Organizer:

UNIVERSITI MALAYSIA KELANTAN

Co-organizers:

KYUSHU UNIVERSITY

PSU PRINCE OF SONGKLA UNIVERSITY

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IConBET 2025

INTERNATIONAL CONFERENCE ON BIOENGINEERING AND TECHNOLOGY

Harnessing Sustainable Pathways through Advancement in Science and Technology

29 – 30th July 2025

CONFERENCE PROGRAM BOOK

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CONFERENCE PROGRAM BOOK

3rd International Conference on Bioengineering and Technology (IConBET 2025)

29th - 30th July 2025
Virtual Conference

Editors:
Dr. Asanah Radhi
Dr. Rosmawani Mohammad

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MESSAGE FROM THE PATRON OF IConBET 2025

Assalamualaikum, Salam Sejahtera and Greetings to all attendees,

I'm delighted to extend a warm welcome to the Universiti Malaysia Kelantan-hosted virtual International Conference on Bioengineering and Technology (IConBET) 2025. First of all, kudos to the organising team and the Faculty of Bioengineering and Technology for organising this significant event. Thanks to your efforts, 102 presenters from seven different countries have been able to connect and exchange insightful ideas.

UMK's mission and values are directly aligned with this year's theme, Harnessing Sustainable Pathways through Advancement in Science and Technology. As a university dedicated to holistic, balanced, and entrepreneurial human development, we support research that empowers people and has practical applications.

The ways that bioengineering, materials science, energy, and forest technology can support the global sustainability agenda are being demonstrated today. This is particularly crucial as we address global issues like food security, climate change, and the demand for more environmentally friendly technologies. Academics, researchers, and industry participants can explore research ideas, commercialisation opportunities, and policy contributions on IConBET. I'm happy to see that universities from China, Thailand, India, Japan, and other countries are actively participating. If we are to go from theory to practice, from lab to market, and from innovation to implementation, this international collaboration is essential. UMK is dedicated to assisting these kinds of platforms, and we hope that this conference will result in publications as well as long-term collaborations that benefit our industry and communities.

IConBET 2025 should, above all, promote reflection, meaningful discussions, and innovation. I encourage everyone to make the most of this experience, whether they are here to present, learn, or work together; express your thoughts, ask questions, and think beyond the box. We develop in this way as a worldwide scientific community and as individuals.

Thank you and all the best.

Warmest regards,

YBRS. PROF. IR. TS. DR. ARHAM BIN ABDULLAH
VICE CHANCELLOR
UNIVERSITI MALAYSIA KELANTAN

MESSAGE FROM THE ADVISOR OF IConBET 2025

Assalamualaikum, Salam Sejahtera and Greetings to all attendees,

I want to start by expressing my gratitude to all of the participants, both local and international, for their enthusiastic participation. This event has been exciting and full of ideas, even if it has been entirely virtual. Your research and conversations have demonstrated that, with cooperation and a clear goal, science and technology can be effective instruments for sustainability.

At UMK, we appreciate these kinds of conferences not only for the knowledge sharing they provide but also for the collaborations they foster. After this, I hope many of you will continue working together, publishing, and creating. We also encourage researchers to get more involved with UMK through upcoming research projects, grants, and innovation showcases.

This meeting has shown that geographical limitations are no longer an obstacle to academic and scientific cooperation. We have effectively brought together minds from many disciplines and cultures through digital platforms, and each one has added a distinct viewpoint to the global sustainability agenda.

In addition to offering fresh perspectives on bio-industrial technology, material science, energy, and forest innovation, IConBET 2025 has reinforced how crucial it is to match our research with practical applications and long-term environmental objectives.

Finally, I want to express my gratitude to our co-organizing universities, the professors, and the organising committee. Thanks to your hard work, this event has been a huge success.

On behalf of Universiti Malaysia Kelantan, I wish all of you continued success in your research journey. I hope to see you again in the coming years at IConBET.

Best regards,

YBRS. PROF. DR. MOHAMMAD BIN ISMAIL
EXERCISING THE FUNCTION OF DEPUTY VICE-CHANCELLOR (RESEARCH & INNOVATION)
UNIVERSITI MALAYSIA KELANTAN

MESSAGE FROM THE ADVISOR OF IConBET 2025

Assalamualaikum, Salam Sejahtera and Greetings to all attendees,

On behalf of the Faculty of Bioengineering and Technology, welcome to IConBET 2025! We consider ourselves very lucky to be hosting this virtual congregation of some of the brightest minds from around the globe. This conference is not just about academics. It manifests the faculty's mission of ensuring that high-end academic and research works are developed that are relevant to the industry, commercially valuable, and nature- and sustainability-based.

