



UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

IKP NEWSLETTER

IN THIS ISSUE

*PUTRA PLANTATION FORUM SERIES 11
POST GRADUATE OPEN DAY*

ABOUT US

INSTITUTE OF PLANTATION STUDIES (IKP)

The establishment of Institute of Plantation Studies (IKP) was approved by the Department of Higher Education, Malaysia in 2004 to become Center of Excellence for the advancement of plantation and agricultural agrotechnology and problem solving to commodity crops issues.

IKP was reactivated in October 2014 with two (2) laboratories, i) Laboratory of Plantation Science and Technology and ii) Laboratory of Plantation Policy and Economy. Since then, research on plantation crops especially plant protection and disease control were actively carried out.

On 5th May 2020, JPU has approved the restructuring of three (3) Research Laboratories; i) Laboratory of Sustainable Agronomy and Crop Protection, ii) Laboratory of Plantation System Technology and Mechanization and iii) Laboratory of Processing and Product Development to cover the upstream, midstream and downstream activities of plantation crops.

The plantation crops are Palm Oil, Rubber, Cocoa, Tea, Pepper, Coconut and Pineapple. IKP brings together researchers of different expertise in UPM to assist the plantation industry and government-related agencies in improving their capability and sustainability in addressing various issues and challenges.

For more information on IKP,
please visit us at:



ikp.upm.edu.my



Institut Kajian Perladangan,
Universiti Putra Malaysia



KajianUpm

FOREWORD FROM THE PAST DIRECTOR

PROFESSOR IR. DR. ROBIAH YUNUS



It is my pleasure to contribute the foreword in the 3rd edition of the IKP e-newsletter as the past director of the institute. I was transferred to the Ministry of Higher Education on 1 June 2021. Many events had taken place in the last six months before I left. Among them is the completion of the administrative office and lab renovation project. The administrative office was relocated to a new location to allow for the setting up of two new research laboratories. Consequently, all research associates, staff and students are now able

to conduct the experiments at IKP own facilities. These facilities will provide a conducive working environment for achieving the vision and mission of IKP.

We have initiated many activities to bring in more students to IKP. The IKP Virtual Postgraduate Open Day and UPM Postgraduate Day were held in June 2021 and potential students participated in the events. Several meetings and visits to government agencies such as Malaysia Palm Oil Board (MPOB), Malaysia Rubber Board (MRB), Ministry of Plantation Industries and Commodities (MPIC), as well as industries such as SIME DARBY, FELDA, and TDM also took place to introduce IKP and strengthen research cooperation with plantation related industries in Malaysia. IKP researchers also conducted virtual monthly seminars to share IKP expertise with students, government agencies, and industry stakeholders. These activities are among several IKP initiatives to assist UPM, plantation industries, and the government in ensuring sustainable practices are implemented in crops and agriculture.

In addition, the first roundtable meeting with RAs and IKP management was also held in June 2021. The meeting discussed the key performance indicators (KPIs) and research programs that will chart the research direction of IKP. Among important outcomes is the establishment of new research programs which are in line with niche areas of new laboratories. I believe that this e-newsletter will provide much information about IKP, and I hope that you will enjoy reading it.



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MAIN HIGHLIGHT | RESEARCH ASSOCIATES FOR LABORATORY OF PROCESSING AND PRODUCT DEVELOPMENT (PPD)

GET TO KNOW PPD RESEARCH ASSOCIATES

Laboratory of Processing and Product Development (PPD) at its best-addressing sustainability issues on the plantation by focusing on research activities that manage and utilise natural resources efficiently, support the human environment and preserve nature is the main goal of the institute.

We are committed to conducting basic and applied research on downstream plantation products, developing, applying and transferring relevant knowledge, findings and research technology to enhance plantation processing and customized downstream product development.



Prof. Dato' Dr. Mohd Ali Hassan is a professor of Bioprocess Engineering, Environmental Biotechnology and Solid Waste Management and Utilisation. He received his BSc. in Chemical Engineering from University of Leeds, United Kingdom and PhD in Environmental Biotechnology from Okayama University, Japan. His research areas include Bioprocess Engineering, Environmental Biotechnology, Biomass Conversion Technologies and Waste Management and Utilization.



