

IABC 2022

INTERNATIONAL APPLIED BIOLOGY CONFERENCE 2022

INTERNATIONAL APPLIED BIOLOGY CONFERENCE 2022 (IABC2022)

3rd - 5th June 2022

Hatten Hotel, Melaka, Malaysia

Sustainable Development Goals
through Applied Biology

SUSTAINABLE
DEVELOPMENT
GOALS

PROGRAMME BOOK

Organized By:



Co-organized By:



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
وَبِإِذْنِ الْمَلِكِ الْمَلَايَا لِتَأْرِيْخِنَا مَلَيْسِيَا





Programme Book

Sustainable Development Goals through Applied Biology

Hatten Hotel

Melaka, Malaysia

3rd June – 5th June 2022

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The Malaysian Society of Applied Biology

<http://msabsimposium.blogspot.my>

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WELCOME MESSAGE FROM THE PRESIDENT OF MSAB

Assalamualaikum and Greetings to all participants of the International Applied Biology Conference 2022 (IABC2022).

First and foremost, on behalf of the Malaysian Society of Applied Biology, I would like to welcome all participants to the beautiful city of Malacca for IABC2022. The theme for this conference is "Sustainable Development Goals Through Applied Biology". As such, this conference is designed to provide an ideal platform for professors, researchers, scientists, industrial specialists, students, and stakeholders in applied biology to share their ideas and advance innovations in order to support the United Nation's Sustainable Development Goals (SDGs) effort. In recent years, many reports have revealed that global research is increasingly being redirected towards addressing SDGs such as Zero Hunger, Good Health & Well-Being, Clean Water & Sanitation, Affordable & Clean Energy, Responsible Consumption & Production, Climate Action, Life Below Water Life and Life on Land. I'm hoping with the participation of renowned local and international experts, fruitful conversations and discussions will spark new ideas for converting new achievements in applied biology into improved practice and application in order to meet the SDG targets.



The society would also like to thank the organising team for their hard work in putting this conference together. Due to the COVID19 epidemic, this conference, which was intended to take place in June 2020, had to be postponed several times. After two years of attempting, the group finally succeeded this year. I hope that this meeting will serve as a springboard for us to get together and talk science more openly again, as we did before the pandemic.

Lastly, I would like to wish all participants a productive and fruitful conference as well as a pleasant stay in the historic city of Malacca.

A handwritten signature in black ink, reading "Abdul Munir Abdul Murad". The signature is written in a cursive style with a long horizontal stroke underneath.

Assoc. Prof. Dr. Abdul Munir Abdul Murad
President
Malaysian Society of Applied Biology
School of Biosciences and Biotechnology
Faculty of Science and Technology
Universiti Kebangsaan Malaysia

FOREWORD FROM THE CHAIRMAN OF THE ORGANISING COMMITTEE

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ and salam sejahtera to all participants of International Applied Biology Conference 2022 (IABC2022). It gives me great pleasure to welcome all the distinguished guests and participants of the IABC2022.

First and foremost, I would like to thank and congratulate the Organising Committee of the IABC2022 who have worked so hard to organise this conference initially planned in 2020. Now, we are in the post COVID-19 era with new norms to be practised. We are happy that the hard work that has been poured by each member of the working committee, we will witness the conference to be held in physical and online mode for our international participants.



As time goes on, we also recognise that many researchers and scientists around the world are beginning to focus and emphasise the element of sustainable development goals (SDGs) in their research. This has opened the eyes of world leaders that the SDGs should not be underestimated because these are the elements that shape the sustainability of human beings, environment and the entire creatures on the planet in which these elements directly will create the prospectus of the nation in future. Therefore, we take this opportunity to mediate the importance of SDGs elements as a scope of conference through the themes that coincides with the field of applied biology such as good health and wellbeing, life below water, life on land, affordable and clean energy, and many more. Hence our conference theme this year "Sustainable Development Goal through Applied Biology" seems very appropriate and timely in responding to the importance of the SDGs to all participants for this year's session.

And to all participants who I believe come from all over Malaysia, I hope you can enjoy the beauty and uniqueness of the Historic City of Malacca. I strongly believe this might be your first experience of attending a conference physically after over two years as we are prohibited to do so and only go through a conference virtually. To our international participants, please be patiently following IABC2022 behind your screens, we hope to have you together with us here in Malaysia next time. Finally, I am strongly confident that this event will be a great success as the platform or medium for scientific exchange of ideas and new knowledge, as well as to build a research collaboration and strengthen the linkage between research institutes or universities. So, enjoy your three days staycation here in Melaka.