Our vision is to become one of the most respected and frequently referred-to faculties that churn out graduates who are technologically skilled, entrepreneurial, and holistic in approach. This conference is a step towards that vision by fostering collaboration and innovation on critical axes of world impact. In the face of monumental challenges like climate change, dwindling resources, and a rapid spread of technologies, the domain of bioengineering and material sciences must rise and matter always. IConBET 2025 thus forms one of those spaces where researchers, practitioners, and industry players intensively engage with each other, exchanging ideas and planning ways forward.

We believe that the knowledge that is generated must not remain a closed book within the walls of academia. It must flow freely into the communities, industry, and constitute the basis of sustainable, inclusive, and future-oriented policies. I would like to take this opportunity to thank our co-organizing institutions for lending strength to our cause. Equally, your presence goes a long way in earning us international recognition and meaning.

To all presenters and attendees, I hope that the knowledge shared today will inspire new collaborations and solutions that go beyond this virtual platform. Let's use this chance to create significant networks and leave a knowledge legacy that cuts across boundaries.
Thank you.

Sincerely,

ASSOC. PROF. DR. SARIZAM MAMAT
DEAN
FACULTY OF BIOENGINEERING AND TECHNOLOGY

MESSAGE FROM THE CHAIRMAN OF IConBET 2025

Assalamualaikum, Salam Sejahtera and Greetings to all attendees,

It is an honour to welcome you to the International Conference on Bioengineering and Technology (IConBET) 2025. Though we convene in the virtual space, I wish for the thoughts exchanged today and tomorrow to carry immense value.
This year, our theme, Harnessing Sustainable Pathways through Advancement of Science and Technology, essentially calls for the spotlight on how our research and innovation can be applied to address sustainability issues.

We are privileged to have 102 presenters from 7 diverse countries gracing this event. The laughter of new ideas will undoubtedly pave the way for new partnerships and open up fresh avenues for research.
I would like to offer my sincere thanks to our co-organizers: Kyushu University (Japan), Sri Padmavati Mahila Visvavidyalayam (India), Prince of Songkla University (Thailand), Koneru-Lakshmaiah University (India), and Southwest Forestry University (China). This collaboration means a great deal to us.

Let this platform foster not just an exchange of ideas but also the generation of realizable solutions, innovations, and policies that communities can benefit from across borders. Let us remember that science and technology pursued in the spirit of sustainability hold the power to fundamentally alter lives, from renewable energy innovations to sustainable agriculture, green materials, and real-time digital environmental monitoring. A noteworthy glowing feature is that IConBET 2025 reflects our faculty's continuous commitment toward interdisciplinary collaborations, young researchers' cultivation, and contemporary technologies that resonate with global sustainable development goals (SDGs).

To the organizing committee, the technical team, and supporting staff, may I take this humble opportunity to express my gratitude for their commitment and sacrifices in making this conference happen. May this conference mark the beginning of lasting academic and professional connections, and may the ideas generated here translate into real changes.
Thank you.

Sincerely,

ASSOC. PROF. DR. AN'AMT MOHAMED NOOR
CHAIRMAN
IConBET 2025

ORGANIZING COMMITTEE OF IConBET 2025

Patron
Prof. Ts. Dr. Arham Bin Abdullah
Vice Chancellor, UMK

Advisor
Prof. Dr. Mohammad Bin Ismail
(Excercising The Function of Deputy Vice Chancellor of Research & Innovation, UMK)

Assoc. Prof. Dr. Sarizam Bin Mamat
(Dean, Faculty of Bioengineering and Technology, UMK)

Assoc. Prof. ChM. Ts. Dr. Nor Hakimin Bin Abdullah
(Deputy Dean of Research, Entrepreneurship, and Student Development)

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Ts. Dr. Mohamad Bashree Bin Abu Bakar

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Mrs. Farah Binti Mohamed
Ms. Shahira Shafiqa Samsudin

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Assoc. Prof. ChM. Ts. Dr. Wong Yee Ching
Assoc. Prof. Ts. Dr. Mohd Hazim Bin Mohamad Amini
Ts. Dr. Ainihayati Binti Abdul Rahim
Ts. Dr. Arlina Binti Ali
Assoc. Prof. Ts. Dr. Mardawani Binti Mohamad
Dr. Nur Sakinah Binti Mohamed Tamat

Publicity and Website

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Assoc. Prof. Dr. Muhammad Azwadi Bin Sulaiman
Assoc. Prof. Dr. Mahani Binti Yusoff
Dr. Azfi Zaidi Bin Mohamad Sofi @ Aziz
Assoc. Prof. ChM. Ts. Dr. Nor Hakimin Bin Abdullah
Ts. ChM. Dr. Nadiah Bte Ameram
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Mrs. Normala Binti Othman

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Mr. Muhamad Qamal Bin Othman
Mr. Ts. Ehsan Shazali Bin Rashim
Mrs. Nurul Adila Binti Mohamad Zamri
Mr. Mohd Firdaus bin Zulkifli
Mr. Amir Zulhilmie Aznie Bin Abdullah Aziz
Mr. Adam Edham Bin Mohamed
Mr. Muhammad Solahuddin Bin Hamzah
Mr. Mohd Amirul Hisam Bin Mohamood
Mr. Hasifadhullah Bin Nasir
Mr. Muhammad Hafiz Bin Hamzah

