

## CURRICULUM VITAE



Prof. Ts. Dr. Siti Khairunniza Bejo  
Director  
Institute of Plantation Studies  
Universiti Putra Malaysia

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Faculty of Engineering,  
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### Education

1. PhD Image Processing, 2006, University of Surrey, UK.
2. B.E.(Computer System and Communications), 2002, Universiti Putra Malaysia.

### Areas of Interest

1. Imaging Technology
2. Precision Agriculture
3. Remote Sensing
4. Artificial Intelligence
5. Internet of Things

### Professional Qualification/Membership/Affiliation

1. Chartered Engineer, The Institution of Engineering and Technology (IET) (2023 – to date)
2. Professional Technologist, Malaysia Board of Technologist (MBOT) (2022 – to date)
3. Graduate Technologist, Malaysia Board of Technologist (MBOT) (2022 – to date)
4. Member, The Institution of Engineering and Technology (IET) (2017 – to date)
5. Member, International Society of Precision Agriculture (ISPA) (2018 – to date)
6. Professional Member, Malaysian Society of Agricultural Engineers (MSAE) (2014 – to date)
7. Graduate Member, The Institution of Engineers Malaysia (IEM) (2013 - to date)
8. Executive Committee Member, IEEE GOLD Affinity Group (IEEE) (2011 – 2015)
9. Member, Institute of Electrical and Electronics Engineers (IEEE) (2008 - to date)
10. Member, Malaysian Remote Sensing Society (MRSS) (2008 - to date)

### Appointments

Position	Duration
1. Director, Institute of Plantation Studies	1 Feb 2024 – 31 Jan 2027
2. Member, Senate (Director), UPM	1 Feb 2024 – 31 Jan 2027
3. Member, Board of Institute Directors	1 Feb 2024 – 31 Jan 2027
4. Head, Smart Farming University Driven Research Program, UPM	2024 – to date
5. Member, University Research and Innovation Investment Summit (URIIS 2026) committee	2025 - 2026
6. Member, UPM Publication Committee	2025-2027
7. Patron, IKP Postgraduate Students Club (IKPPGSC)	2024-2027
8. Research Coordinator, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	1 Sept 2023 – 31 Jan 2024
9. Head, Smart Farming Technology Research Centre, Faculty of Engineering, UPM	1 Sept 2020 - 31 August 2023
10. Committee Member, Programme Development – <i>Bachelor Teknologi Pertanian Pintar Dengan Keupujian (BTPP)</i> , UPM.	14 Sept 2020 – 17 July 2024
11. Head, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	1 August 2016- 31 July 2020
12. Research Associate, Institute of Plantation Studies, UPM	2020-2022
13. Research Associate, Institute of Plantation Studies, UPM	2015-2018



14. Acting Head, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM 25 August-22 Nov 2014
15. Research Member, Smart Farming Technology Research Centre, UPM 2012-to date
16. Auditor, Full Accreditation Program, Universiti Putra Malaysia 2011-2013
17. Committee Member, Expert Group E-content, UPM. 2010-2012
18. Research Associate, Spatial and Numerical Modeling Laboratory, Institute of Advanced Technology, UPM 2010-2012
19. Industrial Training Coordinator, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM 2009
20. Academic Coordinator, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM 2007-2016
21. Head, Laboratory of Spatial Information Systems, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM 2007-to date
22. Research Associate, SMART Farming Technology Laboratory, Institute of Advanced Technology, UPM 2007-2010
23. Seminar Coordinator, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM 2006-2007

### Publications

**Scopus h-index: 26**

**Cited – Scopus/JCR/ERA (84) - JCR Q1 (33), Q2 (14), Q3 (1) & Q4 (6)**

**Non-Scopus: 15**

**Conference Proceedings: 59**

**Chapter in Book: 6**

**Professional Magazines: 6**

#### Journals and Proceedings

1. Islam, M. M., **Khairunniza-Bejo, S.**, Ahmad Hamdani, M. S., & Husin, N. A. (2025). Automatic weed detection in paddy field: A review. *Journal of Plant Diseases and Protection*. Pp1-12. <https://doi.org/10.1007/s41348-025-01209-8> (under publication process) (Q2)
2. Huang, Shaoguang, Wei Xiao, Hongyu Chen, **Siti Khairunniza Bejo**, and Hongyan Zhang. 2025. Hyperspectral Image Classification Based on a Locally Enhanced Transformer Network. *IEEE Transactions on Geoscience and Remote Sensing*, vol. 63, 1–17. <https://doi.org/10.1109/TGRS.2025.3566672>. (Q1)
3. Zhou, H., Shariff, A. R. M., **Bejo, S. K.**, Jahari, M., Mohd Shafri, H. Z. B., Omar, H. B., Nordin, L., Trisasonko, B., & Takeuchi, W. (2025). Estimating Mangrove Aboveground Biomass Using Sentinel-2 and ALOS-2 Imagery: A Case Study of the Matang Mangrove Reserve, Malaysia. *Forests*, 16(10), 1517. <https://doi.org/10.3390/f16101517>. (Q2)
4. Husin, Nur Azuan, R. Clement Ridu, Normahnani Md Noh, and **Siti Khairunniza Bejo**. 2025. Growth Monitoring of Healthy and BSR-Infected Oil Palm Seedlings Using Ground-based LiDAR. *Pertanika Journal of Science & Technology* 33 (3): 1137–1158. (Q3)
5. Sudau, E. T., Norhashila, H., **Siti, K. B.**, Siti, I. I., and Maimunah, M. A. 2025. Characterisation of Physicochemical Properties of Mango Infected by Colletotrichum gloeosporioides. *Food Research* 9 (Suppl. 1): 34–41.
6. Mohd Johari, S.N.A., **Khairunniza-Bejo, S.**, Mohamed Shariff, A.R. et al. Effect of datasets size on the machine learning performance of the bagworm, *Metisa plana* (Walker) infestation using UAV remote sensing. *J Plant Dis Prot* 132, 52 (2025). <https://doi.org/10.1007/s41348-024-01020-x>. 2024. (Q2) (JCR).
7. **Khairunniza-Bejo, S.**, Baqir-Mahdi, W.M., Nurhafizi-Zahari, M. Automatic counting of Paulownia trees using UAV images and template matching technique. *Food Research*. 2024. (Scopus). (Accepted).
8. **Khairunniza-Bejo S**, Ibrahim MF, Hanafi M, Jahari M, Ahmad Saad FS, Mhd Booker MA. Automatic Paddy Planthopper Detection and Counting Using Faster R-CNN. *Agriculture*.

