



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA



**ICLCA'22**

**8<sup>TH</sup> INTERNATIONAL CONFERENCE ON  
LOW CARBON ASIA AND BEYOND**  
*SUSTAINABLE DEVELOPMENT TOWARDS CARBON NEUTRALITY*

**18-19 OCTOBER 2022**



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA



# 8<sup>th</sup> INTERNATIONAL CONFERENCE ON LOW CARBON ASIA

*Sustainable Development towards Carbon Neutrality*

**Day 1**

**4:00pm  
Opening**

**Plenary 1  
Prof. Joey D. Ocon**

*A Net-Zero Emission Energy Transition Pathway towards  
100% Renewable Energy for the Philippine Archipelago  
(Grid and Off-grid)*



**Plenary 2  
Prof Jiří Jaromír Klemes**

*Graphical Approaches to Facilitate  
Low Carbon Emissions Economy*



**Plenary 3  
Prof. Xiaotang Ju**

*How to Coordinate Crop Productivity  
and GHG Emission in Agroecosystem*



**Plenary 4  
Prof. Takeshi Fujiwara**

*Sustainable Waste Management  
towards Net Zero Emissions*



**Day 2  
4:00pm  
Closing**

**18<sup>th</sup> & 19<sup>th</sup>  
OCTOBER  
2022**

**Opening &  
Closing**



**Register at: [bit.ly/ICLCA2022](https://bit.ly/ICLCA2022)**





## 8<sup>th</sup> INTERNATIONAL CONFERENCE ON LOW CARBON ASIA

Sustainable Development towards Carbon Neutrality

# OPENING SPEECH

18<sup>th</sup> OCTOBER 2022 | 4.00 PM (GMT +8)



**Br. Bernard S. Oca FSC**  
President of DLSU



**Prof Ahmad Fauzi Ismail**  
Vice - Chancellor of UTM



LOW CARBON ASIA (ICLCA)



FB.ME/ICLLCACONF



**8<sup>th</sup> INTERNATIONAL CONFERENCE ON LOW CARBON ASIA**

*Sustainable Development towards Carbon Neutrality*

## **WELCOMING SPEECH**

**18<sup>th</sup> OCTOBER 2022 | 4.00 PM (GMT +8)**



**Prof Kathleen Aviso**  
Chair of ICLCA 2022



**Prof Ho Chin Siong**  
Chair of ICLCA 2022



LOW CARBON ASIA (ICLCA)



FB.ME/ICLLCACONF





## 8<sup>th</sup> INTERNATIONAL CONFERENCE ON LOW CARBON ASIA

Sustainable Development towards Carbon Neutrality

# CLOSING CEREMONY

19 OCTOBER 2022 4:00 PM (GMT+8)

[fb.me/icllcaconf](https://fb.me/icllcaconf)



**Prof Jiří Jaromír Klemes**

Honorary Advisor of ICLCA 2022



**Prof Raymond R. Tan**

Advisor of ICLCA 2022



**Prof Ho Chin Siong**

Chair of ICLCA 2022

## AWARDS CEREMONY



**Best Presenter**



**Most Active Participant**



LOW CARBON ASIA (ICLCA)



FB.ME/ICLLCACONF

## SESSION CO-CHAIRS

### Urban Planning & Smart Cities



- Xiaobin DONG, CN
- Seungjae LEE, KR
- Chin Siong HO, MY
- Loon Wai CHAU, MY

### Agriculture & Food Production



- Chunjie LI, CN
- Sheng ZHOU, CN
- Yee Van FAN, CZ
- Hoang Anh HOANG, VN

### Sustainable Energy Systems



- Cheng Tung CHONG, CN
- Alvin CULABA, PH
- Michael Francis D. BENJAMIN, PH
- Phongthep HANPATTANAKIT, TH

### Methodology



- Xiongfeng PAN, CN
- Petar Sabev VARBANOV, CZ
- Jeng Shiun LIM, MY
- Beatriz A. BELMONTE, PH

### Waste & Water Management



- Joni ADIANSYAH, ID
- Takeshi FUJIWARA, JP
- Kok Sin WOON, MY
- Maria Victoria MIGO-SUMAGANG, PH

### Cleaner Technology



- Jiří Jaromír KLEMEŠ, CZ
- Wai Shin HO, MY
- Raymond R. TAN, PH
- Phung Kim LE, VN

# CONFERENCE PLATFORM

**[LIVE via Zoom]** Opening & Closing Ceremony

**[On Demand]** Plenary & Parallel Sessions

- [LIVE]** Opening and Closing Ceremony will be run as **LIVE** sessions via **Zoom Link** on Conference Platform
- **[On Demand]** All Presentations including Plenary Talks are available on the **Conference Platform**. There is **No Presentation Schedule/Timetable**. You could **view and comments on All Presentations from 17-19 Oct 2022**.
- **[Q&A]** Parallel Sessions Q & A: Please **post questions** using the **Chat Box in the Conference platform**. The presenters would **respond** to the questions in the **Chat Box**.
- **[Conference Platform]** The **Link to the Conference Platform** is available in the **COMET** system **ONE day before the conference**. **E-mail notifications** will also be sent to each delegate.
- **[Accessibility]** The **Registered** and paid **Presenter/Participant** (User with Presenter roles in the COMET system) will receive the **Conference Platform Link**

For more Announcement, please follow us at <https://www.facebook.com/iclcaconf>

For more details on the conference platform and video submission, please visit our website:

<https://iclcaconf.com/recorded-presentation-video/>

For further queries please email: [iclcatech@gmail.com](mailto:iclcatech@gmail.com)

