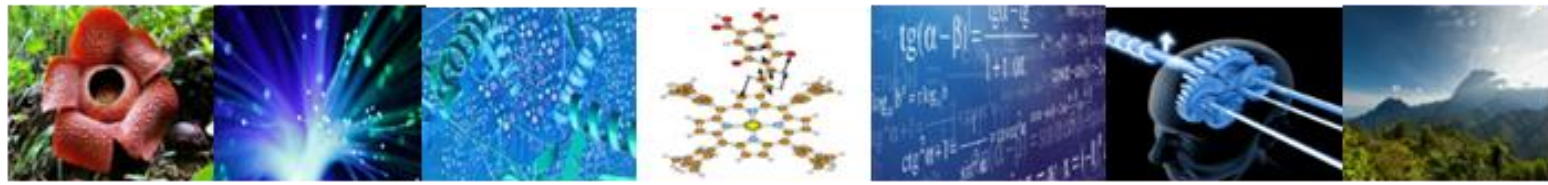




TRANSACTIONS ON SCIENCE AND TECHNOLOGY



Volume 9 Issue No 2-2
August 2022



ISSN 2289-8786

Transactions on Science and Technology

Volume 9, Issue Number 2-2

ISSN: 2289-8786

Editors-in-Chief

- Jedol Dayou** *Energy, Vibration and Sound Research Group (e-VIBS), Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia.*
jed[at]jums.edu.my
- Khim Phin Chong (Special Issue)** *Biotechnology Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia.*
chongkp[at]jums.edu.my

Managing Editor

- Fui Pien Chee** *Energy, Vibration and Sound Research Group (e-VIBS), Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia.*
fpchee06[at]jums.edu.my
- Asmahani Awang** *Energy, Vibration and Sound Research Group (e-VIBS), Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia.*
asmahani_awang[at]jums.edu.my

Editorial Board

- Aini Janteng** *Mathematics with Economics Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Chong Mun Ho** *Mathematics with Economics Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Ismail Jusoh** *Faculty of Resource Science and Technology, Universiti Malaysia Sarawak.*
- Jualang Azlan Gansau** *Biotechnology Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Leong Wan Vun** *Environmental Science Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Moh Pak Yan** *Industrial Chemistry Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Ping Chin Lee** *Biotechnology Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Raseetha Vani Siva Manikam** *Faculty of Applied Sciences, Universiti Teknologi MARA Shah Alam.*
- Thomas Moh Shan Yau** *School of Engineering & Technology, University College of Technology Sarawak.*
- Andy Russel Immit Mojiol** *Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Coswald Stephen Sipaut @ Mohd Nasri** *Chemical Engineering Programme, Faculty of Engineering, Universiti Malaysia Sabah.*
- Jidon Adrian Janaun** *Chemical Engineering Programme, Faculty of Engineering, Universiti Malaysia Sabah.*
- Ko Ying Hao** *Department of Mechanical Engineering, Faculty of Engineering and Built Environment, Tunku Abdul Rahman University College.*
- Mohd Kamel Wan Ibrahim** *Mechanical Engineering Programme, Faculty of Engineering, Universiti Malaysia Sabah.*
- Noumie Surugau** *Industrial Chemistry Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah.*
- Rachel Fran Mansa** *Chemical Engineering Programme, Faculty of Engineering, Universiti Malaysia Sabah.*
- Sebastian Dayou** *School of Engineering & Technology, University College of Technology Sarawak.*
- Yeong Sheng Tey** *Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia.*

International Editorial Board

- Baba Musta** *Universiti Malaysia Sabah, Sabah, Malaysia*
- Cesar G. Demayo** *Mindanao State University-Iligan Institute of Technology, Philippines*
- Francisco Nuñez De Caceres** *Universidad Autonoma del Estado de Hidalgo, Mexico*
- Mariam Gaidamashvili** *Iv. Javakhishvili Tbilisi State University, Georgia*
- Patricia Anthony** *Lincoln University, New Zealand*
- Sa-Ouk Kang** *Seoul National University, South Korea*

