UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Institute of
Bioproduct Development

ipsb2019

2nd International Postgraduate Symposium in Biotechnology 2019

24th - 25th Sept 2019

UTM Johor Bahru, Johor, MALAYSIA

Co-organizers

Faculty of Engineering

National University Corporation
Shizuoka University

ABSTRACT BOOK

THE 2ND INTERNATIONAL POSTGRADUATE SYMPOSIUM IN BIOTECHNOLOGY 2019 (IPSB)

Institute of Bioproduct Development (IBD)
Universiti Teknologi Malaysia

Editor

Noorazwani Zainol
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PREFACE

The 2 nd IPSB 2019 also known as International Postgraduate Symposium of Biotechnology witnesses the full commitment of Institute Bioproduct Development (IBD), Universiti Teknologi Malaysia (Malaysia) jointly organized with Shizouka University (Japan), Universitas Negeri Jakarta (Indonesia), Chulalongkorn University (Thailand) and De La Salle University (Philippines) in providing a platform for postgraduates and researchers to present and discuss their views on recent research and application in related area of biotechnology. Biotechnology is a progressive and evolving scientific area which offers infinite possibilities in shaping our lives. Recent advances in biotechnology had been successful in providing breakthrough technologies and products such as alleviating and preventing chronic diseases, provision of food security and promoting a shift towards greener and sustainable practices to attain a better ecosystem for future generations. This second IPSB comprises of local and international participants which are involved in making this symposium a success. All papers presented are divided into sections namely molecular engineering (ME), nano-technologies and bioactive studies (NTB), biochemical research (BR), herbal bioprocessing and industrial practices (HBP), natural bioactives, microbial bioprocessing (MB) and agri-biotechnology (AGB). The organizing committee sincerely hopes that this symposium provides all involved with interesting and multidimensional perspectives and relevant information which is useful for your professional and personal use. Finally, we hope that this 2 nd IPSB 2019 opens up new opportunities for delegates to contribute and exchange ideas with like-minded peers at international level in the field of biotechnology.

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MESSAGE FROM

Chair, School of Postgraduates Studies
Assoc. Prof. Dr. Noor Hazarina bt Hashim

Bismillahirahmannirahim,

I would like to first of all welcome all of you to the 2nd International Postgraduates Symposium in Biotechnology 2019 and would like to take this opportunity to say "Selamat Datang ke Malaysia" which means welcome to Malaysia to all our foreign delegates. It gives me great pleasure to officiate this Symposium especially since postgraduates are subjects which are close to my heart. On behalf of the University, I would like to congratulate Institute of Bioproduct Development (IBD), School of Chemical and Energy Engineering (SKT) and the organizing committee for holding the 2nd International Postgraduate Symposium in Biotechnology 2019 (IPSB 2019).

A key interest of IPSB 2019 is to provide the avenue for postgraduates in the field of biotechnology to establish a network offering immediate linkages between participants. This collaboration would greatly benefit all. The success of IPSB 2019 depends completely on the energy, effort and talent of researchers in the field of biotechnology who have submitted their research works on a variety of topics. This two day program consists of keynote addresses followed by exciting lectures covering various aspects of biotechnology. The scientific program will consist of keynote/distinguished lectures, poster sessions and 2 parallel sessions over the course of the two days in the arena of Molecular Engineering, Nano-Technology and Bioactive Study, Natural Bioactive, Microbial Bioprocessing and Agri-biotechnology. I trust that IPSB's success will inspire budding researchers and be a brilliant opportunity to meet prominent personalities and to continue to connect the dots between university research and industrial innovation.

Heartfelt appreciations are due to committee members who have worked tirelessly around the clock to ensure the realization of the conference. Additional thanks are also accorded to participating companies and sponsors for their continuous support for this event. It is our fervent hope that this interesting event will benefit participants and may this be the first of the many IPSBs to come. I hope that all participants will take this opportunity to establish networking and build bridges rather than barriers in order to establish a common goal which is "Biotechnology for Wellness".

Thank you.
Assoc Prof Dr Noor Hazarina Hashim
Chair, School of Postgraduates Studies
Universiti Teknologi Malaysia

MESSAGE FROM

Chairman of IPSB
Prof. Dr. Hesham El-Enshasy

السلام عليكم ورحمة الله وبركاته
and Sincere Greetings to all

I am pleased to welcome all of you to the 2nd International Postgraduate Symposium in Biotechnology 2019 (IPSB 2019).

