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1992-2022

RESEARCH UPDATE

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INNOVATION

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Foreword

Professor Dr Wan Hashim Wan Ibrahim
Deputy Vice-Chancellor (Research and Innovation)

It is with great pleasure that I welcome you to our 2022 Research Update. With every publication, we hope that the dissemination of knowledge will impart valuable information to encourage current and potential researchers to strive for excellence in research. Further, we hope that our researchers are able to produce impactful outcomes to the society through research opportunities and collaborations.

With the endeavours of our researchers, the issue themed **"Innovation and Sustainability"** is in line with several guiding principles of the Shared Prosperity Vision 2030 announced by the Ministry. Collaboration in research is also revered highly in rebuilding the nation's economy by providing labour markets and producing human capital.

In addition, the active participation of our researchers in the Research and Innovation Ecosystem drives the university towards visibility and research excellence. Research is vital in transforming and revolutionising the nation and its societies. By focusing on enhanced research impacts, our researchers are able to create translational research to impact our society and enterprises while leveraging UNIMAS niche areas towards wealth creation through commercialisation and sustainable development goals. In line with this, we have achieved a record high of publications in indexed journals. In terms of commercialisation, our researchers have contributed to the COVID-19 studies and the betterment of the society.

We hope that our researchers will continue to gain their momentum and to inspire other fellow researchers to have a hand in our impactful research to society. We wish to thank our researchers for their efforts in providing us the content for our publications. We also extend our gratitudes to the committed team behind the continuous publication of our Research Update bulletin.

Professor Dr Lo May Chiun
Senior Director
Research, Innovation and Enterprise Centre

It is with great pleasure that I welcome all to our 2022 Research Update. In an era where resources fall short and needs increase, there is a need to vanguard research knowledge in the field of sciences and non-sciences. The sharing and exchange of experience is a means to an end in achieving effective communication among the parties of the triple helix model of innovation in fostering economic and social development.

The challenges of the COVID-19 pandemic have provided researchers with opportunities to innovate and creatively conquer resource limitations. The year 2021 has had its difficulties, especially with the prolonged impacts of COVID-19. However, thanks to the research conducted by the combined efforts of our researchers and international researchers, we have a better understanding of the virus and how we can combat its spread. Despite the uncertainty of an ending, we are positive that research contributions will provide clarity to our societies and a hope of an end.

We support our researchers in the endeavours of research publications. Esteemed guest speakers were invited to share insights and their experiences in research publications in various fields.

Hence, along this line of aspiration, this issue highlights the success of our researchers for the betterment of our communities. Our foresight for the year 2022 is to drive the 'Development' and 'Commercialisation' stages of the Research and Innovation Ecosystem. As we enter a new cycle of research funds, we hope that our efforts to support our researchers are fruitful in providing researchers with platforms to translate knowledge into transformational programmes.

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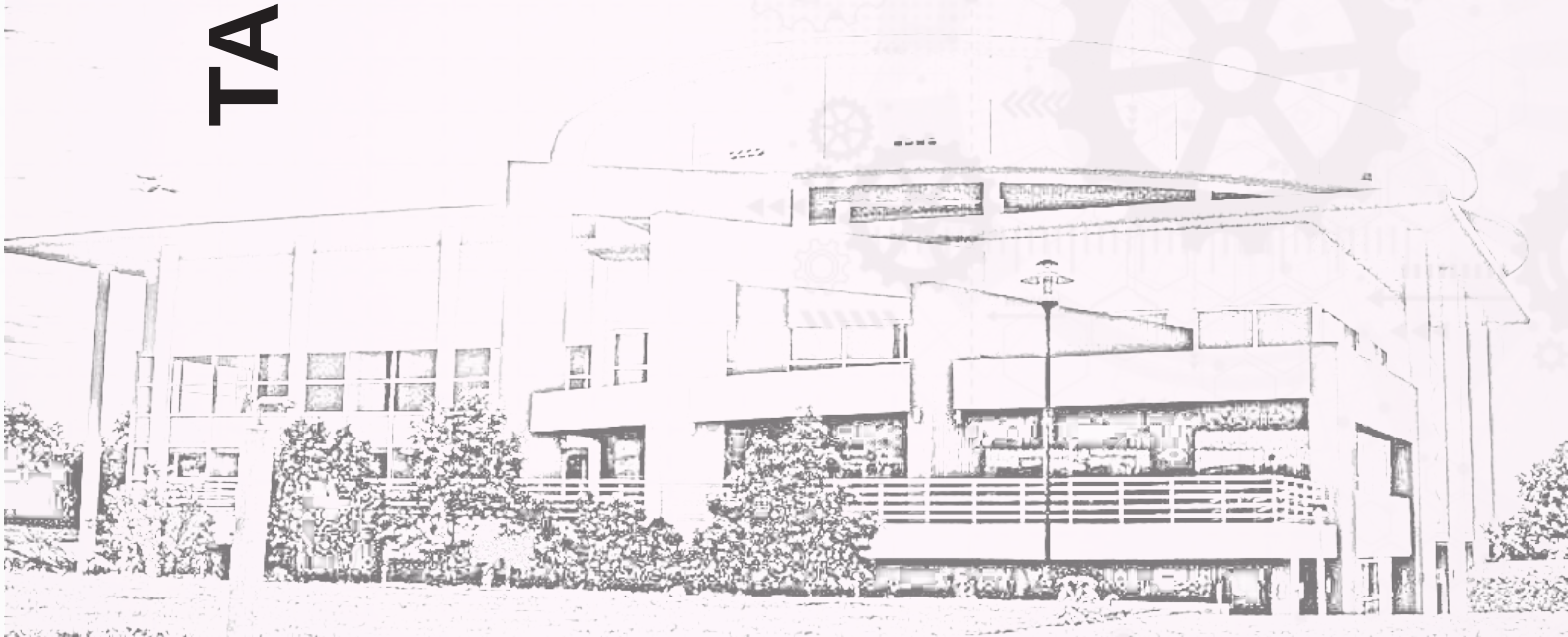

NUTRITIONAL STUDIES OF ENGKABANG AS ANIMAL FEED FOR GREEN BREEDER SDN BHD

Researchers: [a]Boon Siong Wee, [a]Siong Fong Sim, [a]Hung Hui Chong, [b]Danial Nicholas
[a]Faculty of Resource Science and Technology
[b]The Malaysian Agricultural Research and Development Institute, Kuching

The nutritional studies of Engkabang fruit and its benefits to animal nutrition have attracted much interests in livestock industry in many countries. Addition of Engkabang fruit at appropriate level to conventional feed would be beneficial to the animal nutrition needs. However, the use of Engkabang fruit in swine feed is yet to be reported. Thus, this study aimed to study the nutritional compositions of Engkabang fruit and its potential benefit as animal feed. The results of this study provided useful information on the benefits of Engkabang fruit as supplement in animal feeds. Proximate analyses of Engkabang fruit showed that it contained high levels of healthy fat and carbohydrate required for animal nutrition. Besides, the use of Engkabang fruit in feed mixture could produce pork with a better fatty acid profile as it contains more polyunsaturated fats than normal pork. This points to some health benefit for consuming Engkabang pork. Apart from that, the presence of essential amino acids (methionine and lysine) was found to be slightly higher in Engkabang pork that could improve the nutritional value of the pork. Other amino acids such as arginine and lysine presence in the pork would provide better taste sensation. In general, this study showed encouraging results on the benefits of Engkabang fruit as animal feed and producing pork with better quality and nutritional values.

Acknowledgement
The authors thank Green Breeder Sdn Bhd for providing the financial support of this study. The technical assistance from Mr. Benedict Samling and Mr. Eric K. Droepenu were very much appreciated.

Figure 1: Dried Engkabang Fruits

Figure 2: Engkabang feed materials

FEASIBILITY STUDY OF SLUDGE PALM OIL (SPO) FOR BIODIESEL PRODUCTION

Researchers: [a]Siong Fong Sim, [a]Meng Guan Tay, [b]Lau Seng, [b]William Liang, [b]Clarence Chin
[a]Faculty of Resource Science & Technology
[b]Hexa BRT Sdn Bhd

Sludge Palm Oil (SPO) is a by-product from palm oil refineries. It has been widely used for soap manufacturing, as supplements in animal feed and as feedstock for biogas production. It is also a viable and attractive feedstock for biodiesel production. With the implementation of biodiesel mandate in Malaysia, the demand for crude palm oil (CPO) is anticipated to rise. To ensure the sustainability of biodiesel production, there is a crucial need to identify a potential low-cost feedstock. SPO has the advantage of lower material cost compared to CPO for biodiesel conversion. This project aimed to characterise the SPO obtained from palm oil mills in Sarawak, optimise the conversion reaction of SPO into biodiesel and evaluate the potential of SPO as the feedstock for biodiesel production. The results showed that SPO from palm oil mills in Sarawak was characterised with high water content and free fatty acid (FFA). With the esterification-transesterification reactions, the biodiesel yield from SPO was approximately 74%. Pre-treatment steps for removal of water and conversion of FFA into fatty acid alkyl ester (esterification reaction) were necessary before the transesterification process into biodiesel. This indicated that additional production cost of biodiesel may occur, which render SPO an unfavourable option.

Acknowledgement
The authors thank Hexa BRT Sdn Bhd for funding this project (GL/F07/HEXA/2021).

Figure 1: SPO from Serian and Kuching

IMPROVING STRENGTH AND COMPRESSIBILITY OF PEAT USING CEMENTED SILICA FUME PASTE COLUMN

Researchers: [a]Hasan Alsidqi, [a]Mohamad Ibrahim Safawi Mohamad Zain, [a]Aldrino Chan Ron
[a]Department of Civil Engineering, Faculty of Engineering

In Sarawak, peatland covers 1.65 ha (about 70%) of Malaysian total peatlands. Infrastructure development into the peatland is currently underway due to urbanization and unavailability of area with good soil properties. Concurrently, the metal processing industry, such as ferrosilicon alloys in Sarawak, produces large amounts of silica fume waste that accumulates overtime with limited storage capacity and insubstantial utilisation.

