



## CURRICULUM VITAE



### DR. DIYANA JAMALUDIN

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### Education

1. PhD. Agricultural Mechanisation and Automation Engineering, 2016, Universiti Putra Malaysia
2. M.Sc. Bioenvironmental Engineering, 2010, Universiti Putra Malaysia
3. B. Eng. Biological & Agricultural Engineering, 2005, Universiti Putra Malaysia.

### Areas of Interest

1. Controlled Environment Agriculture
2. Data Analytics and Machine Learning
3. Non-destructive Technique (NDT) in Agriculture
4. Precision Agriculture

### Professional Qualification/ Membership/ Affiliation

1. Member, Malaysian Society of Agricultural Engineers (MSAE)
2. Graduate Member, Board of Engineers Malaysia (BEM)
3. Member, American Society of Agricultural and Biological Engineers (ASABE)
4. Member, Institute of Engineers Malaysia (IEM)
5. Member, International Society of Horticultural Science (ISHS)
6. Member, Society of Engineering Education (SEEM)
7. Member, Persatuan Pegawai Akademik UPM (PPA UPM)

### Employment & Attachment

Position	Duration
1. Senior Lecturer, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	9 Jun 2016 – to date
2. Tutor, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	7 November 2005– 8 Jun 2016
3. Research Attachment, Department of Agricultural and Biosystems Engineering, Iowa State University USA	Jun 2011- November 2011
4. Research Assistant, Department of Plant Biology and Pathology, Rutgers University, New Jersey USA	October 2006– to April 2007

## Appointment

No.	Positon	Duration
1.	Academic Coordinator II, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	1 November 2024-31 Oktober 2026
2.	Head of Industry and Community Relations, Faculty of Engineering, UPM	3 January 2022 –2 January 2024
3.	External Academic Advisor Program Teknologi Mekanisasi Agro, Kolej Vokasional Lahad Datu	8 September 2021 – to date
4.	Promotion and Publication Coordinator, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	1 January 2021 – 3 January 2022
5.	Academic Coordinator II, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	1 Jun 2016– 20 September 2019
6.	Committee Member EAC Taskforce 2018 Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	November 2017- December 2019
7.	Facilitator, Program Global I-LEAD STEM UPM & PIBG SBPI Selandar, Faculty of Engineering, Asasi Pertanian and Faculty of Sciences, UPM.	18 December 2017-22 December 2017
8.	Committee Member, International Inbound Mobility Program	2 July- 2018- 15 July 2018
9.	Training Committee Engineering Education Interest Group (E <sup>2</sup> IG) Faculty of Engineering UPM	May 2018 -2024
10.	Committee Member “ <i>Pembentukan Program Baharu Master Mekanisasi Pertanian (Kerja Kursus)</i> ”	25 March 2017- 2020
11.	Committee and Developer UPM MOOC- Introductory to Engineering Mathematics.	August 2017 – 2019
12.	Secretariat Publicity and Programme, XIII Smart Farming Workshop. Crop Cultivation and Postharvest Technology	January 2019-August 2019
13.	Junior Associate Researcher SFTRC UPM	1 January 2019- to date
14.	Facilitator, Urban Agrischool	January 2019- to date
15.	Committee Member, Konvensyen Kebangsaan Kejuruteraan Pertanian dan Makanan 2019	November 2018- March 2019
16.	Scientific Team International Conference on Agricultural and Food Engineering 2020 (CAFEi 2020)	July 2019-February 2021
17.	Committee Member, Material Lecture Competition (MLC2020)	January 2020 to June 2021



## Research Project

Project No.	Project Title	Role	Year	Source of fund	Status
GP-IPS/2013/939814	Dielectric Spectroscopy measurement of <i>Labisia pumila</i> (Kacip Fatimah) water content and phytochemical content	Student Member	01/01/2014 - 31/12/2015	UPM	Completed
FRGS-5524357	Dielectric Spectroscopy measurement of <i>Labisia pumila</i> (Kacip Fatimah) water content and phytochemical content	Student member	30/11/2014-31/5//2015	MOHE	Completed
GIPP	Study of Authentic Assessment for Learning (AfL) in Engineering Mathematics PutraMOOC	Co-Researcher	2017- 2018	UPM	Completed
UPM-IPM	LED Supplemental Lighting in Rockmelon Production for Building Integrated Agriculture	Principle Researcher	15 Feb 2018 - 14 Feb 2022	UPM	Completed
FRGS-5540070	Data Fusion Spectrometry for Stingless Bee Honey Quality Analysis	Principle Researcher	1 January 2019- 31 September 2021	MOHE	Completed
FRGS -5540593	Understanding the influence of photosynthetic active radiation wavelengths on physical and phytochemical properties of tomatoes during postharvest storage for strategic postharvest management	Principle researcher	1 October 2023 – 30 September 2026	MOHE	On-going
Knowledge Transfer Grant Scheme (KTGS@PTJ)	Agri Cilik Hidroponik Pertanian Bandaran untuk Taski ABIM Cawangan Serdang	Project Leader	October 2023- October 2024	Faculty of Engineering	Completed