- 2024; 14(9):1567. <https://doi.org/10.3390/agriculture14091567> (Q1) (JCR).
9. Nur Atirah Muhadi, Ahmad Fikri Abdullah, **Siti Khairunniza-Bejo**, Muhammad Razif Mahadi, Ana Mijic & Zoran Vojinovic. Deep learning and LiDAR integration for surveillance camera-based river water level monitoring in flood applications. *Nat Hazards* 120, 8367–8390 (2024). <https://doi.org/10.1007/s11069-024-06503-6> (Q2) (JCR).
  10. Johari SNAM, **Khairunniza-Bejo S.**, Shariff ARM, Husin NA, Masri MMM, Kamarudin N. Detection of Bagworm Infestation Area in Oil Palm Plantation Based on UAV Remote Sensing Using Machine Learning Approach. *Agriculture*. 2023; 13(10):1886. <https://doi.org/10.3390/agriculture13101886>. (Q1) (JCR).
  11. Ibrahim, M.F.; **Khairunniza-Bejo, S.**; Hanafi, M.; Jahari, M.; Ahmad Saad, F.S.; Mhd Bookeri, M.A. Deep CNN-Based Planthopper Classification Using a High-Density Image Dataset. *Agriculture* 2023, 13, 1155. <https://doi.org/10.3390/agriculture13061155>. (Q1) (JCR)
  12. Johari SNAM, **Khairunniza-Bejo S**, Shariff ARM, Husin NA, Masri MMM, Kamarudin N. Automatic Classification of Bagworm, *Metisa plana* (Walker) Instar Stages Using a Transfer Learning-Based Framework. *Agriculture*. 2023; 13(2):442. <https://doi.org/10.3390/agriculture13020442>. (Q1) (JCR).
  13. Yu Hong Haw, Yan Chai Hum, Joon Huang Chuah, Wingates Voon, **Siti Khairunniza-Bejo**, Nur Azuan Husin, Por Lip Yee, Khin Wee Lai. Detection of Basal Stem Rot Disease Using Deep Learning. *IEEE Access*, vol. 11, pp. 49846-49862, 2023, doi: 10.1109/ACCESS.2023.3276763. (Q1) (JCR).
  14. Maimunah Mohd Ali, Norhashila Hashim, **Siti Khairunniza Bejo**, Mahirah Jahari, Nurul Aqilah Shahabudin (2023). Innovative non-destructive technologies for quality monitoring of pineapples: Recent advances and applications, *Trends in Food Science & Technology*, 133(2023):176-188. <https://doi.org/10.1016/j.tifs.2023.02.005>. (Q1) (JCR).
  15. Yong, L.Z., **Khairunniza-Bejo, S.**, Jahari, M., Muharam, F.M. Automatic Disease Detection of Basal Stem Rot Using Deep Learning and Hyperspectral Imaging. *Agriculture* 2023, 13, 69. <https://doi.org/10.3390/agriculture13010069> (Q1) (JCR).
  16. Haw YH, Lai KW, Chuah JH, **Bejo SK**, Husin NA, Hum YC, Yee PL, Tee CATH, Ye X, Wu X. 2023. Classification of basal stem rot using deep learning: a review of digital data collection and palm disease classification methods. *PeerJ Computer Science* 9:e1325 <https://doi.org/10.7717/peerj-cs.1325> (Scopus)
  17. Alfatni MSM, **Khairunniza-Bejo S**, Marhaban MHB, Saaed OMB, Mustapha A, Shariff ARM (2022). Towards a Real-Time Oil Palm Fruit Maturity System Using Supervised Classifiers Based on Feature Analysis. *Agriculture*. 2022; 12(9):1461. <https://doi.org/10.3390/agriculture12091461> (Q1) (JCR).
  18. Ruslan R, **Khairunniza-Bejo S**, Jahari M, Ibrahim MF (2022). Weedy Rice Classification Using Image Processing and a Machine Learning Approach. *Agriculture*. 2022; 12(5):645. <https://doi.org/10.3390/agriculture12050645> (Q1) (JCR).
  19. Siti Nurul Afiah Mohd Johari, **Siti Khairunniza-Bejo**, Abdul Rashid Mohamed Shariff, Nur Azuan Husin, Mohamed Mazmira Mohd Basri and Noorhazwani Kamarudin (2022). Identification of Bagworm (*Metisa plana*) Instar Stages using Hyperspectral Imaging and Machine Learning Techniques. *Computers and Electronics in Agriculture*, Volume 194, 2022, 106739. (Q1) (JCR).
  20. Husin, N.A., **Khairunniza-Bejo, S.**, Ahmad F. Abdullah, Muhamad S. M. Kassim and Desa Ahmad (2022). Multi-temporal analysis of terrestrial laser scanning data to detect basal stem rot in oil palm trees. *Precision Agric* 23, 101–126 (2022). <https://doi.org/10.1007/s11119-021-09829-4>. (Q1) (JCR).
  21. Johari, S.N.A.M., **Khairunniza-Bejo, S.** Automated rubber seed ventral surface identification using hue, saturation, value (HSV) image processing and a decision rule approach. *J Rubber Res* (2022). <https://doi.org/10.1007/s42464-022-00155-6>. (Q4) (JCR).
  22. Mustafah, A.M., **Khairunniza-Bejo, S.** & Lim, Y (2022). The development of an automatic

- rubber seed sowing system with machine vision assistance. *J Rubber Res* (2022). <https://doi.org/10.1007/s42464-022-00153-8>. (Q4) (JCR).
23. Lazim, S. S. R. M., Nawawi, M. N., **Bejo, S. K.**, Shariff, A. R. M. and Abdullah, N (2022). Prediction and classification of soluble solid contents to determine the maturity level of watermelon using visible and shortwave near infrared spectroscopy. *International Food Research Journal* 29(6): 1372 – 1379. <https://doi.org/10.47836/ifrj.29.6.13> (Q4) (JCR).
  24. Aiman Nabilah Noor Azmi, **Siti Khairunniza-Bejo**, Mahirah Jahari, Farrah Melissa Muharam, and Ian Yule. (2021). Identification of a Suitable Machine Learning Model for Detection of Asymptomatic *Ganoderma boninense* Infection in Oil Palm Seedlings Using Hyperspectral Data. *Applied Sciences*, 2021, 11, 11798. 8. <https://doi.org/10.3390/app112411798> (Q2). (JCR)
  25. **Khairunniza-Bejo**, Siti, Muhamad S. Shahibullah, Aiman N.N. Azmi, and Mahirah Jahari (2021). Non-Destructive Detection of Asymptomatic *Ganoderma boninense* Infection of Oil Palm Seedlings Using NIR-Hyperspectral Data and Support Vector Machine. *Applied Sciences*, 11(22): 10878. <https://doi.org/10.3390/app112210878> (Q2). (JCR)
  26. Aziz, Mohd H.A., **Siti Khairunniza-Bejo**, Aimrun Wayayok, Fazirulhisyam Hashim, Naoshi Kondo, and Aiman N.N. Azmi (2021). Temporal Changes Analysis of Soil Properties Associated with *Ganoderma boninense* Pat. Infection in Oil Palm Seedlings in a Controlled Environment. *Agronomy* 11, (11): 2279. <https://doi.org/10.3390/agronomy11112279> (Q1). (JCR)
  27. Izrahayu Che Hashim, Abdul Rashid Mohamed Shariff, **Siti Khairunniza Bejo**, Farrah Melissa Muharam and Khairulmazmi Ahmad (2021). Classification of Non-Infected and Infected with Basal Stem Rot Disease using Thermal Images and Imbalanced Data Approach. *Agronomy*. 2021; 11(12):2373. <https://doi.org/10.3390/agronomy11122373> (Q1). (JCR)
  28. Zhi Hong Kok, Abdul Rashid Mohamed Shariff, Meftah Salem M. Alfatni, **Siti Khairunniza-Bejo** (2021). Support Vector Machine in Precision Agriculture: A review, *Computers and Electronics in Agriculture*, 191: 106546 (Q1). (JCR)
  29. Muhadi, N.A., Abdullah, A.F., **Bejo, S.K.**, Mahadi, M.R., Mijic A (2021). Deep Learning Semantic Segmentation for Water Level Estimation Using Surveillance Camera. *Appl. Sci.*, 11: 9691. (Q2). (JCR)
  30. Alfadhl Yahya Khaled, Samsuzana Abd Aziz, **Siti Khairunniza Bejo**, Nazmi Mat Nawawi and Idris Abu Seman. (2021). Artificial intelligence for spectral classification to identify the basal stem rot disease in oil palm using dielectric spectroscopy measurements. *Trop. plant pathol.* (2021): 1-12 (Q3). (JCR)
  31. Zhi Hong Kok, Abdul Rashid Bin Mohamed Shariff, **Siti Khairunniza-Bejo**, Hyeon-Tae Kim, Tofael Ahamed, See Siang Cheah and Siti Aishah Abd Wahid (2021). Plot-based classification of macronutrient levels in oil palm trees with landsat-8 images and machine learning. *Remote Sensing*, 2021, 13(11), 2029: 1-29 (Q2). (JCR)
  32. Izrahayu Che Hashim, Abdul Rashid Mohamed Shariff, **Siti Khairunniza Bejo**, Farrah Melissa Muharam and Khairulmazmi Ahmad (2021). Machine-Learning Approach Using SAR Data for The Classification of Oil Palm Trees That are Non-Infected and Infected With The Basal Stem Rot Disease. *Agronomy*, 11(3):532. <https://doi.org/10.3390/agronomy11030532> (Q1). (JCR)
  33. Z. Zulkifli, **S. Khairunniza-Bejo**, F. M. Muharam, I. Yule, R. Pullanagari, L. Dan, W. N. Z. Zainol@Abdulllah. (2021). Biomass and Yield Estimation Using Terrestrial Laser Scanning Data. *Basrah J. Agric. Sci.*, 34(Special Issue 1): 54-62, 2021. (Scopus index).
  34. Azuan, N.H., **Khairunniza-Bejo, S.**, Abdullah, A.F., Kassim, M.S.M. and Ahmad, D. (2021). Relationship of oil palm crown features extracted using Terrestrial Laser Scanning for Basal Stem Rot disease classification. *Basrah J. Agric. Sci.*, 34(Special Issue 1): 1-10. (Scopus index).
  35. Mohd Johari, S. N. A., **Khairunniza-Bejo, S.**, Abdol Lajis, G., Jeffery Daim, L. D., Neoh, B. K., Yap, Y. C., and Ithnin, N. (2021). Detecting BSR-Infected Oil Palm Seedling using Thermal Imaging Technique. *Basrah J. Agric. Sci.*, 34(Special Issue 1), 73-80, 2021. (Scopus index).