Constructions in deep peat areas call for innovative techniques. A few construction methods had been proposed by researchers such as cement/chemical stabilisation, deep mixing, soil column, etc. However, only soil column had been considered to be feasible due to cost and practicability. There were several types of material normally used for soil column, e.g. stone, sand, and cemented material. Each of this material had its own advantages depending on its application and availability.

Due to low confinement quality of peat, only the cemented material was found as a viable option. Silica fume was investigated as the main component that was identified as cost effective, environmentally friendly, and acid resistive material to be used as soil column. This research was a laboratory-scaled investigation of cemented silica fume in the form of paste to be used for soil column application to provide adequate strength and compressibility requirements for construction on peat. The aim was elaborated into the following objectives: 1.To characterize the rheology of cemented silica fume paste in the laboratory to achieve the optimum mix design, and 2. To determine the strength and compressibility of cemented silica fume paste column by performing a small scaled test in the laboratory.

This research produced a new type of construction material and method to improve the strength and compressibility of peat for infrastructure development in deep peat areas.

Acknowledgement
The authors acknowledge the financial support from Pertama Ferroalloys Sdn. Bhd., Sarawak, Malaysia.

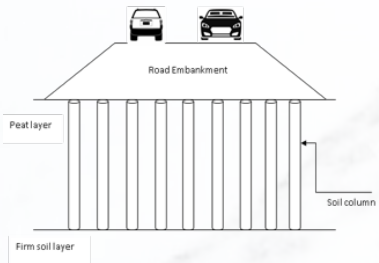

Figure 1: Idealization of soil column in peat

Figure 2: Cemented Silica Fume Paste

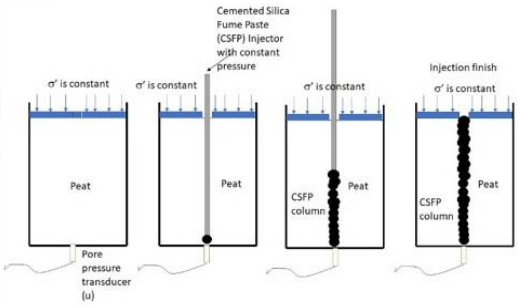

Figure 3: Small scaled laboratory test

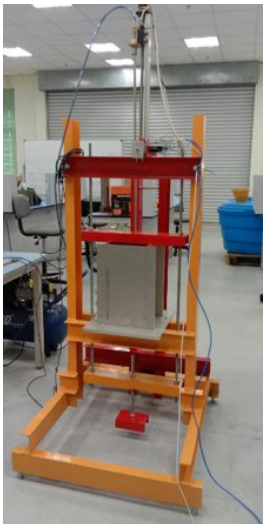

Figure 4: Apparatus

DEVELOPMENT OF BIODIVERSITY AND ECOSYSTEM SERVICES MAPPING SYSTEM IN SELECTED FOREST CONSERVATION AREAS WITHIN OIL PALM LANDSCAPE IN MALAYSIA

Researchers: [a]Das Indraneil, [a]Kumar Tharnisha, [a]Dai Sheng Cheah
[a]Institute of Biodiversity and Environmental Conservation

Life history traits are influenced by latitude, with the translation of latitudinal clines into responses to temperature are crucial to survival. Reptiles, as ectotherms, are particularly susceptible to changes in climate since most physiological functions, including locomotion, digestion, reproduction, and growth, are tightly coupled with environmental factors, especially temperature.

Although climate is likely to affect physiological and life-history traits, other aspects of the phenotype, including morphological and meristic traits, may also exhibit adaptive variation along geographical climatic gradients. Consequently, life-history strategies are known to shift with latitude in many ectothermic species. Two common lizards (Eutropis multifasciatus and Gonocephalus grandis) were used to test for latitudinal differences in thermoregulation patterns, movement and behaviour. Both commonly occurred in forest and around human settlements. These studies were being conducted at several locations, namely, the Malaysian Palm Oil Board site at Pekan, Pahang (west coast of Peninsular Malaysia), Hutan Simpan Utara, Sebungan, near Bintulu, the campus of Universiti Malaysia Sarawak and Kubah National Park, in which the last three sites in Sarawak (Borneo).

The objectives were to ascertain whether aspects of life history, such as activity, including movements, home ranges, behaviour and thermoregulation strategies were affected as the result of latitudinal difference between sites, the northern areas in Peninsular Malaysia with seasonal, as opposed to the more aseasonal sites on Borneo. Temperature-sensitive radio transmitters were attached via pectoral vests to individual lizards, which are tracked for 10–12 months at each sampling sites, using a receiver with external antenna. The project increased our knowledge of thermal biology of ectotherms, critical against a background of climate change and species extinctions.

Acknowledgement
The authors thank the Malaysian Palm Oil Board for funding of our research, and IBEC and RIEC for technical and administrative support.

Figure 1: Graduate student employing radio-telemetry to locate the skink, Eutropis multifasciata and examining an angle-headed lizard, Goncephalus grandis.

Figure 2: Eutropis multifasciata fitted with a Holohil BD-2 radio-transmitter at a northern study site.

A SMARTPHONE-BASED DIABETIC RETINOPATHY (DR) SCREENING SYSTEM USING DEEP LEARNING CNN CLASSIFICATION MODEL

Researchers: [a]Kuryati Kipli, [b]Muhammad Hamdi Mahmood, [c]Lim Lik Thai, [a]Dayang Azra Awang Mat, [a]Rohana Sapawi, [a]Siti Kudnie Sahari, [a]Kasumawati Lias, [d]Suriati Khartini Jali
[a]Department of Electrical and Electronics Engineering, Faculty of Engineering
[b]Department of Para-Clinical Sciences, Faculty of Medicine and Health Sciences
[c]Department of Ophthalmology, Faculty of Medicine and Health Sciences
[d]Faculty of Computer Science and Information Technology

Diabetic Retinopathy (DR) is a worldwide eye disease that causes visual damage and can lead to blindness. Despite the importance of detecting DR in its early phases, insufficient supporting tools for DR screening and grading has hampered access to this opportunity across Malaysia. The situation is even worse in the rural areas, where the modern ophthalmic diagnostic and treatment systems are not available due to the expensive setup and the backdated transportation system.

Hence, this project integrated Deep Learning (DL) technology with other technologies to provide a low-cost diagnosis to DR while also attempting to overcome previous impediments to the implementation of mass eye screening. The DL technology development framework was incorporated with Image Processing and Android and iOS application (Fig. 1). Most existing smartphone-based assistive applications were developed solely for DR detection, with only a few applications in the works that combined DR detection grading. There were also limitations in terms of compatibility with various smartphone operating systems in existing DR screening application. Thus, incorporating relevant features that were critically important to make a standard assistive tool for ophthalmologists as well as their patients would overcome those limitations.

However, the viability of DR screening with a built-in mobile application remained a challenge. In this project, a smartphone-based DR screening system with DL classification model (Fig 2) was developed with technological rigour to enhance the socio-economic lifestyle of remote area people. In combination with a portable ophthalmoscope, the system collected high-quality retinal images. Later, the mobile app interpreted the images and assessed whether a patient should be referred to an ophthalmologist for follow-up in real time.

Acknowledgement
The authors would like to thank University Malaysia Sarawak (UNIMAS) and Ministry of Science Technology and Innovation (MOSTI), Malaysia for supporting this research

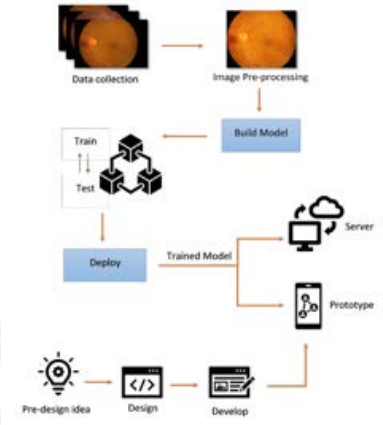

Figure 1: Mobile Application Development Module

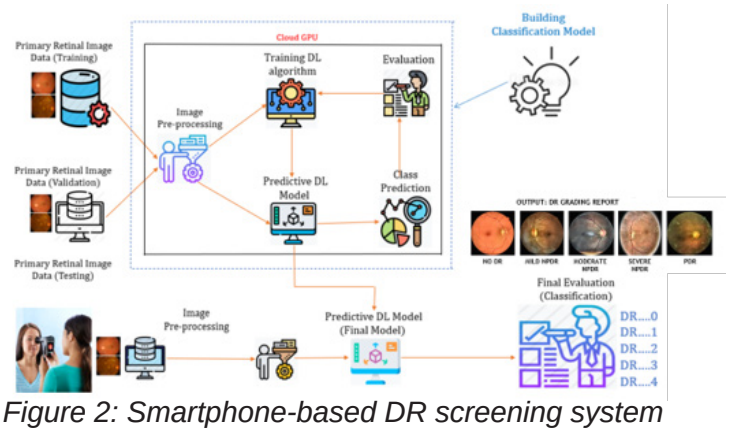

Figure 2: Smartphone-based DR screening system

SCALING-UP PRODUCTION OF MICROPROPAGATED KELAMPAYAN CLONE TOWARDS SUSTAINABLE GROWTH OF THE WOOD-BASED INDUSTRY IN SARAWAK

