



**ICAERA**  
2022

# **3rd International Conference On Advances In Energy Research And Applications (ICAERA'22)**

**October 27 -29, 2022 | Seoul, South Korea | Virtual Conference**

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# TABLE OF CONTENTS

<b>Welcome Message from the Conference Chair.....</b>	<b>3</b>
<b>About ICAER'22.....</b>	<b>4</b>
<b>Scientific Committee.....</b>	<b>5</b>
<b>Keynote Speakers.....</b>	<b>6</b>
<b>List of Papers .....</b>	<b>9</b>
<b>Sponsors .....</b>	<b>11</b>
<b>ICAERA'23 .....</b>	<b>12</b>
<b>Ethics &amp; Malpractice .....</b>	<b>13</b>
<b>Contact Us .....</b>	<b>18</b>

# 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 3<sup>rd</sup> International Conference on Advances in Energy Research and Applications (ICAERA'22).

The goal of ICAERA'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, two plenary 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 3<sup>rd</sup> International Conference on Advances in Energy Research and Applications (ICAERA'22). We wish you a very successful and enjoyable experience.

**Dr. Boguslaw Kruczek**  
**University of Ottawa, Canada**  
*Conference Chair*  
*ICAERA'22*

[Return to Top](#)

# ABOUT ICAER'22

The 3<sup>rd</sup> International Conference on Advances in Energy Research and Applications (ICAER'22) aims to become the leading conference in fields related to Energy Research and Applications. The goal of ICAER'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.

ICAER'22 is an international conference will be held yearly. This conference focus on all aspects Energy Research and Applications. ICAER'22 Will be held this year in virtual conference

**ICAER'22** 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

[Return to Top](#)

# SCIENTIFIC COMMITTEE

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



**Dr. Boguslaw Kruczek**

University of Ottawa, Canada  
Conference Chair

## Scientific Committee Members

- **Dr. Hamdy Afefy**, Tanta University, Egypt
- **Dr. Müslüm Arıcı**, Kocaeli University, Turkey
- **Dr. Muhammad Akram**, University of Sheffield, UK
- **Dr. Nilofar Asim**, Universiti Kebangsaan Malaysia, Malaysia
- **Dr. George Bakos**, Democritus University of Thrace, Greece
- **Dr. Sathaporn Chuepeng**, Kasetsart University, Thailand
- **Dr. D. Y. Dhande**, AISSMS College of Engineering, India
- **Dr. Ragab A. El-Sehiemy**, Kafrelsheikh University, Egypt
- **Dr. Mojtaba Nedaei**, University of Padua, Italy
- **Dr. Ali Mostafaeipour**, Yazd University, Iran
- **Dr. Jun Peng**, University of Lincoln, UK
- **Dr. Swellam W. Sharshir**, Kafrelsheikh University, Egypt

# PLENARY/KEYNOTE SPEAKERS

The keynote information for the 3rd International Conference on Advances in Energy Research and Applications (ICAER'22) is as follows:

## Plenary Speakers

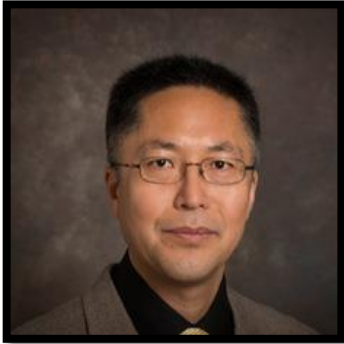


**Dr. Bingqing Wei**  
**University of Delaware, USA**



**Dr. Makhsud Saidaminov**  
**University of Victoria, Canada**

# PLENARY SPEAKER



**Title:** 3D Interconnected Carbon Nanostructures for Filter Capacitor Applications  
**Dr. Bingqing Wei, University of Delaware, USA**

[Return to Top](#)

Dr. Bingqing Wei (B. Q. Wei) is a Tenured Professor in the Department of Mechanical Engineering and serves as Director of the Center for Fuel Cells and Batteries at the University of Delaware, USA. Dr. Wei was an Assistant Professor in the Department of Electrical & Computer Engineering and Center for Computation & Technology at Louisiana State University from 2003 to 2007. He was a Research Scientist at Rensselaer Polytechnic Institute, Department of Materials Science and Engineering, and Rensselaer Nanotechnology Center from 2000 to 2003.

Dr. Wei was a visiting scientist at Max-Planck-Institut für Metallforschung, Stuttgart, Germany, in 1998 and 1999. From 1992 to 2001, he was a faculty member at Tsinghua University in Beijing.

## PLENARY SPEAKER



**Title:** 3rd Generation Solar Cells Based On Halide Perovskites

**Dr. Makhsud Saidaminov, University of Victoria, Canada**

[Return to Top](#)

Makhsud Saidaminov is a Canada Research Chair Tier II in Advanced Functional Materials and an Assistant Professor at the University of Victoria. He received his Ph.D. from Moscow State University. Makhsud authored 100+ papers and was named 2021 Highly Cited Researcher by Clarivate Analytics.



# LIST OF PAPERS

The following papers were presented at the 3rd International Conference on Advances in Energy Research and Applications (ICAER'22)

## Energy Storage and Conversion

### Experimental Study on the Turbulent Steam Jet from Four Different Nozzle Exit Geometries Using PDPA System

Authors: Jaewon Myeong, Hyeon Gyeom Kim, Weon Gyu Shin

### SoH Prediction Model for Lithium-ion Batteries Based on Transformer

Authors: Seung-Beom Cho, Si-Hwa Jeong, Jae-Boong Choi

### Experimental Study of Double Inverted Flags Energy Harvesting System with Flow Induced Vibration

Authors: Yi-Ren Wang, Pin-Tung Chen, Yen-Te Hsieh

### Transient Analysis of Lower and Ground Zone Energy Extraction in Solar Ponds with Temperature Drop across Exchangers

Authors: Sunirmit Verma, Ranjan Das

## CFD

### CFD Investigation of Hydrogen Combustion in Swirler Combustor

Authors: Jun Peng Peng, Jordache Stones-Blackman, Jingyin Liu

# LIST OF PAPERS

The following papers were presented at the 3rd International Conference on Advances in Energy Research and Applications (ICAER'22)

## Sustainable Energy

### Techno Economic Analysis of Modular Microgrids in Cold Regions

Authors: Karen Supan, Seth Soman, Michael CrossKim

### Parametric Analysis of a Multiple Solution Concentration Operated Combined Power and Cooling Cycle with Internal Recuperation

Authors: Adityabir Singh, Ranjan Das

### Solar Aided Power Generation (SAPG) System Using Parabolic Troughs: Techno-Economic Scenarios

Authors: George C. Bakos, Stylianos A. Papazis

# SPONSORS

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



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[Return to Top](#)

# ICAERA'23

The 4<sup>th</sup> International Conference on Advances in Energy Research and Applications (ICAERA'23) will be held on December 7, 2023 - December 9, 2023 | Dubai, United Arab Emirates.

## ICAERA'23

### 4th International Conference on Advances in Energy Research and Applications (ICAERA'23)

December 7, 2023 - December 9, 2023 | Dubai, United Arab Emirates.

<https://2023.icaera.com>

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

You can also email [info@icaera.com](mailto:info@icaera.com) or call us at:

+1-613-834-9999

[Return to Top](#)

# 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.

# 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.

### ***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.

# ETHICS & MALPRACTICE

## **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.

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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.

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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***

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

## ***Reporting of Mistakes, Errata, and Retractions***

If an author identifies a major error in a published paper, he/she must immediately inform 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**

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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.

# CONTACT US

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[Return to Top](#)