36. Aiman Nabilah, N.A., **Khairunniza-Bejo, S.**, Mahirah, J., Muharram, F.M., Yule, I. (2021). Differences between healthy and *Ganoderma boninense* infected oil palm seedlings using spectral reflectance of young leaf data. *Basrah J. Agric. Sci.*, 34(Special Issue 1): 171-179, 2021. (Scopus index).
37. Izat Jaris Dzulkifli, Muhamad Saufi Mohd Kassim and **Siti Khairunniza Bejo** (2021). Development of 360-degree imaging system for fresh fruit bunch (FFB) identification. *Journal of Agricultural and Food Engineering* 4 (2020) 0028: 1-9.
38. Aiman Nabilah Noor Azmi, **Siti Khairunniza-Bejo**, Mahirah Jahari, Farrah Melissa Muharam, Ian Yule and Nur Azuan Husin. (2020). Early Detection of *Ganoderma boninense* in Oil Palm Seedlings Using Support Vector Machines. *Remote Sensing*, 12(3920): 1-23. (Q1). (JCR)
39. Nur Azuan Husin, **Siti Khairunniza-Bejo**, Ahmad Fikri Abdullah, Muhamad Saufi Mohd Kassim, Desa Ahmad and Mohd Hamim Abdul Aziz. (2020). Classification of Basal Stem Rot disease in oil palm plantations using terrestrial laser scanning data and machine learning. *Agronomy*, 10(11)(1624): 1-23. (Q1). (JCR)
40. Nur Azuan Husin, **Siti Khairunniza-Bejo**, Ahmad Fikri Abdullah, Muhamad Saufi Mohd Kassim, and Desa Ahmad. (2020). Study of the oil palm crown characteristics associated with Basal Stem Rot (BSR) disease using stratification method of point cloud data. *Computers and Electronics in Agriculture*, 178(105810):1-9. (Q1). (JCR)
41. Md Imam Hossain, Khairulmazmi Ahmad, Yasmeen Siddiqui, Norsazilawati Saad, Ziaur Rahman, Ahmed Osumanu Haruna, **Siti Khairunniza Bejo**. (2020). Current and prospective strategies on detecting and managing *colletotrichumfalcatum* causing red rot of sugarcane. *Agronomy*, 10(1253):1-29. (Q1). (JCR)
42. Nur Atirah Muhadi , Ahmad Fikri Abdullah , **Siti Khairunniza Bejo** , Muhammad Razif Mahadi, Ana Mijic. (2020). The Use of LiDAR-Derived DEM in Flood Applications: A Review. *Remote Sensing*, 12(2308):1-20. (Q2). (JCR)
43. Nur Atirah Muhadi , Ahmad Fikri Abdullah , **Siti Khairunniza Bejo** , Muhammad Razif Mahadi, Ana Mijic. (2020). Image Segmentation Methods for Flood Monitoring System. *Water*, 12( 1825):1-10. (Q2). (JCR)
44. Nur Azuan Husin, **Siti Khairunniza-Bejo**, Ahmad Fikri Abdullah, Muhamad Saufi Mohd Kassim, and Desa Ahmad. (2020). Application of Ground-Based LiDAR for Analysing Oil Palm Canopy Properties on the Occurrence of Basal Stem Rot (BSR) Disease. *Scientific Reports*, 10: 6464. (Q1). (JCR)
45. Khaled, A.Y., Abd Aziz, S., **Khairunniza Bejo, S.**, Mat Nawati, N., Jamaludin, D., Ibrahim, N.U.A. (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*, 170 (2020): 105288. (Q1) (JCR)
46. Mohd Ali, M., Hashim, N., **Bejo, S.K.**, Shamsudin, R. (2020). Comparison of laser backscattering imaging and computer vision system for grading of seedless watermelons. *Journal of Food Measurement and Characterization*, 14(1), pp. 69-77. (Q3) (JCR)
47. Mohd Ali, M., Hashim, N., **Bejo, S.K.**, Shamsudin, R. (2020). Correlation between Physicochemical Changes of Seeded and Seedless Watermelons during Postharvest Storage, *International Journal of Postharvest Technology and Innovation*, 7(1):73-86. (Scopus index).
48. Nur Azuan Husin, **Siti Khairunniza-Bejo**, Ahmad Fikri Abdullah, Muhamad Saufi Mohd Kassim, and Desa Ahmad. (2019). Analysis of Changes in Oil Palm Canopy Architecture from Basal Stem Rot Using Terrestrial Laser Scanner. *Plant Disease*, 103:3218-3225. (Q1). (JCR)
49. Ruslan, R., **Khairunniza-Bejo, S.**, Rukunudin, I.H, Jahari, M. and Ibrahim, M.F. (2020). Development of a machine vision system for rice seed inspection system. *Food Research* 4 (Suppl. 6): 150 - 156. (Scopus index.)
50. Mohd Hamim Abdul Aziz, **Siti Khairunniza-Bejo**, Fazirulhisyam Hashim, Nur Hidayah Ramli, and Desa Ahmad. (2019). Evaluations of Soil Resistivity in Relation to Basal Stem Rot Incidences Using Soil Moisture Sensor. *Pertanika J. Sci. & Technol*, 27(S1), pp. 225 – 234. (Q3) (JCR)
51. Nur Azuan Husin, **Siti Khairunniza-Bejo**, Ahmad Fikri Abdullah, Muhamad Saufi Mohd Kassim, and Desa Ahmad. (2019). Effects of Basal Stem Rot on Oil Palm Interfrond Angles

