

Preface

It is with great pleasure and a sense of profound responsibility that we welcome you to the proceedings of the 2024 9th International Conference on Advances in Energy and Environment Research (ICAER 2024). This prestigious gathering, held in Shanghai, China from September 20th to 22nd, 2024, brings together leading researchers, scholars, and industry professionals from across the globe to share their latest findings, innovations, and insights in the field of energy and environmental engineering.

Since its inception in 2016, ICAER has evolved and grown to become the leading forum for discussing the most pressing challenges and opportunities facing the planet today. The 9th edition of this conference series marks a significant milestone in our collective journey towards fostering sustainable development and promoting environmental stewardship.

The theme of this year's conference Innovations for a Sustainable Future resonates deeply with the global community's aspirations for a cleaner, greener, and more resilient world. It provides a timely platform for addressing the intricate interlinkages between energy production and consumption, environmental degradation, and climate change. The papers presented in this proceedings reflect the diverse range of perspectives and approaches being taken to tackle these complex issues.

The conference has attracted an impressive array of esteemed keynote speakers, including Professor Marc A. Rosen from Ontario Tech University, Canada, Fellow of the Canadian Academy of Engineering, and Professor Mohammed JK Bashir from School of Engineering & Technology, Central Queensland University, Australia, among others. Their insightful presentations have set the tone for a rich and stimulating discourse that has engaged all participants.

The proceedings contains a wealth of high-quality research papers, each meticulously reviewed and selected to ensure their relevance, originality, and scientific rigor. These contributions cover a wide spectrum of topics, including renewable energy technologies, carbon emission control and treatment, energy materials, atmospheric environment monitoring and pollution control, environmental science and engineering, and others. They showcase the latest advancements in theoretical and applied research, providing a comprehensive snapshot of the current landscape of energy and environmental research.

As we look ahead, it is clear that the path to a sustainable future is fraught with challenges. However, the collective wisdom and ingenuity represented in this proceedings give us hope and inspiration. The insights and innovations presented here have the potential to transform the way we think about and approach energy and environmental issues, paving the way for a brighter and more sustainable future for all.

On behalf of the organizing committee, we would like to extend our heartfelt thanks to all the authors, reviewers, keynote speakers, and participants for their invaluable contributions to the great success of ICAER 2024. We are also grateful to our sponsors and partners for their unwavering support.

In conclusion, the proceedings of the 2024 9th International Conference on Advances in Energy and Environment Research represents a significant step forward in our collective efforts to address the most pressing challenges of our time. We hope that they will serve as a valuable resource for researchers, policymakers, and practitioners alike, inspiring further innovation and collaboration in the pursuit of a sustainable future.

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