Researchers: [a]Ho Wei Seng, [b]Peter Ling Kwong Hung, [b]Annie Ting, [c]Pang Shek Ling
[a]Faculty of Resource Science and Technology, UNIMAS
[b]Sarawak Timber Association
[c]Forest Department, Sarawak

Conventional micropropagation, using semi-solid (agar) medium is still limited in commercial production mainly due to its intensive labour input and thereby expensive. New propagation technology such as temporary immersion bioreactor (TIB) was developed to ease the handling of plant cultures, and it is a viable business venture to scale-up and automate in commercial micropropagation. The principle of TIB technology is that plant material is immersed in liquid growth media for short periods at regular intervals. These immersions are sufficient for the plants to take up the nutrients. The TIB technology makes use of the advantages of liquid cultures while growing the plant material under high gas-exchange environments. The use of a liquid medium has several advantages over the use of a semi-solid medium in micropropagation system. These include it lowers plantlet production costs due to agar consumption; the media can be easily renewed without changing the container; sterilisation by microfiltration is possible and cleaning the vessels after the culture period is much more comfortable. The TIB system has been widely used to propagate woody plants by axillary shoot proliferation for some species, such as eucalyptus, apple, strawberry, pineapple, banana, pistachio, paulownia, orchids, and sugarcane. It was demonstrated to allow for high yields, low levels of vitrification, low contamination rates and improved plant quality due to the flexible culture system concerning the high rates of air exchange and a design separating culture space from the culture medium. To the best of our knowledge, this is the first attempt to optimise and scaling-up the production of Kelampayan planting materials using the TIB system. Hence, we hope this project will pave the way to understand better the “know-how” in scaling-up production of quality planting materials of Kelampayan for commercial planting.

Acknowledgement
The authors would like to thank Sarawak Timber Association (STA) for supporting this research

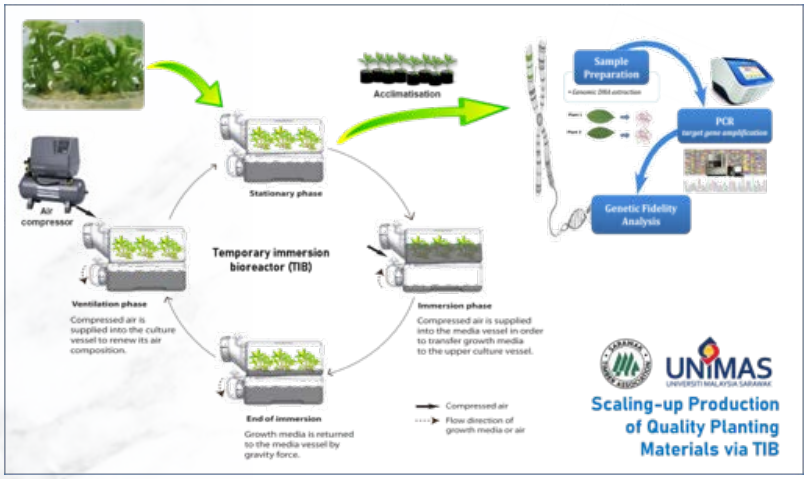

Figure 1: Scaling-up Production of Quality Planting Materials via TIB

SYNTHESIS AND EVALUATION OF ECO-FRIENDLY NANOBIOCIDE AS PRESERVATIVE FOR BAMBOO PROTECTION

Researchers: [a]Chin Suk Fun, [a]Awang Ahmad Sallehin Awang Husaini, [a]Ngieng Ngui Sing, [a]Mohd Effendi bin Wasli
[a]Faculty of Resource Science & Technology

Bamboo is a promising substitute for wood in various applications such as furniture, flooring, handicrafts, etc, however, bamboo is very susceptible to fungal degradation. Conventional chemical preservatives such as chromate copper arsenate (CCA) for bamboo is toxic to human and environment. Nanoparticles-based biocides were found to offer advantages of high effectiveness due to their complete penetration and uniform distribution. In this research, a novel nanobiocide, lignin nanoparticles were prepared as an eco-friendly preservative for bamboo treatment. An environmentally-benign laccase catalysed iodination were carried out to enhance antifungal properties to the lignin nanoparticles. The surface morphology, chemical and antifungal properties of the iodinated lignin nanoparticles will be optimized by tuning the synthesis conditions. Our preliminary results showed both lignin and iodinated lignin nanoparticles demonstrated promising antifungal properties towards locally isolated fungi such as Aspergillus niger and Penicillium chryogenum. The optimised lignin and iodinated lignin nanoparticles formulation will be further evaluated on mold resistant tests as a eco-friendly nanobiocide for the protection of bamboo.

Acknowledgement
The authors would like to acknowledge the financial support from the Sarawak Timber Industry Development Corporation.

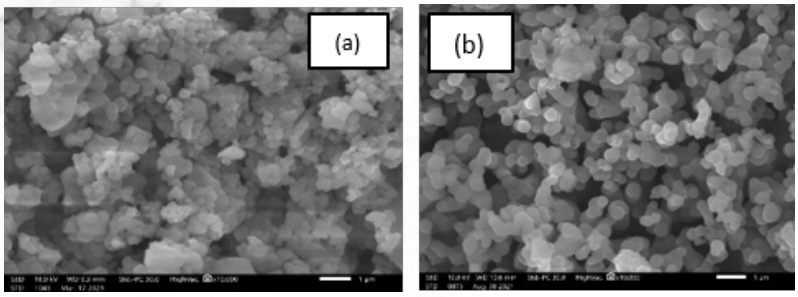

Figure 1: Scanning electron micrograph (SEM) of (a) Lignin nanoparticles (LNPs) (b) iodinated lignin nanoparticles (I-LNPs)

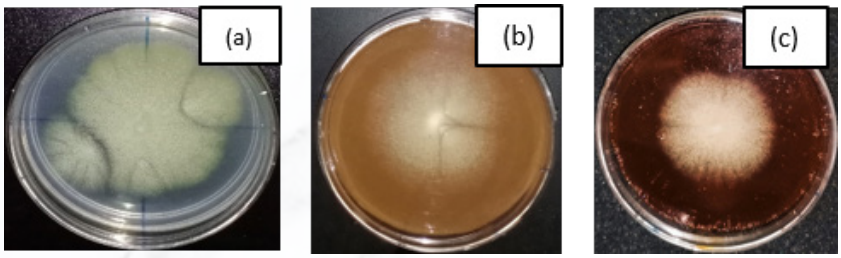

Figure 2: Macroscopic mycelial growth of P.chrysogenum: (a) control (b) treatment with LNPs, and (c) treatment with I-LNPs, which demonstrated the antifungal effects of LNPs

Figure 3: Lignin nanoparticles dispersed in aqueous solution

EVIDENCE BASED ADVOCACY FOR PRO-POOR NATURE BASED ADAPTATION SOLUTION BY INNOVATION OF NATURAL MANGROVE MUD CRAB (*SCYLLA SERRATA*) HATCHERY DEVELOPMENT IN BANGLADESH

Researchers: Munir Mohamad Bodrul, Samsur Mohamad, Sallehin Awang Ahmad, Prof Islamail, Yusoff Saiful Bahari and Tamrin Khairul Fikri

The southern part of Bangladesh is surrounded by coastal environment. Naturally coastal area is prone to different natural calamities, on top of which climate change makes this area more vulnerable. Due to climate change and natural disasters, which cause saline water intrusion to this area, there have been adverse effects for agricultural crops. As the land of these area is not suitable for agriculture, people are farming shrimp and other saline water species. However, there is an uncertainty in shrimp culture and it requires large amount of land so the marginal people cannot manage a shrimp farm. Instead of shrimp, crab farming requires smaller land size and it is more profitable. Considering the increasing demand of mud crab in the local and international markets, it has been gaining popularity among the coastal communities in greater Khulna and Chittagong regions. Mud crab has been an incidental product arising from the culture of shrimps and other fin fishes in ponds. However, mud crab farming is still dependent on wild resources. As the demand of mud crab in the international market increased, the number of crab gatherers also significantly increased. In addition, gathering of sub-adult crabs for fattening contributed to the depletion of adult crabs as breeders. Since the wild resources are under threat, proper management of resources and establishment of hatcheries is needed to sustain the mud crab industry in Bangladesh. The goal of the proposed project is “Innovation of natural mangrove-based mud crab (Scylla serrata) hatchery development in Bangladesh”. This project introduced a nature-based source (e.g. mangrove based natural crab hatchery) for climate resilient livelihood option found through crab cultivation; therefore, the environmental risk on natural resources could remain limited. It encouraged the engagement and trust of communities, which would foster climate change adaptation and resilience.

Acknowledgement

The authors would like to acknowledge the financial support from the UNDP Bangladesh Country Office.