CONFERENCE SCHEDULE

TIME (UTC +8)	**PROGRAMME (29th July 2025, Tuesday)**		
Room Link Link	fbkt.my/iconbet2025-mainroom		
9:00 – 9:30 AM	Recitation of Doa Welcoming address **Assoc. Prof. Dr. An'amt Mohamed Noor, IConBET2025 Chairman** Speech **Assoc. Prof. Dr. Sarizam Mamat, Dean, Faculty of Bioengineering and Technology, UMK** Speech and Officiating **YBrs. Prof. Ir. Ts. Dr. Arham Abdullah, Vice Chancellor Universiti Malaysia Kelantan**		
Moderator	Assoc. Prof. Dr. Noor Fazliani Binti Shoparwe		
9:30 – 10:30 AM	**Keynote 1 (YBhg. Dato' Ts. Ir. Dr. Badhrulhisham Abdul Aziz)** Future Prospects and Challenges in Building a Sustainable Critical Mineral Sector: A Case Study on Rare Earths in Malaysia		
Moderator	Assoc. Prof. Dr. Andi Hermawan		
10:30 – 11:30 AM	**Keynote 2 (Assoc. Prof. Dr. Kuniyoshi Shimizu)** How should we utilize natural resources for sustainable development based on scientific evidence? -Use for pharmaceuticals, functional foods, aromas, cosmetics, living environment-		
Sessions	**Session 1**	**Session 2**	**Session 3**
Topics	**Materials Science & Mineral Technology**	**Bioindustrial Technology, Wood & Forest Technology**	**Energy Technology**
Room Links	fbkt.my/iconbet2025-mainroom	fbkt.my/iconbet2025-room1	fbkt.my/iconbet2025-room2
Moderators	Ts. Dr. Teo Pao Ter	Assoc. Prof. Dr. Wee Seng Kew	Dr. Ainihayati Binti Abdul Rahim
11:30-12:15 PM	**Plenary Speaker 1** **Assoc. Prof. Dr. Mahani Yusoff** Synthesis of Alumina-Titania Hybrid Nanocomposites Using High Energy Ball Milling	**Plenary Speaker 2** **Assoc. Prof. Dr. Noor Azlina Ibrahim** Structural Insights and Alkaline Adaptation Mechanisms of a Thermostable Serine Protease from Bacillus subtilis 50a	**Plenary Speaker 3** **Prof. Emeritus Dato' Dr. Hj. Ibrahim Che Omar** The Past and Future Perspectives of Industrial Enzyme Technology: A Review
12:15-12:45 PM	**Invited Speaker 1** **Dr Yang Jinhua**	**Invited Speaker 2** **Prof Dr. Ong Keat Khim**	**Invited Speaker 3** **Dr Alan Wong**

	eWarp – The Dawn of a New Era in EBSD Technology	A simple paper-based colorimetric assay for detection of malathion	Bruker's Extended Range of X-ray Analytical Solutions
12:45-1:00 PM	UMK22 Dr. Nik Alnur Auli Bt Nik Yusuf Investigations Of Film Making from Pineapple Leaves for Application Biodegradable Straw and Eggshell Fillers in Physical and Mechanical Properties	UMK41 Ms. Jivashree A/P Ganasan Stability and Physicochemical Properties Evaluation of Watermelon Rind-based Sunscreen	PTSB01 Dr. Fadzilah Binti Hashim InnoSAT Attitude Control Performance Comparison using PID-Lead, MPC-Lead, and MPC-PDLead Controllers with the Effect of Varying gain
1:00-1:15 PM	UMK52 Mrs. Affidah Mardziah Binti Mukhtar Environmental Conditions Influencing Bacterial Viability and Growth within Concrete Matrices: A Review	UMK44 Dr. Zhangxiuwan Real-Time Automated Tomato Ripeness Grading for Precision Farming Using Optimized YOLOv11 with Adaptive Feature Extraction	UMK18 Dr. Ahmad Zul Izzi Fauzi Computational Fluid Dynamic-Based Investigation of Temperature Distribution in Office Air Conditioning Systems
1:15 – 2:30 PM	**Lunch Break**		
Sessions	**Session 4**	**Session 5**	**Session 6**
Topics	**Materials Science & Mineral Technology**	**Bioindustrial Technology, Wood & Forest Technology**	**Energy Technology/Biondustrial Technology**
Room Links	fbkt.my/iconbet2025-mainroom	fbkt.my/iconbet2025-room1	fbkt.my/iconbet2025-room2
Chairpersons	Dr. Mohamad Bashree Bin Abu Bakar	Dr. Nur Nabilah Binti Shahidan	Dr. Hidayani Binti Jaafar
2:30-2:45 PM	UMS04 Dr. Fiona Ling Wang Ming Copper (II) Ions Removal via Biosynthesized Iron Oxide Nanoparticles Mediated by Cymbopogon sp. Leaves	SPMVV01 Mrs. K.P.Leela Sai Circular Bioeconomy Approach to Bioplastics: Integrating Microalgal PHB with Corn-Based Polymers	UTP01 Ms. Nureen Amalia Binti Zulkifli Enhancing Lipid Contents in Black Soldier Fly Larvae for Biodiesel Production: A Comparative Study between Fermented Sludge Tailing and Coconut Endosperm Wastes with Effective Microorganism 1 (EM-1)
2:45 – 3:00 PM	UNIMAP02 Ms. Nurfarahilya Bt Mohd Fazil Influence of Chemical Treatments on Corn Stalk Fiber as Filler in Epoxy Composites	UMS01 Dr. Fera Cleophas Potential of Mango (Mangifera indica) and Papaya (Carica papaya) Seeds as Sustainable Natural Coagulants for Water Treatment	UMS05 Dr. Ng Chi Huey Bimetallic Co and Zn-doped GO/MOF for a high capacitive supercapacitor
3:00 – 3:15 PM	UMK43 Dr. Mohd Syakir Bin Sulaiman Characterization of Gold Grains from Panned Sediments in Gua Setir via Polished Thin Section Analysis	UMS03 Dr. Nur Zaida Zahari Assessing the Potential of Tenebrio molitor for Biodepolymerization of Plastic Waste	UMK36 Dr. Muhammad Iqbal Ahmad Numerical Simulation of the Effects of Encapsulant Dispensing on Void Formation and Distribution in LED Encapsulation Processes