## PLENARY PRESENTATION



**PROF. JOEY D. OCON**



**PROF. JIŘÍ JAROMÍR  
KLEMES**



**PROF. XIAOTANG JU**



**PROF. TAKESHI  
FUJIWARA**

| Paper id     | Title                                                                                                                          | Authors ( <u>Presenter</u> )                                                     |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| ICLCA22.0074 | Graphical Approaches to Facilitate Low Carbon Emissions Economy                                                                | Bohong Wang, Yee Van Fan, Lianghui Guo, Sheng Zhang, <u>Jiří Jaromír Klemes*</u> |
| ICLCA22.0148 | Sustainable Waste Management towards Net Zero Emissions                                                                        | <u>Takeshi Fujiwara*</u>                                                         |
| ICLCA22.0149 | A Net-Zero Emission Energy Transition Pathway towards 100% Renewable Energy for the Philippine Archipelago (Grid and Off-grid) | <u>Joey Ocon*</u>                                                                |
| ICLCA22.0150 | How to Coordinate Crop Productivity and GHG Emission in Agroecosystem                                                          | <u>Xiaotang Ju*</u>                                                              |



## Urban Planning & Smart Cities

| Paper id     | Title                                                                                                                                                                  | Authors (Presenter)                                                                                                                                                                                                   |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0012 | Various Effects of the Tag-less Framework                                                                                                                              | <u>Dahye Kim</u> , Minje Choi, Donggyun Ku, Seungjae Lee*                                                                                                                                                             |
| ICLCA22.0013 | Calculating the Environmental Benefits of Trams                                                                                                                        | <u>Minje Choi</u> , Gayoung Kang, Juhyeon Kwak, Yoonjung Jang, Seungjae Lee*                                                                                                                                          |
| ICLCA22.0018 | The mediation role of entrepreneurship in the link between High-speed rail and carbon emission reduction                                                               | Chen Yu, Deng Yajue, <u>Yuqing Wang</u> , Zhao Changyi*                                                                                                                                                               |
| ICLCA22.0030 | The Relationship between Green Transportation and Leisure Travel Based on Social Media Data                                                                            | <u>Juhyeon Kwak</u> , Joonsik Jo, Donggyun Ku, Seungjae Lee*                                                                                                                                                          |
| ICLCA22.0031 | Basis for Hydrogen Freight Vehicle Activation Policy                                                                                                                   | Sion Kim, <u>Hyeri Jeong</u> , Donggyun Ku, Seungjae Lee*                                                                                                                                                             |
| ICLCA22.0035 | Wider Benefits of Eco-Friendly Transportation Projects with Contingent Valuation Method                                                                                | <u>Donggyun Ku</u> , Kweon Soonwook, Jooyoung Kim, Seungjae Lee*                                                                                                                                                      |
| ICLCA22.0040 | Electric Bus Charging Schedule for Multiple Route via Mathematical Modelling                                                                                           | <u>Lek Keng Lim</u> , Zarina Ab Muis*, Wai Shin Ho, Ir. Dr. Haslenda Hashim, Wan Choy Chee                                                                                                                            |
| ICLCA22.0045 | Activation plans of Public Transport based on Urban Network Analysis                                                                                                   | <u>Ilho Jeong</u> , Minje Choi, Donggyun Ku, Seungjae Lee*                                                                                                                                                            |
| ICLCA22.0046 | Investigation of Transport Carbon Emissions in Korea                                                                                                                   | <u>Madiha Bencekri</u> , Doyun Lee, Donggyun Ku, Seungjae Lee*                                                                                                                                                        |
| ICLCA22.0100 | Community Practice in Low Carbon Lifestyle Towards Sustainable Development Goals in Kuala Lumpur                                                                       | <u>Nek Mah Basri</u> , Amir Hamzah Sharaai*, Mohd Mursyid Arsyad, Zakiah Ponrahono                                                                                                                                    |
| ICLCA22.0111 | SME Contractor Multi-Criteria Business Model on Adaptation of Construction Industry Revolution 4.0 in Malaysia – A Review on Business Models and Adaptation Challenges | <u>Loganathan Ratana Singaram*</u> , Rozana Zakaria, Vikneswaran Munikanan, Eeydzah Aminudin, Siti Mazzuana Shamsuddin, Muhamad Azani Yahya, Abdul Rahman Mohd Sam, Noraziah Wahi, Jawa Anak Gara, Shaza Rina Sahamir |
| ICLCA22.0127 | Estimating Carbon Stock in Biomass and Soil of Young Eco-Forest in Urban City, Thailand                                                                                | <u>Phongthep Hanpattanakit*</u> , Patchara Kongsanakaew, Arnon Pocksorn, Wipaporn Thanajaruwittayakorn, Worapada Detchairit, Atsamon Limsakul                                                                         |
| ICLCA22.0134 | Influence of urban agglomerations on carbon emissions                                                                                                                  | Ruifeng Hu*, Weiqiao Xu, <u>Chengming Zhang</u>                                                                                                                                                                       |
| ICLCA22.0153 | Decarbonisation of the Industrial Sector Through Greenhouse Gas Mitigation, Offset, and Emission Trading Schemes                                                       | <u>Haslenda Hashim*</u> , Muhammad Afiq Zubir, Hesam Kamyab, Muhammad Fakhrul Islam Zahran                                                                                                                            |

