

Preface of 14th International Conference on Green Technology 2024 (ICGT 2024)

The 14th International Conference on Green Technology (ICGT 2024) was held at the Atria Hotel and Convention Center in Malang, East Java, Indonesia, from October 1 to 2, 2024. ICGT is an esteemed annual multidisciplinary conference that serves as a platform for fostering collaboration and promoting intellectual exchange among educators, researchers, engineers, and industry professionals engaged in the advancement of science, technology, and related fields. In recent years, there has been increasing attention among scholars and practitioners regarding the need for green technologies to transition towards more integrated and sustainable approaches to environmental challenges. Existing frameworks, however, often fall short in addressing the region's diverse climatic, cultural, and environmental contexts. In response to these pressing issues, the theme of the 14th ICGT 2024 was “Emerging Green Technology: A Path Towards a Resilient and Sustainable Built Environment.”

The conference’s scientific program included keynote speeches, plenary sessions, and invited lectures, alongside parallel sessions covering a wide range of topics across the STEM disciplines. The event attracted a diverse audience comprising professors, PhD students, early-career researchers, academic supervisors, scientists, master’s students, and undergraduates from fields including earth sciences, environmental studies, engineering, natural sciences, technology, and innovation. The primary objective of the conference was to introduce students to the dynamic and evolving STEM landscape, keep experts abreast of the latest developments in their respective fields, and facilitate the exchange of knowledge and research insights across a broad spectrum of scientific and technological domains. Notably, the 14th ICGT 2024 emphasized the development of both accessible and advanced technologies to foster sustainability in diverse environmental and cultural settings.

In light of the global disruptions in recent years, the 14th ICGT 2024 adopted a hybrid format. Although virtual participation was limited, this model enabled all attendees to engage with the conference either in person in Malang or virtually via Zoom. The conference agenda began with keynote speaker presentations and discussions, followed by parallel sessions for all presenters. Each presenter was allotted 20 minutes, including 15 minutes for their oral presentation and 5 minutes for discussion. These sessions were moderated, with all keynote speakers serving as reviewers for the presentations, both in the plenary room onsite and virtually. Additionally, all events were live-streamed on the university’s YouTube channel. We would like to express our gratitude to the organizing and scientific committees, as well as to all presenters and participants, for their unwavering support and contributions. Finally, we extend our sincere appreciation to the Faculty of Science and Technology at the Islamic State University of Maulana Malik Ibrahim Malang for their generous financial support and assistance in ensuring the success of this event.

Chairman,

Agus Subaqin

ORGANIZING COMMITTEE

14th International Conference on Green Technology 2024

Steering Committee

Prof. Dr. Sri Harini, M.Si. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Anton Prasetyo, M.Si. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Akyunul Jannah, M.Si. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Dwi Suheriyanto, MP. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Nunik Junara, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Chairman

Dr. Agus Subaqin, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Vice Chairman

Angga Perdana, M.Ars. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Editors

Assoc. Prof. Lar. Dr. Nor Atiah Ismail (University Putra Malaysia, Malaysia)
Prof. Ueki (Hiroshima University, Japan)
Dr. Panupong Tamachoti (Chulalongkorn University, Bangkok, Thailand)
Dr. Anton Prasetyo, M.Si (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Ajeng Kusumaningtyas Pramono (Gifu University, Japan)
Dr. Agus Subaqin, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Reviewers

Assoc. Prof. LAr. Dr. Nor Atiah Ismail (Universiti Putra Malaysia, Malaysia)
Prof. Dr. Boriana Mihailova (Universität Hamburg, Germany)
Asst. Prof. Sunaree Lawanyawatna (King Mongkut's University of Technology Thonburi, Thailand.)
Prof. Agung Sedayu, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Aulia Fikriarini Muchlis, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Ir. Agung Murti Nugroho, ST., M.T., Ph.D (Brawijaya University, Indonesia)
Dr. Ririen Kusumawati, S.Si., M.Kom. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Arie Dipareza Syafei, Dr.Eng, ST., MEPM (Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia)
Prof. Gunawan Prayitno, SP., MT., Ph.D (Brawijaya University, Malang, Indonesia)
Dr. Muhammad Saefi, M.Pd (Malang State University, Indonesia)

Secretary

Anita Andriya Ningsih, M.Pd (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
M. Imam Faqihuddin, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Ana Ziyadatul Husna, M.Ars (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Ahmad Fahmi Karami, M.Kom (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Nurizal Dwi Priandani, M. Kom (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Johan Ericka Wahyu Prakasa, M.Kom (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Galuh Akbar Jagini (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Abidin, S.Pdi (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Treasury

Elok Mutiara, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Ninik Wahyu Lestari, M.M (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Faridah Abubakar M., S.Ag (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Irratul Wardah, S.Kom (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Ridha Dwi Utami, S.Pd (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Organizer Division

Prima Kurniawaty, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Tarranita Kusumadewi, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Aisyah, M.Ars (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Luluk Maslucha, M.Sc. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Aisyah Nur H, M.Sc. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Nur Kharismawardani, M. Ars (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Sukmayati Rahmah, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Prima Purbasari, M. Hum (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Weni Susilowati, S.AB (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Aldrin Yusuf Firmansyah, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Ach. Gat Gautama, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Pudji P Wismantara, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Achmad Farid Nazarudin, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Yulianto, M.Pd.I (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Academic Publication Division

Dr. Yulia Eka Putri, M.T. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Harida Samudro, M.Ars. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Bayu Agung Prahandika, M. Si. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Utiya Hikmah, M. Si, (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Juhari, M. Si. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Susi Nurul Kholifah, M. Si. (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dedy Dwi Putra, M.Hum (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Dr. Ririen Kusumawati, S.Si., M.Kom (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Human Relation Division

Andi Baso Mappaturi, M.T (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Muh. Abu Hasan Azzuhri, SE (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Muhammad Hatif, S.Pd.I (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Eko Achmad Deckri (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Sabar, S.S (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Anton Prasetyo, S.Si (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Nanang Prasetyo (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Muhamad Izzudin, S.Pd (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Andy Irawan, S.Si (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Yongki Irawan, S.M (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)

Documentation and IT Division

M. Fatkhul Ulum, S.Pd.I (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Taa'ib Maghfur, M.Pd.I (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Abadi Wijaya, S.Psi (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Alitha Natriezia Rachmayanti, S.E (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)
Santoso (State Islamic University Maulana Malik Ibrahim Malang, Indonesia)