## Supervision

Students Name	Thesis Title	Level	Role	Graduation Year
Ubong Offiong David	Effect Of Photosynthetically Active Radiation (PAR) on the Postharvest Quality and Phytochemical Changes in Market Displayed Tomatoes	PhD	Supervisor	Expected 2025
Goh Jian Guan	Energy modelling of indoor farm operation for the growing of coriander and cherry tomatoes	PhD	Co-supervisor	Expected 2025
Muhamad Faiz Izzuddin Azmi	Stingless Bee Honey Adulteration and Characterization by Data Fusion Spectrometry	Master of Science	Supervisor	
Nur UI Atikah Ibrahim	Non-destructive Approach for the Determination of Nitrogen Status in Plant Through Color Image Processing and Artificial Intelligence	PhD	Co-Supervisor	Expected 2022
Nadirah Roslan	Effect of Multilayer Dye-Sensitized Solar Cell (DSSC) Rooftop Shading Greenhouse on Medicinal Herbs Under Closed-Loop System	Master of Science	Co-Supervisor	2021
Mohd Baharin Bin Lakimo (210662)	Development And Deployment of A Tinyml Model For Postharvest Tomato Quality Classification Using	Bachelor of Engineering	Main Supervisor	2025

	Edge Impulse			
Yip Jun Xian	Development Of IoT-Enabled Intelligent Nutrient Dosing Algorithm (Inda) For Hydroponics	Bachelor of Engineering	Main Supervisor	2024
Rabiahtul Aishah Zulkefle (203720)	Off-type Paddy Plants Identification Using RGB Images	Bachelor of Engineering	Main Supervisor	2023
Shree Tanusha Saravanan (198571)	Evaluation of Ventilation and Cooling Strategy inside a Greenhouse	Bachelor of Engineering	Main Supervisor	2022
Zaida Mohamed (183583)	LED Supplemental Lighting Design on Rock melon Growth	Bachelor of Engineering	Main Supervisor	2019
NurSakinah Abd Malik (183160)	Smart Environmental Monitoring for Hydroponic System	Bachelor of Engineering	Main Supervisor	2019
Hanif Fahmi Mohamed Zin (181442)	Determination of Grain Losses for AxialFlow Combine Harvester	Bachelor of Engineering	Main Supervisor	2018
Nur Shafiqah Bt Sapri (179133)	Determination of Pure and Adulterated <del>Sty</del> Bee Honey Based on Dielectric Properties	Bachelor of Engineering	Main Supervisor	2018
Nur Shahirah Binti Talib (177916)	Effect of Light Emitting Diodes (LED) on Leafy Plants in Indoor Vertical Farming	Bachelor of Engineering	Main Supervisor	2018
Nur Ainina binti Hazuan (180162)	Effect of LED Supplemental Lighting on Rockmelon Quality in Building Integrated Agriculture	Bachelor of Engineering	Main Supervisor	2018
Muhammad Dzafri Shahimi Abd Latiff (173750)	Quantification of Honey Adulteration Based on Dielectric Properties	Bachelor of Engineering	Main Supervisor	2017
Mohd. Shahrul Azwan Bin Jumadi (174830)	Impedance Properties as An Indicator of Rockmelon Quality and Maturity	Bachelor of Engineering	Main Supervisor	2017

## Teaching

No	Course Code and Name
1.	EAB3206-Biosystem Environment (3+0)
2.	EAB 3204- Agricultural Process Engineering (3+1)
3.	EAB4205-Controlled Environment (3+0)
4.	ECC3001- Engineering Mathematics I (3+0)
5.	EAB 3204- Agricultural Process Engineering (3+1)
6.	EAB3216 – Instrumentation for Biological System (2+1)
7.	EAB4949 – Bachelor Project (0+6)
8.	ENG3011- Engineering Seminar (1+0)

