and their application toward the remediation of contaminated systems. Areas of current emphasis include: laboratory and field experiments, as well as mathematical simulations of biogeochemical processes in porous media, such as: (1) understanding the mechanism as well as environmental distribution of the Feammox process (ammonium oxidation under iron reducing conditions); (2) Applications of the Feammox process for ammonium removal in engineered systems and for the cometabolical degradation of recalcitrant organics such as PFAS; (2) biogeochemically mediated dynamics of trace metals, metalloids, and radioisotopes in sediments, wetland soils, and groundwater; (4) nitrogen processing in urban settings coupled to urban hydrology; and (5) design of novel biological waste treatment processes.

KEYNOTE SPEAKER



Title: Functionalization of Renewable Materials for Energy, Environment, and Healthcare
Dr. Rajan Jose, University Malaysia Pahang , Malaysia

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Professor Rajan Jose supervises the Nanostructured Renewable Energy Materials Laboratory in the Universiti Malaysia Pahang (UMP) and is the Associate Editor-in-Chief of the Springer Nature journal “Materials Circular Economy” (<https://www.springer.com/journal/42824?IFA>). He has served as the Dean of Research of UMP during Feb 2016 – Aug 2019 and a member of various committees of UMP and Ministry of Higher Education, Malaysia.

He has investigated nanostructured perovskite ceramics for microwave and superconducting electronics during doctoral research at the Council of Scientific and Industrial Research (CSIR), Trivandrum, India and has received PhD degree in the year 2002. He has contributed to the science and engineering of diverse range of materials including metals and alloys, luminescent quantum dots for biological and energy applications, glass and glass ceramics for quantum electronics, and electrochemical materials for energy conversion and storage. He was employed as a scientist at the Indira Gandhi Centre for Atomic Research (India), AIST (Japan), Toyota Technological Institute (Japan), and the National University of Singapore (Singapore) before joining UMP. He has published over 220 papers in Web of Science (Thomson Reuters) indexed journals which are cited nearly 11600 times with an h-index of 56 according to Google Scholar database (<https://scholar.google.com.my/citations?user=LgSpTSAAAAAJ&hl=en>). He holds 25 patents. He has supervised 6 Postdoctoral, 23 Doctoral, and 10 Master’s researchers.

His current research interests include sustainable materials, circular economy, data science, renewable energy devices; most of his research is on the structure – property relationship in materials for a desired device functionality.

KEYNOTE SPEAKER



Title: Degradation of Micropollutants Using Advanced Oxidation Processes - From Process Fundamentals to Municipal and Industrial Wastewater Applications

[Dr. Mohamed Gamal El-Din, University of Alberta, Canada](#)

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Dr. Mohamed Gamal El-Din is a Professor in the Department of Civil and Environmental Engineering at the University of Alberta. His research focuses on the fundamentals of advanced and innovative treatment approaches for water and wastewater (municipal and industrial such as oil and gas). Since 2011, he holds an NSERC Senior Industrial Research Chair (IRC) in Oil Sands Tailings Water Treatment. He is also one of the Theme Leads of the Future Energy Systems (FES) theme on Resilient Reclaimed Land and Water Systems, a 75-million multidisciplinary research from the Canada First Research Excellence Fund. Because of his contributions in the area of oil sands process water treatment/reclamation, in 2017, Dr. Gamal El-Din received the Alberta Science and Technology Leadership (ASTech) Foundation Award for Innovation in Oil Sands Research. In 2019, he was appointed Jinshan Distinguished Professor at Jiangsu University and in 2020 he was awarded Research Chair in Environmental Engineering, College of Environmental Science and Engineering at Tongji University (China). His research work has resulted in important advancements in the area of advanced oxidation and ozone treatment, membrane separation and biological processes. Another part of his research program has centered on the development of new materials and their applications in water and wastewater treatment. Dr. Gamal El-Din's research program also focuses on the development of cost-effective and simple, yet highly efficient treatment systems for rural communities in both industrialized and developing countries. Dr. Gamal El-Din's research has resulted in 255 refereed journal papers, 94 refereed conference papers, 369 conference and workshop presentations, 52 technical reports, and 7 book chapters and a number of other articles. Currently, Dr. Gamal El-Din's h-index is 55 (10044 citations) as per Google Scholar.

