

# Preface

The International Conference on Industrial Sciences, Engineering and Technology toward Digital Era 2023 (eICISSET2023) was a conference event attended by postgraduate students and researchers from 4 countries who shared their research activities and exchanged new knowledge based on the current development of industrial sciences, engineering and technology. The conference was organized by the Office of Deputy Rector III Planning and Cooperation, Universitas Indo Global Mandiri (UIGM). It was successfully held both offline and online on 8<sup>th</sup> and 9<sup>th</sup> of August 2023 at UIGM, Palembang, South Sumatra, Indonesia.

The eICISSET2023 was dedicated specifically to the advancement of industrial sciences, engineering and technology in related industries such as membrane, biotechnology, biodiversity, biocomposite, industrial chemistry, electroceramics, photonics, renewable energy, mechatronics, sensor, environment, and others.

In this proceeding were included the selected articles from the eICISSET2023 with a special focus on modern aspects of sustainable development in biotechnologies, robotics, machine learning and management.

Analysis of red rice phenotypic diversity for the support of its breeding, and antibacterial potential of endophytic fungi, including a study of butterflies' diversity in geothermal powerplant areas for environmental impact assessment of their activity are the topics of the first chapter.

The second chapter presents the results of developing an obstacle-detection system for small unmanned aerial vehicles and designing an autonomous robotic fish with possibilities for obstacle avoidance.

The third chapter contains articles on a review of existing approaches to deep learning using a convolutional neural network model and practice of the implementation of natural language processing in the manufacturing and service industry through skateboard monitoring devices.

The last chapter presents some articles on the comprehensive investigation of occupational hazards at a building construction site, risk inspection of cooling pipes for ranking of possible failures in the reactor and recommendation formation for the public to resolve conflicts regarding land disputes.

This selection will be useful to a wide range of specialists engaged in the relevant fields of science or industry.

On behalf of the conference organizing team, we would like to thank the Office of Deputy Rector Planning and Cooperation, UIGM, for allowing this activity and extending help for the success of this event. We extend our thanks to Trans Tech Publication for giving an opportunity to publicise the conference results in this book. We also would like to express our gratitude to all authors, organizing committee members, reviewers, and international scientists for their support to eICISSET2023.

Special thanks are extended to the Directorate General Higher Education, Research and Technology, Ministry of Education, Culture, Research and Technology Indonesia through *BKII (Bantuan Konferensi Ilmiah International)* program 2023 for the support in this event.

## Editor

Dr. Agus Geter Edy Sutjipto  
Head of Bureau, Planning and Development  
Universitas Indo Global Mandiri

## Committee

|                                       |   |
|---------------------------------------|---|
| <b>Patron:</b>                        | Ketua Yayasan IGM<br>Rector Universitas IGM               |
| <b>Advisor:</b>                       | Deputy Rector III Universitas IGM                         |
| <b>Director:</b>                      | Dr Agus Geter Edy Sutjipto                                |
| <b>Co-Director:</b>                   | Isabella, S.Ip., M.Si                                     |
| <b>Secretary I:</b>                   | Dr Gasim, S. Kom., M.Si                                   |
| <b>Treasurer:</b>                     | Estiana Asri Fadhila                                      |
| <b>Publication:</b>                   | Dr Agus Geter Edy Sutjipto<br>Sanny Nofrima, S.Ip., M.Ip. |
| <b>Abstract/Tentative:</b>            | Dr. Endy Agustian, S.T., M.Eng.                           |
| <b>Souvenir/Certificate/Registr.:</b> | Estiana Asri Fadhila                                      |
| <b>Publicity/Media:</b>               | Budi Arianto, S.E., M.M.<br>Sapta Meida Heriadi, S.Kom.   |
| <b>Protocol/Invitation/Emcee:</b>     | Samat, S.Si., M.Si.                                       |

## Sponsor

Ministry of Education, Culture, Research and Technology Indonesia