## Publications

### Journals (30 recent journals)

Offiong, U. D., Jamaludin, D., Jaafar, J. N., Khairudin, N., & Aziz, S. A. (2025). Enhancing and Modelling of Tomato Phytochemicals with LED Storage Treatment for Improved Market Shelf Life. *Journal of Food Processing and Preservation*, 2025(1), 6611040. <https://doi.org/10.1155/jfpp/6611040>

Er, E.Z., Harith, H.H., **Jamaludin, D.**, Abd Aziz, S. (2024). A Web-Based IoT Monitoring and Service System for Agricultural Applications. In: *IoT and AI in Agriculture*. Springer, Singapore. [https://doi.org/10.1007/978-981-97-1263-2\\_26](https://doi.org/10.1007/978-981-97-1263-2_26)

Offiong, U., **Jamaludin, D.**, Nakasha, J., & Khairudin, N. (2023). Impact of Photo-treatment on Tomato Physiological Qualities during Storage and On-shelf Display. *Advanced and Sustainable Technologies (ASET)*, 2(2). DOI:[10.58915/aset.v2i2.335](https://doi.org/10.58915/aset.v2i2.335)

Aini Amini Mohd Shukri, **Diyana Jamaludin**, Muhamad Saufi Mohd Kassim, Muhammad Hazwan Hamzah (2023). Development of Decision Support System (DSS) for Greenhouse Ventilation and Cooling Control, *Advances in Agricultural and Food Research Journal*, Vol. 4 (2) <https://doi.org/10.36877/aafrj.a0000369>

Yee Nie Goh, **Diyana Jamaludin**, Hazreen Haizi Harith, Alfadhl Yahya Alkhaled, Nurul Adilah Abdul Latiff, Samsuzana Abd Aziz. (2023). Long Range Wide Area Network (LoRaWAN) for Oil Palm Soil Monitoring. *IoT and AI in Agriculture: Self-sufficiency in Food Production to Achieve Society 5.0 and SDG's Globally*. Springer Nature Singapore, pg:97-124.

Nur Fizura Chin-Hashim, Alfadhl Yahya Khaled, **Diyana Jamaludin**, Samsuzana Abd Aziz (2022). Electrical Impedance Spectroscopy for Moisture and Oil Content Prediction in Oil Palm (*Elaeis guineensis* Jacq.) Fruitlets. *Plants MDPI*, Vol. 11 (23) pg:3373

Roslan N, Ya'acob ME, **Jamaludin D**, Hashimoto Y, Othman MH, Iskandar AN, Ariffin MR, Ibrahim MH, Mailan J, Jamaluddin AH, Mail MF, Aliah BSN, Lu L.(2021). Dye-Sensitized Solar Cell (DSSC): Effects on Light Quality, Microclimate, and Growth of *Orthosiphon stamineus* in Tropical Climatic Condition. *Agronomy*. 11(4):631. <https://doi.org/10.3390/agronomy1104063>

Ibrahim, N.U.A., Abd Aziz, S., **Jamaludin, D.**, Harith, H.H. (2021). Development of smartphone-based Imaging techniques for estimation of chlorophyll content in lettuces leaves. *Food Research 5 (Suppl.1):33-38* DOI: [https://doi.org/10.26656/fr.2017.5\(S1\).036](https://doi.org/10.26656/fr.2017.5(S1).036)

Azmi., M.F.I., **Jamaludin,D.**, Abd Aziz, S., Yusof, Y.A., Mustafah, A.M. (2021). Adulterated stingless bee honey identification using VIS-NIR spectroscopy technique. *Food Research 5 (Suppl.1):85-93*. DOI: [https://doi.org/10.26656/fr.2017.5\(S1\).035](https://doi.org/10.26656/fr.2017.5(S1).035)

Alfadhl Yahya Khaled, Samsuzana Abd Aziz, Siti Khairunniza Bejo, Nazmi Mat Nawi, **Diyana Jamaludin**, Nur Ul Atikah Ibrahim (2020). A comparative study on dimensionality reduction of dielectric spectral data for the classification of basal stem rot (BSR) disease in oil palm. *Computers and Electronics in Agriculture*. Volume 170. ISSN 0168-1699. <https://doi.org/10.1016/j.compag.2020.105288>. (<http://www.sciencedirect.com/science/article/pii/S0168169919324500>)

M.S.A. Jumadi and **D. Jamaludin** (2020). Non-destructive measurement of Rockmelon Fruit Properties using Electrical Impedance Spectroscopy (EIS) Technique. *ASM Science Journal* . Vol. 13, Special Issue 4, Academy Science Malaysia.

