



PROCEEDINGS OF THE 6TH INTERNATIONAL CONFERENCE OF RECENT TRENDS IN ENVIRONMENTAL SCIENCE AND ENGINEERING (RTESE'22)

June 05 - 07, 2022 | Niagara Falls, Canada

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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 6th International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22).

RTESE'22 is aimed to become one of the leading international annual conferences in the fields related to environmental science and engineering. 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.

RTESE is a series of international conferences held yearly. These conferences focus on all aspects of environmental science and engineering. The 6th International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22) is going to be held in a hybrid format, i.e. in person as well as online.

In the sixth meeting of this conference, four keynote speakers will share their expertises 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 26 papers will be presented from professors, students, and researchers across the world.

We thank you for your participation and contribution to the 6th International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22). We wish you a very successful and enjoyable experience.

Dr. Mehrab Mehrvar

*Conference Chair and Proceedings Editor
RTESE'22*

Dr. Zhi Chen

*Conference Co-Chair and Proceedings Editor
RTESE'22*

ABOUT RTESE'22

The International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22) aims to become the leading annual conference in fields related to environmental science and engineering. The goal of RTESE'22 is to gather scholars from all over the world to present advances in the fields related to environmental science and engineering 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.

RTESE is a series of international conferences held annually. These conferences focus on all aspects of environmental science and engineering. After successfully holding RTESE'17 to ICCSTE'21 in Canada, RTESE'22 is hosted in **Niagara Falls - Canada** as well this year. RTESE'22 is going to be held in a hybrid format, i.e. in person as well as online.

RTESE is an acronym for **R**ecent **T**rends in **E**nvironmental **S**cience and **E**ngineering.

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

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SCIENTIFIC COMMITTEE

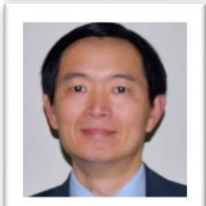
We would like to thank the following for accepting to act as a member of the Scientific Committee for the RTESE'22 Congress:

Scientific Committee Chairs



Dr. Mehrab Mehrvar

Ryerson University, Canada
Conference Chair



Dr. Zhi Chen

Concordia University, Canada
Conference Co-Chair

Scientific Committee Members

- **Dr. Christopher Y H Chao**, The Hong Kong Polytechnic University, Hong Kong
- **Dr. Paul Christodoulides**, Cyprus University of Technology, Cyprus
- **Dr. Dimitris Damigos**, National Technical Univ. of Athens, Greece
- **Dr. Wayne T. Davis**, University of Tennessee, USA
- **Dr. Haoran Duan**, The University of Queensland, Australia
- **Dr. Fredrik Gröndahl**, Royal Institute of Technology, Sweden
- **Dr. Mehdi Kargar**, Ryerson University, Canada
- **Dr. Younggy Kim**, McMaster university, Canada
- **Dr. Phoebe Koundouri**, Athens University of Economics and Business, Greece
- **Dr. Jianbing Li**, University of Northern British Columbia, Canada
- **Dr. Chavalit Ratanatamskul**, Chulalongkorn University, Thailand
- **Dr. Qiuyan Yuan**, University of Manitoba, Canada

KEYNOTE SPEAKERS

We are very happy to announce the following keynote speakers for the 6th International Conference of Recent Trends in Environmental Science and Engineering (RTESE'22):



Dr. Chunjiang An
Concordia University, Canada



Dr. Van Nguyen
McGill University, Canada



Dr. Jan Oleszkiewicz
University of Manitoba, Canada



Dr. Raul Guerrero Torres
University of Cartagena, Colombia

RTESE'22 KEYNOTE SPEAKERS



Titles: Shoreline Washing Agents for Oil Spill Response

[Dr. Chunjiang An, Concordia University, Canada](#)

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Dr. Chunjiang An is an Assistant Professor in the Department of Building, Civil, and Environmental Engineering at Concordia University, and Concordia University Research Chair in Spill Response and Remediation. His research interests include a broad range of topics related to pollution control, risk assessment and systems analysis. Dr. An is a licensed Professional Engineer, associate editor and editorial board member of eight international journals, and the guest editor for seven special issues in some international journals. Dr. An has published over 120 peer-reviewed journal articles. Dr. An's interdisciplinary activities have been supported by some research grants from Natural Sciences and Engineering Research Council of Canada, Fisheries and Oceans Canada, Environment and Climate Change Canada, etc.