IPSB is based on the aspirations of the Malaysian Education Blueprint (Higher Education) (MEB (HE)) in making innovation as the major driver of economic growth. While Malaysia has improved its output on a number of publications, a lot can still be improved in term of patent output and the relation between academia, industry, government, and local communities.

It is a matter of immense pleasure that Institute of Bioproducts Development (UTM-IBD) is organizing the 2nd International Postgraduate Symposium in Biotechnology. This symposium is organized in collaboration with the School of Chemical Engineering and other local and international partners from many countries. We are very proud to organize this type of postgraduate symposium for biotechnology students in IBD for the second time. The symposium will have a variety of lectures which will be given by eminent scientists, who will present the recent trends in basic and applied research in different fields of biotechnology. IPSB aspires to be a platform that enhances the exchange of research knowledge through the cooperation between local and international universities as well as cooperation with industries in the field of biotechnology.

IPSB is also a platform for local and international postgraduate students and researchers to disseminate knowledge in their respective fields of biotechnology to the public. Research findings in IPSB could provide the spur needed for the development of high-impact products for the purpose of commercialization and the betterment of communities around the world. This gives excellent change to exchange views, visions and experience among the participant from different countries in many multidisciplinary fields.

In addition, I am sure that IPSB will give ample opportunity for the postgraduate students to present their work and receive feedback from the senior professors in the field and from other colleagues about the quality of research and receive some recommendation about the strength and weaknesses of their work which will help them for sure to improve their work quality.

I would like to express my sincere thanks to all co-organizing local and international universities for supporting this symposium.

At the end, I would like to thank all members of the organizing committee who voluntary help in the success of the program and without their highly active and dedicated work, this symposium were not able to run. Thus I would like to thank the organizing committee for realizing this symposium. On behalf of 2nd IPSB 2019 organizing committee, I would like to take this opportunity to wish everyone a rewarding and fruitful event.

Best wishes,
Prof. Dr. Hesham El-Enshasy
Chairman,The Organizing Committee of 2nd IPSB.

MESSAGE FROM

Co- Chairman of IPSB 2019
Prof. Ir. Dr. Ani Idris

I am pleased to welcome all of you to the International Postgraduate Symposium in Biotechnology 2019 (IPSB 2019). While Institute of Bioproduct Development aspires to provide scaling up services and also serve as an incubator for small and medium scale industries, much more can be done in improving the quality by performing advanced research in biotechnology. The research output can be shared via publications, patents and through conferences such IPSB. IPSB aspires to be a platform that enhance the exchange of research knowledge through the cooperation between local and international universities as well as cooperation with industries in the field of biotechnology. The application of biotechnology is expected to create added value to the food, healthcare, nutraceuticals, cosmeceutical and industrial bioprocessing sectors. IPSB is also a platform for local and international postgraduate students and researchers to disseminate knowledge in their respective fields of biotechnology to the public. Research findings in IPSB could spur the development of high-impact products for the purpose of commercialization and the betterment of communities around the world.

Thus I would like to thank the organizing committee for realizing this symposium. It is our fervent hope that this interesting event will benefit participants and I hope you will enjoy the symposium and fruitful to all.

Best wishes
Prof. Ir. Dr. Ani Idris
Co-Chairman
The Organizing Committee of 2nd IPSB 2019.

PROGRAMME ITINERARY

DAY 1 | 24th September 2019 *Tuesday*

08.00 - 09.00	**Registration (Dewan Kuliah 8, N24)**
8.45 am **9.00 am** **9.10 am** **9.20 am** **9.30 am**	**The arrival of Symposium Delegates / Guests / VIP** **Welcoming speech by the Symposium Chairman Y.Bhg. Prof. Dr. Hesham El- Enshansy** **Officiation speech by Assoc.Prof. Dr. Noor Hazarina Hashim** **Chair, School of Postgraduate Study** **Product Launching** **End of Ceremony**
09.30 – 10.00	**Plenary 1 - Prof. Dr. Enoch Park (Shizouka University, Japan)**
10.00 – 10.30	**Plenary 2 - Prof. Dr. Rosli Md Ilias (UTM, Malaysia)**
10.30 – 10.50	**Group Photo & coffee break**