# Sustainable Energy Systems

| Paper id     | Title                                                                                                                                      | Authors (Presenter)                                                                                                                                                                           |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0011 | Planning and optimization of 100% renewable energy communities: a case study for Corvo Island, Portugal                                    | <u>João Graça Gomes*</u> , Qiang Yang, Juan Jiang, Tianqi Yang, Cheng Tung Chong, Xu Zhang, Shu Yang Wang                                                                                     |
| ICLCA22.0021 | Could Green Finance Facilitate Low Carbon Transformation of Power Generation? Some Evidence from China                                     | <u>Xianchun Liao*</u> , Ziqiang Lin, Haoran Jia                                                                                                                                               |
| ICLCA22.0026 | Optimal Operation of Chillers Plant in Academic Building by using Linear Programming Approach                                              | <u>Nur Izyan Zulkafli*</u> , Mohamad Firdaus Sukri, Musthafah Mohd Tahir, Asjufri Muhajir, Dawid Hanak                                                                                        |
| ICLCA22.0066 | Peer-to-peer Economic Decision Analysis Model for Integrated Thermal Energy Trading                                                        | <u>Muhammad Imran Ismail*</u> , Nor Alafiza Yunus, Muhammad Nurariffudin Mohd Idris, Haslenda Hashim                                                                                          |
| ICLCA22.0067 | Analysis of nonlinear evolution mechanism of power technology progress under the constraints of net-zero carbon dioxide emissions in China | <u>Huaihua Zheng*</u>                                                                                                                                                                         |
| ICLCA22.0077 | Reducing Environmental Footprints of Buildings Heating, Cooling and Ventilation by more Efficient Use of Energy and Supply from Renewables | Jiří Jaromír Klemeš, Paweł Odroń, <u>Petar Sabev Varbanov*</u> , Yee Van Fan                                                                                                                  |
| ICLCA22.0078 | Bioenergy Generation Potential of Empty Fruit Bunch and Waste Tire Through Microwave Pyrolysis: An Energy Balance Analysis                 | <u>Guo Ren Mong*</u> , Chin Seng Liew, William Woei Fong Chong, Rubia Idris, Jo-Han Ng, Meng Choung Chiong                                                                                    |
| ICLCA22.0082 | A Review of Palestine's National Electricity Sector Decarbonization Policy through adapting Solar PV systems                               | <u>Amer Braik</u> , Asaad Makhalfih, Kamaruzzaman Sopian, Adnan Ibrahim*                                                                                                                      |
| ICLCA22.0103 | Design Of Water in Diesel Emulsion Fuel Using a Computer-aided Approach                                                                    | Shah Aznie Ariffin Kashinath, Haslenda Hashim, <u>Nor Alafiza Yunus*</u>                                                                                                                      |
| ICLCA22.0124 | Field Measurement and Dispersion Modelling of Hydrogen Sulphide for Recycled Paper Mill in Malaysia                                        | Li Yee Lim, Cassandra Bong, <u>Wai Shin Ho*</u> , Ir. Dr. Haslenda Hashim, Mohd Rozainee Taib, Pangsoon Ng, Keng Yinn Wong                                                                    |
| ICLCA22.0125 | Thermodynamic Analysis of Glycerol-Methane Steam Reforming to Hydrogen                                                                     | Nor Fatin Fariahah Mohd Yusof, Mahadhir Mohamed, Norzita Ngadi, Zurina Mohamad, Muhammad Abbas Ahmad Zaini, Rafiziana Md Kasmani, Agus Arsad, Mazura Jusoh Jusoh, <u>Zaki Yamani Zakaria*</u> |
| ICLCA22.0136 | Optimal Energy System for Repowering Yemen's Cities                                                                                        | <u>Mohammed Abdulrahman Saleh Almurisi</u> , Jeng Shiun Lim*                                                                                                                                  |
| ICLCA22.0142 | Optimising Process Pathway for Palm Oil Mill Effluent to Compressed Biomethane Off-Site Utilisation                                        | Aminullah Mohtar, <u>Wai Shin Ho*</u> , Cassandra Phun Chien Bong, Li Yee Lim, Zarina Ab Muis, Ir. Dr. Haslenda Hashim, Keng Yinn Wong                                                        |

| Paper id     | Title                                                                                                             | Authors (Presenter)                                                                                                                                                                    |
|--------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0145 | Carbon and Economic Analysis on Cogeneration Natural Gas Boiler and Solar Photovoltaic in Pulp and Paper Industry | <u>Wan Choy Chee</u> , Wai Shin Ho*, Lek Keng Lim, Zarina Ab Muis, Keng Yinn Wong, Mohd Rozainee Taib, Azizul Azri Mustaffa                                                            |
| ICLCA22.0151 | Quality Enhancement Process of Hazardous Industrial Waste-Based Solid Fuel                                        | Mei Zhi Ong, Sameer Rajaratnam Abdullah, Balasubramaniam Kapram, Afif Hamidi Bin Kori, Noor Shawal Nasri, Haslenda Hashim, <u>Muhammad Afiq Zubir*</u> , Muhammad Fakhrol Islam Zahran |
| ICLCA22.0152 | Study on physicochemical properties of tailor-made green jet fuel blend from waste cooking oil                    | <u>Nor Alafiza Yunus*</u> , Ir. Dr. Haslenda Hashim, Kheoh Zi Hoon                                                                                                                     |