Titles: Linking Climate Change to Environmental Impact and Adaptation Studies: Recent Advances and Shortcomings in Modeling of Extreme Hydrologic Processes

[Dr. Van Nguyen, McGill University, Canada](#)

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Dr. Nguyen is Brace Endowed Chair Professor of Civil Engineering at McGill University, Canada. He has been Chair of Civil Engineering Department, Director of Brace Centre for Water Resources Management, and Associate Director of Global Environmental and Climate Change Centre at McGill. His research contributions over 40 years have been in the areas of climate change impact and adaptation and sustainable water management. He has served in several national/international expert committees to develop some of the most influential technical guidelines in engineering practice in Canada and in the world (e.g., technical guides by the Canadian Dam Safety Association and Canadian Standards Association; and "Guide to Hydrological Practices" by the World Meteorological Organization). In addition, he has been invited to deliver prestigious lectures at numerous national and international scientific conferences around the world and has served in editorial boards of several renowned scientific international journals. He has been also Invited Professors at universities in Australia, Canada, China, Japan, Malaysia, Singapore, Thailand, and Vietnam.

RTESE'22 KEYNOTE SPEAKERS



Titles: Recent Trends in Wastewater Treatment and Resulting Research Needs
Dr. Jan Oleszkiewicz, University of Manitoba, Canada

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Dr Jan A. Oleszkiewicz is a Distinguished Professor Emeritus in Environmental Engineering at the University of Manitoba and President of JAAO Environmental Engineering Ltd. His expertise is in advanced municipal wastewater treatment and biosolids processing, specializing in nutrient removal and recovery and anaerobic processes for wastewater and sludge. He has advised over forty municipalities on a variety of wastewater treatment plans with flows ranging from 2 MLD to 1,000 MLD, in Canada, USA, Australia and Europe. He has continuous hands-on experience with the conversion to nutrient removal of the three wastewater treatment plants in Winnipeg MB. He has inspected over one hundred wastewater treatment plants around the world and conducted wastewater operator training for over 600 operators. He has published over 580 journal papers and conference proceedings and has 8 patents. He is a Fellow of Canadian Academy of Engineering, Fellow of CSCE and Fellow of Water Environment Federation



Titles: Suitable Abating of Global Air Pollution Controlling CO2 Emissions from Mobile Sources by Magnetic Action
Dr. Raul Guerrero Torres, University of Cartagena, Colombia

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Professor Raul Guerrero Torres is a Civil Engineer from the Civil Engineering program of Universidad de Cartagena (U of C) and Specialist in Physical Sciences from the Faculty of Sciences of Universidad Nacional de Colombia in Bogotá. His professional experience can be summarized in a considerable number of important Engineering works in the city of Cartagena de Indias, Colombia, as managing engineer or contractor, research activities such as corrosion and geoelectric prospecting, with professional engineering activity. He was the head of the Physics Central Department of U of C for eight years and a Full Professor of U of C: Teaching Physics in the the Faculty of Exact and Natural Sciences programs and the Faculty of Engineering programs; occupying administrative academic positions as, Head of the Graduate Center and External Relationships, Dean of the Faculty of Sciences and Engineering, Academic Vice-President and finally, five times, Acting President of U of C.

LIST OF PAPERS

Water and Wastewater Management and Treatment

The Effect of Water Circulation on Bulk Flotation Performance of a Polymetallic Sulphide Ore

Authors: Tintswalo B. Z. Baloyi, Willie Nheta

The Impact of Frother Type on the Concentration of Coal by Flotation Process

Authors: Tsumbo Nethamba, Willie Nheta

Cyanobacteria And Their Phages Revealed Through Metagenomic Analysis In A Freshwater Lake

Authors: Shang Shen, Kento Tominaga, Kenji Tsuchiya, Tomonari Matsuda, Takashi Yoshida, and Yoshihisa Shimizu

Improving Membranes Distillation For Desalination Technologies To The Environmental Impact Of Brine Discharge In Context Of Climate Change For The Caribbean Coastal Aquifers.