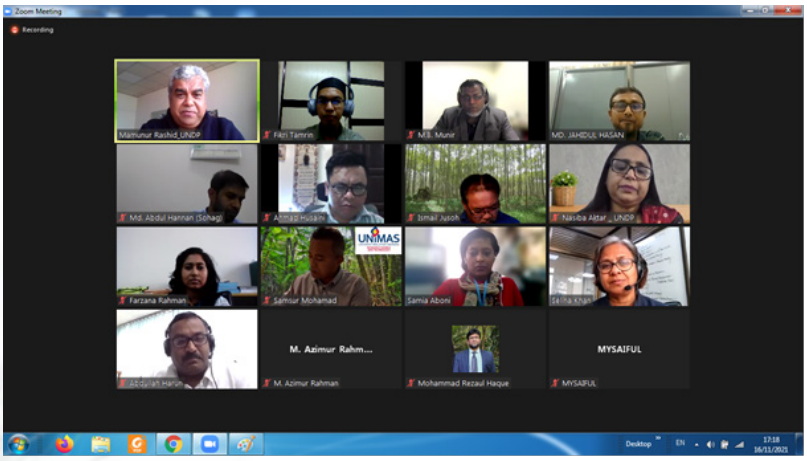

Figure 1: Online project inception meeting

Research Grants

POST-VACCINATION SEROLOGICAL SURVEILLANCE OF NEUTRALIZING ANTIBODIES TO SARS-CoV-2

Project Leader:
Prof. Dr. David Perera

Funded by: Sarawak Research and Development Council (SRDC)
Amount: RM2,895,770

Co-Researcher(s): Prof. Datu Dr. Andrew Kiyu Dawie anak Usop, Dr. Ooi Mong How (Sarawak General Hospital), Dr. Ivan K. S. Yap (SRDC)

PROJEK SARS-CoV-2 GENOMICS SURVEILLANCE

Project Leader:
Prof. Dr. David Perera

Funded by: MOSTI [Program Strategik Memperkasa Rakyat dan Ekonomi (PEMERKASA)]
Amount: RM2,392,000

DISCOVERY OF NEW COVID-19 VARIANTS VIA LARGE SCALE GENOME SURVEILLANCE PROGRAM: A PILOT OF 3,000 GENOMES

Project Leader:
Prof. Dr. David Perera

Funded by: MOSTI-UKM (Dana Penyelidikan Strategik)
Amount: RM520,000

EVIDENCE-BASED ADVOCACY FOR PRO-POOR NATURE-BASED ADAPTATION SOLUTION BY INNOVATION OF NATURAL MANGROVE MUD CRAB (SCYLLA SERRATA) HATCHERY DEVELOPMENT IN BANGLADESH

Project Leader:
Dr Mohammad Bodrul Munir

Funded by: United Nations Development Program (UNDP)
Amount: RM505,206

Co-Researcher(s): Assoc. Prof. Dr Samsur Mohamad, Prof. Dr Awang Ahmad Sallehin Awang, Ir Dr Khairul Fikri Tamrin, Prof Dr Ismail Jusoh, Assoc. Prof. Dr Saiful Bahari Mohd Yusoff

IBN KHALDUN - SOCIO ECONOMIC PROFILE OF SARAWAKIAN MUSLIM

Project Leader:
Assoc. Prof. Dr Dayang Affizah binti Awang Marikan

Funded by: Harakah Islamiah (HIKMAH)
Amount: RM354,750.00

Co-Researcher(s): Assoc. Prof. Dr Mohammad Affendy bin Arip, Prof. Dr Tarmiji bin Maron, Ts. Syahrul Nizam bin Junaini, Prof. Dr Mohamad bin Jais, Dr Nor Afiza binti Abu Bakar, Dr Norizan bin Jaafar, Awangku Alizra Awg Ahmad (HIKMAH), Nur Syamina Abd Ghani (HIKMAH), Nur Shafiene Sidik (HIKMAH), Azry Mustafa (HIKMAH), Asmah Seruja (HIKMAH), Asyraf Roszofor (HIKMAH)

SCALING-UP PRODUCTION OF MICROPROPAGATED KELAMPAYAN CLONE TOWARDS SUSTAINABLE GROWTH OF THE WOOD-BASED INDUSTRY IN SARAWAK

Project Leader:
Assoc. Prof. Dr Ho Wei Seng

Funded by: Sarawak Timber Association
Amount: RM299,200

Co-Researcher(s): Dr Pang Shek Ling (Forestry Department), Peter Ling Kwong Hung (Sarawak Timber Association), Annie Ting (Sarawak Timber Association)

A SMARTPHONE-BASED DIABETIC RETINOPATHY (DR) SCREENING SYSTEM USING DEEP LEARNING CNN CLASSIFICATION MODEL

Project Leader:
Dr Kuryati bt Kipli

Funded by: MOSTI
Amount: RM273,795

Co-Researcher(s): Dr Muhammad Hamdi bin Mahmood, Prof. Dr Lim Lik Thai, Ts. Dr Suriati Khartini binti Jali, Dr Kasumawati bt Lias, Dr Dayang Azra binti Awang Mat, Assoc. Prof. Ts. Dr Siti Kudnie bt Sahari, Assoc Prof Dr Rohana binti Sapawi

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CHLOROPLAST GENOME, REPRODUCTIVE SUCCESS, AND DAMAR DEFENCE OF SHOREA MACROPHYLLA AND FOUR OTHER ENGKABANG SPECIES IN SARAWAK

Project Leader:
Assoc. Prof. Dr Wong Sin Yeng

Funded by: Sarawak Research and Development Council (SRDC)
Amount: RM258,500

Co-Researcher(s): Malcom Demies (Forest Department Sarawak), Jacqueline Heckenhauer (Senckenberg Research Institute and Natural History Museum, Germany), Lie Jie (Kunming Institute of Botany), Marc Gibernau (University of Corsica, France)

BEHAVIOURAL ANALYTICS AND REAL-TIME TRACKING OF PATIENTS USING IoT AND RFID

Project Leader:
Assoc. Prof. Dr Fitri Suraya binti Mohamad Hapni Joblie

Funded by: The Telecommunication Technology Committee (TTC), Japan
Amount: RM251,536

Co-Researcher(s): Assoc. Prof. Dr Jacey Lynn Minoi, Dr Stephanie Chua Hui Li, Prof Dr Chew Keng Sheng, Dev Nath Kaushal, Assoc. Prof. Dr Tan Chong Eng

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DEVELOPMENT OF APTAMER-BASED POINT-OF-CARE DIAGNOSTIC TEST FOR CHIKUNGUNYA INFECTION

Project Leader:
Dr Magdline Sia Henry Sum

Funded by: Sarawak Research and Development Council (SRDC)
Amount: RM240,000

Co-Researcher(s): Puan Anna Andrew, Dr Citartan Marimuthu (USM), Prof. Dr Tang Thean Hock (USM)

UNRAVELLING THE POTENTIAL OF PERIDOMESTIC RODENT SPECIES DISTRIBUTION MODELLING TO IDENTIFY RODENT-BORNE GUT ENTERIC PATHOGEN HOTSPOT IN SARAWAK USING METAGENOMIC ANALYSES

Project Leader:
Assoc. Prof. Dr Faisal Ali bin Anwarali Khan

Funded by: Sarawak Research and Development Council (SRDC)
Amount: RM200,000

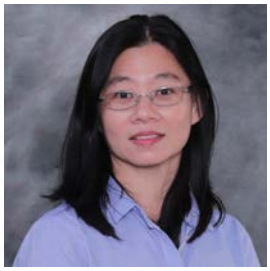
Co-Researcher(s): Dr Madinah binti Adrus, Assoc. Prof. Dr Tan Cheng Siang, Julius Anak William Dee, Azroie Denel (Sarawak Forestry Corporation)

MOLECULAR CHARACTERISATION AND DIVERSITY OF MOSQUITOES AS POTENTIAL VECTORS FOR ZOONOTIC MALARIA IN SARAWAK

Project Leader:
Dr Paul Cliff Simon Divis

Funded by: Sarawak Research and Development Council (SRDC)
Amount: RM197,000

Co-Researcher(s): Dr Khatijah binti Yaman, Dr Heo Chong Chin (Universiti Teknologi MARA)



ANALYSIS AND MODELLING OF 3-MCPDs AND GEs in PALM OIL

Project Leader:
Assoc. Prof. Dr Sim Siong Fong

Funded by: Malaysian Palm Oil Board
Amount: RM186,680

Co-Researcher(s): Mdm Norizah binti Halim (Malaysian Palm Oil Board)

SYNTHESIS, CHARACTERIZATION AND IN SILICO DOCKING ANALYSIS OF HYBRID THIOUREA AZO CHOMOPHORES FOR IN-VITRO CYTOTOXICITY AND ANTIMICROBIAL ACTIVITIES

Project Leader:
Dr Ainaa Nadiah binti Abd Halim

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM185,500

Co-Researcher(s): Prof Dr Zainab binti Ngani, Mdm Wan Sharifatun Handayani binti Wan Zullkiplee, Hwang Siaw San (Swinburne University of Technology

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A NOVEL TRANSMISSION-BASED RISK ANALYTIC PARADIGM WITH COMPUTATIONAL INTELLIGENCE FOR PREVENTION AND CONTROL OF INFECTIOUS DISEASES: CASE STUDY AT PASAI SIONG COVID-19 CLUSTER, SARAWAK

Project Leader:
Dr Kasumawati bt Lias

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM176,600

Co-Researcher(s): Assoc. Prof. Dr Tay Kai Meng, Ir Dr Hazrul bin Mohamed Basri, Dr Kuryati bt Kipli, Assoc. Prof. Dr Chai Chee Shee

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ELUCIDATION OF VITAMIN D LEVELS AND HEART RATE VARIABILITY INFLUENCE ON ENDOTHELIAL FUNCTION VIA RENIN ANGIOTENSIN ALDOSTERONE SYSTEM AUGMENTATION IN OBSTRUCTIVE SLEEP APNEA

Project Leader:
Assoc. Prof. Dr Loh Huai Heng

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM174,428

Co-Researcher(s): Mdm Tay Siow Phing, Assoc. Prof. Dr Chai Chee Shee, Prof Dr Asri Said, Dr Koa Ai Jiun, Norlela binti Sukor (UKM)

TUA PEK KONG TEMPLES AS TOURISM ATTRACTIONS: AN ETHNOGRAPHIC APPROACH TOWARDS SARAWAK CHINESE CULTURAL HERITAGE

Project Leader:
Dr Elena Gregoria Chai Chin Fern @ Chai Chin Fern

Funded by: Ministry of Tourism, Arts and Culture Sarawak
Amount: RM170,000

Ministry of Tourism, Arts & Culture Sarawak

Co-Researcher(s): Prof. Dr Wang Yin Chai, Assoc. Prof. Dr Tan Chong Eng, Assoc. Prof. Dr Lee Nung Kion