With Best Regards

A handwritten signature in black ink, appearing to read 'M. Shukri'.

DR. MOHD SHUKRI BABA
Chairperson of IABC2022 Organising Committee

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CONFERENCE SCHEDULE

Friday, 3rd June 2022

Time	Event
1700 – 1830 2000 – 2200	Registration/Secretariat Room (Hatten 1) and Poster/Booth Setup (Grand Ballroom 1)

Saturday, 4th June 2022

Time	Event		
0800 – 0815	Registration (Hatten 1) and Poster/Booth Setup (Foyer Grand Ballroom 1)		
0815 – 0900	Opening Ceremony (Grand Ballroom 1)		
0900 – 0945	Keynote Address Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak (Grand Ballroom 1)		
0945 – 1010	Photography Session & Coffee Break		
1010 – 1040	Plenary 1 (SDG 15- Life on Land) Prof. Emeritus Dato' Dr. Abdul Latiff Mohamad, MSAB Patron (Grand Ballroom 1)		
1045 – 1230	Parallel Session 1		
	Management & Conservation Biology (Grand Ballroom 1)	Food and Agricultural Sciences (Hatten 2)	Medical & Health Sciences (Hatten 3)
1230 – 1300	Poster Viewing & Evaluation (Foyer Grand Ballroom 1)		
1300 – 1410	Lunch Break		
1410 – 1440	Plenary 2 (SDG 2- Zero Hunger) Prof. Dr. Aziz Ahmad, Universiti Malaysia Terengganu (Grand Ballroom 1)		
1445 – 1630	Parallel Session 2		
	Marine and Freshwater Sciences (Grand Ballroom 1)	Food and Agricultural Sciences (Hatten 2)	Natural Products (Hatten 3)
1630 – 1700	Tea Break, Poster Viewing & Evaluation (Foyer Grand Ballroom 1)		
1700 – 1800	The 45th MSAB Annual General Meeting (MSAB Members) (Hatten 2)		
1930 – 2200	IABC2022 Gala Dinner (Grand Ballroom 1)		

Sunday, 5th June 2022

Time	Event	
0830 – 0900	Plenary 3 (SDG 14- Life Underwater) Mr. Giva Kuppusamy, CEO of GK Aqua Sdn. Bhd (Grand Ballroom 1)	
0905 – 1020	Parallel Session 3	
	Marine and Freshwater Sciences (Grand Ballroom 1)	Management & Conservation Biology (Hatten 2)
1020 – 1110	Coffee Break, Poster Viewing & Evaluation (Foyer Grand Ballroom 1)	
1110 – 1140	Plenary 4 (SDG 3- Good Health) Prof. Dr. Geoffrey Cordell, University of Florida, USA (Grand Ballroom 1)	
1145 – 1315	Parallel Session 4	
	Medical & Health Sciences (Grand Ballroom 1)	Food and Agricultural Sciences (Hatten 2)
1315 – 1430	Lunch Break	
1430 – 1500	Plenary 5 (SDG 7- Clean Energy) Prof. Dr. Sung Ok Han, Korea University (Grand Ballroom 1)	
1505 – 1650	Parallel Session 5	
	Green Technology (Grand Ballroom 1)	Food and Agricultural Sciences (Hatten 2)
1650 – 1700	Tea Break	
1700 – 1800	AWARD PRESENTATION & CLOSING CEREMONY (Grand Ballroom 1)	
1800	CONFERENCE END	

TECHNICAL SESSIONS

Saturday, 4th June 2022

Keynote Address (Grand Ballroom 1)

0900	Title: Sustainable Development in the Age of Bio-disruption Speaker: Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak Chairperson: Dr. Mohd Syukri Baba (IIUM)
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0945	Photography Session & Coffee Break
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Plenary 1 (Grand Ballroom 1)

1010	Title: Malaysian Biological Resources and Sustainable Development Goals : An appraisal Speaker: Prof. Emeritus Dato' Dr. Abdul Latiff Mohamad, MSAB Patron Chairperson: Assoc. Prof. Dr. Abdul Munir Abdul Murad (UKM)
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Parallel Session 1