- for Different Severity Levels. *Journal of Advanced Agricultural Technologies* 6(2), pp. 113-117.
52. Maryam Khosrokhani, **Siti Khairunniza-Bejo** and Biswajeet Pradhan. (2018). Geospatial technologies for detection and monitoring of Ganoderma basal stem rot infection in oil palm plantations: a review on sensors and techniques. *Geocarto International*, 33(3) pp. 260-276. (Q2)(JCR).
  53. Khaled, A.Y., Abd Aziz, S., **Khairunniza Bejo, S.**, Mat Nawi, N., Abu Seman, I., Izzuddin, M.A. (2018). Development of classification models for basal stem rot (BSR) disease in oil palm using dielectric spectroscopy. *Industrial Crops and Products*, 124, pp. 99-107. (Q1) (Scopus index)
  54. **Siti Khairunniza-Bejo**, Nur Hidayah Ramli and Farrah Melissa Muharam. (2018). Wireless Sensor Network (WSN) Applications in Plantation Canopy Areas: A Review. *Asian Journal of Scientific Research*, 11 (2), pp. 151-161. (Scopus index)
  55. Lin, M.G., Lasekan, O., Saari, N., **Khairunniza-Bejo, S.** (2018). Effect of chitosan and carrageenan-based edible coatings on post-harvested longan (*Dimocarpus longan*) fruits. *CYTA - Journal of Food*, 16 (1), pp. 490-497. (Q3) (JCR)
  56. Sowat, S.N., Wan Ismail, W.I., Mahadi, M.R., **Bejo, S.K.**, Kassim, M.S.M. (2018). Trend in the development of oil palm fruit harvesting technologies in Malaysia. *Jurnal Teknologi*, 80 (2), pp. 83-91. (Q4) (JCR)
  57. Khaled, A.Y., Abd Aziz, S., **Bejo, S.K.**, Nawi, N.M., Seman, I.A., Onwude, D.I. (2018). Early detection of diseases in plant tissue using spectroscopy—applications and limitations. *Applied Spectroscopy Reviews*, 53 (1), pp. 36-64. (Q3) (JCR)
  58. Khaled, A.Y., Abd Aziz, S., **Bejo, S.K.**, Nawi, N.M., Abu Seman, I. (2018). Spectral features selection and classification of oil palm leaves infected by Basal stem rot (BSR) disease using dielectric spectroscopy. *Computers and Electronics in Agriculture*, 144, pp. 297-309. (Q1) (JCR)
  59. Mee Gie Lin, Ola Lasekan, Nazamid Saari, and **Siti Khairunniza-Bejo**. (2017). The Effect of the Application of Edible Coatings on or before Ultraviolet Treatment on Postharvested Longan Fruits. *Journal of Food Quality*, 2017 (5454263): 1-11. (Q4) (Scopus index)
  60. **Siti Khairunniza-Bejo**, Ainol Najwa and Hazreen H. Harith. (2017). The Development of a 3D Model of Oil Palm Fresh Fruit Bunch (FFB) for Mass Estimation. *Journal of Engineering and Applied Sciences*, 12(22):5956-5959.
  61. Sharence Nai Sowat, Wan Ishak Wan Ismail, **Siti Khairunniza-Bejo**, Muhammad Razif Mahadi, Muhamad Saufi Mohd Kasim. (2017). Design and Feasibility Study of a Surface-Irregularities Adaptive Tracked Crawler Based on Oil Palm Tree Morphological Features. *Journal of Engineering and Applied Sciences*, 12(22):5949-5955.
  62. Siti Nurul Afiah M. Johari, **Siti Khairunniza Bejo**, and W. Ishak Wan Ismail. (2017). Identification of Dorsal and Ventral Surface of Rubber Seed using Image Processing and Machine Learning Approach. *Sci. Int. (Lahore)*, 29(2), 121-125.
  63. Mohd Ali, M. Hashim, N., **Bejo, S.K.**, and Shamsudin, R. (2017). Laser-induced backscattering imaging for classification of seeded and seedless watermelons. *Computer and Electronics in Agriculture*, 140: 313-316. (Q1, IF: 2.201) (JCR)
  64. Mohd Ali, M. Hashim, N., **Bejo, S.K.**, and Shamsudin, R. (2017). Quality Evaluation of Watermelon using Laser-induced Backscattering Imaging during Storage. *Postharvest Biology and Technology*, 123: 51-59. (Q1, IF: 2.618) (JCR)
  65. Mohd Ali, M. Hashim, N., Shamsudin, R., and **Bejo, S.K.** (2017). Optical parameters in food and agricultural processing. *International Food Research Journal*, 24(3): 908-914. (Q4) (JCR)
  66. Mohd Ali, M. Hashim, N., **Bejo, S.K.**, and Shamsudin, R. (2017). Rapid and Nondestructive Techniques for Internal and External Quality Evaluation of Watermelons: A Review. *Scientia Horticulturae*, 225(2017): 689-699. (Q1, IF: 2.618) (JCR)
  67. Mohd Ali, M., Hashim, N., **Bejo, S.K.**, Shamsudin, R. (2017). Determination of the difference on color changes of watermelons by laser light backscattering imaging. *Journal of Food Science and Technology*, 54(11), pp. 3650-3657. (Q2) (JCR)
  68. Marini Nafi, Murni Rahim & **Siti Khairunniza-Bejo** (2017). Agarwood Chips Grading Using Neural Network. *Politeknik & Kolej Komuniti Journal of Engineering and Technology*, Vol.1: 31-47.
  69. Noryusdiana Mohamad Yusoff, Farrah Melissa Muharam & **Siti Khairunniza-Bejo** (2017). Towards the use of remote-sensing data for monitoring of abandoned oil palm lands in Malaysia: a semi-automatic approach. *International Journal of Remote Sensing* (Q2), Vol. 38, No. 2, 432–449. (JCR)

70. Mohammed Oludare Idrees, Biswajeet Pradhan, Manfred F. Buchroithner, Helmi Z. M. Shafri, **Siti K. Bejo** (2016). Assessing the transferability of a hybrid Taguchi-objective function method to optimize image segmentation for detecting and counting cave roosting birds using terrestrial laser scanning data. *Journal of Applied Remote Sensing*, 10(3): 1-16. (Q4) (JCR)
71. **Khairunniza-Bejo, S.**, Sumgap, N., and Siti, N.A.M.J. (2016). Relationship between Soil Moisture Content in Paddy Field and Its Image Texture. *Jurnal Teknologi*, 78:1–2 (2016): 93-96. (Scopus index)
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2. Nur Azuan Husin and **Siti Khairunniza Bejo** (2022). LiDAR in oil palm disease detection. Coordinates, Volume XVIII, Issue 4, April 2022 p. 6-9.
3. **Khairunniza-Bejo, S.** (2020). Preparing Agricultural and Biosystems Engineers for Agriculture 4.0. Jurutera, The Ingenieur, Vol 84, October-December 2020 p. 35-39.
4. **Khairunniza-Bejo, S.** (2017). Use of Unmanned Aerial Vehicles (UAVs) in Oil Palm Plantations. Jurutera, The Institution of Engineers Malaysia, October 2017, p. 24-26.
5. **Khairunniza-Bejo, S.** (2012). Mangrove Forest Mapping. Synthesis, Issue 37: p. 20
6. Norasma,C.Y.N., Shariff,A.R.M., Amin, M.S.M., **Khairunniza-Bejo, S.** and Mahmud, A.R. (2009).Web-Based GIS Decision Support System for Paddy Precision Farming. GIS Development, p. 1-7.