BREAK UP SESSION

	MOLECULAR ENGINEERING (ME)	**NANO-TECHNOLOGY AND BIOACTIVES STUDY**
	Chairperson : Prof. Dr. Tetsuo Narumi (Shizouka, Japan) **Co-chair : Prof. Dr. Ani Idris (UTM, Malaysia)** **Venue 1 : Dewan Kuliah 8, N24**	**Chairperson: Assoc. Prof. Dr. Azila Aziz (UTM, Malaysia)** **Co-chair: Assoc. Prof. Dr. Nuttha Tongchul (Chulalongkorn, Thailand)** **Venue 2 : Bilik Kuliah 2, N24**
11.00 – 11.20	ME 1 Peptidomimetic Study on Amyloid Fibril Formation based on the Amide-to-Alkene Isosteric Switch Strategy **Tetsuo Narumi**	NTB 1 Downsizing: Nanotechnology in Natural Cosmetic and Personal Care Products **Azila Abdul Aziz**
11.20 – 11.35	ME 2 Fabrication Of Tilapia Gelatin-Chitosan Nanofiber Scaffold For Skin Tissue Engineering **Syazwani Ramli**	NTB 2 Fine Bubble Organic Synthesis: From Batch to Flow **Nobuyuki Mase**
11.35 – 11.50	ME 3 Improved Performance of Microbial Fuel Cell with Nanocomposite of Medium-Chain-Length Polyhydroxyalkanoates-co-Methyl Acrylate Carbon Nanotubes as Electrode Modifier **Sirajudeen Abdul Azeez Olayiwola**	NTB 3 Hydrogenation of Heterocyclic Compounds by Fine Bubble Method **Soma suzuki**

11.50 – 12.05	ME 4 Analysis Genes Controlling the Fruiting Body Formation of Cordyceps militaris in Silkworm **Ahmad Suparmin**	NTB 4 Effects of Extraction Solvent on Antioxidant and Wound Healing Properties from *Carica papaya* Leaves Extracts **Husnul Hanani Soib**
12.05 – 12.20	ME 5 Solid-phase Chemical Ligation Using Peptide Hydrazide **Shunma OH**	NTB 5 In-vitro Anticancer of Andrographis Paniculata Extract from Differernt Solvents Against Du145 **Mohamad Khairul Hafidz Idris**
12.20 - 12.35	ME 6 *Neospora caninum* profilin: Screening the truncation domain and its identification of secretion in silkworm larvae **Hamizah Suhaimi**	NTB 6 Growth and Survival Model of *Listeria monocytogenes* in Short Mackerel (Rastrelliger brachysoma) During Storage under Isothermal and Non-Isothermal Time –Temperature Profile **Ummul Izzatul Izzah Binti Yahya**
12.35 – 12.50	ME 7 Purification of Recombinant Proteins from the Haemolymph and Fat Body of the Silkworm *Bombyx Mori* Aiming for Industrial Usage **Robert Minkner**	NTB 7 Synergistic Effect Of Graphene Oxide and Zinc Oxide Nanocomposite On Antimicrobial Activity **Liew Wen Ching**
12.50 – 13.05	ME 8 Interaction of Flexirubin-type pigments in Keap1-Nrf2 Pathway as Potential Hepatoproctective Compound **Norfarisha Mohd Fadil**	NTB 8 A review on the Extraction Techniques of Quasinoids from *Eurycoma Longifolia* **Nurul Izzati Mohd Ismail**
13.05 –14.15	**LUNCH BREAK**	
	BIOCHEMICAL RESEARCH	**HERBAL BIOPROCESSING & INDUSTRIAL PRACTICE**
	Chairperson : Ts. Dr. Hamzah Nasir (IIUM, Malaysia) **Co-chair : Dr. Harisun Yaakob (UTM, Malaysia)** **Venue 1 : Dewan Kuliah 8, N24**	**Chairperson : Dr. Eddie Tan Tijih (UiTM, Malaysia)** **Co-chair : Dr. Zaidah Rahmat (UTM Malaysia)** **Venue 2 : Bilik Kuliah 2, N24**
14.15 – 14.35	BR 1 Activation of endothelial cells and its potential involvement in blood-brain barrier damage in cerebral malaria: an in vitro study **Hamzah Nasir**	HBP 1 Herbal Bioprocessing: Safety Risk **Eddie Tan Ti Tjih**
14.35 – 14.50	BR 2 Chemical Synthesis of Protein for Protein-based Therapeutic **Kohei Sato**	HBP 2 Review on Drying Process of *Moringa Oleifera* Leaves **Nabilah binti Abdul Samad**