## Sustainable Waste & Water Management

| Paper id     | Title                                                                                                                                                         | Authors ( <u>Presenter</u> )                                                                                                                      |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0014 | Removal of Reactive Black 5 from Water by Polyethylenimine-Crosslinked Polyvinyl Chloride Electrospun Nanofiber Adsorbent                                     | <u>Zhuo Wang</u> , Su Bin Kang, Sung Wook Won*                                                                                                    |
| ICLCA22.0016 | A Review on Green Porous Composites Made of Cellulose and Chitosan Derivatives for Water Treatment                                                            | Viet Thanh Tran, <u>Nguyen Luon</u> , Nga Hoang Nguyen Do, Phung Kim Le*                                                                          |
| ICLCA22.0036 | Valorisation of Black Soldier Flies at Different Life Cycle Stages                                                                                            | <u>Chi Tran</u> , Tan M. Le, Co Dang Pham, Trang Trinh, Yen Duong, Phung Kim Le, Tran Tan Viet*                                                   |
| ICLCA22.0053 | Reduction Potential of Anthropogenic Mercury Release in Malaysia                                                                                              | <u>Xxx Habuer*</u> , Takeshi Fujiwara                                                                                                             |
| ICLCA22.0091 | Potential of Heavy Metal and Mould Contamination in Rose Petal Tea                                                                                            | <u>Nor Hanuni Ramli@said*</u> , Muhammad Haikal Safuan Othman, Norfairna Baharulrazi, Farhan Mohd Said, Nur Ezyan Badrul Hisham                   |
| ICLCA22.0096 | Fabrication of Cellulose Aerogel from Waste Paper and Banana Peel for Water Treatment                                                                         | <u>Ngoc Do Quyen Chau*</u> , Van Nguyen Chung, Ky Phuong Ha Huynh, Truong Son Nguyen                                                              |
| ICLCA22.0098 | Bi-Objective Optimisation Model for Phosphorous Removal in Wastewater Treatment Plants                                                                        | <u>Regina Damalerio</u> , Arnel Beltran, Kathleen Aviso*                                                                                          |
| ICLCA22.0105 | Decentralised Wastewater Management Systems in Developing Countries: Key Barriers and Potential Resource Recovery Applications                                | <u>Regina Damalerio</u> , Arnel Beltran, Aileen Orbecido, Kathleen Aviso, Renan Tanhueco, Ador Torneo, Rico Ancog, Michael Angelo B. Promentilla* |
| ICLCA22.0117 | Developing Sustainability Portfolio with Environmental, Economic, and Social Integration: Municipal solid waste management in Malaysia                        | <u>Min Yee Chin</u> , Chew Tin Lee, Kok Sin Woon*                                                                                                 |
| ICLCA22.0119 | Effect of compatible solute on high-solid anaerobic digestion                                                                                                 | <u>Shohei Riya*</u> , Lingyu Meng, Yoshiki Nakamura                                                                                               |
| ICLCA22.0128 | Evaluating the Peak Flow and Runoff Coefficient Reductions of Bioretention, Infiltration Trench, and Permeable Pavement LID Using Stormwater Management Model | <u>Sergi Garbanzos</u> , Marla Maniquiz-Redillas*                                                                                                 |
| ICLCA22.0137 | PROGRESSIVE FREEZE CONCENTRATION FOR LEACHATE TREATMENT USING VERTICAL FINNED CRYSTALLIZER                                                                    | Tazien Rashid, Su Ying Tan, Zaki Yamani Zakaria, Norzita Ngadi, Zurina Mohamad, <u>Mazura Jusoh*</u>                                              |
| ICLCA22.0141 | Major Ion Concentration Analysis and Evaluation of Malaysian-Sourced Groundwater for Drinking Water                                                           | <u>Ramyah Segaran</u> , Aishah Rosli*, Mazura Jusoh Jusoh                                                                                         |

# Sustainable Agriculture & Food Production

| Paper id     | Title                                                                                                                                                             | Authors (Presenter)                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0010 | Encapsulation of Betalains Extracted from Red Dragon Fruit Peels by Freeze-drying using Microcrystalline Cellulose and Dragon Fruit Peel Pectin as Wall Materials | <u>Uyen P. N. Tran*</u> , Trung Dang-Bao, Phung Kim Le, Uyen D. H. Huynh, Tan Le, Thanh Nguyen                                  |
| ICLCA22.0029 | A Mini-Review on Essential oils, Chitosan, and Their Application in Preserving Fruits and Vegetables                                                              | <u>Nga Phan Thi Thanh*</u> , Nghi Nguyen Hoang Phuong, Xuan Thang Nguyen, Minh Pham Thi Phuong, Phung Kim Le                    |
| ICLCA22.0037 | Biochar increases carbon stability on changing carbon-associated fractions based on a 4-year vegetable field experiment                                           | <u>Jining Zhang</u> , Xianxian Zhang, Huifeng Sun, Cong Wang, Sheng Zhou*                                                       |
| ICLCA22.0050 | Promising Approach for Nutrient Recovery through Phototrophic Bioconversion of Aquaculture Sludge in Aquaponics: A Review                                         | Tian Xia, Yihan Gu, Yan Ma, Ang Chen, <u>Chunjie Li*</u>                                                                        |
| ICLCA22.0055 | Improving the Water Retention Characteristics of Sandy Soil using Food Waste Compost Amendment and Indigenous Microorganisms                                      | <u>Siti Aisyah</u> , Nor Alafiza Yunus*, Umi Aisah Asli, Aidee Kamal, Norfairna Baharulrazi, Nur Raudhah Azman                  |
| ICLCA22.0069 | Water and Land Footprint Assessment of Food Loss: A Case Study on Indonesia                                                                                       | <u>Marissa Malahayati*</u>                                                                                                      |
| ICLCA22.0072 | Isolation of Antagonistic Rhizosphere Bacteria Toward Phytophthora capsici Induce Phytophthora Blight in Pepper (Piper nigrum)                                    | Nguyen Quynh Nhi, <u>Nguyen Minh Thien</u> , Mai Xuan Linh, Nguyen Thi Lien Phuong, Tien Pham*                                  |
| ICLCA22.0089 | Influencing Factors on Up-stream Process of Edwardsiella ictaluri Bacteriophage Preparation                                                                       | <u>Phi Nga Le*</u> , Thi My Duyen Le, Hue Ngoc To, Xuan Thi Thanh Tran, Hoang Anh Hoang                                         |
| ICLCA22.0104 | Social performance of paddy production at three selected divisions in Selangor, Malaysia using the Social Life Cycle Assessment (S-LCA) Method.                   | Amir Hamzah Sharaai*, Mohammad Firdaus Masri, <u>Somayeh Rezaei</u>                                                             |
| ICLCA22.0108 | Optimisation of Microwave Drying for Encapsulation of Edible Bird's Nest Hydrolysate                                                                              | Aina Natasha Nazarudin, Zanariah Hashim, Yanti Maslina Mohd Jusoh, Noor Hazwani Salleh, <u>Dayang Norulfairuz Abang Zaidel*</u> |
| ICLCA22.0112 | Rice quality depends on the soil properties with the nitrogen fertilization rate in the paddy field                                                               | <u>Lehui Wang*</u> , Jining Zhang, Huifeng Sun, Xianxian Zhang, Cong Wang, Ya Gao, Sheng Zhou                                   |
| ICLCA22.0114 | Potential economic and environmental co-benefits for water saving technology in rice production                                                                   | <u>Xianxian Zhang</u> , Junguo Bi, Huifeng Sun, Jining Zhang, Cong Wang, Jinsong Tan, Sheng Zhou*                               |
| ICLCA22.0115 | Effect of Straw and Straw-derived Biochar Amendment on Methane Emission and Carbon Sequestration in Paddy Field                                                   | <u>Cong Wang</u> , Huifeng Sun, Jining Zhang, Xianxian Zhang, Sheng Zhou*                                                       |

