



ICAERA
2023

4th International Conference On Advances In Energy Research And Applications (ICAERA 2023)

December 7 - 9, 2023 | Lisbon, Portugal

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ISBN: 978-1-990800-32-0 | ISSN: 2563-531X

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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 4th International Conference on Advances in Energy Research and Applications (ICAERA 2023).

The goal of ICAERA 2023 is to provide a space for 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.

In the fourth meeting of this conference, one plenary speaker 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 4th International Conference on Advances in Energy Research and Applications (ICAERA 2023). We wish you a very successful and enjoyable experience.

Dr. Boguslaw Kruczek
University of Ottawa, Canada
Conference Chair
ICAERA 2023

Dr. Wael H. Ahmed
University of Guelph, Canada
Conference Chair
ICAERA 2023

Dr. Sohel Murshed
University of Lisbon, Portugal
Conference Local Chair
ICAERA 2023

ABOUT ICAERA 2023

The 4th International Conference on Advances in Energy Research and Applications (ICAERA 2023) aims to become the leading conference in fields related to Energy Research and Applications. The goal of ICAERA 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.

ICAERA 2023 is an international conference will be held yearly. This conference focus on all aspects Energy Research and Applications. ICAERA 2023 Will be held this year as a hybrid conference

ICAERA 2023 is an acronym for International Conference, on Energy Research and Applications.

- The proceedings are published in Ottawa, Canada.
- All papers were peer-reviewed
- The congress 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 ICAER 2023 Conference:



Dr. Boguslaw Kruczek

University of Ottawa, Canada
Conference Chair



Dr. Wael H. Ahmed

University of Guelph, Canada
Conference Chair



Dr. Sohel Murshed

University of Lisbon, Portugal
Conference Local Chair

Scientific Committee Members

- **Dr. Müslüm Arıcı**, Kocaeli University, Turkey
- **Dr. Hamdy Afefy**, Tanta University, Egypt
- **Dr. Nilofar Asim**, National University of Malaysia, Malaysia
- **Dr. Wei-Hsin Chen**, National Cheng Kung University, Taiwan
- **Dr. Sathaporn Chuepeng**, Kasetsart University, Thailand
- **Dr. Mohammad O. Hamdan**, American University of Sharjah, UAE
- **Dr. Jun Peng**, University of Lincoln, UK

PLENARY/KEYNOTE SPEAKER

The Plenary information for the 4th International Conference on Advances in Energy Research and Applications (ICAER 2023) is as follow:

Plenary Speaker



Dr. Jun Peng
University of Lincoln, United Kingdom

PLENARY SPEAKER



Title: Net-Zero Power Technology for Water Transport
Dr. Jun Peng, University of Lincoln, United Kingdom

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Jun Peng is a Professor of Sustainable Energy Engineering. He received his PhD degree from National Engine Combustion Lab (current State Key Lab of Engines), Tianjin University, China in 1996, for a research on the investigation of high pressure fuel injection and spray characteristics. After four years working experiences as research fellow in Brunel University and two years as senior development engineer in Ford Motor Company, he held the position of Lecturer since 2004 and Senior Lecture since 2007 in the University of Sussex. Prior to his current appointment, he worked as Professor in Engineering in the University of Bedfordshire. Jun Peng's research interest lies in thermodynamics, fluid dynamics and combustion with applications on flows and combustion in IC engines, gas turbines, fuel cells and other sustainable energy systems. His recent research works have contributed to sustainable vehicle powertrain, non-carbon water transport technology, combination of solar PV and solar thermal for energy efficiency improvement, etc. Jun Peng is a fellow of IMechE, chartered engineer recognised by IMechE and the member of Professional Review Committee of IMechE. He was an invited fellow of Japan Society for the Promotion of Science (JSPS), and the Associate Editor of IET journal of Electronics Letters (SCI indexed).

LIST OF PAPERS

The following papers were presented at the 4th International Conference on Advances in Energy Research and Applications (ICAER 2023)

Renewable & Non-renewable Energies

Characterization and Performance Analysis of Novel Diesel-Methanol Fuel Blends: A Comprehensive Investigation

Authors: Tanmay Deka, Ahmed Osman, Deben Baruah, David Rooney

Effect of Hydrothermal Carbonization on the Fuel Properties of Chicken Manure Hydrochar

Authors: Leyanet Odales Bernal, Lisbet M. López González, Stef Ghysels, Ernesto L. Barrera, Frederik Ronsse

Graphene Nanoplatelets Dispersed In Isopropyl Palmitate for the Improvement of Cold Storage Applications

Authors: Marco A. Marcos, Jose I. Prado, Javier P. Vallejo, S.M. Sohel Murshed, Luis Lugo

Phase Change Analysis of New Backfilling Materials with PCM for Geothermal Wellbores

Authors: Uxía Calviño, Javier P. Vallejo, S. M. Sohel Murshed, Yulong Ding, Luis Lugo

BN:SiO₂ Hybrid Nanofluids Based On Ethylene Glycol:Water As Enhanced Thermal Fluids

Authors: Marco A. Marcos, F. Almeida, Javier P. Vallejo, S.M. Sohel Murshed, Luis Lugo

LIST OF PAPERS

Poster Session

A Multi-Scale Numerical Method for Simulating an Onshore Wind Farm over Complex Terrain

Authors: Qiang Wang, Song Chen, Jianren Fan

Virtual Session

The Sustainable Treatment of Municipal Landfill Leachate

Authors: Hugo Romero B., Paul Jaramillo, Luiggi Solano, Kerly Dávila, Fredis Pesantez, Irán Rodríguez

SPONSORS

International ASET Inc. would like to thank the following sponsors for their support of ICAER 2023:



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ICAERA 2024

The 5th International Conference on Advances in Energy Research and Applications (ICAERA 2024) will be held on November 21 – 23 in Lisbon, Portugal

ICAERA 2024

5th International Conference on Advances in
Energy Research and Applications

November 21 – 23 | Lisbon, Portugal.

<https://2024.icaera.com>

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

You can also email info@icaera.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 Journal of Fluid Flow, Heat and Mass Transfer (JFFHMT) after a secondary review process.

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

All published papers of JFFHMT will be submitted to Google Scholar and be indexed in Scopus. 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 websites for the respected journals: **JFFHMT:** <https://jffhmt.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.

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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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Authors

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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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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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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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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