Prof. Dr. Tan Chin Ping is a professor of Food Processing. He received his BSc. in Food Science and PhD in Food Processing from Universiti Putra Malaysia. His research areas include Edible Oil Processing, Safety & Quality, Functional Lipid Nano Dispersion System, Food Emulsion and Food/Process Innovation.



Prof. Ir. Dr. Wan Azlina Wan Abd Karim Ghani is a professor of Biomass Conversion, Gasification, Fluidized Bed Technology, Waste Management, Biogas and Syngas. She received her BEng in Chemical from Universiti Teknologi Malaysia and PhD in Combustion Engineering from the University of Sheffield, United Kingdom. Her research areas include Waste and Biomass Valorizations into Bioenergy, Biofuels and Bioproducts, Environmental Pollution Control and Treatment and Chemical Reactor Engineering.



Assoc. Prof. Dr. Irmawati Ramli is a lecturer of Catalysis. She received her BSc. in Chemistry from UPM and PhD in Heterogeneous Catalysis from UMIST, United Kingdom. Her research areas include the Development and Synthesis of Solid Catalysts for Reactions of Natural Gas and Biomass Conversion into Fuel and Useful Chemicals.



Assoc. Prof. Dr. Chong Gun Hean is a lecturer of Chemical Engineering. He received his BEng. in Process & Food Engineering from Universiti Putra Malaysia and PhD in Chemical Engineering also from Universiti Putra Malaysia. His research areas includes Supercritical Fluids Engineering, Food Engineering & Powder Design and Extraction.



Assoc. Prof. Dr. Rozita Omar is a lecturer of Chemical Engineering. She received her BEng. in Chemical Engineering and Petroleum Refining from Colorado School of Mines, USA; MSc. (Bioprocess and Fermentation Technology) and PhD in Chemical Engineering from Universiti Putra Malaysia. Her research area includes Microwave - assisted Processes, Water and Wastewater Treatment and Hydroponics and Aquaponics.



Assoc. Prof. Dr. Ing. Mohd Noriznan Mokhtar is a lecturer of Process Engineering of Biological/Agricultural Products. He received his BEng. in Chemical and Process from Universiti Kebangsaan Malaysia and Dr.-Ing. (Magna Cum Laude) in Chemical Process Engineering from Fakultät für Maschinenbau, Technische Universität Chemnitz, Germany. His research areas includes Enzyme Immobilization Technology (reaction kinetics, mass and heat transfers in biological/agricultural processing) and Process Plant Design of Biological /Agricultural based Products.



Assoc. Prof. Dr. Mohd Halim Shah Ismail is a lecturer in Gas Cleaning & Palm Oil Re-Engineering. He received his BEng. in Chemical Engineering from Universiti of Wales Swansea, United Kingdom and PhD in Chemical Engineering from the University of Sheffield, United Kingdom. His research areas include Palm Oil Mill Re-Engineering, Hot Gas Cleaning and Air & Water Pollution Treatment.



Nur Hafizah Yusoff



industry through its involvement in research, academic programmes and consultancy services in related fields. The Open Day was attended by 34 interested students consisted of final year bachelor students and postgraduate students at both local and international levels. Twelve RM50 cash rewards were given at the lucky draw session while several interested students received the registration fee waiver vouchers from the School of Graduate Studies.

ACTIVITIES

UPGRADED OFFICE AND NEW RESEARCH LABORATORY

The new research laboratory under the Laboratory of Sustainable Agronomy and Crop Protection and Laboratory of Processing and Product Development are fully operational. This will facilitate researchers, especially postgraduate students to conduct research. Apart from that, IKP has also upgraded the administration office to a new building that is more conducive and comfortable for the administration of IKP.