#### Research Grants

**Total Number of Research Grants: 32**

**Total Number of Research Grants (as Principal Investigator): 16**

**Total Value of Research Grants: RM6,818,385.55**

No	Project Title	Amount (RM)	Year	Source of Fund	Role
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1.	Weed Detection in Paddy Fields Based on UAV Imagery and Artificial Intelligence	38250.00	2024-2027	APCU-BARC, Bangladesh	Main researcher
2.	Rice Production Estimation in Bangladesh using GIS and Remote Sensing	38250.00	2025-2028	APCU-BARC, Bangladesh	Main researcher
3.	Species Diversity of Fungi and Environmental Impacts in Disturbed and Undisturbed Forest in Malaysia	RM143,654.55	2025-2027	NCTF	Co-researcher
4.	Pineapple AI-app: A transformative Digital Economic Advisor Leveraging AI and UAV Technology to Boost Economy of MD2 Pineapple Farmers	RM100,000.00	2025-2027	Geran Putra Berimpak	Co-researcher
5.	Synergizing Acoustic Spectrogram and Advanced Imaging Techniques for Comprehensive Cocoa Pods Quality Evaluation	RM134,000.00	2024-2026	FRGS	Co-researcher
6.	Development of machine vision system for automatic plant health levels evaluation due to <i>ganoderma boninense</i> infection in an in vitro setup	RM33,000.00	2023-2025	Geran Industry - FGV	Main researcher
7.	Implementation of imaging and artificial intelligence technology in agriculture for crop protection	RM10,000	2023-2025	Geran Putra Inisiatif	Main researcher
8.	IoT-based integrated sensing for basal stem rot disease detection in oil palm plantation	RM35,000.00	2023-2024	Geran Putra IPM	Co-researcher
9.	Regional Professorial Chair Grant	USD 5,000.00	2022-2023	SEARCA	Main researcher
10.	Drone application for <i>Ganoderma boninense</i> disease detection in oil palm plantation	RM60,000.00	2021-2023	Geran Putra IPM	Co-researcher
11.	Extension of Electrical Resistance (ER) Based Basal Stem Rot (BSR) Detection That Includes Macro Monitoring at Plantation and Nursery Level With Application of Treatment	RM454,000.00	2020-2023	PRGS2.0	Main researcher

12.	Big Data Platform for Pineapple Management System	RM100,000.00	2020-2022	GP-IPB	Main researcher
13.	Putra Makers Space	RM60,000.00	2019-2025	MOHE	Co-researcher
14.	Data Fusion of Spectral Reflectance, Biotic and Abiotic Parameters for Bagworm Detection and Prediction Modeling in Palm Oil Plantation	RM99,025.00	2019-2023	FRGS, MOHE	Main researcher
15.	A Novel Methodology for Ganoderma Disease Prevention Using Deep Learning (DL)	RM97,000.00	2019-2023	FRGS, MOHE	Co-researcher
16.	Smart Management and Information System for Hydroponic Culture System	RM122,500.00	2019-2022	Geran Putra Berimpak	Co-researcher
17.	Prediction of MacroNutrients Status (Nitrogen, Phosphorus and Potassium) in Oil Palm Trees By Remote Sensing	RM124,800.00	2019-2022	Asia-Pacific Telecommunity (APT), Korea	Co-researcher
18.	Key technology of orchard nitrogen pollution simulation and its application on emission reduction through remote sensing big data	RM50,000.00	2018-2019	Guangdong Science and Technology, China	Co-researcher
19.	Machine Vision System For Rice Quality Evaluation Using Fluorescence Technique	RM60,000.00	2018-2019	IPM	Co-researcher
20.	Multispectral Remote Sensing For Nitrogen Fertilizer Management in Oil Palm	RM19,000.00	2016-2018	GP-IPS	Co-researcher
19.	Impedance Spectroscopy For Basal Stem Rot Disease Analysis In Oil Palm	RM20,000.00	2016-2018	GP-IPS	Co-researcher
20.	Assessment of Oil Palm Tree Productivity using Computer Vision	RM63,800.00	2015-2018	FRGS, MOHE	Main researcher
21.	Application of the Nanodelivery System and Nanosensor in Smart Farming for Actual Detection and Control of Ganoderma Boninense	RM1,500,000.00	2015-2020	LRGS, MOHE	Main researcher
22.	Comprehensive Crop Information for Advance Basal Stem Rot (BSR) Oil Palm	RM288,800.00	2015-2017	Geran Putra IPB (Sub-Project)	Co-researcher

Management					
23.	Detection of the Basal Stem Rot (BSR) using Imaging Technology and Soil Sensor	RM165,200.00	2014-2015	Geran Putra IPB (Sub-Project)	Main researcher
24.	Mangrove Biomass Modelling and Mapping Using Satellite Remote Sensing and GIS	RM15,000.00	2014-2015	Geran Putra IPS	Main researcher
25.	Characterization of optical parameters of laser induced backscattering imaging and its interaction with seeded and seedless properties in watermelon	RM83,200.00	2014-2017	FRGS	Co-researcher
26.	Quality Control of Paddy Rice Using Thermal Image Processing	RM253,156.00	2012-2014	EScience Fund, MOSTI	Main researcher
27.	Uncertainty Assesment of Topographic Factor in Soil Loss Prediction Using DEMs for Highland Agriculture Fertility Conservation	RM50,000.00	2011-2013	FRGS	Co-researcher
28.	Novel Anolyte Products for a Safe and Healthy Production of Chickens	RM2,000,000.00	2007-2010	TechnoFund, MOSTI	Co-researcher
29.	3D Liver Model for Hepatocellular Carcinoma (HCC) Pre-Surgical Planning	RM160,000.00	2007-2009	EScience Fund, MOSTI	Co-researcher
30.	Elastic Image Registration for Land Movement Monitoring for Landslides Detection and Prediction	RM185,000.00	2006 - 2009	EScience Fund, MOSTI	Main researcher
31.	Local Similarity Measure for Forest Monitoring	RM80,000.00	2006 - 2009	FRGS, MOHE	Main researcher
32.	Rice Yield Prediction Model for Variable Rate Management using Neural Network	RM193,000.00	2009 - 2012	RUGS, UPM	Main researcher

Intellectual Properties		
No	Year	Title
Copyright		

1. 2024 **Khairunniza-Bejo, S.**, Yong, L.Z., Jahari, M., Muharam, F.M. (2024). Automatic Basal Stem Rot Detection Using Deep Learning and Hyperspectral Imaging (DBSRSPEC V1.0) [CRLY2024W08182]
2. 2022 **Khairunniza-Bejo, S.**, Azuan, N., Abdullah, A.F., Kassim, M.S.M. (2022). Crown Biometrics System for *Ganoderma Boninense* Infection Detection in Oil Palm. [LY2021W06050]
3. 2022 **Khairunniza-Bejo, S.**, Abdul Aziz, M. H., Wayayok, A., Hashim, F. (2022). Soil Sensor Network System (SSNS) for *Ganoderma Boninense* Infection Detection in Oil Palm Seedlings. [LY2021W06066]
4. 2022 **Khairunniza-Bejo, S.**, Abdol Lajis, G., Aziz, S.A. (2022). Spectral Properties System (SPS) for Basal Stem Rot Disease Detection in Oil Palm Trees. [LY2021W06051]
5. 2015 **Khairunniza-Bejo, S.**, Hanibah, S.S.B., Ismail, W.I.W. and Wayayok, W. (2015). Broken Rice Detection version 1.0 (*i-Rice v1.0*)
6. 2014 **Khairunniza-Bejo, S.**, Azman, N., Ismail, W.I.W. and Wayayok, W. (2014). Paddy Quality Determination Using Imaging Technology version 1.0 (QPaddy v1.0)
7. 2010 **Khairunniza-Bejo, S.**, Jahari, M., Shariff, A.R.M. and Shafri H.Z.M. Local Mutual Information for Forest Monitoring version 1.0 (LMI v1.0).
8. 2010 **Khairunniza-Bejo, S.**, Amin, M.R.M., Ismail, W.I.W. and Syamsiah Mashoor, S. Agarwood Grading Inspection System (AGIS v1.0).
9. 2010 **Khairunniza-Bejo, S.**, Jahari, M., Shariff, A.R.M. and Shafri, H.Z.M. Local Mutual Information for Forest Monitoring version 2.0 (LMI v2.0).
10. 2010 Hair-Bejo, M., **Khairunniza-Bejo, S.**, Ideris, A., Omar, A.R., Napis, S., Khairani-Bejo, S., Sarpin, S., Malik, M.J. and Jaafar, R. Online MyECA Database System (MyECA v1.0).