3:15 – 3:30 PM	UMK23 Mr. Muhamad Afif Zaafarani Bin Muhamad Aidi Preliminary Study of Tannic Acid Extracted from Kenaf Bast Fiber as Green Corrosion Inhibitor for Aluminium Substrate in Automobile Radiator	UPM01 Dr. Nor Azlina binti Alias Evaluating Biofiltration Systems for Enhancing Water Quality in Lake Restoration	UTEM02 Mr. Mohamad Taufiq Bin Mohamad Alias The Potential of Functionalized Graphene Anode for Lithium Iron Phosphate Battery
3:30 – 3:45 PM	UMK35 Mr. Muhamad Syarifuddin Gold-Cyanide Adsorption onto Activated Carbon: A Kinetic Investigation	UITM04 Ms. Athirah Izzati Binti Razak Effect of Phenolic Resin Impregnation on Surface Quality Properties and Termite Resistance of Kelempayan Wood	USM01 Dr. Nurhafizah Md Disa Complementary Analysis of Thermal Decomposition Kinetics, Slow Pyrolysis, and Characteristics of Activated Carbon from Coconut Fronds
3:45 – 4:00 PM	UMK34 Mrs. Fathin Asila binti Mohd Pabli Effect of Microwave-Assisted Calcination to the Structural and Dielectric Properties of Calcium Copper Titanate (CCTO)	UMK05 Mrs. Afnan Azzahra Preliminary Study on Treating Synthetic Pollutant (Ammonium-Nitrogen) In REE Wastewater Using Electrocoagulation Method: A General Full Factorial Statistical Design Approach	UMK55 Dr. Lum Wei Chen Development of Eco-Friendly Bamboo Particleboard Using Citric Acid–Tapioca Starch Adhesive: Influence of Pressing Temperature and Time
4:00-4:15 PM	UMK09 Dr. Norfadhilah Ibrahim Comparing Crystallization Techniques for Glass Ceramics Using Recycled Glass Waste	UMK01 Dr. Zubaidah Aimi Abdul Hamid Extraction, Characterization, and Antimicrobial Activity of Chitosan Derived from Corbicula fluminea (Etok) Shells	UMK46 Dr. Wan Suriyani Faliq Adeeba Wan Ibrahim Activation of Natural Killer Cell Cytotoxicity by Methanolic Leaf Extract of Abrus precatorius in Breast Cancer Cells
4:15-4:30 PM	UTEM03 Dr. Abdulgaphur Athani Computational Study of Pulsatile Blood Flow in a Multi-Phase, Multi-Stenosed Left Coronary Artery	UMK03 Dr. Azfi Zaidi bin Mohammad Sofi @ Aziz Performance Optimization of Soap Formulations via Taguchi Approach: Focus on Foaming, Antimicrobial, and Economic Parameters	UMK49 Assoc. Prof. Dr. Wan Mohd Faizal Wan Ishak Sustainable Ceramic Water Filters from Rice Husk Waste: Optimization of Composition and Performance Evaluation for Point-of-Use Water Treatment