Time	PaperID	Ballroom 1 Management Conservation & Biology Chairperson: Dr. Mohd Syukri Baba	
1045	O-MC-01	Adibah bt Abu Bakar (Phd)	Detection of invasive peacock bass species in Malaysia using environmental DNA technique.
1100	O-MC-02	Haja Maideen bin Kader Maideen (Phd)	Ferns of Peninsular Malaysia
1115	O-MC-03	Nurul Nadhirah Bt Othman (Ms)	Optimizing In vitro surface sterilization of <i>Cyathea latebrosa</i>
1130	O-MC-04	Nurul Nabilah Huda Bt Mohd Hisham (Ms)	Leaf anatomical characteristics of <i>Nepenthes</i> species in Western Sarawak, Borneo.
1145	O-MC-05	Aidatul Aifa Mohd Tajudin (Ms)	Comparative study of leaf anatomy and micromorphology of selected <i>Justicia</i> sp from Peninsular Malaysia.
1200	O-MC-06	Nik Norhazrina bt Nik Mohd Kamil (Phd)	Mosses of Pulau Perhentian, a small resort island off the coast of Terengganu in Peninsular Malaysia

Time	PaperID	Hatten 2 Food and Agricultural Sciences Chairperson: Dr. Pauline Liew Woan Ying	
1045	O-FA-01	Dhiya Dalila Zawawi (Phd)	Identification and prevention of microbial contaminants in <i>Musa paradisiaca</i> tissue culture.
1100	O-FA-02	Nor Hayati Ibrahim (Phd)	Optimization of mixing parameters on techno-functional properties of fenugreek gum-soy protein isolate dispersion.
1115	O-FA-03	Wong Li Yin (Ms)	Enzymatic hydrolysis of edible bird's nest (EBN) and anion exchange chromatography (AEC) fractionation: Physicochemical properties and antioxidant activities.
1130	O-FA-04	Wan Zaliha Wan Sembok (Phd)	The impact of different drying temperatures on Black Ginger rhizome Slices in relation to different application of growing media
1145	O-FA-05	Chuah Hui Qian (Ms)	Exploration of Antioxidant and Anti-inflammatory Potential of Jicama Skin
1200	O-FA-06	Khairunnisa Hanisah bt Mohd Daud (Ms)	Gene knockdown via RNA interference in oil palm pathogen, <i>Ganoderma boninense</i>
1215	O-FA-07	Rafidah bt Badrun (Mrs)	Dual RNA-sequencing of <i>Ralstonia syzygii</i> subs. <i>celebensis</i> , a pathogen causing Banana Blood Disease.

Time	PaperID	Hatten 3 Medical & Health Sciences Chairperson: Dr. Shevin Rizal Feroz	
1045	O-MH-01	Shevin Rizal Feroz (Phd)	Albumin- based drug delivery systems: Recent advancements
1100	O-MH-02	Hayati Mohd Yusof (Phd)	Knowledge, attitude and practice (KAP) on complementary and alternative medicine (CAM) associated with Covid-19
1115	O-MH-03	M.Pirehma A/P Marimuthu (Ms)	Rapid desloughing using sterile maggots of <i>Lucilia cuprina</i>
1130	O-MH-04	Nurrul Shaqinah Nasruddin (Phd)	Expression of proinflammatory cytokines (IL-1 β , IL-6, and TNF- α) in the gingival, heart and kidney tissues after experimental periodontitis induction
1145	O-MH-05	Norhazniza bt Aziz (Ms)	Chemical profile and antiviral activity of fermented Jackfruit (<i>Artocarpus heterophyllus</i>) extract against Herpes simplex virus type 1 (HSV-1)
1200	O-MH-06	Nirmell Satthiyasilan (Mr)	Proto-enzymes during the origins of life on earth.

Poster Evaluation (1215 - 1300) (Foyer Grand Ballroom 1)