14.50 – 15.05	BR 3 Preventive Interventions to Reduce Second-Hand Smoke Exposure among Non-Smoking Pregnant Women **Siti Hajar Binti Mohamed Zain**	HBP 3 Optimization of Whey Protein Isolate And Carboxymethyl Cellulose Composition For Stability Of Clove Essential Oil Microemulsion **Noer Hartini Dolhaji**
15.05 – 15.20	BR 4 Structural and Functional Studies of KEG15107 from Mycobacterium avium **Azura Mohd Noor**	HBP 4 Zeta-Potential and Size Distribution of Microencapsulated Boswellia Carterii Essential Oil in Gum Arabic **Mohamed Soleiman Barre**
15.20 – 15.35	BR 5 Effect of Control and Un-control PH Toward *Lactobacillus Acidophilus* Cell Growth **Afif Najihah binti Kepli**	HBP 5 Application of Moringa and Turmeric as Booster to Improve Giant Freshwater Prawn Larvae Quality **Muhammad Amiruddin Bin Wahab**
15.35 – 15.50	BR 6 Pulsed Electric Field (PEF): Influences on Physicochemical Properties and Fat Globule Size Distribution of Goat Milk **Azizah Mohamad**	HBP 6 Bioprocess Optimization for Production of High Xanthan Gum Using Statistical Method **Nurul Zahidah Nordin**
15.50 – 16.05	BR 7 Characterization of *Ashbya gossypii* riboflavin-overproducing mutant **Junya Azegami**	HBP 7 Halal Critical Control Points in Halal Assurance System in Breeding Farms Broiler **Mohd Hasli Ramli**
16.05 – 16.15	BR 8 Thermodynamic Evaluation of H-Bonding Ability of Chloroalkene Dipeptide Isostere in an Amide-to-Alkene Peptidomimetic Catalyst **Takuma Nishizawa**	HBP 9 Comparison of Caseinolytic Enzymes Production from Bacillus Cereus 13BN using Different Types of Media Potentially for Cardiovascular Diseases **Mazlina Mohd Arifin**
16.15 – 16.30	BR 9 One-Pot Synthesis of Highly Functionalized 2-Chloroaziridines for Stereoselective Synthesis of (Z)-Chloroalkene Dipeptide Isosteres Containing α, α-Disubstituted Amino Acids **Saki Imai**	HBP 9 Biomass Production Of Probiotic *Lactobacillus Reuteri* Dsm 20016t By Developing Low Cost Media Cultivation Strategy **Shanmugaprakasham Selvamani**
16.30 – 16.45	BR 10 Rapid Optimization of Reaction Conditions by Machine Learning Using In-Line Analysis **Takuya Kon**	HBP 10 Optimizing Vacuum Evaporation Process to Prepare High Nutrient Dense Pineapple Concentrate **Chin Yee Leong**
16.45 – 17.00	BR 11 Effects of Nutrient Depletion and High Light Emitting Diodes (LEDs) Irradiances on Morphology Changes in Unicellular Astaxanthin-Producing Green Microalgae *Haematococcus pluvialis* **Nur Diana Mohd Noor**	HBP 11 Study on the Spray Drying Conditions of Pineapple Fruit Powder **Nur Syazwani Hanafi**
	COFFEE BREAK **END OF DAY 1**	