TIME (UTC +8)	**PROGRAMME (30th July 2025, Wednesday)**	
Room Link	fbkt.my/iconbet2025-mainroom	
Moderator	Assoc. Prof. Ts. ChM. Dr. Nor Hakimin Bin Abdullah	
9:00 – 10:00 AM	**Keynote 3 (Prof. Dr. Erman Taer)** Transforming Biomass into Porous Carbon for High-Performance Supercapacitor Applications	
Session	**Session 7**	**Session 8**
Topics	**Materials Science & Mineral Technology**	**Bioindustrial Technology, Wood & Forest Technology**
Room Links	fbkt.my/iconbet2025-room1	fbkt.my/iconbet2025-room2
Moderators	Dr. Norfadhilah Binti Ibrahim	Dr. Lum Wei Chen
10:00-10:45 AM	**Plenary Speaker 4** **Assoc. Prof. Dr. Muhammad Azwadi Sulaiman** Improvement of Microwave Absorption of SiC/Kaolinite Composite Susceptor	**Plenary Speaker 5** **Assoc. Prof. Ts. Dr. Mohd Hazim Mohamad Amini** Recent Advancements in Wood Treatment Technology
Chairpersons	Assoc. Prof. Dr. Wan Mohd Faizal Bin Wan Ishak	Assoc. Prof. Ts. Dr. Sitti Fatimah Binti Mhd. Ramle
10:45-11:15 AM	**Invited Speaker 4** **Dr. -Ing. Mohd Zamri Che Wanik** Peer to Peer Trading of Energy from distributed energy resources	**Invited Speaker 5** **Dr. Ainihayati Binti Abdul Rahim** The growth of paddy plant in soil media inoculated with two Methylorubrum isolates and their effect on early plant development
11:15-11:30 AM	UMK13 Miss Nor Zafirah Binti Nor' Azmi Effect of Aliquat-336 on Characteristics and Performances of Polymer Inclusion Membrane for Gold Extraction	UMK15 Assoc. Prof. Dr. Wong Yee Ching Optimizing Biogas Production from Municipal Solid Waste: A Comprehensive Analysis of Microbial Communities and Substrate Characteristics in Anaerobic Digestion Systems
11:30-11:45 AM	UMK19 Assoc. Prof. Dr. Sarizam Mamat Study on intermetallic compound formation in Al/Steel dissimilar joining using TIG MIG hybrid welding	UMK17 Mrs. Norfatihah Binti Mohd Adenam Optimising Anaerobic Digestion Efficiency in Biogas Production from Municipal Solid Waste (MSW)
11:45-12:00 PM	UNIMAP01 Dr. Nor Azwin binti Ahad Acid and Alkali Treatment on Natural Fibers for Better Tensile Strength of Epoxy Composites	UMK54 Dr. Nur Sakinah Binti Mohamed Tamat Characterization and Bulk Density of Wood Particles Used in the Particleboard Production as a Function of Their Particle Size
12:00-12:15 PM	UNIMAP03 Ms. Nur Hasnidah Binti Ahmad Shukeri Influence of Silica Addition on the Structural, Phase Transformation and Microstructure Evolution of Sintered Perlis Dolomite	UMK61 Ms. Farah Khaliz Kedri River channel change analysis using remote sensing images for Sungai Galas, Kelantan
12:15-12:30 PM	UMPSA01 Dr. Nadiah binti Mokhtar Biosorption of Cu (II) ion from aqueous solution by Euchema Cottonii Sp: a breakthrough Curve study	UMK45 Miss Nur Ain Atiqah Jamaluddin Electricity Production from Paddy Field Mud in Double Chamber Microbial Fuel Cells and Isolation of Electroactive Bacteria Involved

12:30-12:45 PM		SPMVV02 Ms. Mrunalika Kadiyam Sustainable recovery of Chitosan from Prawn waste: Process, Optimization and Structural analysis and its Antibacterial activity against multidrug resistant bacteria
12:45-1:30 PM	**Score Calculation**	
1:30-2:00 PM	**Closing Ceremony**	
Room Link	fbkt.my/iconbet2025-mainroom	