COLLABORATION EFFORT BETWEEN IKP AND TPU TO UPGRADE BIO-COMPOST PROCESSING SITE IN TPU - BUDGET APPROVAL RM480,000.00

To make the Agenda Pemerkasaan Pertanian Universiti a success, the IKP has proposed a composting project at the University Agricultural Park (TPU). IKP has held several meetings with the TPU to plan and prepare a proposal for approval by the University Research Committee (JPU) in December 2020. Alhamdulillah, IKP-TPU has received approval from the JPU for this project with the financial assistance of RM480,000. The project involves two phases; the first phase is the construction of the roof structure, water and electrical sources. The second phase is the installation of machinery and equipment for the composting process such as grinder, rotary sieve, pelletizer, and also compost turner. It is hoped that this upgrading project will help strengthen the university's agricultural agenda and further for the benefit of students, the local community and the country.

VISIT FROM FGV TO IKP TRANSGENIC GLASSHOUSE

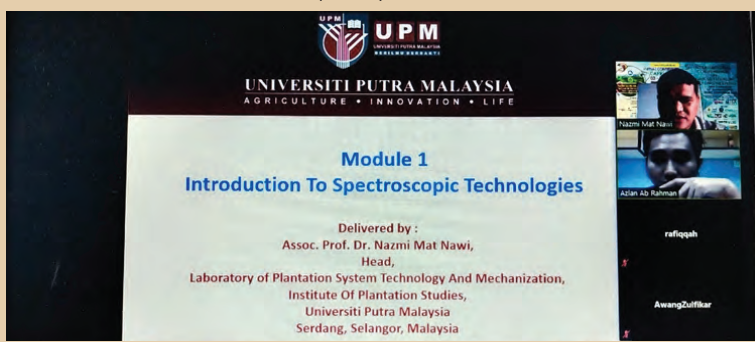
A meeting and working visit from Felda Global Venture (FGV) was carried out on 15th February. The discussion was attended by 15 top FGV officials. The discussion focused more on the potential for research collaboration between the two parties and a visit to the research facilities and research projects at IKP. This is the best platform to introduce current research projects, areas of expertise and human resources at IKP. Furthermore, this program can increase the visibility of IKP on the local and international stage.



ONLINE SHORT- COURSE ON SPECTROSCOPIC TECHNOLOGY TO CRAUN RESEARCH SDN BHD

On 31st May, Assoc. Professor Dr. Nazmi Mat Nawi, head of PSTM was invited by CRAUN Research Sdn Bhd to deliver online short course on how to apply spectroscopic measurement method for quality measurement of sago. The training was attended by nine researchers from the company. The training took four hours, covering four modules namely; 1) Introduction to spectroscopic technologies; 2) Measurement methods; 3) Spectral data analysis; and 4) Chemometrics Analysis.

From the training, the potential use of spectroscopic technology as a non-destructive measurement method for measuring the quality level of sago was revealed. The training also created a new platform for research collaboration between IKP and the company. A proper workshop on handling the technology will be organized at IKP once the Movement Control Order (MCO) is terminated.



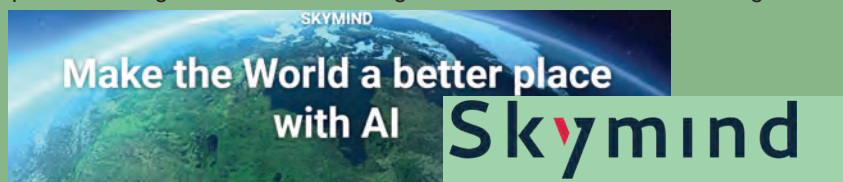
MoU BETWEEN IKP AND SKYMIND HOLDINGS BERHAD: A WAY FORWARD FOR DIGITAL AGRICULTURE

22nd January – The researchers from the Laboratory of Plantation Technology and Mechanization (PSTM), led by Associate Professor Dr. Nazmi Mat Nawi participated in the first on-line meeting with the top management members of Skymind Holdings Berhad. The meeting was hosted by Mr Rafe Azsna, vice president for growth division of the company. Skymind Holdings Berhad is the world's first dedicated artificial intelligent (AI) ecosystem builder, assisting companies and organisations to develop and apply AI technologies in their businesses. The company also provides clients with world-class support and access to open-source tools, as well as global capital funding for promising AI innovation and talent development.