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COMPARATIVE METAGENOMICS OF THE GUT MICROBIOTA OF FRUGIVOROUS AND INSECTIVOROUS WILD BIRD SPECIES IN SARAWAK

Project Leader:
Dr Dency Flenny Augustine Gawin

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM170,000

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Prof. Dr Edmund Sim Ui Hang, Prof. Dr Ramlah binti Zainudin, Assoc. Prof. Dr Faisal Ali bin Anwarali Khan, Dr Chung Hung Hui

---

CONVERTING WASTE ENERGY TO USEFUL ENERGY VIA A NEW NOISE BARRIER ENERGY HARVESTING SYSTEM

Project Leader:
Ir Dr Mohamad Asrul bin Mustapha

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM163,700

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Prof. Dr Mohammad Omar Abdullah, Assoc. Prof. Dr Rubiyah bt Hj Baini, Mdm Amira Satirawaty binti Mohamed Pauzan, Dr Abang Mohammad Nizam bin Abang Kamaruddin, Ir Rudiyanto bin Philman Jong

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AN INTELLIGENT MODELLING OF POWER ROUTER IN CLOUD COMPUTING ENVIRONMENT FOR VOLTAGE MANAGEMENT OF GRID-CONNECTED RENEWABLE RESOURCES

Project Leader:
Assoc. Prof. Dr Ahmed Mohamed Ahmed Haidar

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM143,000

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Prof. Dr Mohammad Omar Abdullah, Assoc. Prof. Dr Norhuzaimin bin Julai, Ts. Mohd Ridhuan bin Mohd Sharip, Dr Fatihah bin Ramli

IMPROVING THE WHITE PEPPER DRYING BEHAVIOUR TOWARDS EFFICIENT DRYING PROCESS OF THE PREMIUM QUALITY PRODUCT EMPLOYING HYBRID DRYING SCHEME

Project Leader:
Dr Ana Sakura binti Zainal Abidin

Funded by: Kementerian Pendidikan Tinggi (KPT)
Amount: RM139,500

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Prof. Dr Mohammad Omar Abdullah, Dr Annisa binti Jamali, Prof. Dr Sinin bin Hamdan, Mr Rasli bin Muslimen, Zehnder Jarroop Augustine Mercer (Malaysian Pepper Board)

PANDANACEAE ARCHIVING AND BOTANICAL PROFILE FOR CONSERVATION AND SUSTAINABLE UTILIZATION

Project Leader:
Dr Mohd Akmal bin Mohd Raffi

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM139,250

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Dr Zinnirah bin Shabdin, Dr Qammil Muzzammil Abdullah @ Meekiong B. Kalu, Nur Safinas binti Jelani (Forest Department Sarawak)

DESIGN OF A DEEP LEARNING MODEL WITH ATTENTION MECHANISM FOR BIOMETRIC RE-IDENTIFICATION OF GREEN SEA TURTLES IN LONG-TERM TRACKING SCENARIO

Project Leader:
Dr Irwandi Hipni bin Mohamad Hipiny

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM135,416

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Assoc. Prof. Dr Ruhana binti Hassan, Ts. Dr Hamimah binti Ujir, Prof. Dr Wang Yin Chai, Assoc. Prof. Dr Jacey Lynn Minoi, Oswald Braken Tisen (Sarawak Forestry Corporation)

UNDERLYING MECHANISMS OF P-CRESYL SULFATE INDUCED ALTERATIONS IN BONE METABOLISM AND ITS PREVENTION BY ELDECALCITOL

Project Leader:
Prof. Dr Mohammad Zulkarnaen bin Ahmad Narihan

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM134,700

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Assoc. Prof. Dr Zunika binti Amit, Dr Muhammad Hamdi bin Mahmood, Prof. Dr Gabriele Ruth Anisah Fromming, Nwabueze Patrick Okechukwu (USCI), Aisha Mohd Din (Universiti Teknologi MARA)

A ROBUST DEEP LEARNING MODEL DERIVED USING REAL CONDITION IMAGE DATABASE FOR LOCAL RICE DISEASES RECOGNITION

Project Leader:
Assoc. Prof. Dr Lee Nung Kion

Funded by: Kementerian Pendidikan Tinggi (KPT)
Amount: RM129,890

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Assoc. Prof. Dr Bong Chih How, Dr Samuel Lihan, Hwang Siaw San (Swinburne University of Technology), Khew Choy Yuen (Lembaga Lada Malaysia), Lai Lee San (Agriculture Research Centre, Sarawak)

SYNTHESIS AND MECHANISM OF MOLECULARLY IMPRINTED POLYMERS AND THEIR HYBRID IMPRINTED MEMBRANES FOR UPTAKE MONITORING OF GLYPHOSATE

Project Leader:
Assoc. Prof. Dr Showkat Ahmad Bhawani

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM129,000

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Prof. Dr Zainab binti Ngaini, Assoc. Prof. Dr Rafeah binti Wahi, Mohamad Nasir bin Mohamad Ibrahim (USM)

DIVERSITY OF INDIGENOUS BETTA FISH FROM SARAWAK FOR CAPTIVE BREEDING PURPOSES

Project Leader:
Dr Ahmad Syafiq bin Ahmad Nasir

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM128,000

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Assoc. Prof. Dr Ruhana binti Hassan, Assoc. Prof. Dr Samsur bin Mohamad, Dr Mohammad Bodrul Munir, Mohamad Faizul bin Mat Isa (UPM)

SYNTHESIS AND EVALUATION OF ECO-FRIENDLY NANOBIOCIDE AS PRESERVATIVE FOR BAMBOO PROTECTION

Project Leader:
Assoc. Prof. Dr Chin Suk Fun

Funded by: Perbadanan Kemajuan Perusahaan Kayu Sarawak (PUSAKA)
Amount: RM123,900

PUSAKA

Co-Researcher(s): Prof. Dr Awang Ahmad Sallehin bin Awang Husaini, Dr Ngieng Ngui Sing, Assoc. Prof. Dr Mohd Effendi bin Wasli

MALAYSIAN ADOLESCENTS RESILIENCE STUDY

Project Leader:
Dr Amalia bt Madihie

Funded by: Kementerian Kesihatan Malaysia - UNICEF Malaysia
Amount: RM115,120

Co-Researcher(s): Dr Salmah bt Mohmad Yusoff, Mdm Siti Norazilah binti Mohd Said, Mdm Nur Fatihah binti Mat Yusoff, Mr Yow Chong Lee

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FORMULATING A TWO-PHASE PROTOTYPE-BASED CLASSIFIER USING INFORMATIVE METHODS FOR BIG DATA CLASSIGICATION

Project Leader:
Dr Mohammad bin Hossin

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM112,800

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Dr Suhaila binti Saee, Norita binti Md Norwawi

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FORMULATING A DIGITAL HERITAGE MODEL FOR COMMUNITY-BASED PRESERVATION AND MANAGEMENT OF CULTURAL AND ARCHAELOGICAL SITES IN THE KELABIT HIGHLANDS OF SARAWAK

Project Leader:
Assoc. Prof. Dr Poline Bala

Funded by: Kementerian Pengajian Tinggi (KPT)
Amount: RM102,750

KEMENTERIAN PENDIDIKAN TINGGI

Co-Researcher(s): Prof. Dr Narayanan A/L N. Kulathu Ramaiyer, Prof. Dr Tarmiji bin Masron, Dr Nicholas anak Gani

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MEASURING THE IMPORTANCE OF FOREST PATCES STRATEGY ON BIRDS BIODIVERSITY CONSERVATION IN OIL PALM DOMINATED LANDSCAPE

Project Leader:
Assoc. Prof. Dr Mohd Azlan Jayasilan bin Abdul Gulam Azad

Funded by: Malaysian Palm Oil Board
Amount: RM101,540

MPOB

Co-Researcher(s): Prof. Dr Andrew anak Alek Tuen, Prof. Dr Indraneil Das, Dr Jongkar anak Grinang

ASSESSING THE CONSERVATION VALUE OF RIPARIAN RESERVE ON FRESHWATER FISH AND WATER QUALTIY IN OIL PALM DOMINATED LANDSCAPE

Project Leader:
Dr Jongkar anak Grinang

Funded by: Malaysian Palm Oil Board
Amount: RM101,540

Co-Researcher(s): Prof. Dr Andrew Alek anak Tuen, Prof. Dr Indraneil Das

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CONSTRUCTION OF SOLAR AND IoT MONITORING SYSTEM IN SURAU KAMPUNG SAWAI DARO SARAWAK

Project Leader:
Assoc. Prof. Ir Dr Mohd Danial bin Ibrahim

Funded by: Pemodalan Nasional Berhad
Amount: RM100,000

Co-Researcher(s): Assoc. Prof. Dr Thelaha bin Hj Masri, Dr Aidil Azli bin Alias, Mr Hazmi Hijazi bin Abdul Halim

---

DEVELOPMENT OF BIODIVERSITY AND ECOSYSTEM SERIES MAPPING SYSTEM IN SELECTED FOREST CONSERVATION AREAS WITHIN OIL PALM LANDSCAPE IN MALAYSIA