#### Patent

1. 2021 Shariff, A.R.M., Zolfagharnassab, S. and **Khairunniza-Bejo, S.** A Method for Producing a Soil Nutrient Map with Reduced Number of Soil Sample (PI2012000684: Patent Granted).
2. 2010 Shariff, A.R.M.S., Mahmud, A.R., Norasma, C.Y.N., Jahanshiri, E., Soom, M.A.M., **Khairunniza-Bejo, S.** and Aziz, F.A.A. Web Based Agricultural Data Management System and Methods of Managing Thereof (PI2010700091: Patent Pending).

#### Awards/Recognition

No	Name of awards	Title	Award Authority	Award Type	Year
1.	Silver Award	Detection of Cocoa Maturity and Cocoa Pod Borer using Thermal Imaging and Sound Measurement Technique	The 7 <sup>th</sup> International Conference on Food and Agricultural Engineering (CAFE/2025)	International	2025
2.	Best Thesis Award 2023 (3 <sup>rd</sup> prize)	Basal Stem Rot Disease Detection Using Vegetation Index, Thermal Image and Machine Learning Technique	Malaysian Society of Agricultural and Food Engineers (MSAE)	National	2024



3.	Excellent Service Award	Excellence Achievement	UPM	University	2023
4.	Best Final Year Project Award	Basal Stem Rot Disease Detection Using Vegetation Index, Thermal Image and Machine Learning Technique	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2023
5.	Third Winner in Poster Competition	Automatic Paulownia Tree Counting Using Images From the UAV and Template Matching Technique	The International Conference on Modern and Sustainable Agriculture (ICOMSA)	International	2022
6.	Best Final Year Project Award	Automatic Paulownia Tree Counting Using Images From the UAV and Template Matching Technique	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2022
7.	Gold Medal	Automatic Paulownia Tree Counting Using Images From the UAV and Template Matching Technique	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2022
8.	Second Prize Best Paper Award (Agricultural Engineering)	Differences Between Healthy and <i>Ganoderma Boninense</i> Infected Oil Palm Seedlings Using Spectral Reflectance of Young Leaf Data	The 5 <sup>th</sup> International Conference on Food and Agricultural Engineering (CAFE/2020)	International	2021
9.	Second Prize Best Paper Award (Food Engineering)	Development of a Machine Vision System for Rice Seed Industry	The 5 <sup>th</sup> International Conference on Food and Agricultural Engineering (CAFE/2020)	International	2021
10.	Silver Medal	Early Detection of <i>Ganoderma Boninense</i> at Oil Palm Seedling using Spectral Properties and Support Vector Machine Techniques	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2021



11.	Gold Medal (Poster)	Data Integration with ArcGIS Application for Oil Palm Management	The 6 <sup>th</sup> Southeast Asian Agricultural Engineering Student Chapter Annual Regional Convention 2020	International	2020
12.	Gold Medal	Development of an Automatic Rubber Seed Planter Using Machine Vision Technique	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2016
13.	Best Final Year Project Award	Dorsal and Ventral Surface of Rubber Seeds Identification Using Image Processing Technique	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2015
14.	Best Paper Award	Husk Detection Using Thermal Imaging Technology	International Conference on Food and Agricultural Engineering	International	2014
15.	Bronze Medal	Paddy Quality Determination Using Imaging Technology	Pameran Reka Cipta, Penyelidikan dan Inovasi, Malaysia	National	2014
16.	Silver Medal	GIS-Based Micronutrient Soil Mapping Using Artificial Neural Network as a Sample Predictor	Pameran Reka Cipta, Penyelidikan dan Inovasi, Malaysia	National	2014
17.	Best Final Year Project	Preliminary Study on the Use of Thermal Image for Paddy Moisture Content Determination	Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM	Department	2013
18.	Gold Medal	Mangrove Forest Mapping	International Trade Fair "Ideas-Invention-New Products" (iENA), Germany	International	2012
19.	Gold Medal	Mangrove Forest Mapping	Malaysia Technology Expo	National	2012
20.	Gold Medal	Development of Mangrove Forest Monitoring Technique Using Local Similarity Measure	Pameran Reka Cipta, Penyelidikan dan Inovasi, UPM	University	2011
21.	Best Poster Award	Paddy Soil Moisture Content Interpretation Using CIELuv Image	National Rice Conference, MARDI	National	2010



22.	Silver Medal	Online GIS Decision Support System for Paddy Precision Farming	International Trade Fair "Ideas-Invention-New Products" (iENA)	International	2009
23.	Gold Medal	Web-Based GIS Paddy Precision Farming for Design Support System	Pameran Reka Cipta, Penyelidikan dan Inovasi, UPM	University	2008
24.	Bronze Medal	Pameran Reka Cipta, Penyelidikan dan Inovasi, UPM	Local Similarity Measure for Landslides Detection and Identification	University	2007
25.	Excellent Service Award	Excellence Achievement	UPM	University	2012
26.	Excellent Service Award	Excellence Achievement	UPM	University	2008
27.	Excellent Achievement	Certificate of Excellent Teaching	Faculty of Engineering, UPM	Faculty	2006 - 2024
28.	Excellent Achievement	Certificate of Excellent Service	UPM	University	2006 - 2024

### Services

#### International conference

1. Advisor, International Conference of Plantation Technology (ICPTech2025) 2025
2. Director, Winner and Award Committee, the 7<sup>th</sup> International Conference on Agricultural and Food Engineering (CAFEi2025) 2024-2025
3. Chairperson, 3<sup>rd</sup> International Symposium on One Health, One World (OHOW2024) 2024
4. Scientific Committee, International Conference of Plantation Technology (ICPTech2023) 2022-2023
5. Scientific Committee, 15<sup>th</sup> International Congress on Agricultural Mechanization and Energy in Agriculture 2022-2023
6. Organizing Committee Member, E-Palli International Conferences (EIC) on STEM (Science, Technology, Engineering, and Math, and BAS (Business, Arts, and Social Science) 2022
7. Chairperson, the 5<sup>th</sup> International Conference on Agricultural and Food Engineering (CAFEi2020) 2019-2021
8. Member of Advisory Committee, International Conference on Contemporary Practices of Technology & Management for Economic Growth (ICTMEG ( 2<sup>nd</sup> Edition )) 2020
9. International Advisory Board, 24<sup>th</sup> World Conference on Applied Sciences, Engineering, and Technology 2019
10. Co-Chairperson, the 4<sup>th</sup> International Conference on Agricultural and Food Engineering (CAFEi2018) 2017-2018
11. Director, Scientific Committee, the 3<sup>rd</sup> International Conference on Agricultural and Food Engineering (CAFEi2016) 2015-2016
12. Technical Session Chairperson, the 3<sup>rd</sup> International Conference on Agricultural and Food Engineering (CAFEi2016) 2016
13. Technical Session Chairperson, the 2<sup>nd</sup> International Conference on Agricultural and Food Engineering (CAFEi2014) 2014
14. Secretary 2, the 2<sup>nd</sup> International Conference on Agricultural and Food Engineering (CAFEi2014) 2013-2014
15. Technical Session Chairperson, the International Conference on Agricultural and Food Engineering (CAFEi2012) 2012