PaperID	Theme: Food and Agricultural Sciences	
P-FA-01	Mohd Asyraf Kassim	Phycoremediation of organochlorine pesticide by <i>Chlorella</i> sp. microalgae
P-FA-02	Mohd Shahril Firdaus Bin Ab Razak	Identification of aromatic rice from genetic landrace resource using molecular marker integrated with chemical assessment
P-FA-03	Intan Nur Ainni Binti Mohamed Azni	Pathogenicity assessment of fungi isolated from leaf blotches in tenera variety of oil palm in malaysia
P-FA-04	Nur Diyana Roslan	Inoculation of monomeric and dimeric coconut cadang-cadang viroid (cccvd) using pressure injector in oil palm seedling: symptomatology and accumulation of viroid
P-FA-05	Suhaila Sulaiman	Omics approach in oil palm research- Bioinformatics perspective
P-FA-06	Farah Nini Binti Othman	In silico genome-wide profiling of non-coding RNA in oil palm <i>Elaeis guineensis</i> and its fungal pathogen <i>Ganoderma boninense</i>
P-FA-07	Norsyahima Binti Azizi	A systematic database for microbial data collection management
P-FA-08	Hazlina Ahamad Zakeri	Potential of eco-enzymes from sugarcane bagasse and banana peel as natural insecticides against the red palm weevil, <i>Rhynchophorus ferrugineus</i>
P-FA-09	Muhamad Hafiz Che Othman	Identification of miRNAs and Their Target Genes in <i>Mitragyna speciosa</i> using computational approaches
P-FA-10	Nurulhikma Md Isa	Stress associated protein family: potential target gene for rice improvement against abiotic stress
P-FA-11	Nor Helwa Ezzah Binti Nor Azman	Molecular characterization of liberica coffee using ssr marker
P-FA-12	Nurhafizhoh Zainuddin	Transcriptome profiling of bagworm <i>Metisa plana</i> from untreated oil palm estate in Perak and identification of genes relevant to insecticides resistance
P-FA-13	Jong Bor Chyan	Bacterial pha irradiation mutants by gamma irradiation
P-FA-14	Hing Jan Nie	Gamma radiation dose response of gram-positive and gram-negative bacteria
P-FA-15	Arnida Hani Teh	Effects of temperature and polyethylene plastic packaging on physicochemical changes and antioxidant properties of tomato during storage

P-FA-16	Nurul Asyikin Binti Mohd Zim	Generation of CRISPR/Cas9 vectors as a potential tool for rice improvement against drought via golden gate cloning method
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1230	Poster Evaluation (Foyer Grand Ballroom 1)
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1300	Lunch Break
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Plenary 2 (Grand Ballroom 1)

1415	Title: The Utilisation of Microbes for Sustainable Agri-Food Production Speaker: Prof. Dr. Aziz Ahmad (UMT) Chairperson: Assoc Prof Dr Wahizatul Afzan Azmi
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Parallel Session 2

Time	PaperID	Grand Ballroom 1	Marine and Freshwater Sciences Chairperson: Dr. Noor Haza Fazlin Bt Hashim
1445	O-MF-01	Noor Haza Fazlin binti Hashim (Phd)	Surveillance on the emergence of extended spectrum beta lactamase producing Escherichia coli in water bodies in Selangor
1500	O-MF-02	Kok Xin Fang (Mr)	Bacteriophages as candidates for environmental pathogens biocontrol
1515	O-MF-03	Muhammad Arif Samshuri (Mr)	Thiol-containing protein as biomarkers on oxidative stress ecology of Acropora digitifer
1530	O-MF-04	Nur Athirah Yusof (Phd)	Safeguarding the future of seaweed aquaculture in Malaysia: Development of endophytic bacteria possessing biocontrol potential against ice-ice disease in Kappaphycus alvarezii

Time	PaperID	Hatten 2	Food and Agricultural Sciences Chairperson: Dr. Malinna Jusoh
1445	O-FA-08	Izwan Bharudin (Phd)	Multi-omics studies on oil palm pathogen, Ganoderma boninense
1500	O-FA-09	Chew Huei Chin (Ms)	Cellulase pretreatment to enhance antioxidant, anti-inflammatory and hypoglycemic activities of Mulberry leaf extract.
1515	O-FA-10	Nur Hidayah Jamar (Phd)	Challenges in applying probiotics in freshwater fish aquaculture.
1530	O-FA-11	Ng Xin Yie (Ms)	Identification of cerato-platanin genes involved during infection of Ganoderma boninense on oil palm via bioinformatics analysis.
1545	O-FA-12	Muhammad Asyraff Abdul Samad (Mr)	Identification of antifungal compounds from soil microbes capable of inhibiting the growth of Ganoderma boninense

1600	O-FA-13	Madiah Ahmad Zairun (Mrs)	Potential of mating genes as biological markers for <i>Ganoderma boninense</i> detection
1615	O-FA-14	Shazilah Kamaruddin (Phd)	Protein engineering of <i>Glaciuzyma antarctica</i> proline iminopeptidase for enhanced cold adaptive performance

Time	PaperID	Hatten 3 Natural Products Chairperson: Dr. Sylvia Chieng	
1445	O-NP-01	Khairul Azreena binti Bakar (Ms)	Interaction characteristics of Mitragynine with human serum albumin and α 1-acid glycoprotein
1500	O-NP-02	Nazlina Ibrahim (Phd)	Potential of Goniotalamin as Antiviral Drug Against Acyclovir-Resistant Herpes Simplex Virus Type-1
1515	O-NP-03	Siti Nurulhuda Mastuki (Mrs)	Inhibitory effects of <i>Melastoma malabathricum</i> against <i>Candida albicans</i> : A preliminary report
1530	O-NP-04	Siti Nor Amira Mohd Azli (Ms)	Malaysian herbal product labels: Does it guide the consumers for reasonable and safe use?
1545	O-NP-05	Arifah Adlina binti Rashahan (Ms)	Medicinal postpartum products: Insufficient labels and misleading advertisements.
1600	O-NP-06	Nazlina Haiza binti Mohd Yasin (Phd)	The effects of co-cultivation of <i>Chlorella</i> sp. (UKM2) and <i>Scenedesmus</i> sp. (UKM9) on growth and biochemical compounds.