Project Leader:
Prof. Dr Indraneil Das

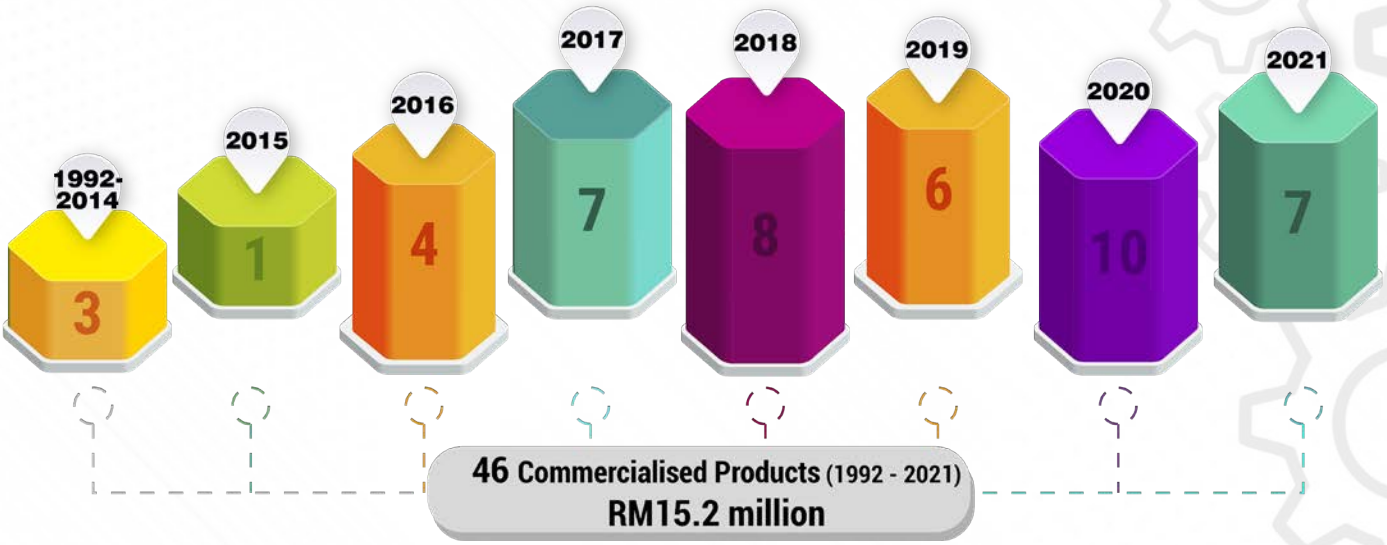
Funded by: Malaysian Palm Oil Board
Amount: RM100,000

Co-Researcher(s): Prof. Dr Andrew anak Alek Tuen, Dr Jongkar anak Grinang

Commercialisations

TOTAL AMOUNT OF COMMERCIALISED PRODUCTS IN YEAR 2021

RM8,947,600



Commercialised to:

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGICAL RESEARCH SARAWAK
KEMENTERIAN PENDIDIKAN, SAINS DAN PENYELIDIKAN TEKNOLOGI SARAWAK

Assoc. Prof. Dr Noor Alamshah Bolhassan

IoT-BASED MICRO FARMING TRAINING MODULE

The IoT-Based Micro Farming Training Module is a product designed and developed by the Faculty of Computer Science and Information Technology (FCSIT), Universiti Malaysia Sarawak. The agricultural techniques and IoT technology proposed in this module are closely related to the topics in the syllabus of Design and Technology subjects in Forms 1-3. It can be used as an effective practical training for them, and can also act as a catalyst and foundation of awareness to other students, parents, family members, as well as project participants themselves to practise modern technologies in agriculture.

Commercialised to:

UNIVERSITI TEKNOLOGI MARA

Assoc. Prof. Dr Saiful Bahari Mohd Yusoff

RUMAH KETAM UNIMAS (UCF)

Rumah Ketam UNIMAS is a new design and re-scaled crab pen culture system. The design feature of this crab culture system which is not available in the market, has a unique approach whereby it imitates the air pocket system of boat design so that it can be semi-submerged in the water.

RUMAH IKAN UNIMAS (USFF)

Rumah Ikan UNIMAS is portable structure like a container used for keeping fish within. This portable fish tank system is made of a combination of several materials such as Fibre Glass and aluminium structures. This structure is built based on identified size for growing any freshwater or saltwater fish within their natural habitat to expedite the growth of freshwater and saltwater fish and suitable to located in the rivers, ocean, dam, pond etc.

Commercialised to:

E LEADERSHIP TRAINING

Assoc. Prof. Dr Bong Chih How

SMARTAGW

SmartAGW is a cloud-based integrated information system to assist farmers to monitor the process of Agarwood from the seeding stage to inoculation. SmartAGW consists of Plant Inventory and Soil Inventory. Using GPS coordinates and past weed control activities, SmartAGW enables intelligent scheduling of weed control tasks according to different regions in the farm. This allows the distribution of the limited weed control workforce to be done efficiently based on the existing weed control pattern using machine learning.

Commercialised to:

Dr Amalia Madihie

RESILIENCE INTERVENTION FOR PEARL

Resilience intervention enhances an individual's positive problem orientation as well as his or her planful problem solving (i.e. analysing the problem and setting goals, generating possible solutions, choosing the best solution and creating an action plan, implementing the solution and reviewing the problem-solving process) might foster the participants' psychological adaptation to stress (i.e. resilience) by increasing the resilience factor of active coping.

Commercialised to:

国立大学法人
宇都宮大学
UTSUNOMIYA UNIVERSITY

Assoc. Prof. Dr Soubakeavathi Rethinasamy

e-EduTour MODULE

The e-EduTour Module is a product designed and developed by a team of researchers from the Faculty of Language and Communication, Universiti Malaysia Sarawak. The module is an invention that covers different approaches to integrating alternative assessment rubrics on English language learners' speaking and writing ability.

Expositions

Congratulations to our reseachers at the following expositions:

International

SIIF 2021 Seoul International Invention Fair 2021

01 - 04 December 2021

GOLD AWARD RECIPIENTS

1. Assoc. Prof. Dr Siti Kudnie Sahari
   DYEredGO
2. Assoc. Prof. Dr Chin Suk Fun
   NanoBlast
3. Assoc. Prof. Dr Bong Chih How
   Agarwood Intelligent Information Management (AIIM)

SILVER AWARD RECIPIENTS

1. Prof. Dr Ahmad Hata Rasit
   FB Wound Solution
2. Assoc. Prof. Dr Jacey Lynn Minoi
   CreativeCulture - Play Mat
3. Assoc. Prof. Dr Musdi Shanat
   MyJawi
4. Dr Abang Azlan Mohamad
   Travelscape
5. Dr Annisa Jamali
   REtrain

BRONZE AWARD RECIPIENTS

1. Dr Ana Sakura Zainal Abidin
   HPS Stove
2. Ir Dr Hazrul Mohamed Basri
   PVDes

MERIT AWARD RECIPIENTS

1. Assoc. Prof. Dr Souba Rethinasamy
   e-EduTour
2. Dr Amalia Madihie
   CHRETI
3. Dr Mohammad Bodrul Munir
   Biogenic Fish Feed

National

MTE 2021
Malaysia Technology Expo
The International Expo on Innovation and Technology
22 - 26 March 2021

SPECIAL AWARD RECIPIENT

1. Assoc. Prof. Ir. Dr Mah Yau Seng
   A Road that Flows Stormwater

GOLD AWARD RECIPIENTS

1. Assoc. Prof. Ir. Dr Mah Yau Seng
   A Road that Flows Stormwater

2. Dr Mohd Razip Asaruddin
   Oral Care Spray

3. Assoc. Prof. Dr Johari Abdullah
   Automated Vehicle Census System

4. Dr Kuryati Kipli
   EYE-DR

5. Prof. Dr Md. Abdul Mannan
   Cylindral Detention Pond

SILVER AWARD RECIPIENTS

1. Assoc. Prof. Dr Johari Abdullah
   Assisted Navigation and Object Detection

2. Dr Ana Sakura Zainal Abidin
   Smart Agriculture Assistance

3. Assoc. Prof. Dr Mohd Hasnain Md Hussain
   TEMILTECH

4. Dr Sarah Flora Samson Juan
   KALAKA

5. Ts Ahmad Hadinata Fauzi
   i-Concrete

6. Ts. Mohd Azirin Mohd Said
   Portable Low-Cost Electromyography

7. Mr Jonathan Sidi
   Road-Go

BRONZE AWARD RECIPIENTS

1. Dr Aazani Mujahid
   Your Story

2. Mdm Nurul Zawiyah Mohamad
   XRTermites

3. Dr Abdulrazak Yahya Saleh Al-Hababi
   AutiDL

4. Assoc. Prof. Dr Siti Akmar Khadijah Ab Rahim
   Arboreal Crab (*Labuanium politum*) as Potential Income Generator

5. Dr Yonis Buswig
   Smart Parking System

National

ITEX'21

13 - 14 December 2021

GOLD AWARD RECIPIENTS

1. Assoc. Prof. Dr Musdi Shanat
   Hexagon Fidget: Fine Motor Skill Product for Cerebral Palsy Children

2. Prof. Dr Awang Ahmad Sallehin Awang Husaini
   A Fast and Easy Fungal Identification Kit (feFiD)

3. Assoc. Prof. Ts Dr Dayang NurFatimah Awg Iskandar
   Automatic Cardiac Remodelling Prediction using Deep Learning

4. Assoc. Prof. Dr Tay Meng Guan
   Changing Wastewater to Electricity: PFCell

5. Dr Dayang Azra Awang Mat
   Deep Skin Mobile App

6. Dr Faridah Sahari
   SeaCle: Seaweed Cultivation Apparatus

SILVER AWARD RECIPIENTS

1. Dr Charles Bong Hin Joo
   Flow Curbing Drain Cover (FLO-CURB)

2. Dr Lau Sei Ping
   IoT-Based Streetlight Fault Sensing and Monitoring

National

INTERNATIONAL RESEARCH AND INNOVATION SYMPOSIUM AND EXPOSITION RISE 2021

27 October 2021

GOLD AWARD RECIPIENTS

1. Dr Nur Tahirah Razali
   Multi-moulding Concrete Block Machine

2. Dr Annisa Jamali
   Food Drying Machine

3. Assoc. Prof. Dr Julia Lee Ai Cheng
   ReaDl*e

4. Ts Ahmad Sofian Shminan
   ASELTY

5. Prof. Dr Rossazana Ab Rahim
   A Conceptual Framework to Assess the Nexus between Microfinance and Poverty Alleviation