During the meeting, the company expressed its intention to venture into agricultural industry. For that reason, the company sought engagement and expert advice from researchers in PSTM and UPM as well. As a result of the meeting, both parties agreed to establish a formal agreement for research collaboration through an official Memorandum of Understanding (MoU). In June 2021, the MoU was realized and activated with a special focus on providing solution to problems in agriculture and knowledge transfer and information sharing between both parties.



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STAFF DEPARTURE AND NEW MEMBER OF IKP

Former IKP's Senior Assistant Registrar Mr. Mustapha Kamal Tahir and Mr. Mohd Junaidi Yasin have been positioned to a new office effective on 1st February and 15th March respectively. The institute would like to express appreciation and gratitude to Mr. Junaidi and Mr. Mustafa for excellent contribution during their service with the Institute of Plantation Studies.

We are pleased to inform that IKP has received a total of 7 permanent staff (Change of Placement and New Appointed) namely as below:

- Mrs. Norazlina Zulkefli, Senior Assistant Registrar, 15 March 2021
- Miss Rozila Mohamed Jamalludin, Assistant Science Officer, 16 April 2021
- Mrs. Nazlia Girun, Science Officer, 3 May 2021
- Dr. Halimatun Saadiah Hafid, Research Officer, 1 June 2021
- Dr. Erneeza Binti Mohd Hata, Research Officer, 1 June 2021
- Mrs. Farah Zeehan Mohd Nadzri, Research Officer, 1 June 2021
- Mr. Ahmad Faiz Mokhtar, Research Officer, 1 June 2021

We wish all of them well in this new chapter. Welcome!

Briefing on Ekosistem Kondusif Sektor Awam (EKSA) has been organized by IKP management team which was held on 30th June. This briefing was participated by 20 IKP staff and briefing was conducted via online through the Zoom application.

Invited speaker for the briefing was Ms. Nur Nadjla Ahmad Razei. She is from the School of Graduate Studies, UPM and one of the UPM EKSA Facilitators. This briefing has met its objective by facilitated the possible strategy and initial action to be taken to implement EKSA in IKP working environment, to enhance the service quality and productivity in such a conducive environment.

EKSA BRIEFING



IKP RESEARCH SEMINAR SERIES

From January to June, IKP has successfully organized five series of IKP Research Seminar Series online. The main objectives are to share the latest information or/and research findings of plantation crops in Malaysia and to promote the roles/aims of IKP to become the centre of excellence for plantation industry through creation of new knowledge and discovery of new technologies in plantation crops. This seminar series is the best avenue to exchange new technical knowledge and ideas among participants.



Research Seminar Series 1/2021: 'Latest R&D in Mechanization for Sustainable Oil Palm Plantation Management'



Research Seminar Series 2/2021: 'UAV Technology and Application in Plantation Crops'

LIST OF PUBLICATIONS IN Q1/Q2 JOURNALS 2021 (January - June)