Poster Evaluation (1630 - 1700) (Foyer Grand Ballroom 1)

PaperID	Theme: Food and Agricultural Sciences	
P-MH-17	Nur Aminah Binti Mohd Hazbir	Genome wide analysis of stress associated protein (sap) family in <i>Oryza sativa</i>
P-FA-18	Sitti 'Aisyah Binti Mohd Roszelin	Effect of abiotic stress at vegetative and inflorescence stage on <i>Arabidopsis</i> transgenic overexpression osSAP8
P-FA-19	Sujitra Raj Genga Raj	Comprehensive meta-analysis of cereal QTLs associated with growth and yield traits under drought conditions
P-FA-20	Nur Atiqah Binti Mohd Khari	Rice stem borer infestation in two different planting seasons in North Malaysia
P-FA-21	Noor Liyana Sukiran	The effect of submergence on selected Malaysian rice varieties

PaperID	Theme: Medical & Health Science	
P-MH-01	Normah Awang	Cytotoxicity and Mode of Cell Death Assessment of Acute Lymphoblastic Leukemia Cell Lines, CCRF CEM (CCL-119) Induced by Triphenyltin(IV) Dithiocarbamate Compounds
P-MH-02	Noraziah Mohamad Zin	Potential of dimeric sesquiterpene compound derived from basidiomycete fungus against MRSA

P-MH-03	Nurul Farahana Kamaludin	Triphenyltin(iv) diisopropyl dithiocarbamate induces mitochondrial mediated-apoptosis in jurkat t lymphoblastic leukemia cells
P-MH-04	Afzan Mat Yusof	Effectiveness of counselling among parents in managing children with disabilities at rehabilitation center, esenyurt, istanbul during pandemic
P-MH-05	Siti Junaidah Binti Ahmad	In-vitro anti-plasmodial of endophytic streptomyces sp. and elucidation of bioactive metabolite by metabolomics approaches
P-MH-06	Sylvia Chieng	Computational analyses of epitope-spanning peptides from <i>Burkholderia pseudomallei</i> immunogenic proteins
P-MH-07	How Shu Sian	Functional and Structural Analysis of BPSS0140-BPSS0142 ABC Transporter that Mediates Fructose Import in <i>Burkholderia pseudomallei</i> .
P-MH-08	Nurul Hanun Ahmad Raston	Site-directed mutagenesis and production of catalytically-inactive cas13 (dcas13) from <i>Leptotrichia wadei</i>
P-MH-09	Yap Yin Xin	<i>Lipid metabolon in non-oleaginous fungus of Aspergillus niger</i>

1630 | Tea Break, Poster Viewing and Evaluation (Foyer Grand Ballroom 1)

1700 | The 45th MSAB Annual General Meeting (MSAB Members) (Hatten 2)

1930 | IABC2022 Gala Dinner (Grand Ballroom 1)

Sunday, 5th June 2022

Plenary 3 (Grand Ballroom 1)

0830	Title: Towards The Circular Green Economy of Freshwater Prawn Farming Speaker: Mr. Giva Kuppusamy (CEO of GK Aqua Sdn. Bhd) Chairperson: Dr. Lisa Ong Gaik Ai
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Parallel Session 3

Time	PaperID	Grand Ballroom 1	Marine and Freshwater Sciences Chairperson: Dr. Douglas Law
0905	O-MF-05	Doris Quay Huai Xia (Phd)	Biochemical and biophysical characterisation of an arginase from <i>Glaciozyma antarctica</i> P112
0920	O-MF-06	Malinna Jusoh (Phd)	Lipids induction strategy in microalgae through environmental manipulations
0935	O-MF-07	Nor Omaima Harun (Phd)	The Prevalence of anisakid nematode present in Shortfin Scad, <i>Decapterus macrosoma</i> (Bleeker, 1851) from Terengganu waters, Malaysia
0950	O-MF-08	Douglas Law (Phd)	Live Semi-dry Transportation of wild marble goby (<i>Oxyleotris marmorata</i> Bleeker, 1852) to in-land stock tank facility
1005	O-MF-09	Kuhan Chandru (Phd)	Astrobiology: An interdisciplinary Science to understand the Origins of Life and Universal Biology