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| 16. Secretary 1, the International Conference on Agricultural and Food Engineering (CAFEi2012) | 2011-2012 |
| 17. Committee Member, Conference on Natural Resources and Green Technology 2010 (CNRGT 2010)   | 2009-2010 |
| 18. Committee Member, World Engineering Congress 2007 (WEC 2007)                               | 2006-2007 |

#### Editorial Board

- |   |                |
|---|----------------|
| 1. Editor-in-Chief, Plantation Studies e-proceeding   | 2024 – to date |
| 2. Editorial Board, Heliyon Agriculture   | 2022 – to date |
| 3. Editorial Board, Frontiers in Remote Sensing (Research Topic: Remote Sensing for Crop Growth Monitoring) | 2022           |
| 4. Journal of Agricultural Engineering (JTEP)   | 2022 – to date |
| 5. Editorial Board, VIT Press International Journal of Agriculture Engineering (VITP-IJAENG)                | 2021-2022      |
| 6. Editorial Board, Information Processing in Agriculture   | 2020-2022      |
| 7. Editorial Board, Advances in Agriculture, Horticulture and Entomology                                    | 2020-2022      |
| 8. Guest Editor, Journal of food Packaging and Shelf Life   | 2020           |
| 9. Editor, Acta Hort. III Int. Conf. on Agricultural and Food Engineering                                   | 2016-2017      |
| 10. Guest Editorial Board, Pertanika Journal  | 2012           |

#### Journal Reviewer

- |   |                        |
|---|------------------------|
| 1. Journal of Integrative Agriculture                   | 2022                   |
| 2. Artificial Intelligence in Agriculture               | 2022                   |
| 3. Biosystems Engineering                               | 2021                   |
| 4. Remote Sensing Applications: Society and Environment | 2021                   |
| 5. Basrah Journal of Agricultural Sciences (BJAS)       | 2020                   |
| 6. Geocarto International                               | 2020, 2021             |
| 7. Advances in Agricultural and Food Research Journal   | 2020                   |
| 8. Journal of Science and Technology                    | 2020, 2019             |
| 9. Information Processing in Agriculture                | 2021, 2020, 2019, 2015 |
| 10. Science, Engineering and Health Studies             | 2020                   |
| 11. Journal of Agricultural Science                     | 2019                   |
| 12. Journal of Oil Palm Research                        | 2020, 2019, 2014       |
| 13. Transactions of the ASABE                           | 2017                   |
| 14. Acta Horticulturae                                  | 2016                   |
| 15. Computers and Electronics in Agriculture            | 2015, 2020, 2021, 2022 |
| 16. African Journal of Agricultural Research            | 2015                   |
| 17. American Journal                                    | 2015                   |
| 18. Malaysian Journal of Computer Science Special Issue | 2015                   |
| 19. Journal of Agricultural Science and Technology      | 2014                   |
| 20. Geoscience and Remote Sensing Letters               | 2010-2013              |
| 21. PERTANIKA Journal                                   | 2011-2012              |
| 22. Journal of Tropical Agriculture and Food Science    | 2009                   |

#### Conference Paper Reviewer

- |   |      |
|---|------|
| 1. 1st International Conference on Plantation Technology (ICPTech 2021)   | 2021 |
| 2. Konferens MSAE 2020  | 2020 |
| 3. 5 <sup>th</sup> International Conference on Agricultural and Food Engineering                                      | 2020 |
| 4. XIII SMART Farming Workshop: Crop Cultivation and Postharvest Technology   | 2019 |
| 5. 4 <sup>th</sup> International Conference on Agricultural and Food Engineering                                      | 2018 |
| 6. ICBAE 2017   | 2017 |
| 7. ROVISIP 2016   | 2016 |
| 8. 3 <sup>rd</sup> International Conference on Agricultural and Food Engineering                                      | 2016 |
| 9. 7 <sup>th</sup> Conference on Sustainable Agriculture for Food, Energy and Industry in Regional and Global Context | 2015 |
| 10. Kolakium RACE 2015  | 2015 |



11. PAWEES-INWEPF	2015
12. 2 <sup>nd</sup> International Conference on Agricultural and Food Engineering	2014
13. ISG 2014	2014
14. 1 <sup>st</sup> International Conference on Agricultural and Food Engineering	2012
15. IEEE GOLD Colloquium	2010
16. International Conference on Robotics, Vision, Signal Processing	2009

#### Book Reviewer

1. Machine Learning for Data Science, UTM Press	2017
2. Data Cleaning for Data Science, UTM Press	2015

#### Research Grant Evaluator

1. FRGS Grant	2010-2023
2. IPM Putra Grant	2010-2023
3. IPS Putra Grant	2010-2023
4. IPB Putra Grant	2010-2023
PRGS Grant	2020-2023

#### Evaluator

1. Expert panel, VIT - Ideathon Finals 2021	2021
2. Judge, MSAE-Sc Small Tractor Competition	2018
3. Judge, The 3rd International Conference on Agricultural and Food Engineering (CAFEi2016)	2016

#### Student Mobility Program

1. Advisor, Inbound Mobility Program (France)	2020
2. Advisor, Inbound Mobility Program (Portugal)	2017
3. Advisor, Inbound Mobility Program (Beuth University of Applied Science Berlin)	2016
4. Committee Member, Student Mobility to Kyoto University, Japan	2012
5. Committee Member, Student Mobility to MIE University, Japan	2012

#### Keynote and Invited Speaker

1. Keynote Speaker at the 2nd International Agriculture Revolution Symposium (IAGRIS) 2025, 10 - 11 September 2025, Kuala Lumpur, Malaysia. Title: Cross-Disciplinary Collaborations for Resilient and Sustainable Agriculture.	2025
2. Invited Speaker at the Introduction to Artificial Intelligence Webinar, 5 March 2025, Putrajaya, Malaysia. Title: Module 1 – Introduction to Artificial Intelligence; Module 2 – Application of Artificial Intelligence in Agriculture.	2025
3. Invited Speaker at the International Institute Interaction & Student Relationship Cell Webinar, 14 Feb 2025, Chennai, India. Title: Smart Agriculture.	2025
4. Forum Panelist at the 3rd International Symposium on One Health, One World (OHOW2024), 10th-12th December 2024. Title: Empowering Planetary Health: The Strategic Roles of Academia and Industry	2024
5. Invited Speaker at the International Fundamental Science Congress 2024 (IFSC2024), 19-21 August 2024, Selangor, Malaysia. Title: Pest and Disease Detection using Imaging Technology and Artificial Intelligence.	2024
6. Invited Speaker at the 6th University Consortium Faculty Forum (UCFF) on Resilience and Adaptation towards Innovation in Climate	2024