KEYNOTE SPEAKER 1

YBHG. DATO' TS. IR. DR. BADHRULHISHAM BIN ABDUL AZIZ

Global Rare Earth Technology

Dato' Ir Ts Dr Badhrulhisham Abdul Aziz is currently the President and CEO of Founder and Managing Director, Global Rare Earth Technology, a company focusing on the rare earth industry from mining to processing. Previously, he was the Principal Consulting Fellow with University Malaysia Pahang, concentrating on the consultation in the development of the critical mineral industry. He has more than 10 years of working experience in the chemical, oil and gas, and energy industry; working in several multinational companies with roles as Senior Process Engineer, Site Quality manager, HSSE Senior Manager, Senior Operation Manager and General Manager. He was also in academia for more than 20 years, serving several public and private universities in the capacity as Professor, Head of Department, Dean, Corporate Strategic Director, Research and Development Centre Director and Deputy Vice Chancellor. Dr. Badhrulhisham completed his undergraduate from Colorado State University, USA, and his postgraduate from the University of Wales, UK and Kyoto University, Japan, all in the field of Chemical Engineering. He is a registered practising professional engineer with the Board of Engineers Malaysia; certified Technologist with the Malaysian Board of Technologists, and was elected as Fellow by the prestigious Academy of Sciences Malaysia (ASM) in 2014. He is also active in consulting work and served as advisor and consultant to private and government sectors in critical mineral matters especially on the rare earth mining and processing plant (referred expert on Lynas to Parliament Select Committee; government spoke person on Lynas issue; one of the authors of the National Blueprint of Rare Earth 2014 and Business Model for non-Radioactive REE Industry 2023); industrial pollution (e.g. Sg Kim-Kim tragedy); engineering education and commercialization of R&D projects (scale up of bio and chemical plants). He has published and presented more than 160 papers locally and internationally, including more than 10 keynote and plenary speeches.

KEYNOTE SPEAKER 2

ASSOC. PROF. DR. KUNIYOSHI KATSUYOSHI SHIMIZU

Kyushu University, Japan

Dr. Kuniyoshi Shimizu is a distinguished scholar from the Faculty of Agriculture, Kyushu University, Japan. His research primarily focuses on elucidating the complex functions of forests with an emphasis on human physiological activities. He explores the effects of natural aromatic compounds on human mind and body, as well as investigates mushroom bioactive compounds to combat metabolic syndrome and aging diseases such as benign prostatic hyperplasia and osteoporosis. Dr. Shimizu's research outcomes have led to the development of cosmetics, aromas, functional foods, living environments, and toiletries made from natural materials that are available commercially. With an impressive h-index of 41 and over 5,800 citations, Dr. Shimizu's work has significantly impacted the fields of natural product and bioorganic chemistry.

KEYNOTE SPEAKER 3

PROF. DR. ERMAN TAER

Universiti Riau, Indonesia

Erman Taer, a Lecturer and Professor at the Department of Physics, University of Riau in Indonesia, has been making remarkable contributions since 1995. He is a leading figure in research related to the synthesis of biomaterial-derived carbon with superior features for energy storage device applications, specifically supercapacitors. Having obtained his Ph.D. in Applied Sciences from the University Kebangsaan Malaysia (UKM) in 2012, Erman earned the prestigious title of professor in 2019 due to his expertise in material physics, with a focus on carbon-based for supercapacitors. Besides his teaching responsibilities, Erman is deeply engaged in extensive research into carbon porous material derived biomass based for electrochemical energy storage. He consistently received awards as a top-cited article from Wiley Global from 2023 to 2024. With 151 articles indexed by Scopus and sustained dedication to this research area, he currently holds the highest H-index of 28 among researchers at the University of Riau in Indonesia

PLENARY SPEAKER 1

PROFESSOR EMERITUS DATO' DR. HJ. IBRAHIM CHE OMAR

Universiti Malaysia Kelantan, Malaysia

Professor Emeritus Dato' Dr. Hj. Ibrahim Che Omar, FASc, D.Eng.,P.S.K.,J.M.N.,DPSK (Kel), was with the academia from 1984 through 2019 until his last position as the Deputy Vice Chancellor (Research and Innovation) at Universiti Malaysia Kelantan. He was a senior professor in Industrial Biotechnology and currently is the Fellow of The Malaysian Academy of Science (ASM). He holds Bachelor of Science (First Class), Master of Engineering and Doctor of Engineering from Hiroshima University, Japan. In his specialization of Industrial Biotechnology, particularly in the fields of Industrial Chemistry, Enzyme and Fermentation Technology, he has completed over 30 research projects with 26 research awards, 5 patents and over 50 post graduates. He has published over 15 books and 400 research articles in journals and research proceedings. He was aslo declared as the one of the Top Research Scientists of Malaysia" (TRSM). He was awarded The Merit of Excellence Award (2013) by The World Congress in Pharmaceutical Science and Chemical Technology, Sri Lanka on his contribution to Science and Technology at the international level. In 2015, and was later awarded The Life Time Achievement Award by University Sri Venkastewaran, India for his international academic contributions. He is the recipient of 10 academic and research awards which include UNESCO Fellowship in Industrial Biotechnology (Thailand) dan Natural Resource Chemistry (Malaysia), Commonwealth Fellowship for Academic Staff (ACU, UK – Non-aqueous Biocatalysis), Japan Society for the Promotion of Sciences (JSPS – Enzyme Immobilization), Asian Development Bank (ADB – Food Biotechnology), Gessellchaft fur Biotechnologische Forschung (GBF, Germany – Industrial Biotechnology), MIRCEN UNESCO (Organic Solvent Enzymatic Reactions, South Africa) and The Malaysia-Hungary Research Award (Solid State Fermentation). He was appointed Visiting Professor at the University of Orange Free State, Bloemfontein South Africa (1997), Kyoto University, Japan (1991), Strathclyde University, Glasgow, UK (1992 and 1994), Technical University of Budapest, Hungary (1998) dan S.Seifulin AgroTechnical University, Kazakhstan (2013 - 2015). Besides that he was also active in professional associations and academic journals, and conference organisers as Advisory Board members. He was the founder and was the first