Time	PaperID	Hatten 2	Management and Conservation Biology Chairperson: Dr. Lisa Ong Gaik Ai
0905	O-MC-07	Lee Gaik Ee (Phd)	Intergrative taxonomy reveals a new species of liverwort from Peninsular Malaysia
0920	O-MC-08	Azi Azeyanty bt Jamaludin (Phd)	Potential ethnomedicinal uses from <i>Adiantum</i> species (Pteridaceae) grown in Malaysia
0935	O-MC-09	Rohani Shahrudin (Phd)	Comparison of micromorphology of terrestrial and epiphytic orchids in the Bris ecosystem
0950	O-MC-10	Khairiatul Mardiana Jansar (Phd)	Morphology of Weedy Rice (<i>Oryza sativa</i>) in Selected Rice Fields of Peninsular Malaysia: Phenotypic Characterization
1005	O-MC-011	Nur 'Aqilah binti Mustafa Bakray (Phd)	Elevated CO ₂ influence the ectomycorrhizas diversity at Tekam forest reserve, Jerantut, Pahang.

Poster Evaluation (1020 - 1100) (Foyer Grand Ballroom 1)

PaperID	Theme: Management & Conservation Biology	
P-MC-01	Khairiatul Mardiana Jansar	Microplastics Abundance from Pig Farm Effluent and Surface Water in Sungai Tuang, Melaka, Malaysia.
P-MC-02	Md Asek Uddin	Ichthyofaunal Composition in the Pahang River, Pahang, Malaysia: A Review
P-MC-03	Saiful Arif Abdullah	Wildlife ecological connectivity network in Central Forest Spine 2, Peninsular Malaysia

PaperID	Theme: Green Technology	
P-GE-01	Nur Hazlin Hazrin-Chong	Enrichment of glycerol-utilising microbial consortium for bioaugmentation of anaerobic sludge digestion to increase biogas production
P-GE-02	Nurkhalida Binti Mohammad Khalil	Screening of potential polyethylene terephthalate degrading bacteria
P-GE-03	Ariff Haikal Bin Hairil Anuar	Green Synthesis, Characterization and Antibacterial Activity of Silver Nanoparticles-Kaempferol (agnps-K) Against Methicillin-Resistant <i>Staphylococcus Aureus</i> (MRSA)
P-GE-04	Pauline Liew Woan Ying	Characterization of bacterial pha treated with electron beam by physicochemical analyses

PaperID	Theme: Natural Products	
P-NP-01	Noor Zarina Binti Abd Wahab	Phytochemical analysis and evaluation of antibacterial efficacy of <i>Kyllinga nemoralis</i> plant extracts
P-NP-02	Nur Fatimah Zaharah	Antibacterial Activities of <i>Salvadora persica</i> Extracts Against Oral Bacteria From Clinical Strains
P-NP-03	Shaima Abdulfattah Gamal Mohammed	<i>Chlorella</i> sp. (UKM8): A local microalgae isolate with antiviral and antioxidant properties
P-NP-04	Fatin Humairah Binti Hj M As'Ari	Comparative Analysis of Short Open Reading Frames (sORFs) in Causative Agents of Melioidosis, <i>Burkholderia pseudomallei</i> and other species of <i>Burkholderia</i>
P-NP-05	Mahanem Mat Noor	The Testicular Protective Effect of <i>Moringa oleifera</i> Leaves Extract Against Streptozotocin-Induced Sprague Dawley Rats
P-NP-06	Khew Chung Yuen	Comparative genomics analysis of small ORFs in human pathogenic and non-pathogenic

		<i>Burkholderia</i> sp. reveals a large proportion of uncharacterized sORF
P-NP-07	Fatin Izzati Binti Abdul Hadi	In silica structural and functional annotation of <i>Glaciozyma antarctica</i> proteome

PaperID	Theme: Marine & Freshwater Sciences	
P-MF-01	Muhammaz Haziq Anwar Bin Azlan	Identification of endophytic fungi from macroalga and antibacterial metabolites
P-MF-02	Siti Alwani Ariffin	Saline tolerant of marine endophytic fungi from Teluk Kemang, Malaysia – a rich source of bioactive material

1020	Tea Break, Poster Viewing and Evaluation (Foyer Grand Ballroom 1)
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Plenary 4 (Grand Ballroom 1)