- Crisis, 28 -29 August 2024, Putrajaya, Malaysia. Title: Application of Drone and Machine Learning for Disease Surveillance
7. Keynote Speaker at the International Conference on Signal Processing, Computation, Electronics, Power and Telecommunication (IConSCEPT 2024), 4th- 5th July 2024, India. Title: SMART AGRICULTURE: Modernizing the Agricultural Industry. 2024
  8. Invited Speaker at Kursus Asas Teknologi IR 4.0 Pertanian Pintar, 24 – 25 June 2024, Putrajaya, Malaysia. Title: Pengenalan Kepada IR4.0 dalam Industri Pertanian. 2024
  9. Invited Speaker at the High – End Workshop “Artificial Intelligence Models for Remote Sensing and its Applications (AIRS 2024)”, 7 June 2024, India. Title: Overview of Artificial Intelligence. 2024
  10. Invited Speaker at Bengkel Hala Tuju J-Biotech Perkasa 2030 Siri Ke-2, 1 – 2 June 2024, Selangor, Malaysia. Title: SMART AGRICULTURE: Modernizing the Agricultural Industry. 2024
  11. Invited Speaker at ENTOMA Webinar Series 1, 14 May 2024, Selangor, Malaysia. Title: Automatic classification of bagworm (*Metisa plana*) instar stages using hyperspectral imaging and machine learning techniques. 2024
  12. Invited Speaker at the 2nd International Symposium on One Health, One World (OHOW 2023), 6 – 8 December 2023, Dhaka, Bangladesh. Title: Basal Stem Rot (BSR) Disease Detection at Different Severity Levels of Infections Using Machine Learning with Vegetation Indices and Thermal Imagery. 2023
  13. Invited Speaker at the International Palm Oil Congress and Exhibition (PIPOC 2023), 5-9 November, Kuala Lumpur, Malaysia. Title: Basal Stem Rot Disease Detection Using Machine Learning with UAV Multispectral and Thermal Imagery. 2023
  14. Invited Speaker at the 15th International Congress on Agricultural Mechanization and Energy in Agriculture (ANKAgEng'2023), 29 October – 1 November 2023, Antalya, Turkey. Title: Detecting the Basal Stem Rot (BSR) Disease Using Vegetation Index, Thermal Imaging, and Machine Learning. 2023
  15. Invited Speaker at the SEARCA Regional Professorial Chair Lecture, Malaysia, 27 February 2023. Invited Speaker. 2023
  16. Invited Speaker at the Adoption of Digital Agriculture for Sustainable Crop Production Webinar, Malaysia, 28 November 2022. Title: Smart *ganoderma boninense* infection detection using imaging and IoT technique. 2022
  17. Invited Speaker at the Geospatial Artificial Intelligence International Short Course in - Digital Twin And Green Economy, Indonesia. 1 - 6 December 2022. Title: The Role of Imaging Technology in Geographic Information Systems for Plantation Management . 2022
  18. Invited Speaker at the 2022 Summer Course Program Green Technology for Sustainable Tropical Agriculture, Indonesia. 1-11 August 2022. Title: Smart Agriculture in Malaysia. 2022
  19. Invited Speaker Faculty of Agricultural Technology, Udayana University, Badung, Bali, Indonesia, 16 July 2022. Title: Shaping Climate Change Resilience and Food Security through Scientific and Technological Advances in Agriculture. 2022
  20. Invited Speaker at REDtone Smart Farming Virtual Conference, Malaysia, 31 March 2022. Title: Feed the World, Protect the Planet: The Journey Begins at University. 2022
  21. Invited Speaker at the International Workshop on Applied Computing in Agriculture, De La Salle University – Manila, Philippines, 4-5 March 2022. Title: Early Detection of Plant Disease Infection using

- Hyperspectral Data and Artificial Intelligence.
22. Plenary Speaker at the 1st International Conference on Engineering and Agro-industrial Technology, University of the Philippines, Los Banos, Philippines, 23-24 Feb 2022. Title: Digital crop protection using artificial intelligence and the internet of things. 2022
  23. Invited Speaker at the Sharing session PRGS & FRGS 2022, Faculty of Engineering, UPM. 7 January 2022. Title: Sharing session on PRGS 2.0. 2022
  24. Invited Speaker at the International virtual conference on "Smart farming technology for sustainable agriculture", India. 21 December 2021. Title: Drone Technology in Agriculture. 2021
  25. Invited Speaker at the MPOB Oil Palm Plant Protection Webinar Series: Pests, Diseases and Weeds (Webinar Serie 3), Malaysia. 7 December 2021. Title: Digital Solutions Towards Smart *Ganoderma boninense* Infection Management for Sustainability of Palm Oil Production. 2021
  26. Invited Speaker at the 1st International Conference on Plantation Technology (ICPTech 2021), Malaysia. 23-24 November 2021. Title: Automatic Identification of Ventral and Dorsal Surface of Rubber Seeds using HSV Color Space and Decision Rule Approach. 2021
  27. Invited Speaker at Jeli Polytechnic workshop. 9 November 2021. Title: Application of Drone and Artificial Intelligence in Agriculture. 2021
  28. Invited Speaker at the 2021 Summer Course Program Green Technology for Sustainable Tropical Agriculture, Indonesia. 16-28 August 2021. Title: Smart Agriculture in Malaysia. 2021
  29. Invited Speaker at the Microwave Research Institute (MRI) Webinar Series 1/2021, UiTM, Malaysia, 16 February 2021. Title: Artificial Intelligence Applications in Agriculture. 2021
  30. Invited Speaker at the FST Wacana Series 1/2021, Faculty of Science and Technology, USIM, 18 February 2021. Title: The Future of Smart Farming Technology. 2021
  31. Invited Speaker at the 12<sup>th</sup> International Webinar 2020: The Development and Prospect of Agricultural Engineering Technology in Southeast Asian, Indonesia, 18 November 2020. Title: Agricultural Technology in Malaysia. 2020
  32. Invited Speaker at the Smart International Webinar 2020 (SFIW2020), Sarawak, Malaysia, 24 October 2020. Title: Agriculture 4.0: Digital Transformation Driven by The Internet of Things (IoT) and Artificial Intelligence (AI). 2020
  33. Invited Speaker at the Agriculture X AI: Self Sufficiency in Food Production to Achieve Society 5.0 and SDGs Globally, Tsukuba, Japan, 30 September 2020. Title: Smart Intelligent Technologies in Crop Protection Towards Agriculture 5.0. 2020
  34. Invited Speaker at the Innovation Workshop, MARDI, Serdang, Malaysia, 24 September 2020. Title: Digital Technology in Agriculture: Element of IoT and Artificial Intelligence. 2020
  35. Keynote Speaker at the International Conference on Contemporary Practices of Technology and Management for Economic Growth, India. 6-7 September 2019. Title: Transforming Precision Agriculture Into Digital Agriculture For a Better Economic Growth. 2019
  36. Plenary Speaker at the Joint Conference on ASEAN Cooperation on Agricultural and Biosystems Engineering (ACABE) and ASEAN Universities Consortium on Food and Agro-based Engineering and Technology Education (AUCFA), Philippines, 6-8 November 2018. Title: Situationer of Agricultural and Biosystems Engineering Education in Malaysia. 2018
  37. Invited Speaker at the Sarawak Industrial Fiesta, Bintulu Civic Centre, Sarawak, Malaysia. 24-26 April 2018. Title: Precision Agriculture: Solution Provider of Agricultural Challenges in The Future. 2018
  38. Invited Speaker at the 2018 Summer Course Program Green 2018



- Technology for Sustainable Tropical Agriculture, Indonesia. 12-21 August 2018. Title: The Future of Agriculture: Upgrading Precision Agriculture Become Digital Agriculture.
39. Invited Speaker, Public Lecture, Engineering Technology Program, Fakultas Teknologi Pertanian Universitas Andalas, Indonesia. 27 Nov – 9 Dis 2017. Title: Sensing Technology for Precision Agriculture. 2017
40. Speaker, International Workshop on Smart Farming XI: Delivering Appropriate Precision Technologies and Management Practices in Agriculture, Kuala Lumpur. 11 August 2014. 2014

**Supervision (student with Thesis)**

Category	Current student			Graduate		
	PhD	Master	Total	PhD	Master	Total
<b>Main supervisor</b>	5	1	<b>5</b>	4	9	<b>14</b>
<b>Member</b>	5	1	<b>6</b>	9	13	<b>22</b>
<b>Total</b>	<b>10</b>	<b>2</b>	<b>11</b>	<b>13</b>	<b>22</b>	<b>36</b>