| Paper id     | Title                                                                                                                    | Authors ( <u>Presenter</u> )                                                                                                   |
|--------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0123 | Production of An Feed Additive Containing Polyunsaturated fatty acids from Food Wastes Using <i>Aurantiochytrium</i> sp. | <u>Satoshi Nakai*</u> , Toshikazu Suenaga, Wataru Nishijima, Takehiko Gotoh                                                    |
| ICLCA22.0135 | Analytical Hierarchy Process for Automated Fertigation Blending System in Reducing Nutrient and Water Losses             | <u>Dhiya' Hawina Che Aziz</u> , Nurul Hanim Razak*, Nur Izyan Zulkafli, Jiří Jaromír Klemeš                                    |
| ICLCA22.0138 | Research Update on Food Waste Composting: A Bibliometric Analysis and Way Forward                                        | <u>Li Yee Lim</u> , Cassandra Bong, Wai Shin Ho, Jeng Shiun Lim, Pei Ying Ong, Yee Van Fan, Jiří Jaromír Klemeš, Chew Tin Lee* |

## Cleaner Technology

| Paper id     | Title                                                                                                                                                                                  | Authors (Presenter)                                                                                                                              |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0006 | Thermodynamic and Kinetic Analysis of CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> Hydrates for Hydrate-based Gas Separation                                                         | <u>Hai Truong-Lam*</u> , Ju Dong Lee                                                                                                             |
| ICLCA22.0008 | Synthesis of Ferromagnetic Nanocomposites from Nanocrystalline Cellulose and Characterization as an Adsorbent to Remove Lead in the Water                                              | <u>Bao Tran Pham Ngoc*</u> , Ngoc Han Tran Thi, Nhan Tu Le Tan, Son Dinh Thanh, Thien Le Nguyen Phuc, Thanh Phong Mai, Dinh Quan Nguyen          |
| ICLCA22.0009 | Catalytic Pyrolysis of Plastics over Maghemite-Impregnated Mesocellular Foam using Induction Heating                                                                                   | <u>Syie Luong Wong</u> , Sabino Armenise, Bemgba B. Nyakuma, Pangsoon Ng, Chiahau Lee, Anna Bogush, Franck Launay, Evgeny Rebrov, Marta Muñoz*   |
| ICLCA22.0017 | Microfibrillated Cellulose from Pineapple Leaves for Synthesizing Novel Thermal Insulation Aerogels                                                                                    | <u>Nguyen Luon</u> , Giang Chi Tu, Thinh Phu Le, Nga Hoang Nguyen Do, Viet Thanh Tran, Kien Anh Le, Thanh Phong Mai, Thang Van Le, Phung Kim Le* |
| ICLCA22.0020 | Review of The Role of Pretreatment Step in Production Nanocellulose from Rice Straw                                                                                                    | <u>Co Dang Pham</u> , Tan M. Le, Chi Thi Xuan Nguyen, Nhi Vo, Nga Hoang Nguyen Do, Kien Anh Le, Thanh Phong Mai, Phung Kim Le*                   |
| ICLCA22.0023 | Recovery of Rice Straw Cellulose on Pilot Scale for Fabrication of Aerogel for Oil/Water Separation                                                                                    | <u>Nhi Vo</u> , Chi Thi Xuan Nguyen, Tan M. Le, Co Dang Pham, Nga Hoang Nguyen Do, Kien Anh Le, Thanh Phong Mai, Phung Kim Le*                   |
| ICLCA22.0024 | Experiment and Simulation of Rice husk Gasification Process with a Downdraft Gasifier                                                                                                  | <u>Nhan Tu Le Tan*</u> , Thien Le Nguyen Phuc, Tan Phat Vo, Thanh Phong Mai, Dinh Quan Nguyen                                                    |
| ICLCA22.0025 | Fabrication of Chitosan-Based Film by Incorporating with Nanocellulose Produced from Agricultural Waste                                                                                | <u>Chi Thi Xuan Nguyen</u> , Khue Hai Bui, Nhi Vo, Tan M. Le, Co Dang Pham, Nga Hoang Nguyen Do, Phong Mai Thanh, Anh Kien Le, Phung Kim Le*     |
| ICLCA22.0027 | Improving Adsorption Performance Of Water Hyacinth-Derived Activated Biochar Via Controlling The Activating Agents And Pyrolysis Temperature                                           | Khoa Mai, Phat Truong, <u>Chi Nguyen*</u>                                                                                                        |
| ICLCA22.0028 | Hydro-alcoholic Extraction by an Ultrasound Assisted Leaching Method of Crotalaria assamica Benth Seed Powder for Pharmaceutical Purposes: Optimization using RSM and Basic Properties | Hoang Nguyen Long, Tien Vo Viet, Minh Thong Le Tuan, Tan Phat Vo, <u>Nhan Tu Le Tan*</u> , Dinh Quan Nguyen                                      |
| ICLCA22.0033 | Mass Transfer Performance Comparison between Conventional Solvent Extraction and Supported Liquid Membrane with Strip Dispersion for Indium Recovery from Waste Stream                 | <u>Ngan Thi Tuyet Dang</u> , Da-Ming Wang, Kien Trung Tran*, Son Xuan Nghiem                                                                     |
| ICLCA22.0038 | Effect of Ultrasound on Silicon Extraction from Coal Fly Ash                                                                                                                           | <u>Tam Le Van*</u> , Kien Anh Le, Ky Phung Nguyen                                                                                                |