1110	Title: CYBERECOETHNOPHARMACOLOGICS (CEEPO) Speaker: Prof. Dr. Geoffrey Cordell (University of Florida, USA) Chairperson: Assoc. Prof. Dr. Nazlina Ibrahim
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Parallel Session 4

Time	PaperID	Ballroom 1 Medical & Health Sciences Chairperson: Dr. Mohd Fareed bin Mohd Sairi	
1145	O-MH-09	Mohd Shukri bin Baba (Phd)	In-vivo antimalarial activity and toxicity evaluation of <i>Trichosanthes cucumerina</i> against the development of <i>Plasmodium berghei</i> NK65 in mice.
1200	O-MH-08	Mohd Fareed bin Mohd Sairi (Phd)	Harnessing Machine-Learning to triangulate antimicrobial and antibiofilm peptide
1215	O-MH-09	Ahmad Ayad Qatran Al-Khdhairawi (Mr)	Collagen-derived cryptides: Machine-learning prediction and molecular dynamic interaction against <i>Klebsiella pneumonia</i> biofilm synthesis precursor
1230	O-MH-010	Abdullah Trad Sh. Al-Fawaz (Phd)	Antibacterial effect of silver nanoparticles synthesized by medicinal plant extracts against some cariogenic pathogens
1245	O-MH-011	Nisreen Jawad Kadhim (Phd)	Molecular Detection of <i>Bacillus cereus</i> in different food samples by Polymerase Chain Reaction
1300	O-MH-012	Su Datt Lam (PhD)	Understanding Host Susceptibility and Sialic-Acid Receptor Binding of SARS-Cov-2

Time	PaperID	Hatten 2 Food & Agricultural Sciences Chairperson: Dr Chew Bee Lynn	
1145	O-FA-15	Yaseer Suhaimi Mohd (Phd)	Effects of substrates on growth and yield of sweet potato cultivated using soilless culture system.
1200	O-FA-16	Chew Bee Lynn (Phd)	Micropropagation of different Fig cultivars in Malaysia : From lab to the farm
1215	O-FA-17	Lim Seng Joe (Phd)	Petai (<i>Parkia speciosa</i>) seeds and skin as potential functional ingredients
1230	O-FA-18	Mohd Ikmal bin Asmuni (Phd)	Introduction of Sub1 increased tolerance of rice (<i>Oryza sativa</i> L.) to reproductive stage drought stress.
1245	O-FA-20	Ter Zhi Yin (Ms)	Proteolytic fermentation of edible bird nest glycoprotein using <i>Lactobacillus curvatus</i> and <i>Lactobacillus sakei</i>

1315	Lunch Break
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Plenary 5 (Grand Ballroom 1)

1430	Title: Designer Microbial Cell Factory (Equipped with Nanoscale Multifunctional Enzyme Complex) for High-Valued Products from Renewable Resources Speaker: Prof. Dr. Sung Ok Han (Korea University, South Korea) Chairperson: Dr. Jong Bor Chyan
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Parallel Session 5

Time	PaperID	Grand Ballroom 1 Green Technology Chairperson: Dr. Mohd Asyraf Kassim	
1505	O-GE-01	Naqibah Balqis binti Badrulzaman (Ms)	Enrichment of Glycerol-utilising microbial consortium for bioaugmentation of anaerobic sludge digestion to increase biogas production.
1520	O-GE-02	Mohamad Faisal bin Nik Aznan (Mr)	Penilaian model matematik bagi pertumbuhan mikroalga <i>Characium</i> sp. UKM1, <i>Chlorella</i> sp. UKM2 dan <i>Coelastrella</i> sp. UKM4 dalam air kumbahan sintetik
1535	O-GE-03	Nabihah Azhary (Ms)	Enhanced microbial Rhamnolipid biosurfactant production with potential in oil recovery.
1550	O-GE-04	Mardiana Mohd Ashaari (Phd)	Enhanced Microbial Rhamnolipid Biosurfactant Production with Potential in Oil Recovery
1605	O-GE-05	Wan Syaidatul Aqma Wan Mohd Noor (Phd)	Biodegradation of Polyethylene terephthalate (PET) microplastics using <i>Bacillus</i> species
1620	O-GE-06	Siti Nor Asma binti Musa (Ms)	Antimicrobial Activities of <i>Strobilanthes Crispus</i> Silver Nanoparticles (AgNpSc) against <i>Pseudomonas aeruginosa</i>