Chief Editor for The Malaysian Journal of Microbiology (MJM) and the International Advisory Board of MJM. He was also the International Editorial member of other 8 journals, Council member of The Asian Federation of Biotechnology (AFOB), editor to the "Current Research in Malaysia (CREAM) MOHE, Advisor to The Journal of Industrial Chemical Technology, SIRIM, and The Journal of Tropical Agriculture and Sustainable Science and Editorial Board of The Asian Journal for Poverty Studies (Indonesia). He has also participated in more than 15 research on the policies of Higher Education in Malaysia and lectured on Entrepreneurial Leadership and Education at various universities and Higher Education Academy on Leadership (AKEPT).

PLENARY SPEAKER 2

ASSOC. PROF. DR MAHANI YUSOFF

Universiti Malaysia Kelantan, Malaysia

Dr. Mahani Yusoff obtained her PhD in Materials Engineering (Composite Materials), MSc. in Materials Engineering, and B. Eng (Hons) in Materials Engineering from Universiti Sains Malaysia, Malaysia. She has 12 years of teaching experience at the tertiary level covering the materials technology field. She has received 17 research grants totaling up to RM 1 million. At various national and international levels, her research was acknowledged, and she received honors with three patents. She has published more than 80 technical papers in books of chapters, peer-reviewed journals, and conference proceedings locally and internationally related to composite materials and powder metallurgy. She has supervised 2 PhD students, 6 masters students, and more than 50 undergraduate students.

PLENARY SPEAKER 3

ASSOC. PROF. DR. MOHD HAZIM MOHAMAD AMINI

Universiti Malaysia Kelantan, Malaysia

Dr. Mohd Hazim Mohamad Amini is a PhD holder from Universiti Sains Malaysia in the field of Chemical Modification of Bioresources. He started his academic journey in 2012 at Universiti Teknologi MARA Pahang in the Wood Industry Program. Later, he joined Universiti Malaysia Kelantan in 2013 in the Forest Resources Technology Program. Obtaining Associate Professor in 2020, he has experience on sabbatical leave at the Karadeniz Technical University, Turkiye, for a year. His field of study mainly involves the utilization of bioresource materials, including wood technology, starch modification, activated carbon products and related research areas. He has over 11 years of experience working with wood composite research projects, specifically particleboards.

PLENARY SPEAKER 4

ASSOC. PROF. DR. MUHAMMAD AZWADI BIN SULAIMAN

Universiti Malaysia Kelantan, Malaysia

Dr Muhammad Azwadi Sulaiman was born in Kuala Besut, Terengganu, Malaysia, on the 20th of March 1984. He obtained his BEng (2008), MSc (2009), and PhD (2013) degrees from Universiti Sains Malaysia in the field of Materials Engineering. In 2013, he joined Universiti Malaysia Kelantan (UMK) as a lecturer for the Materials Technology Programme, where he played a significant role in developing several new programmes. Throughout his tenure at UMK, he held various administrative positions, including Head of Department, Deputy Dean of Research and Innovation, and Dean of Faculty Bioengineering and Technology until 2023. Dr Azwadi is actively engaged in numerous research activities related to materials science and engineering and has organised conferences and seminars such as RCSSST, ICXRI, IConBET, ICoST, AMCT, and SCMSM. Additionally, he contributes to the editorial boards of several journals, including the International Journal of Electroactive Materials (IJEM), Journal of Tropical Resources and Sustainable Science (JTRSS), Malaysian Journal of Microscopy (MJM), and Malaysian Journal of Bioengineering and Technology (MJBeT). To date, he has published over 100 journal articles and edited more than 200. His research interests primarily focus on X-ray-related techniques for investigating material properties and behaviours. He also specialises in radiation protection, occupational safety, and health and oversees the Radiation Laboratory at UMK.

PLENARY SPEAKER 5

ASSOC. PROF. DR. NOOR AZLINA BINTI IBRAHIM

Universiti Malaysia Kelantan, Malaysia

Associate Professor Dr. Noor Azlina Ibrahim is an academic and researcher at Universiti Malaysia Kelantan, with a robust background in microbiology. Dr. Noor Azlina has made significant contributions to enzyme technology and structural biology. Dr. Noor Azlina earned her PhD in Structural Biology from Universiti Putra Malaysia, where she developed a keen interest in protein structure and engineering. As an academician, she is passionate about mentoring the next generation of scholars and professionals, fostering a culture of innovation and excellence at Universiti Malaysia Kelantan. Dr. Noor Azlina has held various administrative positions at UMK from 2010 to 2021, including Head of Department, Deputy Dean, and Dean. Despite her administrative responsibilities, she has successfully managed eight research grants as the principal investigator, including national and university grants such as PRGS, FRGS, RAGS, SGJP, UMK PRO, and UMK COM. Her leadership and expertise continue to inspire and drive advancements in microbiology.