| Paper id     | Title                                                                                                                                                                         | Authors (Presenter)                                                                                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0044 | Optimization of Biochar Production from Slow Pyrolysis of Oil Palm Waste                                                                                                      | <u>Nur Aina Najwa Mohd Nor Azman</u> , Mohd Asmadi Mohammed Yussuf*, Muhammad Afiq Shabil Nawawi, Nor Aishah Saidina Amin, Muzakir Mohammad Zainol, Zaki Yamani Zakaria, Zul Ilham, Natthanon Phaiboonsilpa |
| ICLCA22.0047 | Carbon Aerogel from Jackfruit Waste as New Material for Electrodes Capacitive Deionization                                                                                    | <u>Van Cuong Tran*</u> , Nghiep Pham Quoc, Anh Kien Le, Anh Khoi Tran, Cong Minh Pham                                                                                                                       |
| ICLCA22.0048 | Oxidation-Reduction Potential and Peroxone Process in Antibiotic Residues Removal from Hospital Wastewater                                                                    | Cong Minh Pham, <u>Nghiep Pham Quoc*</u> , Anh Kien Le, Van Cuong Tran                                                                                                                                      |
| ICLCA22.0054 | Carbon Aerogel as Conductivity Enhancement Additive for Supercapacitors                                                                                                       | Nghiep Pham Quoc*, <u>Van Cuong Tran</u>                                                                                                                                                                    |
| ICLCA22.0057 | Capability of Supported Liquid Membrane with Strip Dispersion for Precious Metals Recovery from E-waste and Wastewater                                                        | <u>Ngan Thi Tuyet Dang</u> , Kien Trung Tran*, Son Xuan Nghiem, Da-Ming Wang, Giang Thi Dinh, Ngoc Thi Bich Pham                                                                                            |
| ICLCA22.0058 | A Modified Carbon Aerogels with Nitrogen Doping and Drying Conditions for CO2 Capture                                                                                         | <u>Nghiep Pham Quoc*</u>                                                                                                                                                                                    |
| ICLCA22.0059 | Green Extraction of Lawsonia Inermis L. Leaves for Antimicrobial Active Packaging Film                                                                                        | <u>Wen Ching Liew*</u> , Ernie Surianiy Rosly, Ida Idayu Muhamad, Yanti Maslina Mohd Jusoh, Abdul Halim Mohd Yusof, Zulkifli Khair                                                                          |
| ICLCA22.0063 | Manufacture of Bioplastic Composite Method of Blending Synthetic Polymer (PP) with Natural Polymers from Kapok Fiber (Ceiba Pentandra)                                        | <u>Rahmatullah Rahmatullah*</u> , Rizka Wulandari Putri, Sri Haryati, Harry Waristian, Aan Saputra, Robby Kurniawan                                                                                         |
| ICLCA22.0065 | The Residence Time and Slow Pyrolysis Temperature Effect on Chemical Composition Pyrolysis Gas Product of Durian (Durio Zibethinus Murr) Skin                                 | <u>Rizka Wulandari Putri*</u> , Rahmatullah Rahmatullah, Sri Haryati, Budi Santoso, Alek Al Hadi                                                                                                            |
| ICLCA22.0075 | Comparison of Extraction Methods for Recovery of Antioxidant Compounds from White Radish Root (Raphanus sativus L.) and Application as A Natural Preservative in Bottled Beer | <u>Nguyet Nguyen*</u> , Pham T. K. Ngoc                                                                                                                                                                     |
| ICLCA22.0080 | Excellent Charge Transfer over Highly Stable LaCoO3 Perovskites for CO2 Photoreduction to Solar Fuels under Visible Light                                                     | Mohamed Madi, <u>Muhammad Tahir*</u> , Zaki Yamani Zakaria, Hajar Alias                                                                                                                                     |
| ICLCA22.0083 | Molecular Characteristics of Fatty Acid Methyl Ester (FAME) in Waxy Crude as Flow Improver                                                                                    | <u>Ameer Najiuddin Baharudin*</u> , Abdul Rahim Risal, Rozana Zakaria, Mazlin Idress, Farah Rosmaniza Redzuan                                                                                               |