Khairudin Nurulhuda, M.H. Hamzah, Mahirah, **Jamaludin, D.**, Mohd Mustafah, A. - *Urban Agrischool: Urban Agriculture Education Through the Greenhouse Module* (2019). National Innovation Invention in Engineering and Built Environment, Centre of Engineering and Built Environment Education Research (PeKA), National, 9789832982609, [24-26].

Nur Ul Atikah Ibrahim, Samsuzana Abd Aziz, Norhashila Hashim, **Diyana Jamaludin**, Alfadhl Yahya Khaled (2019) Dielectric Spectroscopy of Palm Olein During Batch Deep Frying and Their Relation with Degradation Parameters. *Journal of Food Science*. Vol.84, issue 4, 792-797.

N. Roslan, M.E. Ya'acob, M.A.M. Radzi, Y. Hashimoto, **D. Jamaludin**, G. Chen (2018) Dye Sensitized Solar Cell (DSSC) greenhouse shading: New insights for solar radiation manipulation, *Renewable and Sustainable Energy Reviews*. Volume 92, Pages 171-186. ISSN 1364-0321, <https://doi.org/10.1016/j.rser.2018.04.095>. (<http://www.sciencedirect.com/science/article/pii/S1364032118303204>)

**Diyana Jamaludin**, Samsuzana Abd Aziz, Desa Ahmad, Hawa ZE Jaafar. (2016). Evaluation of Total Flavonoid Content of *Labisia pumila* Leaves Based on Impedance Measurement. *ISHS Acta Horticulturae 1152: III International Conference on Agricultural and Food Engineering*. Scopus Index. (Q3)

**Diyana Jamaludin**, Samsuzana Abd Aziz, Desa Ahmad, Hawa Z.E. Jaafar (2015). Impedance analysis of *Labisia pumila* plant water status, *Information Processing in Agriculture*, Volume 2, Issues 3–4, Pages 161-168, ISSN 2214-3173, <https://doi.org/10.1016/j.inpa.2015.07.00>



**D. Jamaludin**, S. Abd Aziz, N.A. Ibrahim. (2014). Dielectric Based Sensing for Banana Ripeness Assessment. *International Journal of Environmental Science and Development*, 5(3):286-293. ISSN:2010-0264 (Indexed by CAS, CABI, DOAJ, Crossref, ProQuest)

### Conference Proceedings

Shafiqah, **Jamaludin, D.** *Determination of pure and adulterated stingless bee honey based on dielectricspectroscopy* (2019) Konvensyen Kebangsaan Kejuruteraan Pertanian Dan Makanan 2019 21 Mac 2019, Wisma Tani, Kementerian Pertanian Malaysia, Putrajaya, Malaysian Society of Agricultural Engineers (MSAE), 9789671614518 , [97 - 101].

Sapri, NS, **Jamaludin, D.**, Mohd Mustafah A . *Adulteration identification of stingless bee honey using dielectric spectroscopy technique* (2019). 2<sup>nd</sup> International Stingless Bees Conference and Workshop, [31-07-2019 - 02-08-2019 ], Kota Kinabalu Sabah.

Jumadi, M.S.A. and **Jamaludin, D.** (2018). *Non-destructive assessment based on impedance propertiesto determine postharvest quality of rockmelon*. National Conference on Agricultural and Food Mechanization 2018 (NCAFM 2018) pp105-107. Kuching Sarawak.

**Diyana Jamaludin** and Mohd Shahrul Azwan (2017). Proceedings from Forum Pertanian IPIMA 2017. *Penentuan Kualiti Buah Rockmelon Berdasarkan Sifat Elektrik*. Serdang, Selangor.

**Diyana Jamaludin**, Samsuzana Abd Aziz, Desa Ahmad, Hawa ZE Jaafar. (2014). Proceedings from International Conference of Agricultural Engineering (AgEng): *Application of Impedance Spectroscopy Sensing for Leaf Water Status*, Zurich.

**D. Jamaludin**, S. Abd Aziz, D. Ahmad, H.ZE Jaafar. (2014). Proceedings from National Conference on Agricultural and Food Mechanization (NCAFM): *Impedance Characteristics of Labisia pumila Plant Water Stress*, Kota Kinabalu Sabah.