Associate Editor

Jackson Chang, Malaysia

Associate Editors (Special Issue)

Arnnyitte Alexander Malaysia
Syahriell Abdullah Malaysia

<http://tost.unise.org/>. ISSN: 2289-8786

African Continent Section

Editor-in-Chief

Gbenga Festus Akomolafe, *Federal University of Lafia, Nigeria.*

Editorial Board

Terna Tersoo Paul	Akwashiki Ombugadu
<i>Federal University of Lafia, Nigeria</i>	<i>Federal University of Lafia, Nigeria</i>

Preface

The ever-changing landscape in the civil engineering and construction industry has led to rapid innovation and technological advancements in the 21st century. The Civil Engineering Department of Universiti Malaysia Sabah has organized the 1st International Conference on Civil Engineering and Construction Technology (ICECon2021) virtually on the 14th - 15th December 2021 to disseminate new knowledge in these areas. Institutions such as the Green Materials and Advanced Construction Technology Research Unit (GMACT), Institution of Engineers Malaysia (IEM) and Association of Consulting Engineers Malaysia (ACEM) were invited to organize and co-organize in the conference to bridge the disparity between industry practices and academic research. With the theme “Emerging Technology and Sustainable Construction”, participants in the conference had the opportunity to renew their knowledge on current construction issues, expand their professional networks, view construction problems from sustainable perspectives and provide invaluable input for enriching civil engineering and construction technology for the benefit of humanity.

The travel restrictions due to the Covid-19 pandemic did not hamper knowledge transfer via the online platform. Thirty-eight (38) construction experts, researchers and engineers from Malaysia, China, and Australia gathered virtually to present their manuscripts during the 2-day conference. The selected papers were revised and published in an indexed journal. The topics presented and discussed ranged from Applied Sciences to Green Liquid Biofuels and the Environmental Behavior of Nanoparticles. The keynote speakers provided valuable insights on prominent research in the field, and substantial positive feedback from the participants was received during those sessions. Additionally, a rigorous peer-review process from the collective effort of the international/national advisory committee, session chairs, student volunteers, and university financial and administrative staff assistance has significantly improved the quality of papers and the success of ICECon2021.

As a final point, without the team synergy between the Civil Engineering Program and Green Materials and Construction Technology (GMACT) research unit, the ICECon21 would not have materialised. The conference could not have been a technical success and an enjoyable experience without the tremendous support, cooperation, assistance, and faith from our co-organizers, keynote speakers, authors, distinguished reviewers, and participants of our very 1st ICECon2021 Conference.