LIST OF PAPERS

The following papers were presented at the 2nd International Conference on Environmental Science and Applications (ICESA'21) :

Environmental Sustainability and Development

Title: Carbon Policy as a Strategy to Jointly Address Climate Change, Prevent Wildfires and Biodiversity Loss: A Portugal Case Study

Authors: Renata Pacheco, João Claro

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Title: Creation of Geographical Information System for Highways of Kvemo Kartli (Georgia)

Authors: Mariam Elizbarashvili, Bela Kvirkvelia, Shalva Elizbarashvili, Tamar Khuntselia, Marina Tatanashvili, Maia Kimeridze

[View Paper](#)

Title: Paringin Pit Lake: Key Success Factors of Creating a Pit Lake of Ex-Coal Mined Pit

Authors: D. Triwibowo, T. Roberts, C.C. Lee

[View Paper](#)

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

Authors: Kavitha Palaniappan

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LIST OF PAPERS

The following papers were presented at the 2nd International Conference on Environmental Science and Applications (ICESA'21) :

Environmental Sustainability and Development

Title: Green Mark Super Low Energy Building: A Singapore Campus Case Study

Authors: M.A. Sarwar, C.C. Lee

[View Paper](#)

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

Authors: I. Noor, Y.F. Arifin, B.J. Permadi, A. R. Saidy, T. Roberts, C.C. Lee

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Title: A Study On The Collision Avoidance Supporting Model In Coastal Area

Authors: Chang-Je Kim

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LIST OF PAPERS

The following papers were presented at the 2nd International Conference on Environmental Science and Applications (ICESA'21) :

Greenhouse Effect, Global Warming, and Climate Change

Title: Dangerous and Adverse Weather Events in Kvemo Kartli (Georgia)

Authors: Mariam Elizbarashvili, Bela Kvirkvelia, Elizbar Elizbarashvili, Shalva Elizbarashvili, Tamar Khuntselia

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Title: Simulation of Temperature and Precipitation Climatology for Georgia using RegCM4

Authors: Mariam Elizbarashvili, Magda Tsintsadze, Tsezari Mshvenieradze

[View Paper](#)

Title: Development of Tier 2 Estimation Method for Carbon Absorption of Biomass in Grassland to Respond Climate Change Adaptation

Authors: Sle-gee Lee, Jeong Gwan Lee, Du Hee Lee, Hyun-Jun Kim

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LIST OF PAPERS

The following papers were presented at the 2nd International Conference on Environmental Science and Applications (ICESA'21) :

Environmental Pollution and Treatment

Title: Assessment of a Soil Washing Process for Copper (Cu), Zinc (Zn), and Lead (Pb) Contaminated Soil Using High Pressure Water

Authors: Sang Hyeop Park, Deok Hyun Moon

[View Paper](#)

Title: Stabilization of Firing Range Soil Using Cuttlefish Bone

Authors: Deok Hyun Moon

[View Paper](#)

Title: Adsorptive Removal of Disinfection Byproduct (DBP) Precursors by Carbon Nanotubes

Authors: Betul Aykut-Senel, Cihan Ozgur, S. Sule Kaplan-Bekaroglu, Nuray Ates

[View Paper](#)

Title: Removal of Natural Organic Matter by Using Original and Chemically Modified Adsorbents

Authors: Betul Aykut-Senel, Cihan Ozgur, Sehnaz Sule Kaplan-Bekaroglu, Nuray Ates

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LIST OF PAPERS

The following papers were presented at the 2nd International Conference on Environmental Science and Applications (ICESA'21) :

Environmental Pollution and Treatment

Title: Heavy Metals Concentrations (Al, As, Cr, Cu, Fe, Mn, Ni, Pb, And Zn) In An Urban Artificial Lake In Chennai, India (Sembakkam Lake) Under Drought Conditions

Authors: Daniel Rosado, Franco Castillo, Indumathi Nambi, Nicola Fohrer

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Title: Understanding Green Purchase Behavior. Is Gender Important?

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

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SPONSORS

International ASET Inc. would like to thank the following sponsors for their support of ICESA'21:



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ICESA'22

The 3rd International Conference on Environmental Science and Applications (ICESA'22) will be held on October 24, 2022 - October 26, 2022 in Seoul, South Korea.



For inquiries and to obtain further information on the congress, please visit the [website](https://2022.esaconference.com)

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

+1-613-834-9999

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ETHICS & MALPRACTICE

Publication Ethics and Publication Malpractice Statement

The following statement is mainly based on the Code of Conduct and Best-Practice Guidelines for Journal Editors (Committee on Publication Ethics, 2011).

Scientific Committee

Scientific Committee:

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 below.

Scientific Committee

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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.

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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.

ETHICS & MALPRACTICE

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.

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.

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

Thoroughness:

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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.

ETHICS & MALPRACTICE

Authors

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.

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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.

Hazardous Material

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If an author identifies a major error in a published paper, he/she must immediately identify the publisher. Regardless of whether a significant error is reported by the authors of the work or other readers, authors are obligated to take the necessary steps to correct the issue. It is decided on a case-by-case basis whether an erratum will be submitted to notify future readers of the error and correction, or whether the paper will be retracted.

Unethical/plagiarism issues mostly result in a retraction, while unintended mistakes will mostly result in the publication of an erratum.

ETHICS & MALPRACTICE

Publisher

Errata and Retractions

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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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