Authors: Jaime Arturo Lopez Neira, Mehrab Mehrvar, Andres Felipe Suarez Escobar, Edgar Quinones, Carmen Maria, Romero Izasa

Dynamic and Equilibrium Adsorption Studies on Treatment of Pharmaceutical Wastewater using Commercial Charcoal based Activated Carbon

Authors: Mina Asheghmoalla, Mehrab Mehrvar

Modelling and Optimization Study on Biodegradability Enhancement of PVA-Contained Wastewater in a Continuous UV/H₂O₂ photoreactor

Authors: Zahra Parsa, , Ramdhane Dhib, Mehrab Mehrvar

Degradation of Tetracycline Degradation by a Mercury UV Lamp Coupled with an Ultrafine-Bubbles Ozone Gas Producer

Authors: Chikang Wang, Hui-Ni Chen, Huan-Wei Li

LIST OF PAPERS

Air and Soil Pollution and Treatment

Enhanced Phytoremediation of Petroleum Hydrocarbon-Contaminated Soil by *Chromolaena Odorata* Containing bacteria-Endophyte

Authors: Anyasi, Raymond Oriebe; Atagana, Harrison Ifeanyichukwu ; Sutherland, Rene

Copper Slag Valorisation: Recovery of Cobalt by Sulfurization and Flotation

Authors: Sipho Ngema, Willie Nheta, Michel Wa Kalenga

Characterisation of PAH-degrading endophytes isolated from plants growing around a sludge dam

Authors: Raymond Oriebe Anyasi, Harrison Ifeanyichukwu Atagana, Joyce Onyenaaturuchi Anyasi Raymond

Conversion of NO on Cerium Dioxide – Computational Modeling

Authors: Georgi Vayssilov, Hristiyan Aleksandrov, Petko Petkov

Efficient Green Method For The Synthesis Of 3,4-Disubstituted Coumarin Derivatives

Authors: Rositca Nikolova, Ana Koleva, Nevena Petkova

Optimization, Characterization and Implementation of Immobilized *Cladophora* Sp Alga Biosorbents of Mercury from Aqueous Solutions

Authors: Ewa M. Cukrowska, Joy G. Mokone, Hlanganani Tutu, Luke Chimuka

Kinetic And Hydrodynamic Study Of Horizontal Subsurface Flow Constructed Wetlands Under Tropical Conditions

Authors: Eduardo Escobar-Alvareza, Ximena María Vargas-Ramírez, Aracelly Caselles-Osorioa and Henry Casierra-Martinez

LIST OF PAPERS

Environmental Protection

Impact of a low-income informal settlement in a headwater area at high-risk of erosion in Brazil

Authors: Maria Thereza Fonseca, Renan Lima, Samuel L. L. Silva, Hugo Luiz M. de Paula, Jonatas Ferreira da Cruz, Arthur Antão, Juni Cordeiro, Luiz Alberto I. Saenz, Maria Rita Scotti

Contributions to Keep the Atmosphere Balanced: Unsuitable-Reductions of HC and CO Emissions from Mobile-Sources, Using COBMA, Impact Atmospheric Balance

Authors: Raúl Guerrero Torres, Mehrab Mehrvar

Water Pollution and Its Impact on the Environment

Authors: Joyce Onyenaturuchi Anyasi Raymond, Raymond Anyasi, Michael Ikpefua, Stephen Chidi Okafor

Carbon Dioxide Adsorbents on the Base of Fly Ash Zeolite X

Authors: Yuri Kalvachev, Totka Todorova, Borislav Barbov

Contributions to Keep Atmosphere Balanced: Anthropogenic Climate-Change Comprehension from Atmosphere Balance and CO2 Emissions Pattern

Authors: Raul Guerrero Torres, Mehrab Mehrvar

Contributions to Keep the Atmosphere Balanced: Suitable-Reductions of HC and CO Emissions Controlling CO2 from Mobile Sources, Using COBMA

Authors: Raul Guerrero Torres, Mehrab Mehrvar

Pops in Groundwater: Exposure Profiles of Pahs and Ocps at an Agricultural Site of a North Indian Terai Region

Authors: Amit Masih and J.K. Lal

Identification of Chemotaxis Parameters Using Microchannel For Bioremediation Applications

Authors: Marjan Khatami, Zhi Chen

LIST OF PAPERS

Poster Session

Life Cycle Assessment of the Wood Pellet Supply Chain with a Consideration of Bioenergy for Remote Communities in Canada

Authors: Saghar Sadaghiani, Fereshteh Mafakheri, Zhi Chen

SPONSORS

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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.

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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.

This journal has been approved by the Committee on Publication Ethics (COPE). Please visit the following websites for the respected journals:
IJEPR: <https://ijepr.avestia.com/>

RTESE'23

The 7th International Conference of Control, Dynamic Systems, and Robotics (RTESE'23) will be held on June 4, 2022 - June 6, 2023 in Canada.



RTESE'23 7th International Conference of Control, Dynamic Systems, and Robotics

June 4, 2023 - June 6, 2023 | Canada
www.2023.rtese.com

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

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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.

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Schedule:

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