DAY 2 | 25th September 2019 *Wednesday*

08.15 – 08.45	**Plenary 3 – Prof. Dr. Muktiningsih (UNJ, Indonesia)**	
08.45 – 09.15	**Plenary 4 – Assoc. Prof. Dr. Nuttha Thongchul (Chulalongkorn, Thailand)**	
09.15 – 09.45	**Plenary 5 – Prof. Dr. Ida Idayu (UTM, Malaysia)**	
09.45 – 10.15	**Plenary 6 – Assoc. Prof. Dr. Vincent Antonio S.Ng (De La Salle University, Filipina)**	
10.15 – 10.30	**BREAK-UP SESSION / COFFEE BREAK**	
	NATURAL BIOACTIVES (PART 1)	**MICROBIAL BIOPROCESSING**
	Chairperson : Assoc. Prof. Dr. Chua Lee Suan (UTM, Malaysia) **Co-chair : (Dr. Nur Izyan Wan Azalee, UTM, Malaysia)** **Venue 1 : Dewan Kuliah 8, N24**	**Chairperson : Dr. Dalia Sukmawati (UNJ, Indonesia)** **Co-chair : Dr. Daniel Joe Dailin (UTM, Malaysia)** **Venue 2 : Bilik Kuliah 2, N24**
10.30-10.50	NB I Phytochemical Fingerprinting Coupled with Chemometrics for Identification of Herbal Samples **Chua Lee Suan**	MB 1 Optimization of Activity Of Amylase Enzyme Originated From August Flower (*Pyrostegia Venusta* (Ker Gawl.) Miers) Mold **Dalia Sukmawati**
10.50 – 11.05	NB 2 Antioxidant Properties of Extracts and SPE Fractions from *Annona muricata* Leaves **Nur Athirah Hashim**	MB 2 Behaviors of Conjugative Plasmids in Different Environmental Conditions **Masaki Shintani**
11.05 – 11.20	NB 3 Protein Antioxidant Capacity from *Moringa oleifera* fresh and commercialised leaf **Zetty Amirah Binti Zulkifli**	MB 3 Isolation And Identification Studies On Potential Xylanase Enzyme Producing *Trichoderma* sp. From Local Soil **Kugan Kumar Ambehabati**
11.20 – 11.35	NB 4 A Novel Chitosan-Based Nanogel System Co-Loaded with Triclosan and Flurbiprofen for Localised Treatment of Periodontitis **Nafiu Aminu**	MB 4 Preliminary Screening For Higher Production of Riboflavin By Recombinant *Ashbya Gossypii* **Nivashini Neela Mekan**
11.35 – 11.50	NB 5 Isolation, Toxicity and Oxidative Stress Evaluation of Myricetin Derivatives from Syzygium malacensse in C57BL/6J Mice **Devi Nallappan**	MB 5 Anaerobic bio-conversion enhanced by a rechargeable biogenic mackinawite **Kazui Yasuike**
11.50 – 12.05	NB 6 Effects of Molasses an Agrowaste on the Cell Growth and Functional Characteristic of Exopolysaccharide by Lactobacillus Plantarum ATCC 8014 **Nor Zalina Othman**	MB 6 Identification of Factor(s) that Reduces the Fitness Costs of Plasmid Carriage on the Host **Mitsuya Mori**
12.05 – 12.20	NB 7 Optimization of Pullulan Production **Luo Zaini Mohd Izwan Low**	MB 7 Bioprocess Optimization For High Cell Mass Production By Kluyveromyces Lactis **Aelia Insyeera Binti Mohd Hishamuddin**