**Diyana, J.**, Desa, A., Jaafar, H.Z.E., Rezuwan, K., Amin, M.S.M. (2008). Proceedings of the 19<sup>th</sup> Malaysian Society of Plant Physiology Conference (MSPPC, 2008): *Validation of a Simple Temperature Model for Tropical Greenhouse with Evaporative Cooling Pads*. pp61-68, Penang.

**Diyana J.**, Rezuwan K., Ahmad, D. Illias, M.K., Hawa, J., Amin, M.S.M. (2008). Proceedings from National Conference on Agricultural and Food Mechanization (NCAFM): *Evaporative Pads and Exhaust Fans Cooling System for Temperate Crop Production in a Tropical Greenhouse*, pp 104-108. Melaka.

Ari E. Novy, Debora A. Esposito, **Diyana Jamaludin**, and Emily Merewitz. (2007) PS 72-15: The ESA/SER Joint Meeting (August 5 -- August 10, 2007). *Physiological responses to flooding stress in the federally threatened wetland plant Helonias bullata L (swamp pink)*. San Jose California.



## Paper Presented

**Diyana, J.,** Desa, A., Jaafar, H.Z.E., Rezuwan, K., Amin, M.S.M. (2008). Proceedings of the 19<sup>th</sup> Malaysian Society of Plant Physiology Conference (MSPPC, 2008): Validation of a Simple Temperature Model for Tropical Greenhouse with Evaporative Cooling Pads. Penang. 18-20 November 2008.

**Diyana, J.,** Desa, A., Hawa, J., Rezuwan, K. (2011). Effects of Microclimate on Cabbage Yield inside an Evaporative Tropical Greenhouse. 2011 ASABE Annual International Meeting. Louisville Kentucky. 7-11 August 2011.

**D. Jamaludin,** S. Abd Aziz, N.A. Ibrahim. (2014). Dielectric Based Sensing for Banana Ripeness Assessment. 3<sup>rd</sup> International Conference on Environment Science and Biotechnology (ICESBS 2013). Kuala Lumpur. 29-30 December 2013.

**Diyana Jamaludin,** Samsuzana Abd Aziz, Desa Ahmad, Hawa ZE Jaafar. (2014). Application of Impedance Spectroscopy Sensing for Leaf Water Status International Conference of Agricultural Engineering (AgEng). Zurich. 6-10 July 2014.

**D. Jamaludin,** S. Abd Aziz, D. Ahmad, H.ZE Jaafar. (2014). Impedance Characteristics of *Labisia pumila* Plant Water Stress. National Conference on Agricultural and Food Mechanization (NCAFM): Kota Kinabalu Sabah. 20-22 May 2014.

**Diyana Jamaludin,** Samsuzana Abd Aziz, Desa Ahmad, Hawa ZE Jaafar. (2014). Impedance Analysis of Physiological Parameters of Plants (*Labisia pumila*) Water Stress. 2<sup>nd</sup> International Conference on Agricultural and Food Engineering CAFEi2014, Kuala Lumpur. 1-3 December 2014.

**D. Jamaludin,** D. Ahmad, S. Abd Aziz, H.ZE. Jaafar. (2015). Non-Destructive Measurement of Leaf Water Potential Using Impedance Spectroscopy. The 7<sup>th</sup> International Conference on Sustainable Agriculture for Food, Energy and Industry in Regional and Global Context, ICSAFEI2015. Selangor. 25-27 August 2015.

**Diyana Jamaludin,** Samsuzana Abd Aziz, Desa Ahmad, Hawa ZE Jaafar. (2014). Evaluation of Total Flavonoid Content of *Labisia pumila* Leaves Based on Impedance Measurement. 3<sup>rd</sup> International Conference on Agricultural and Food Engineering CAFEi2014, Kuala Lumpur. 23-25 August 2014.

Sapri, N.S., **Jamaludin, D,** Aziz, S.A., Mohd Mustafah A. (2019) Adulteration Identification of Stingless Bee Honey Using Dielectric Spectroscopy Technique. 2<sup>nd</sup> International Stingless Bees Conference and Workshop, Kota Kinabalu Sabah. 31 July – 2 August 2019.