1635	O-GE-07	Mahendran Sithamparam (Mr)	Polymer Gels as Panspermia Seed in relation to Origin of Life
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Time	PaperID	Hatten 2 Food and Agricultural Sciences Chairperson: Assoc Prof. Dr. Wahizatul Afzan Azmi	
1505	O-FA-21	Wahizatul Afzan Azmi (Phd)	Evaluation of two stingless bee species (Heterotrigona itama and Geniotrigona thoracica) for pollination efficiency on melon manis Terengganu (Cucumis melo var. inodorus cv. Manis Terengganu 1)
1520	O-FA-22	Zakiah Mustapha (Ms)	Manipulation Of Sterilizing Agents And Ascorbic Acid To Reduce Contamination And Browning In In-Vitro Propagation Of Musa Paradisiaca Var Pisang Tanduk
1535	O-FA-23	Nurul Hidayah Samsulrizal (Phd)	Strategies for developing and evaluating CRISPR/CAS9 Construct towards drought tolerance in rice (Oryza sativa ssp. indica)
1550	O-FA-24	Abdul Munir Abd. Murad (Phd)	Identification and functional analysis of G-protein coupled receptors (GPCR) in oil palm pathogen, Ganoderma boninense.
1605	O-FA-25	Norfarhan binti Mohd Assa'ad (Phd)	Comparative population genomics to dissect the evolution of pathogens
1620	O-FA-26	Anis Farhan Fatimi Ab Wahab (Phd)	Identifying Effectors from Ganoderma boninense Using Multi-Omics Approaches

1650	Tea Break
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1700	AWARD PRESENTATION & CLOSING CEREMONY (Grand Ballroom 1)
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1600	CONFERENCE END
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KEYNOTE SPEAKER



Emeritus Prof. Tan Sri Dato' Dzulkifli Abdul Razak
International Islamic University Malaysia

Biography

Dzulkifli Abdul Razak (or for short, Dzul) is the Rector of the International Islamic University. He is the immediate past president of the International Association of Universities (IAU), a UNESCO-affiliated organisation, based in Paris. He was the Convenor of the Regional Centre for Expertise on Education for Sustainable Development based in Universiti Sains Malaysia beginning 2005. Dzul was awarded the prestigious *2017 Gilbert Medal* in recognition of "his long term commitment to a sustainable approach to international higher education." He is a Fellow of the Academy of Sciences Malaysia, the World Academy of Art and Science the World Academy of Islamic Management.

STRATEGIES FOR DEVELOPING AND EVALUATING CRISPR/CAS9 CONSTRUCT TOWARDS DROUGHT TOLERANCE IN RICE (*Oryza sativa* ssp. *indica*)

Nurul Hidayah Samsulrizal^{1,3}, Anis Afuza Md Yusof¹, Siti Syafiqah Abdul Sattar¹, Nurul Asyikin Mohd Zim¹, Mohd Syahmi Salleh¹, Zamri Zainal², and Zarina Zainuddin^{1,3}

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Abstract. The majority of the world's population consumes rice (*Oryza sativa*), which is a staple meal. On the other side, climate change has put rice production in jeopardy. The advent of genome editing technologies has ushered in a new age of agricultural development. Hence, the goal of this work is to use the golden gate cloning approach to produce the CRISPR/Cas9 drought tolerance construct in *O. sativa* subsp. *indica*. The development of CRISPR/Cas9 constructs involved several stages, i.e., identification of the SUMO E2-Conjugating Enzyme (*OsSCE1*) gene, sgRNA selection, and vector construction of the CRISPR/Cas9. The first step in this research was to characterise the *OsSCE1* gene using FGENESH, GeneMarkS, InterProScan, and Blast2GO tools. Then, the putative *OsSCE1* gene was verified by sequencing, and found to be 99% identical to *O. sativa* on chromosome 10. The sgRNA design was performed manually with the help of gRNA prediction programmes including WU-CRISPR, CCTop, Benchling, and CRISPR-P. The golden gate cloning method was then used to validate the virtual vector, which included separate vector containing the *OsSCE1* sgRNA sequence, planta selectable maker, and Cas9 cassette that were standardised elements for hierarchical modular cloning (MoClo). This study demonstrated that our system, such inclusions are achievable, resulting in a speedier and more efficient assembly process which could contribute to enhancing the resistance and tolerance of rice. To assure a satisfactory outcome, the effectiveness of knocking out candidate genes in *O. sativa* on drought tolerance will be explored further during the *in vivo* stage.

Keywords: CRISPR/Cas9, *Oryza sativa*, rice, drought, *OsSCE1* gene.

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THANK YOU

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INVITED SPEAKER

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