NO.	ARTICLE TITLE	AUTHORS	JOURNAL
1.	Adsorption of non-ionic surfactants on organoclays in drilling fluid investigated by molecular descriptors and Monte Carlo random walk simulations	Dina Kania, Robiah Yunus, Rozita Omar, Suraya Abdul Rashid, Badrul Mohamed Jan and Akmal Aulia	Applied Surface Science Q1
2	Pretreatment methods for an effective conversion of oil palm biomass into sugars and high-value chemicals	Z.N Akhlisah, R. Yunus, Z.Z. Abidin, B.Y. Lim and D. Kania	Biomass and Bioenergy Q1
3.	Combustion and Emission Performance of CO/NOx/SOx for Green Diesel Blends in a Swirl Burner	Abdulkareem Ghassan Alsultan, Nurul Asikin Mijan, Nasar Mansir, Siti Zulaika Razali, Robiah Yunus, and Yun Hin and Taufiq-Yap	ACS Omega Q2
4.	Prospects and Challenges of Microwave-Combined Technology for Biodiesel and Biolubricant Production through a Transesterification: A Review	Nur Atiqah Mohamad Aziz, Robiah Yunus, Dina Kania and Hamidah Abd Hamid	Molecules Q2
5.	Experimental Study on the Partial Discharge Characteristics of Palm Oil and Coconut Oil Based Al ₂ O ₃ Nanofluids in the Presence of Sodium Dodecyl Sulfate	NA Mohamad, N Azis, J Jasni, MZAA Kadir, R Yunus and Z Yaakub	Nanomaterials Q1
6.	Release Mechanism and Kinetic Models of Gypsum-Sulfur-Zeolite Coated Urea Sealed with Microcrystalline Wax for Regulated Dissolution	Farahnaz Eghbali Babadi, Robiah Yunus, Salman Masoudi Soltani and Artiwan Shotipruk	ACS Omega Q2
7.	Evaluation of Bioformulation of <i>Enterobacter</i> sp. UPMSSB7 and Mycorrhizae with Silicon for White Root Rot Disease Suppression and Growth Promotion of Rubber Seedlings Inoculated with <i>Rigidoporus microporus</i>	Imran Shabbir, Mohd Yusoff Abd Samad, Radziah Othman, Mui-Yun Wong, Zulkefly Sulaiman, Noraini Md Jaafar, Syed and Asad Hussain Bukha	Biological Control Q1
8.	EgJub1 and EgERF113 Transcription Factors as Master Regulators of Defence Response in <i>Elaeis guineensis</i> Against Hemibiotroph <i>Ganoderma boninense</i>	Nurshafika Mohd Sakeh, Siti Nor Akmar Abdullah, Muhammad Nazri Abdul Bahari, Azzreena Mohamad Azzeme, Noor Azmi Shaharuddin and Abu Seman Idris	BMC Plant Biology Q1
9.	The Dynamic Responses of Oil Palm Leaf and Root Metabolome to Phosphorus Deficiency	Isiaka Ibrahim Muhammad, Siti Nor Akmar Abdullah, Halimi Mohd Saud, Noor Azmi Shaharuddin and Nurulfiza Mat Isa	Metabolites Q2
10.	Current Strategies and Perspectives in Detection and Control of Basal Stem Rot of Oil Palm	Yasmeen Siddiqu, Arthy Surendran, R. Russell, M.Paterson, AsgarAli and Khairulmazmi Ahmad	Saudi Journal of Biological Science Q2
11.	Valorization of Biodiesel Side Stream Waste Glycerol for Rhamnolipids Production by <i>Pseudomonas aeruginosa</i> RS6	Shobaan Menon Baskaran, Mohd Rafein Zakaria, Ahmad Syafiq Mukhlis Ahmad Sabri, Mohd Shamzi Mohamed, Helmi Wasoh, Toshinari Maeda, Mohd Ali Hassan and Ibrahim M, Banat	Environmental Pollution Q1
12.	Division of Environ Ecotoxicological Assessment of Palm Oil Mill Effluent Final Discharge by Zebrafish (<i>Danio rerio</i>) Embryonic Assay	Yuya Hashiguchi, Mohd Rafein Zakaria, MaedaToshinari, Mohd Zulkhairi Mohd Yusof, Yoshihito Shirai and Mohd Ali Hassan	Environmental Pollution Q1
13.	Machine-Learning Approach Using SAR Data for the Classification of Oil Palm Trees that are Non-Infected and Infected with the Basal Stem Rot Diseases	Izrahayu Che Hashim, Abdul Rashid Mohamed Shariff, Siti Khairunniza Bejo, Farrah Melissa Muharam and Khairulmazmi Ahmad	Agronomy Q1
14.	Adsorption Mechanism and Effectiveness of Phenol and Tannic Acid Removal By Biochar Produced from Oil Palm Frond Using Steam Pyrolysis	Abubakar Abdullahi Lawal, Mohd Ali Hassan, Mohamed Abdillah Ahmad Farid, Tengku Arisyah Tengku Yasim-Anuar, Mohd Hafif Samsudin, Mohd Zulkhairi Mohd Yusoff, Mohd Rafein Zakaria, Mohd Noriznan Mokhtar and Yoshihito Shirai	Environmental Pollution Q1
15.	Effect of Oil Palm Biomass Cellulosic Content on Nanopore Structure and Adsorption Capacity of Biochar	Abubakar Abdullahi Lawal, Mohd Ali Hassan, Mohd Rafein Zakaria, Mohd Zulkhairi Mohd Yusoff, Mohd Nor Faiz Norrahim, Mohd Noriznan Mokhtar and Yoshihito Shirai	Bioresource Technology Q1
16.	The Detection of Glycidyl Ester in Edible Palm-based Cooking Oil using FTIR-chemometrics and 1H NMR Analysis	Kok Ming Goh, M.Maulidiani, R.Rudiyanto, Faridah Abas, Kok Ming Goh, M.Maulidiani, R.Rudiyanto, Faridah Abas, Oi Ming Lai, Kar Lin Nyam, Fahad A. Alharthi, Immededdine Arbi Nehdi and Chin Ping Tan	Food Control Q1