Rabiahtul Aishah Zulkefle, Samsuzana Abd Aziz, **Diyana Jamaludin,** Mahirah Jahari. Off-type paddy plants identification using RGB images. National Agricultural and Food Engineering Convention (NAFEC) 2024 on May 15-16, 2024 at Universiti Malaysia Perlis (UniMAP), Perlis

## Awards / Recognition

No	Name of awards	Title	Award Authority	Award Type	Year
1.	Industry and Community Appreciation Awards	Anugerah Kategori Komuniti Terbaik SMK Pengerang Utama Johor Urban Agrischool Greenwall	Universiti Putra Malaysia	University	2021
2.	Anugerah Perkhidmatan Cemerlang	Anugerah Perkhidmatan Cemerlang 2021	Universiti Putra Malaysia	University	2022



3.	Best Oral Presenter Award	Development of Decision Support System (DSS) for Greenhouse Ventilation and Cooling Control  Second Prize Winner	National Agricultural and Food Engineering Convention 2022  (NAFEC 2022)	National	2022
4.	Gold Medal Award	Putra Green Vertical Farming Model	ARC 2021 Malaysian Society of Agricultural and Food Engineers (MSAE)	International	2021
5	Anugerah Emas	KHAD (Kelulut Honey Adulteration Detector)	Pertandingan Inovasi Teknologi Pertanian dan Makanan Mampan	National	2021
6	Anugerah Perak	Greenhouse Ventilation, Cooling and Lighting Optimzer	Pertandingan Inovasi Teknologi Pertanian dan Makanan Mampan	National	2021
7	Silver award ISBCW Innovation Challenge	Portable stingless bee honey sensor (SB-honey QC)	International Institute of Plantation Management	International	2019
8.	Best Paper Award	Determination of pure and adulterated stingless bee honey based on dielectric properties	MALAYSIAN SOCIETY OF AGRICULTURAL ENGINEERS (MSAE)	National	2019
9.	Bronze Medal	Urban Agrischool: Urban Agriculture Education Through the Greenhouse Module	Pusat Penyelidikan Alam Bina dan Kejuruteraan UKM, JPN Selangor & BPLTV	National	2019
10.	Silver	MOOC Competition	International Medlit Conference 2018	International	2018
11.	Best Award Classed A	'Banana Ripeness Sensor'	International Engineering Invention and Innovation Exhibition (i-ENVEX)	International	2014
12..	Gold Medal	Banana Ripeness Sensor	International Engineering Invention and Innovation Exhibition (i-ENVEX)	International	2014
13.	Gold Medal	Dielectric Based Measurement of Agricultural Materials	International Engineering Invention and Innovation Exhibition (i-ENVEX)	International	2013
14.	Best Final Year Project	Development of Action Maps for Fertilizer Application at Paddy Field	Faculty of Engineering & FELCRA	Faculty	2005



## Industrial and Community Linkage

No	Activity	Year	Role
1.	Industrial Collaboration with Agri Space Tech Sdn. Bhd. (Industrial Training Placement, Job Position for Graduate, Collaboration in Final Year Project and Master Research)	2018	Project Leader
2.	Inbound Mobility Programme for International Undergraduate Students	2 July 2018-15 July 2018	Committee Member
3.	Global I-LEAD STEM CAMP 1MALAYSIA 2017	2017	Facilitator
4.	Collaboration with Kulim (M) Sdn Bhd, Agri Space Sdn Bhd, SK Sedenak. For Urban Agrischool Programme (Greenhouse Module)	2019	Facilitator
5.	Collaboration with Han JDQ L Sdn Bhd and AUMADA on LED Supplemental Lighting Project	2019	Project Leader
6.	Collaboration with SMK Pengerang Utama Johor, Kean Beng Lee Industries (M) Baba, Farmers Boy, Agri Space Tech Sdn Bhd, Perniagaan Tan and Department of Agriculture Johor for Community Project, Greenwall Module	2021	Project Leader
7.	Urban Agrischool: Agricilik Pertanian Bandaran Hidroponik bersama Taski ABIM Cawangan Serdang, Geran KTGS JINM Fakulti Kejuruteraan	2024	Project Leader

## Professional Services and Consultation

No	Year	Title	Authority
1.	2023	Microalgae potential as plants bio-fertilizer for agricultural farmers	World New Energy Centre Sdn. Bhd.
2.	2016	'Assessment and evaluation on greenhouse structure and operation at Rimbunan Kaseh Project (Pahang & Malacca)	Prime Minister's Office (ICU)



