

# **2023 13th International Conference on Future Environment and Energy (ICFEE 2023)**

**13-15 January, 2023, Tokyo, Japan**

## **Preface**

The 2023 13th International Conference on Future Environment and Energy (ICFEE 2023) was successfully held in hybrid mode of conference in Sophia University, Tokyo, Japan during 13-15 January, 2023. The conference received more than 80 papers during the submission period and more than 50 individuals attended the conference from a range of countries and regions including China, South Korea, Japan, USA, Australia, Czech Republic, Malaysia, Philippines, India, Thailand, Spain, and Honduras.

The conference model included two parts: physical sessions and virtual session. There were 2 conference speakers delivering their wonderful speeches and 4 sub-sessions where each author had 10 minutes for presentation and 5 minutes for questions. Topics included, but were not limited to the following areas: Construction and Civil Engineering; Environmental Pollution, Treatment and Ecological Assessment; Waste Recycling, Utilization and Clean Energy Technology; Environmental Management, Energy Resources and Geotechnical Engineering. ICFEE is an annual event which has been conducted since 2011. We will continue organizing this conference in the future to provide an effective platform for further exchange of new knowledge and potential collaboration in research areas of future environment and energy

ICFEE 2023 proceeding is a collection of outstanding submissions from universities, research institutes and industries. All of the papers were subjected to peer-review by conference committee members and international reviewers. The papers selected depended on their quality and their relevancy to the conference. The proceedings serve as a reference, and hopefully inspire new ideas for scientists, engineers, graduate students, equipment manufactures and operators, as well as technical managers who are working on the broad field of future environment and energy.

Cordial gratitude is delivered to all the authors who have contributed to this volume and also to the organizing committees, reviewers, speakers, chairpersons, sponsors and all the conference participants for their support to ICFEE 2023.

Proceedings Editor  
Prof. Roberto San Jose  
Technical University of Madrid, Spain

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