NO.	ARTICLE TITLE	AUTHORS	JOURNAL
17.	In-depth Characterization of Palm-based Diacylglycerol-virgin Coconut Oil Blends with Enhanced Techno-functional Properties	Siou Pei Ng, Yih Phing Khor, Hong Kwong Lim, Oi Ming Lai, Yong Wang, Yong hua Wang, Imededdine Arbi Nehdi and Chin Pin Tan	LWT Q1
18.	Advances in Valorization of Lignocellulosic Biomass towards Energy Generation	Ikram ul Haq, Kinza Qaisar, Ali Nawaz, Fatima Akram, Hamid Mukhtar, Xin Zohu, Yong Xu, Muhammad Waseem Muntaz, Umer Rashid, Wan Azlina Wan Ab Karim Ghani and Thomas Shean Yaw Chong	Catalysts Q2
19.	Nanobiocatalysts for Biodiesel Synthesis through Transesterification - A Review	Jawayria Najeeb, Sadia Akram, Muhammad Waseem Muntaz, Muhammad Danish, Ahmad Irfan, Tooba Touqeer, Umer Rashid, Wan Azlina Wan Karim Ghani and Thomas Shean Yaw Choong	Catalysts Q2
20.	Prediction and Optimisation of Syngas Production from Air Gasification of Napier Grass via Stoichiometric Equilibrium Model	Mohamad Syazarudin Md Said, Wan Azlina Wan Ab Karim Ghani, Tan Hong Boon and Denny K.S Ng	Energy Conversion and Management: X Q1
21.	Performance of Single and Two-Stage Cross-Flow Ultrafiltration Membrane in Fractionation of Peptide from Microalgae Protein Hydrolysate (<i>Nannochloropsis gaditana</i>)	Nur Izzati Md Saleh, Wan Azlina Wan Ab Karim Ghani, Siti Mazlina Mustapa Kamal and Razif Harun	Processes Q2
22.	Co-combustion of Oil Palm Trunk Biocoal/sub-bituminous Coal Fuel Blends	Nadly Aizat Nudri, Wan Azlina Wan Ab Karim Ghani, Denny K.S Ng, Robert Thomas Bachmann, B.T Hang Tuah Baharudin and Mohamad Syazarudin Md. Said	Energy Covation and Management: X Q1
23.	Techno-economic Assessment of a Novel Integrated System of Mechanical-biological Treatment and Valorisation of Residual Municipal Solid Waste into Hydrogen: A Case Study in the UK	Kok Siew Ng, Anh N. Ohan, Eleni Iacovidou and Wan Azlina Wan Ab. Karim Ghani	Journal of Cleaner Production Q1
24.	Organosulfonic Acid-functionalized Biomass-derived Carbon as a Catalystfor Glycerol Acetylation and Optimization Studies via Response Surface Methodology	Usman Idris Nda-Uma, Ramli Irmawati, Ernee Noryana Muhamad, Norsahida Azri, Nor Shafizah Ishak, Muamad Yahaya and Yun Hin Taufiq-Yap	Journal of the Taiwan Institute of Chemical Engineer Q1
25.	Promotional Effect of Transition Metals (Cu, Ni, Co, Fe, Zn) - Supported on Dolomite for Hydrogenolysis of Glycerol into 1,2-propanediol	Norsahida Azri, Irmawati Ramli, UsmanIdris Nda-Uma, Mohd Izham Saiman and Yun Hin Taufiq-Yap	Arabian Journal Chemistry Q2