6. Prof Dr Jane Labadin
   COVID-MySim

SILVER AWARD RECIPIENTS

1. Ts. Dr Suriati Khartini Jali
   SIMPLE MATHEMATICS

2. Dr Amelia Jati Anak Robert Jupit
   BOOS

3. Assoc. Prof. Dr Chiew Kang Leng
   Audio-based QR Attendance for Visually Impaired Person

4. Assoc. Prof. Dr Sim Siong Fong
   A Tool for Teaching & Learning of Chemistry: Simulation-based Inquiry Models

5. Dr Ahmad Syafiq Ahmad Nasir
   Breeding Technique of Yellow Pufferfish

6. Miss Auzani Zeda Mohamed Kassim
   Digital Forest Visual Installation

BRONZE AWARD RECIPIENTS

1. Mr Muhammad Azri Ali
   Multifunction Set Design for Theatre Performance

National

UTeMEX 2021

8 December 2021

BEST AWARD RECIPIENTS

1. Ir. Dr Norazzlina M.Sa'don
   ConGSI

GOLD AWARD RECIPIENTS

1. Ir. Dr Norazzlina M.Sa'don
   ConGSI

2. AP Dr Rohana Sapawi
   C4Mos

3. Assoc. Prof. Dr Devagi Kanakaraju
   TiO_2/PKSAC/Fe_3O_4 Composite

4. Assoc. Prof. Dr Sze San Nah
   Optimum Shift Scheduling Design

SILVER AWARD RECIPIENTS

1. Prof Dr Ramlah Zainudin
   eORG

2. Assoc. Prof. Dr Tan Chong Eng
   Rapid Crucial Information Dissemination Mechanism for Rural Area

3. Assoc. Prof. Dr Hasnizam Abdul Wahid
   Mapping & Digitizing Sarawak Bioacoustic and Soundscape Ecology for Added Value Tourism Attraction

4. Assoc. Prof. Dr Qistina Donna Lee Abdullah
   Tourism Apps in Enhancing Tourist Travel Experience in Kuching, Sarawak

5. Dr Tharshini Sivabalan
   Cybercrime Experience during the Movement Control Order

BRONZE AWARD RECIPIENTS

1. Assoc. Prof. Dr Haikul Lenando
   Post COVID-19 Student QR Code Attendance (SuQRAN) for School

Research Enhancement Workshops

Perspectives on Publishing Better and More Often

Professor Dr. Indraneil Das
Institute of Biodiversity & Environmental Conservation

UNIMAS Expert Panel Workshop: Assessment as Internal Evaluators to KPT Grants

Professor Sr Dr Abdul Rashid Abdul Aziz
KPT Panel
Faculty of Built Environment, UNIMAS

FRGS Clinic for Researchers (Pure and Applied Sciences)

Professor Dato' Dr Mohamed Isa bin Abdul Majid
National Poison Centre, USM

FRGS Clinic for Researchers (Social Sciences and Humanities)

Professor Dr Ruslan Rainis
Head of Social Science Domain, USM

Strategy for Successful Grants: Learning from Patents with Guided Tour of Lens.org for Impactful Discovery

Professor Dr Narayanan A/L N. Kulathu Ramaiyer
Director of ISITI

FRGS Clinic for Researchers (Information and Communication Technology)

Professor Dr Ku Ruhana Ku Mahamud
Science of Computing, UUM

FRGS Clinic for Researchers (Engineering Technology)

Professor Dr Che Hassan Che Haron
Head of Advanced Technology & Smart Manufacturing Domain, UKM

Menghasilkan 'Zero Reject' Permohonan Projek PPRN 2.0

Professor Ts Dr Safian Sharif
Research Dean, Frontier Materials Research Alliance, UTM

Enhancing Research Collaboration with Industries: Double Tax Deduction

Professor Dr Mohd Shahir Shamsir bin Omar, RTTP
Deputy Vice-Chancellor (Research and Innovation), UTHM

Intensive FRGS Clinic for Researchers (Pure and Applied Sciences)

Professor Dato' Dr Mohamed Isa bin Abdul Majid
National Poison Centre, USM

Intensive FRGS Clinic for Researchers (Social Sciences and Humanities)

Professor Dr Ruslan Rainis
Head of Social Science Domain, USM

Novelty and Inventiveness Step of Patentable Inventions: 5W 1H

Mr Irfan Awang
CEO at Patentsworth International Sdn Bhd

Publishing in High Impact Journals and Achieving High Citations

Professor T. Ramayah
Professor of Technology Management, USM

Understanding Copyright and Copywrong

Mr Irfan Awang
CEO at Patentsworth International Sdn Bhd

Patent: Design Strategy for Game Changers

Professor Dr Narayanan A/L N. Kulathu Ramaiyer
Director of ISITI

Enhancing Research: Smart Strategies to Secure International Fund

Professor Ts Dr Mohd Mustafa Al Bakri Abdullah
Universiti Malaysia Perlis

Getting Your Papers Published in High Impact Journals

Professor Dr Tan Soon Guan FASc
Fellow
Academy of Sciences Malaysia

Financial Management and Procurement Processes in Research

Professor Dr Wan Hashim Wan Ibrahim
Deputy Vice-Chancellor (Research & Innovation)

Professor Dr Lo May Chiun
Senior Director
Research, Innovation & Enterprise Centre

Tuan Haji Mazlan Kifflie
Bursar

Puan Hajjah Zubaidah Abdul Ghani
Deputy Bursar

Sharing Session: Funder's Expectations on SDEC Grants

Dr Khairul Hafiz Sharkawi
Head of Research and Development of Sarawak Digital Economy Corporation (SDEC)

Digital Economy: Global Growth Engine

Professor Jugdutt (Jack) Singh
Chief Scientist & Chief Advisor
Sarawak Multimedia Authority

FRGS 2021 Research Grant Orientation Session

UNIMAS Internal Grants 2021 Research Grant Orientation Session

Professor Dr Lo May Chiun
Senior Director
Research, Innovation & Enterprise Centre

Research & Solutions for the Practitioners: Funding Opportunities from the Industry

Barry Lim
Senior Director, Public Sector and Government,
Frost & Sullivan Asia Pacific

A Winning FRGS Proposal from The Perspective of Panel Reviewer

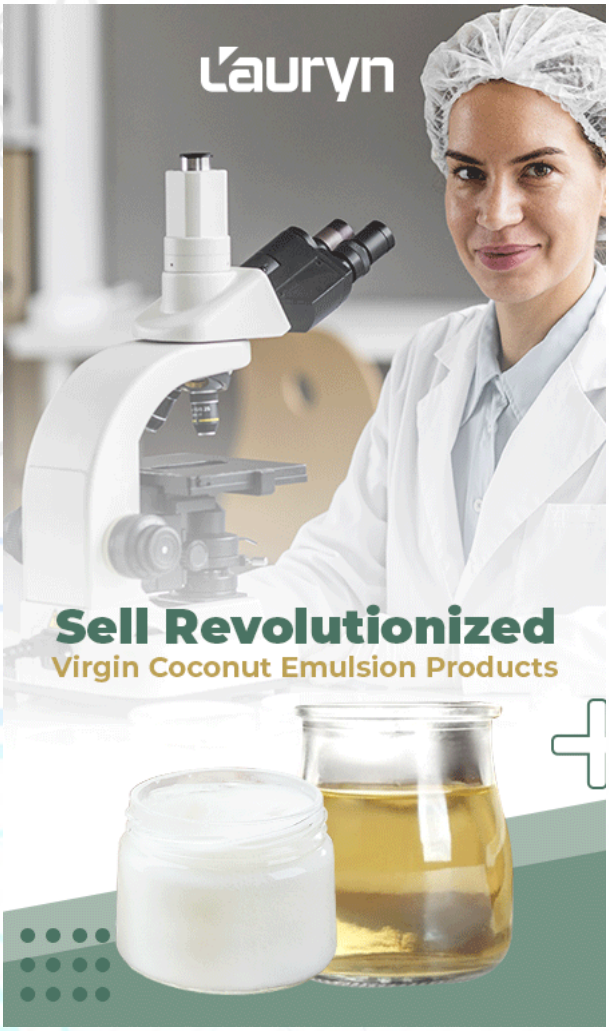
Prof Dr Omar Yaakob
Head of Social Science Domain, USM


UNIMAS
UNIVERSITI MALAYSIA SARAWAK
InnoTech Hub
INNOVATION TECHNOLOGY HUB
INNOVATION

UNIMAS
UNIVERSITI MALAYSIA SARAWAK
InnoTech Hub
INNOVATION TECHNOLOGY HUB

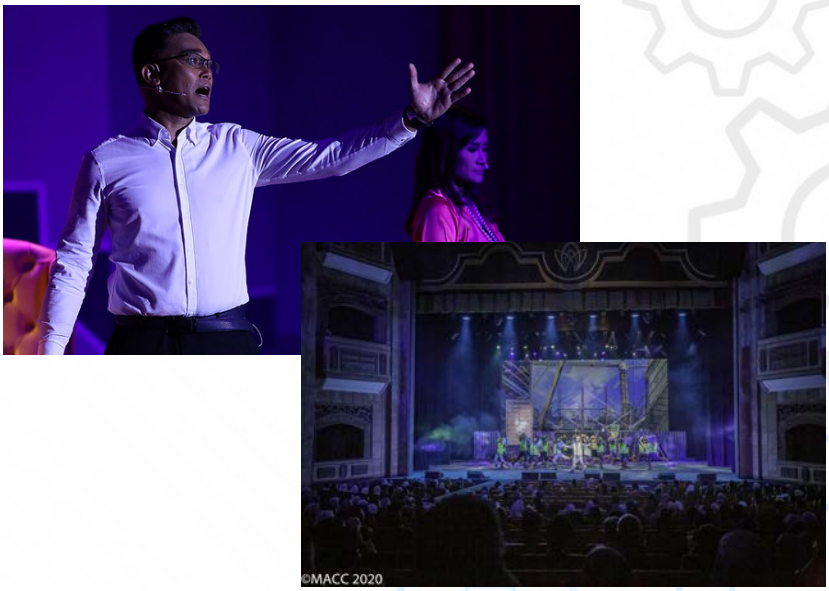
Lauryn Manufacturing Sdn. Bhd.