INVITED SPEAKER

DR. YANG JINHUA

Bruker Nano Analytics

Jinhua Yang received his Ph.D. in Chemical and Bimolecular Engineering from National University of Singapore in 2010. He was a Research Scientist at the Institute of Bioengineering and Nanotechnology in A-Star from 2009 to 2021. He has more than 10 years of R&D experiences on the synthesis and characterization of inorganic materials for electrochemical applications in batteries, fuel cell and supercapacitors. He has published 23 papers and held 3 patents. He is familiar with advanced analytical instrumentations, such as TEM and SEM and professional in material theory and characterization.

INVITED SPEAKER

PROFESSOR DR. ONG KEAT KHIM

National Defence University of Malaysia

Professor Dr. Ong Keat Khim received her Ph.D. from Universiti Putra Malaysia (UPM) in 2007 and joined as a Senior Lecturer at National Defence University of Malaysia (UPNM) in 2008. From 2010 to 2012, she served as Head of the Chemistry Department. Currently, she is a Professor and Senior Research, actively supervising postgraduate and postdoctoral researchers. Her research focuses on analytical and environmental chemistry, particularly in developing novel detection methods for hazardous compounds and applying green chemistry to reduce carbon dioxide and heavy metals. She has led numerous research projects funded by the Ministry of Higher Education and UPNM. Her innovations include a controlled-release fertilizer using biopolymer materials and a portable device for on-site arsenic and pesticides detection. She has published about 100 papers in peer-reviewed journals and conference proceedings. She holds five patents (three granted) and two copyrights. Her work has been recognized with multiple gold medals at international exhibitions, including International Invention, Innovation and Technology Exhibition (ITEX) 2011, the Seoul International Invention Fair 2015, and International Trade Fair for Ideas, Inventions, and New Products (iENA) 2016. She is also a two-time recipient of the Excellent Service Award (years: 2010, 2015) and has presented her research at various international conferences.

INVITED SPEAKER

TS. DR. AINIHAYATI BINTI ABDUL RAHIM

Universiti Malaysia Kelantan, Malaysia

Ts. Dr. Ainihayati was born in Kota Bharu, Kelantan, Malaysia. She holds a Bachelor's degree in Biology with a major in Microbiology from Universiti Sains Malaysia (USM), Penang, and subsequently earned her postgraduate qualifications specializing in Molecular Biology from the same institution. Dr. Ainihayati began her academic career in 2014 as a Senior Lecturer in the Bioindustrial Technology Programme at the Faculty of Agro-Based Industry. Following the establishment of the Faculty of Bioengineering and Technology, she transitioned to the new faculty to continue her academic and research pursuits. Her research focuses on beneficial microorganisms, with particular emphasis on agricultural, environmental, and industrial microbiology. Her work aims to advance sustainable practices and contribute to biotechnological innovations through microbial applications such as biofertilizer, biosurfactant and bioremediation.

INVITED SPEAKER

MR. ALAN WONG

Technical Manager, Innolab

Alan Wong has served as Technical Manager at Inno Lab Engineering Sdn Bhd for six years, specializing in X-ray diffraction (XRD), X-ray fluorescence (XRF), melt flow index analysis, and universal testing machines.

INVITED SPEAKER

DR.-ING. MOHD ZAMRI CHE WANIK

Hamad Bin Khalifa University, State of Qatar

Dr.-Ing. Mohd Zamri Che Wanik is a Power & Renewable Systems Engineering and Research Specialist, with an overall professional experience spanning 23 years. He has a wide experience in R&D, pilots and demonstration projects related to Solar PV, Wind, Hydrogen Fuel Cells, MicroGas turbines, Small Hydro, Biogas-Biomass, Electric Vehicles and Energy Storage integration. He is also working on Renewable Hydrogen Production & Storage and Thermal Cooling. He had successfully led many R&D, consultancy, pilot and demonstration projects in this domain. He received his BSc. from the University of Evansville, U.S.A., MEngSc. from the Curtin University of Technology, Australia and Doktor der Ingenieurwissenschaften (equivalent to PhD) from Universität Duisburg-Essen, Germany in 1997, 2002 and 2011 respectively all in Electrical Engineering specialising in Electrical Power System.

ABSTRACT BOOK

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ACKNOWLEDGEMENT

The organizing committee of IConBET 2025 would like to extend the heartfelt appreciation to ***Bruker Malaysia Sdn Bhd*** *and* ***Inno lab Engineering Sdn Bhd,*** *for the generous contributions and supports towards the success of the conference.*