26.	Influence of Heterogeneous Catalysts and Reaction Parameters on the Acetylation Glycerol to Acetin: A review	Usman Idris Nda- Umar, Irmawati binti Ramli, Ernee, Noryana Muhamad Norsahida Azri, Uchenna Fedelis Amadi and Yun Hin Taufiq-Yap	Applied Sciences Q2
27.	Optimization and Characterization of Mesoporous Sulfonated carbon Catalyst and Its Application in Modelling and Optimization of Acetin Production	Usman Idris Nda- Umar, Irmawatibinti Ramli, Ernee, Noryana Muhamad, Norsahida Azri and Yun Hin Taufiq-Yap	Molecules Q2
28.	Effect of Different Supports for Copper as Catalysts on Glycerol Hydrogenolysis to 1,2-propanediol	Norsahida Azri, Ramli Irmawati, Usman Idris Nda-Umar, Mohd Izham Saiman and Yun Hin Taufiq-Yap	Journal of King Saud University - Science Q2
29.	Voltage Oriented Controller Based Vienna Rectifier for Electric Vehicle Charging Stations	Gowthamraj Rajendran, Chockalingam Aravind Vaithilingam, Norhisam Misron, Kanendra Naidu and Md Rishad Ahmed	IEEE Access Q1
30.	Recent Advances in the Application of Cellulose Derivatives for Removal of Contaminants from Aquatic Environments	Noerhidajat Sjahro, Robiah Yunus, Luqman Chuah Abdullah, Suraya Abdul Rashid, Ahmad Jaril Asis, Z. N. Akhlishah	Cellulose Q1
31.	Biology, Diversity, Detection, and Management of <i>Fusarium oxysporum</i> f. sp. <i>niveum</i> Causing Vascular Wilt Disease of Watermelon (<i>Citrullus lanatus</i>): A Review	Muhammad Ziaur Rahman, Khairulmazmi Ahmad, Yasmeen Siddiqui, Norsazilawati Saad, Tan Geok Hun, Erneeza Mohd Hata, Osamah Rashed, Md Imam Hossain and Abdulaziz Bashir Kutawa	Agronomy Q1
32.	Phylogenetic Analysis and Genetic Diversity of <i>Colletotrichum falcatum</i> Isolates Causing Sugarcane Red Rot Disease in Bangladesh	Md Imam Hossain, Khairulmazmi Ahmad,Ganesan Vadamalai, Yasmeen Siddiqui, Norsazilawati Saad, Osumanu Haruna Ahmed, Erneeza Mohd Hata, Fariz Adzmi, Osamah Rashed, Muhammad Ziaur Rahman and Abdulaziz Bashir Kutawa	Biology Q1
33.	Lubricity Performance of Non-ionic Surfactants in High-solid Drilling Fluids: A Perspective from Quantum Chemical Calculations and Filtration Properties	Dina Kania, Robiah Yunus, Rozita Omar, Suraya Abdul Rashid and Badrul Mohamed Jan, Akmal Aulia	Journal of Petroleum Science and Engineering Q1
34.	Rheological Investigation of Synthetic-based Drilling Fluid Containing Non-ionic Surfactant Pentaerythritol Ester Using Full Factorial Design	Dina Kania, Robiah Yunus, Rozita Omar, Suraya Abdul Rashid and Badrul Mohamed Jan	Colloids and Surfaces A: Physicochemical and Engineering Aspects Q2