Lauryn Manufacturing Sdn. Bhd.'s vision is to be a premier global biotechnology company specialized in Virgin Coconut Oil and to ultimately improve the overall quality of life within the global communities through a culture of innovation and the adoption of cutting-edge biotechnology and best in research, products, and human capital development.



Semarak Creative Sdn Bhd

Semarak Creative Sdn. Bhd. intends to provide creative arts services ranging from theatre, drama, video, film, music, animation, design technology, fine arts and events.



UGlobal Solutions Sdn. Bhd.

UGlobal Solutions Sdn. Bhd. is constantly refining solutions with close feedbacks from customers. The company frequently develops, and improves existing and new solutions and methods.

UNIMAS
UNIVERSITI MALAYSIA SARAWAK
30 years
Crossing frontiers
1992-2022

InTEX22

INNOVATION TECHNOLOGY EXPO

EXPOSITION & CONFERENCE

"INSPIRING INNOVATION THROUGH DIGITALISATION"

15 - 16 June 2022 | PULLMAN HOTEL, KUCHING, SARAWAK

CALL FOR PARTICIPATION

THE UNIMAS INNOVATION AND TECHNOLOGY EXPOSITION 2022 (InTEX22)

CONCURRENT EVENT: Social Science and Humanities Research Conference 2022 (SSHR22)

IMPORTANT DATES

30 April 2022 – Registration Deadline
15 May 2022 – Notification of Acceptance
31 May 2022 – Deadline Payment for Participation
15 June 2022 – Evaluation of Posters
16 June 2022 – Announcement of Winners / Closing Ceremony

REGISTRATION FEES

UNIMAS (staff/students): RM300
Malaysian: RM500
International: RM600
Partners: RM450

SUBMISSION

For submission to InTEX22, please complete the on-line registration at
https://research.unimas.my/iris7

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2022 CONFERENCE CALENDAR

January	February	March	April	May	June
1 Sa New Year's Day	1 Tu Chinese New Year	1 Tu	1 Fr	1 Su Labour Day	1 We Gawai Dayak
2 Su	2 We Chinese New Year	2 We	2 Sa	2 Mo Hari Raya Aidilfitri	2 Th Gawai Dayak
3 Mo	3 Th	3 Th	3 Su Awal Ramadan	3 Tu Hari Raya Aidilfitri	3 Fr
4 Tu	4 Fr	4 Fr	4 Mo	4 We	4 Sa
5 We	5 Sa	5 Sa	5 Tu	5 Th	5 Su
6 Th	6 Su	6 Su	6 We	6 Fr	6 Mo
7 Fr	7 Mo	7 Mo	7 Th	7 Sa	7 Tu
8 Sa	8 Tu	8 Tu ICOMSA	8 Fr	8 Su	8 We
9 Su	9 We	9 We ICOMSA	9 Sa	9 Mo	9 Th
10 Mo	10 Th	10 Th ICOMSA	10 Su	10 Tu	10 Fr
11 Tu	11 Fr	11 Fr	11 Mo	11 We	11 Sa
12 We	12 Sa	12 Sa	12 Tu	12 Th	12 Su
13 Th	13 Su	13 Su	13 We	13 Fr	13 Mo
14 Fr	14 Mo Majlis Konvo UNIMAS (14-17)	14 Mo	14 Th	14 Sa	14 Tu
15 Sa	15 Tu	15 Tu	15 Fr Good Friday	15 Su Wesak Day	15 We InTEX'22 & SSHRC
16 Su	16 We	16 We	16 Sa	16 Mo	16 Th InTEX'22
17 Mo	17 Th	17 Th	17 Su	17 Tu	17 Fr
18 Tu Thaipusam	18 Fr	18 Fr	18 Mo	18 We	18 Sa
19 We	19 Sa	19 Sa	19 Tu	19 Th	19 Su
20 Th	20 Su	20 Su	20 We	20 Fr	20 Mo
21 Fr	21 Mo	21 Mo	21 Th	21 Sa	21 Tu
22 Sa	22 Tu	22 Tu	22 Fr	22 Su	22 We
23 Su	23 We EnCon 2022	23 We	23 Sa	23 Mo	23 Th
24 Mo	24 Th EnCon 2022	24 Th	24 Su	24 Tu	24 Fr
25 Tu	25 Fr	25 Fr	25 Mo	25 We	25 Sa
26 We	26 Sa	26 Sa	26 Tu	26 Th	26 Su
27 Th	27 Su	27 Su	27 We	27 Fr	27 Mo
28 Fr	28 Mo	28 Mo	28 Th	28 Sa	28 Tu
29 Sa		29 Tu	29 Fr	29 Su	29 We
30 Su		30 We	30 Sa	30 Mo Pesta Kaamatan	30 Th
31 Mo		31 Th		31 Tu Pesta Kaamatan	

Majlis Konvokesyen UNIMAS (14-17 February 2022)
UNIMAS ENCon 2022 (23-24 February 2022)
Virtual International Conference on Marine Science and Aquaculture (ICOMSA) 2022 bersama Universiti Malaysia Sabah (8-10 March 2022)
UNIMAS Innovation and Technology Expo 2022 (InTEX22) Pullman Hotel, Kuching (15-16 June 2022)

Note: UNIMAS Convocation will be held in June 2022 and October 2022 (dates will be informed)

2022 CONFERENCE CALENDAR

July	August	September	October	November	December
1 Fr	1 Mo	1 Th	1 Sa	1 Tu	1 Th
2 Sa	2 Tu	2 Fr	2 Su	2 We	2 Fr
3 Su	3 We	3 Sa	3 Mo	3 Th	3 Sa
4 Mo	4 Th	4 Su	4 Tu	4 Fr	4 Su
5 Tu	5 Fr	5 Mo	5 We	5 Sa	5 Mo
6 We	6 Sa	6 Tu	6 Th	6 Su	6 Tu
7 Th	7 Su	7 We	7 Fr	7 Mo	7 We
8 Fr	8 Mo	8 Th	8 Sa Maulidur Rasul	8 Tu	8 Th
9 Sa Hari Raya Qurban	9 Tu	9 Fr	9 Su	9 We	9 Fr
10 Su	10 We	10 Sa	10 Mo	10 Th	10 Sa
11 Mo	11 Th	11 Su	11 Tu	11 Fr	11 Su
12 Tu	12 Fr	12 Mo	12 We	12 Sa	12 Mo
13 We	13 Sa	13 Tu	13 Th	13 Su	13 Tu
14 Th	14 Su	14 We	14 Fr	14 Mo	14 We
15 Fr	15 Mo	15 Th	15 Sa	15 Tu	15 Th
16 Sa	16 Tu	16 Fr Malaysia Day	16 Su	16 We	16 Fr
17 Su	17 We	17 Sa	17 Mo	17 Th	17 Sa
18 Mo	18 Th ACLAB 2022	18 Su	18 Tu	18 Fr	18 Su
19 Tu	19 Fr ACLAB 2022	19 Mo IBBC 2022	19 We	19 Sa	19 Mo
20 We	20 Sa ACLAB 2022	20 Tu IBBC 2022	20 Th	20 Su	20 Tu IC-MAS 2022
21 Th	21 Su ACLAB 2022	21 We IBBC 2022	21 Fr	21 Mo	21 We IC-MAS 2022
22 Fr Sarawak Day	22 Mo ACLAB 2022	22 Th	22 Sa	22 Tu	22 Th
23 Sa	23 Tu DAA11,	23 Fr	23 Su	23 We	23 Fr
24 Su	24 We DAA11,	24 Sa	24 Mo Deepavali	24 Th	24 Sa
25 Mo	25 Th DAA11,	25 Su	25 Tu	25 Fr	25 Su Christmas Day
26 Tu	26 Fr DAA11,	26 Mo	26 We	26 Sa	26 Mo
27 We	27 Sa	27 Tu	27 Th	27 Su	27 Tu
28 Th	28 Su	28 We	28 Fr	28 Mo	28 We
29 Fr	29 Mo	29 Th	29 Sa	29 Tu	29 Th
30 Sa	30 Tu	30 Fr	30 Su	30 We	30 Fr
31 Su Awal Muharam	31 We National Day		31 Mo		31 Sa

13th Asian Conference on Lactic Acid Bacteria 2022 (ACLAB 2022), (UCSI/BCCK) (18-12 August 2022)
Simposium Antarabangsa Ke-11 “Diseases in Asian Aquaculture (DAA11) 2022” Bersama Fish Health Section-Asian Fisheries Society (FSH-AFS), BCCK Kuching (23-25 August 2022)
The Tenth International Borneo Business Conference (IBBC) 2022 (19-21 September 2022)

Note: UNIMAS Convocation will be held in June 2022 and October 2022 (dates will be informed)

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