Africa International Conference on Clean Energy and Energy Storage

Selected peer-reviewed full text papers from the 1st Africa International Conference on Clean Energy and Energy Storage (AICCEES)

Edited by

Prof. Roland Uhunmwangho
Prof. Sunday Olayinka Oyedepo
Dr. Ogheneruona Endurance Diemuodeke
Prof. Fidelis Abam
Dr. Veronica Edeminam
Engr. Anthony Akpasoh

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November 23-24, 2023, Port Harcourt, Nigeria

Edited by

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Preface

Welcome to the publication of the selected articles from the Africa International Conference on Clean Energy and Energy Storage (AICCEES).

In the pursuit of advancing clean energy and energy storage solutions for a sustainable future in Africa, AICCEES 2023 brought together an assembly of brilliant minds, innovative researchers, and industry leaders. This book is a testament to the vibrant exchange of ideas and knowledge that took place during the conference.

AICCEES 2023 in Retrospect

AICCEES 2023 served as a pivotal platform for researchers, practitioners, and policymakers to converge and deliberate on the latest developments in the field of clean energy. The conference aimed not only to showcase the current state of research but also to foster collaborations and inspire future breakthroughs.

Acknowledging the Contributors

We extend our deepest gratitude to all the authors who shared their insights, research findings, and expertise. Your dedication to advancing the discourse on clean energy is evident in the quality and diversity of the selected articles included in this compilation.

Appreciation

A special appreciation goes to Tovero Energy Ltd, the driving force behind the organization of AICCEES 2023. Their commitment to fostering knowledge exchange and innovation has been instrumental in the success of this conference.

We also express our heartfelt thanks to the Conference Chairs, members of the Scientific Committee, and Keynote Speakers for their leadership, guidance, and contributions that shaped the conference agenda.

Recognition of Supporting Organizations

The success of AICCEES 2023 would not have been possible without the support of organisations that share our commitment to advancing clean energy solutions. We extend our appreciation to Clean Technology Hub, CODAHEA, ASSACOV Global Nigeria Ltd, Integrated African Power, and others who have played a vital role in supporting this conference.

Looking Ahead

With this edition, we invite readers to explore the cutting-edge research and ideas that emerged from AICCEES 2023. May this compilation serve as a source of inspiration and a reference for those committed to the pursuit of sustainable and cleaner energy solutions.

Thank you for being a part of this transformative journey.
Best regards,

Engr. Anthony Mbukobong Akpasoh
Tovero Energy Ltd

Acknowledgements

Tovero Energy Ltd sincerely thanks God Almighty, for making the 2023 edition of the Africa International Conference on Clean Energy and Energy Storage a great success. Tovero Energy Ltd would like to thank the Conference Chairperson, Professor Roland Uhunmwangho, the Conference Co-Chairpersons, Professor Sunday Oyedepo, Professor Fidelis Abam and Dr. Ogheneruona Diemuodeke, and the management of the University of Port Harcourt, who worked really hard in making this conference what it is by providing scientific and logistical support.

Tovero Energy Ltd would like to express its appreciation to all members of the scientific committee for their tremendous efforts and contribution to the success of the 2023 Africa International Conference on Clean Energy and Energy Storage. Tovero Energy Ltd is grateful to be known as an organisation that amasses a highly qualified and competent team who relentlessly worked for months to make this conference successful in hopes of creating a well-rounded society.

We further express our sincere appreciation to our partners for their tremendous contributions to the 2023 edition of the conference, **Energy Access and Renewable Energy Programme of the University of Port Harcourt**, Nigeria, **Clean Technology Hub**, **Consortium for the Development and Advancement of Hydrogen Economy in Africa (CODAHEA)**, **ASACCOV**, and **Integrated Africa Power (IAP)**.

We acknowledge the prominent role undertaken by the brilliant keynote speakers, Professor Yacob Mulugetta, and Ifeoma Malo, the authors, moderators, and panel session members who contributed scholarly and industry knowledge to the success of the 2023 conference.

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