12.20 – 12.35	NB 8 Development of Rapid Kit Detection Food-borne Pathogen Salmonella enteritidis in Egg and Meat Based on Real-Time PCR **Putri Annisa Auni**	MB 8 Effect of solvents on PVDF nanofiber and its potential use for *Escherichia coli* immobilization. **Norhamiza Mohamad Sukri**
12.35 – 12.50	NB 9 Antioxidative and Antidiabetic Potential of *Pandanus amaryllifolius* Essential Oils from Different Location of Malaysia **Maisarah binti Mohamed Zakaria**	MB 9 Comparison of Host Range of Plasmids with Different GC Contents Belonging to Incompatibility Group PromA **Maho Tokuda**
12.50 – 13.05	NB 10 Accuracy Of Pregnancy-Specific Protein B (PSPB) Assay for Early Pregnancy Detection of Kedah-Kelantan Cattle **Nor Syairah Atiqah Binti Mohamad Hanafiah**	MB 10 Bioprocess Development for High Cell Biomass Production of *Lactobacillus casei* in semi industrial scale bioreactor **Jennifer Edwina A/P Eyahmalay**
13.05 – 14.05	**LUNCH BREAK**	
	NATURAL BIOACTIVES (II)	**AGRI-BIOTECHNOLOGY (AGB)**
	Chairperson : Dr. Tan Teng Ju (IIUM, Malaysia) **Co-chair : Dr. Rosnani Hasham (UTM, Malaysia)** **Venue 1 : Dewan Kuliah 8, N24**	**Chairperson : Prof. Dr. Masakazu Hara (Shizouka, Japan)** **Co-chair : Dr. Dayang Norulfairuz Abang Zaidel (UTM, Malaysia)** **Venue 2 : Bilik Kuliah 2, N24**
14.05 – 14.25	NB 11 Investigation of chemical compositions and antibacterial activity of Patchouli essential Oil and extrcts produced by conventional methods and supercritical fluid extraction **Teng Ju Tan**	AGB 1 Adaptation of Plants to Extreme Temperature - Key Proteins in Seeds for Surviving under Deep Freeze Conditions- **Masakazu Hara**
14.25 – 14.40	NB 12 Biotechnology research and innovations in 21st century: a great promise to face the global challenges **H.N.Thatoi**	AGB 2 Genomic analysis of riboflavin-overproducing Ashbya gossypii mutant isolated by disparity mutagenesis **Tatsuya Kato**
14.40 – 14.55	NB 13 Non-target Contact Toxicity of Neonicotinoids to An Effective Biological Control Agent Necessitates Compatibility Studies for Nanoparticles-based Insecticides **Billy Joel Almarinez**	AGB 3 A Real Time PCR Method for Rapid Detection of Food-Borne Pathogens Bacteria Staphylococcus Aureus in Contaminated Meat and Milk Product **Hafidza Muslimah**
14.55 – 15.10	NB 14 Application of Box-Behnken Design with Response Surface Methodology for Optimizing Oxygen Colour Indicator Strip Film for Indication Enhancement **Aishah Mohd Marsin**	AGB 4 Molds Isolated from Chicken Feed as Potential Amylase Resources **Zico Arman**

15.10 – 15.25	NB 15 Effect of Red Light Emitting Diod (LED) on *Nannochlorosis sp.* Growth, Lipid Content, and Nutrients Reduction Efficiency Using Palm Oil Mill Effluent (POME) **Rosnani Resdi**	AGB 5 The Effect of Urea Molasses Multi-Nutrient Block Supplementation on Milk Somatic Cell Count of Saanen Crossbred Goats **Mohamad Faiz Mohd Nor**
15.25 – 15.40	NB 16 Variation of Volume of Fim-C *Salmonella typ*hi Protein Production as Vaccine Candidates and Typhoid Fever Detection Kits on Laboratory Scale **Shausan Fairuz Jinan**	AGB 6 Exogenous Plasmid Capturing from Natural Environmental Samples **Masaya Hayakawa**
15.40 – 15.55	NB 17 First Record of *Marieta Carnesi* (Howard)(Hymenoptera:Aphelinidae) and Its Field Hyperparasitism On *Comperiella Calauanica* Barrion, Almarinez & Amalin (Hymenoptera:Encryrtidae) In The Philipines **Shad Natthew S. Arce**	AGB 7 Detection of *Salmonella typhimurium* Foodborne Bacterial Pathogen on Artificially Contaminated Milk by Real Time PCR using STM4497 and *Fljb* Primers **Ulfi Rahma Efrianti**
15.55 – 16.10	NB 18 Isolation and Identification of Halophilic Microorganisms in Soy Sauce **Nur Amirah Khairina binti Khairil Anwar**	AGB 8 Increased Iron Uptake capacity of ultrasonic treated milled rice **Aldrin P.Bonto**
16.10 – 16.25	NB 19 Purification of Pregnancy-Specific Protein B (PSPB) In Kedah-Kelantan Cattle **Muhammad Aiman Bin Adam**	AGB 9 Betaine-Rich Nano Fertilizer Improves Growth Parameters of *Zea mays* var *Saccharata* and *Arabidopsis thaliana* under Salt Stress **Fadzillah Adibah Fadzil Suhaimi**
16.25 – 16.40	**COFFEE BREAK**	
16.40 - 17.00	**CLOSING CEREMONY** **AWARDS PRESENTATION**	