| Paper id     | Title                                                                                                                                      | Authors (Presenter)                                                                                                                                                                     |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0088 | Sulfonated Carbon Catalyst Prepared from Calcination of Lignin for Ethyl Levulinate Synthesis via Ethanolysis of Levulinic Acid            | <u>Abdull Hafidz Hassan</u> , Muzakkir Mohammad Zainol*, Kamarul Ridwan Zainuddin, Nurin Qistina Saperi, Mohd Asmadi Mohammed Yussuf, Norazah Abd Rahman, Nur Aina Najwa Mohd Nor Azman |
| ICLCA22.0090 | Synthesis and Characterization of Graphene Oxide-Cellulose Based Aerogels                                                                  | <u>Ngoc Do Quyen Chau*</u> , Ha Le Ho Khanh, Truong Son Nguyen, Ky Phuong Ha Huynh, Yuta Nishina, Quen K, Ngoc Phung T Bich, Vy Nguyen Lam Tuong                                        |
| ICLCA22.0092 | Tuning Polyol-Mediated Process towards Augmentation of Zero-Valent Copper Nanoparticles                                                    | <u>Trung Dang-Bao*</u> , Ngoc-Hanh Le, Hoa-Hung Lam                                                                                                                                     |
| ICLCA22.0107 | Catalytic Pyrolysis of Fuel Oil Blended Stock for Bio-Oil Production: A Review                                                             | Wan Nur Anis Amira Wan Ranizang, Mohd Asmadi Mohammed Yussuf, Mahadhir Mohamed, Mazura Jusoh Jusoh, <u>Zaki Yamani Zakaria*</u>                                                         |
| ICLCA22.0109 | Mechanical Behaviours and Thermal Stabilities of Irradiated Epoxidized Natural Rubber/Polyvinyl Chloride/Carbon Nanotubes Nanocomposites   | Zurina Mohamad*, <u>Ahmad Mohd Shahrulnizam</u> , Chantara Thevy Ratnam, Roshafima Rasit Ali, Norhayani Othman                                                                          |
| ICLCA22.0118 | Parametric Study of Concurrent Activation and Surface Modification (CAM) Process for Palm Kernel Shell Derived Activated Carbon            | <u>Jia Yen Lai*</u> , Dr Lock Hei Ngu, Jiuang Jing Chew , Deni Shidqi Khaerudini                                                                                                        |
| ICLCA22.0133 | Extraction of fermentable sugars from spent coffee grounds using 1-butyl-3-methylimidazolium-chloride for bioethanol production            | Maggie Chetty, Bhekuyise Mkhonto, <u>Snenhlanhla Bly*</u> , Nirmala Deenadayalu                                                                                                         |
| ICLCA22.0139 | Improved Hydrogel as Potential Carbon Dioxide Adsorbent                                                                                    | <u>Siti Musliha Mat Ghani</u> , Chow Xi Enna, Rowin Kumeressan, Nurul Ekmi Rabat*                                                                                                       |
| ICLCA22.0144 | Recent advancements on application of nanomaterials synthesized by flame aerosol technology                                                | <u>Haoyu Zhang</u> , Cheng Tung Chong*                                                                                                                                                  |
| ICLCA22.0146 | Correlation Analysis of Biodegradable Additives, Temperature and Loading toward Tribology Behaviour of Musa Aluminata Balbisiana (MBS) Oil | Husna A. Hamid, <u>Noryani Binti Muhammad*</u> , Ghazali Omar, Nor Azmmi Masripan                                                                                                       |
| ICLCA22.0147 | Potentials of Citrus Peel Waste Valorisation for Green Diesel Production: A Mini Review                                                    | <u>Tanko Mohammed Abdullahi*</u> , Mohd Farid Muhamad Said, Norazila Othman, Syahiran Abdul Malik                                                                                       |

## Methodology

| Paper id     | Title                                                                                                                                 | Authors (Presenter)                                                                                                               |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0003 | DEMATEL Approach to Analyzing Barriers to Implementing Integrated Biorefineries in the Philippines                                    | Yaselyn Kaye Castro, Bianca Manalo, Nicolle Blane Saunar, Beatriz Belmonte, Viknesh Andiappan, <u>Michael Francis Benjamin*</u>   |
| ICLCA22.0004 | Brownfields Selection for Eco-Industrial Parks Using a Novel Integrated Multi-Criteria Decision-Making Approach                       | <u>Steven Kuba Nuhu</u> , Zainuddin Abdul Manan*, Sharifah Rafidah Wan Alwi, Mohm Nadzri Md Reba                                  |
| ICLCA22.0019 | Technological progress on embodied carbon emissions in G7 countries' exports: A structural decomposition analysis                     | Xiong Feng Pan, <u>Yuqing Wang*</u>                                                                                               |
| ICLCA22.0042 | Carbon Emission Reduction using Waste Management Strategy Approach for Improving a Mine Site Environmental Performance                | <u>Joni Adiansyah*</u>                                                                                                            |
| ICLCA22.0051 | Marginal Abatement Footprint Curves for Climate Change Mitigation                                                                     | <u>Maria Victoria Migo-Sumagang</u> , Purusothmn Nair S Bhasker Nair, Michael Short, Kathleen Aviso, Dominic Foo, Raymond R. Tan* |
| ICLCA22.0056 | Optimal Planning and Design of CO2 Capture and Utilization Systems with Social Discount Rates                                         | <u>Tommie Daniel Cruz</u> , Lawrence Belo, John Frederick Tapia*                                                                  |
| ICLCA22.0060 | Mathematical Modelling for Organic Waste Resources Targeting and Optimization using Carbon-to-Nitrogen Ratio                          | <u>Wan Choy Chee</u> , Wai Shin Ho*, Cassandra Bong, Haslenda Hashim, Keng Yinn Wong, Muhammad Afiz Zubir, Lek Keng Lim           |
| ICLCA22.0073 | Life Cycle Assessment of Plastic Packaging Recycling Embedded with Responsibility Distribution as Driver for Environmental Mitigation | <u>Yee Van Fan*</u> , Lidija Čuček, Damjan Krajnc, Jiří Jaromír Klemeš                                                            |
| ICLCA22.0084 | A Supply Chain Optimization Model Considering Cost and Water Footprint                                                                | <u>Dennis Cruz*</u> , Raymond R. Tan                                                                                              |
| ICLCA22.0087 | A Review of Joint Management Body and Life Cycle Cost Analysis for Green Building Project Facilities Management                       | <u>Khalid Alzarooni*</u>                                                                                                          |
| ICLCA22.0099 | Analysis of Pyrolysis Characteristics of Chicken Manure Using Particle Swarm Optimisation                                             | <u>Jie Gu</u> , Cheng Tung Chong*, Guo Ren Mong, Jo-Han Ng, Chong William Woei Fong                                               |
| ICLCA22.0101 | A Bilevel Mixed-Integer Linear Programming Model for Emissions Reduction                                                              | <u>Raymond R. Tan*</u> , Kathleen Aviso                                                                                           |
| ICLCA22.0106 | Regional Virtual Energy Flows in China and Implications for Carbon Neutrality                                                         | <u>Xue-Chao Wang*</u>                                                                                                             |
| ICLCA22.0113 | Socio-economic Correlation Analysis of E-waste and Prediction of E-waste Generation via Back-propagation Neural Network               | <u>Ruiyu Tian</u> , Zheng Xuan Hoy, Kok Sin Woon*, Marlia Mohd Hanafiah, Peng Yen Liew                                            |