INSTITUTE OF PLANTATION STUDIES
Research Seminar Series 3/2021

MOLECULAR DIAGNOSTIC TECHNIQUES FOR COCONUT CADANG-CADANG VIROID VARIANTS IN OIL PALM

Dr. Kong Lih Ling

30 March 2021 10.00 - 11.00 am

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Research Seminar Series 3/2021: 'Molecular Diagnostic Techniques for Coconut Cadang-cadang Viroid Variants in Oil Palm'



INSTITUTE OF PLANTATION STUDIES
Research Seminar Series 4/2021

ENCAPSULATION OF BIOLOGICAL CONTROL AGENTS FOR IMPROVEMENT OF DELIVERY SYSTEM

Dr. Fariz Adzmi

30 April 2021 10.00 - 11.00 am

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Research Seminar Series 4/2021: 'Encapsulation of Biological Control Agents for Improvement of Delivery System'



INSTITUTE OF PLANTATION STUDIES
Research Seminar Series 5/2021

APPLICATION OF HYPERSPECTRAL TECHNOLOGY FOR PLANT DISEASE DETECTION

Siti Nooradzah Adam

29 June 2021 10.00 - 11.00 am

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Research Seminar Series 5/2021: 'Application of Hyperspectral Technology for Plant Disease Detection'

INCOMING EVENTS



2nd ANNOUNCEMENT

23-24 NOVEMBER 2021
Accelerating Mechanization and IoT Adoption for Sustainable Plantation
Virtual Conference

This two-day conference will explore technologies such as mechanization and IoT in resolving many challenges and issues related to plantation management. As we plan the November meeting in UPM, ICPTech2021 is taking all the necessary steps to provide a safe onsite environment, as well as remote presentation options for authors who cannot travel to Malaysia. We have extended the submission deadline to 24 September to give authors additional time to submit. Your research is important. Share it with the international community.

KEYNOTE SPEAKERS

PROF. DR. DON SCHILLER
University of Florida

PROF. DR. ALI BAKI YAHYA
Universiti Putra Malaysia

PROF. DR. JING GUAN
Chinese Academy of Tropical Agricultural Sciences (CATAS)

DR. MOHD AZHAR MOHD BAKI
Malaysia Palm Oil Board (MPOB)

FORUM POTENTIAL APPLICATION OF MECHANIZATION, AUTOMATION AND DIGITALIZATION FOR SUSTAINABLE PLANTATION SECTOR IN MALAYSIA

MODERATOR
Prof. Dr. Dr. Abdul Razak
Muhammad Shariff
Universiti Putra Malaysia

PANELIST
Dr. Dr. Zairi Razali
Malaysian Rubber Board

PANELIST
Dr. Ahmad Kamal
Hj. Mohd. Jaafar
Malaysian Cocoa Board

PANELIST
Dr. Marikrishnan Kulaveerasingam
Sime Darby Plantation Berhad

PANELIST
Dr. Goh Shu Wei
Deymond Holdings Berhad

PUBLICATIONS
Selected full papers will be recommended for publications in citation-indexed and Scopus-indexed journals if they meet the journal requirements. Additional fee apply upon acceptance. ICPTech2021 have partnered with the following journals:

Second Announcement September 24, 2021
Please submit to: icptech2021@gmail.com

We invite submission of abstracts in any of the relevant fields, including but not limited to:

- Digital Agriculture
- Artificial Intelligence
- Autonomous systems
- Ergonomics, safety and health
- Sensor and control systems
- Bioprocess and environment
- Precision farming and Agrigis
- Process control and integration
- Process modelling and simulation
- Soil and water engineering
- Postharvest engineering and technology
- Food and agricultural waste management
- Natural resources and environmental systems
- Agricultural mechanization and automation
- Sensing system for plant and animal environment
- Agricultural processing
- Data analysis
- Machine learning
- Energy systems
- Machinery systems
- Bioinformation systems
- Plant biotechnology
- Sustainable agronomic practices
- Crop protection

CONFERENCE FEES

Local participant	RM200.00
Local student	RM100.00
International participant	USD50.00
International student	USD25.00

Website: icptech2021.upm.edu.my
Secretariat: icptech2021@gmail.com
Office: 603-9769 4280 / 012-2923994

Organized by: **UPM** Institute of Plantation Studies, Universiti Putra Malaysia

Co-organized by: **UPM** Department of Biological and Agricultural Engineering, Faculty of Engineering; **UPM** Department of Agriculture, Faculty of Agriculture; **UPM** Malaysian Society of Agricultural and Food Engineers (MSAFE); **UPM** Malaysian Palm Oil Board (MPOB)

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