ICECon2021 Committees and Editors

Professor Ir. Dr. Abdul Karim Mirasa, Conference Chair

Assoc. Prof. Ir. Dr. Nurmin Bolong, Vice Chair

Ts. Dr. Lillian Gungat, Vice Chair

Ir. Dr. Habib Musa Mohammad, Technical

Assoc. Prof. Dr. Abu Zahrim Yaser, Publication

Dr. Sheikh Mohd Iqbal S. Zainal Abidin, Publication

Ms. Janice Lynn Ayog, Publicity and IT

Ir. Jess Vun Wey Tyng, Publicity and IT

Dr. Siti Jahara Matlan, Registration and Finance

Sr. Ts. Dr. Asmawan Sarman, Local/Event Manager

Dr. Hidayati Asrah, Secretariat

Mr. Lim Chung Han @ Andrew, Secretariat

Ms. Adriana Erica Amaludin, Secretariat

Guest Editors

- Abdul Karim Mirasa**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
akmirasa@ums.edu.my
- Lillian Gungat**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
lillian@ums.edu.my
- Habib Musa Mohammad**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
habibmusa@ums.edu.my
- Sheikh Mohd Iqbal Bin S. Zainal Abidin**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
iqbal.zainal@ums.edu.my
- Janice Lynn Ayog**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
jay@ums.edu.my
- Hidayati Bte. Asrah**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
hidayati@ums.edu.my
- Adriana Erica Amaludin**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
adriana@ums.edu.my
- Rusdi Bin Rusli**
Faculty of Civil Engineering
Universiti Teknologi MARA, Selangor, Malaysia.
rusdirusli@uitm.edu.my
- Najeeha Binti Mohd Apandi**
Department of Civil Engineering,
Universiti Tun Hussein Onn Malaysia, Johor, Malaysia.
najeha@uthm.edu.my
- Mahyun Bt. Ab Wahab**
Faculty of Engineering Technology,
Universiti Malaysia Perlis, Perlis, Malaysia.
mahyun@unimap.edu.my
- Syahrin Neizam Bin Mohd Dzulkifli**
Faculty of Civil Engineering,
Universiti Teknologi MARA, Selangor, Malaysia.
syahrinneizam@uitm.edu.my
- Nurmin Bolong**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
nurmin@ums.edu.my
- Abu Zahrim Yaser**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
zahrim@ums.edu.my
- Vun Wey Tyng**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
ekonsult2011@gmail.com
- Siti Jahara Matlan**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
jahara@ums.edu.my
- Asmawan Bin Mohd Sarman**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
asmawan@ums.edu.my
- Lim Chung Han @ Andrew**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
andrew.lim@ums.edu.my
- Siti Nor Farhana Bt. Zakaria**
Faculty of Engineering,
Universiti Malaysia Sabah, Sabah, Malaysia.
snfarhanazakaria@ums.edu.my
- Nur Izz Md Yusoff**
Department of Civil Engineering,
Faculty of Engineering and Built Environment,
Universiti Kebangsaan Malaysia
izz@ukm.edu.my
- Min Fui Tom Ngui**
Eramaju Synergy Sdn. Bhd.,
mftngui@hotmail.com
- Norazlina Bt. Bateni**
Faculty of Engineering,
Universiti Malaysia Sarawak, Sarawak, Malaysia.
bnorazlina@unimas.my

Transactions on Science and Technology

Volume 9, Issue Number 2-2

Table of Contents

Original Articles

- | | | |
|---|-----|--|
| <i>Tom Lees; Dane Segar; Andrew Whyte;
Stephen Urquhart</i> | 86 | Cost and Time Overruns in Western Australian Government Projects: Procurement Decision-Making Antecedents |
| <i>Asmawan Mohd Sarman; Nazaruddin Abdul Taha;
Nur Farah Adlin Misri; Elis Mardzianah Mazlan;
Muhammad Muizzuddin Mukhtar</i> | 97 | Comparative Study of Condition Survey Investigation on Building Affected by Bridge Piling Installation |
| <i>Asmawan Mohd Sarman; Lim Chung Han;
Allan Lumberio Lim; Elis Mardzianah Mazlan;
Muhammad Muizzuddin Mukhtar</i> | 103 | Potential Opportunities and Strategy of Building Information Modelling (BIM) In Malaysian Infrastructure Construction |
| <i>Thomas Tan; Habib Musa Mohamad;
Hidayati Asrah</i> | 111 | The Effect of Water Absorption on the Compressive Strength of Conventional Cement-sand Brick |
| <i>Zulkitti Madisibi; Lillian Gungat;
Mohd Azizul Ladin; Nadzirah Jausus</i> | 125 | Investigation on The Public Bus Issues in Kota Kinabalu City |
| <i>Awang Nasrizal Awang Ali; Grace Agnes Justin;
Nazaruddin Abdul Taha;
Mohamad Shakri Mohmad Shariff; Nurmin Bolong</i> | 133 | Community perceptions on the adoption of stormwater management practices in Kota Kinabalu, Sabah: A pilot study |
| <i>Lillian Gungat; Dayang Russalnie Deh;
Mohd. Azizul Ladin; Jodin Makinda; Elsa Eka Putri</i> | 142 | Impact of Pandemic on Public Transportation Service in Kota Kinabalu |

Review Articles

- | | | |
|---|-----|--|
| <i>Siti Kartini Ali Ashgar; Lilian Gungat;
Asmawan Mohd Sarman; Nurmin Bolong</i> | 152 | An Evaluation of Sustainable Campus Guidelines in Energy Management Context |
|---|-----|--|