| Paper id     | Title                                                                                                                                     | Authors (Presenter)                                                                                                                                |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| ICLCA22.0116 | P-Graph Optimization of Reverse Osmosis Networks                                                                                          | Allysa Rae Aguilar, Jahnea Denise Bermejo, Cee Jay Regala, Ghielen Zenarosa, Kathleen Aviso, Raymond R. Tan, <u>Arnel Beltran*</u>                 |
| ICLCA22.0130 | A Review of Joint Management Body and Life Cycle Cost Analysis for Green Building Project Facilities Management                           | <u>Khalid Alzarooni*</u> , Rozana Zakaria, Nur Izieadiana Abidin, Jam Shahzaib Khan, Siti Mazzuana Shamsudin, Shaza Rina Sahamir, Darul Nafis Abas |
| ICLCA22.0131 | The impact of digital twin technology and supply chain dynamic capability on corporate circular economy: a dynamic capability perspective | Xiong Feng Pan*, <u>Sai Yuan</u> , Shenghan Feng                                                                                                   |
| ICLCA22.0140 | Computational Analysis on the Microstructure of Natural Deep Eutectic Solvent – A Review                                                  | <u>Mohd Amirul Mukminin Latirin</u> , Azizul Azri Mustaffa*, Norazah Basar, Shajarahtunnur Jamil                                                   |

## Advisory Committee

- **Jiří Jaromír Klemeš**, Brno University of Technology, Czech Republic
- **Zhenjia Zhang**, Shanghai Jiaotong University, China
- **Chunjie Li**, Shanghai Jiaotong University, China
- **Shuzo Nishioka**, Institute for Global Environmental Strategies (IGES), Japan
- **Junichi Fujino**, Institute for Global Environmental Strategies (IGES), Japan
- **Tomoko Ishikawa**, Institute for Global Environmental Strategies (IGES), Japan
- **Sirintornthep Towprayoon**, King Mongkut's University of Technology Thonburi (KMUTT), Thailand
- **Le Thi Kim Phung**, Ho Chi Minh University of Technology, Vietnam
- **Priyadarshi R. Shukla**, India



# **Organising Committee**

## **Chairs**

Kathleen AVISO, PH

Chin Siong Ho, MY

## **Co-Chairs**

Alvin Culaba, PH

Michael Francis Benjamin, PH

Chew Tin Lee, MY

Haslenda Hashim, MY

## **Secretariat**

Maria Victoria Migo-Sumagang, PH

Zurina MOHAMAD, MY

Mazura JUSOH, MY

Jeng Shiun Lim, MY

## **Committees**

Marla REDILLAS, PH

Wai Shin Ho, MY

Nor Alafiza Yunus, MY

Loon Wai Chau, MY

## International Scientific Committee

Cheng Tung CHONG, CN  
Xiongfeng PAN, CN  
Xue-Chao Wang, CN  
Yutao WANG, CN  
Sheng ZHOU, CN  
Sandro NIŽETIĆ, CR  
Awais BOKHARI, CZ,  
Yee Van FAN, CZ  
Petar VARBANOV, CZ  
Subash DHAR, DK  
Konstantinos MOUSTAKAS, GR  
Joni Safaat ADIANSYAH, ID  
Hamzah FANSURI, ID  
Sri Haryati, ID  
Minal PATHAK, IN  
Stergios VAKALIS, IT  
Takeshi FUJIWARA, JP  
Habuer, JP  
Mikiko KAINUMA, JP  
Toshihiko MASUI, JP  
Koji SHIMADA, JP  
Mianqiang Xue, JP  
Kwang Sik KIM, KR  
Seungjae LEE, KR  
Won Chun OH, KR  
Vasileios INGLEZAKIS, KZ  
Saulius VASAREVICIUS, LT  
Cassandra BONG, MY

Suet Leng KHOO, MY  
Hon Loong LAM, MY  
Su Shiung LAM, MY  
Peng Yen LIEW, MY  
Hesam KAMYAB, MY  
Jully TAN, MY  
Kok Sin WOON, MY  
Timothy WARMSLEY, NZ  
Kathleen AVISO, PH  
Beatriz Belmonte, PH  
Michael Francis BENJAMIN, PH  
Raymond R. TAN, PH  
Zdravko KRAVANJA, SI  
Andreja NEMET, SI  
Awassada Phongphiphat, TH  
Savitri GARIVAIT, TH  
Krengkrai MANEEINTR, TH  
Phongthep HANPATTANAKIT, TH  
Sate SAMPATTAGUL, TH  
Muslum ARICI, TR  
Viknesh ANDIAPPAN, UK  
Hoàng Hoàng ANH, VN  
Viễn Minh LÊ, VN  
Maggie CHETTY, ZA

## Partners



Low Carbon Asia Research Network (LoCARNet)



Institute for Global Environmental Strategies (IGES), Japan



SPIL, NETME Centre, Brno University of Technology, Czech Republic



## **Center of Engineering and Sustainable Development Research**

Gokongwei College of Engineering  
De La Salle University  
2401 Taft Avenue, Manila 1004,  
PHILIPPINES

## **UTM Low Carbon Asia Research**

Universiti Teknologi Malaysia  
81310 Johor Bahru, Johor, MALAYSIA

✉ [secretariat@iclcaconf.com](mailto:secretariat@iclcaconf.com)

🌐 <https://iclcaconf.com>



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA



# THANK YOU

## See you in ICLCA 2023!



[secretariat@iclcaconf.com](mailto:secretariat@iclcaconf.com)  
[technical@iclcaconf.com](mailto:technical@iclcaconf.com)

