CURRICULUM VITAE

Assoc. Prof. Dr.-Ing. Mohd Noriznan Mokhtar, *PEng, PTech, CEng, MIChemE*
Department of Process and Food Engineering
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Educations

Dr.-Ing. (*Magna Cum Laude*) in **Chem. Process Eng. (Bioprocess Eng.)**, 2005 – 2009, Fakultät für Maschinenbau, Technische Universität Chemnitz, Germany
Thesis: Biocatalytic Production, Preparation and Characterization of Large-Ring Cyclodextrins

M.Sc. (*Gut*) in **Chem. Eng. (Biochem. Eng.)**, 2002 – 2004, Fakultät Bio- und Chemieingenieurwesen, Technische Universität Dortmund, Germany
Thesis: Studies on the Reaction and Adsorption of a Cofactor Dependent Immobilized Enzyme System

B. Eng. (2nd Class-Upper, Hons) in **Chem. and Process Eng.**, 1997 – 2000, Department of Chemical and Process Eng., Universiti Kebangsaan Malaysia

Area of Expertise

Bioprocess Engineering (Bioresources)

Research Activities

1. Enzyme and fermentation technology- Enzymes for the application of edible oil/fat, beverages, and food; immobilized enzyme technology; biochemical conversion; reaction kinetics; complex reactions
2. Separation and purification- Treatment of agri-industrial wastes; isolation and purification of edible oils, carbohydrates, bioactive compounds, and other value-added products
3. Digital R&D / digital twin- Dynamic mathematical modelling and simulation; process design and intensification; biorefinery concept; sustainable design; techno-economic analysis of food processing, agri-processing, and value-added products

Professional Qualification/ Membership/ Affiliation

1. Professional Engineer (P.Eng.), P121228, Board of Engineers Malaysia (BEM)
2. Professional Technologist (P.Tech.), PT21030240, Malaysia Board of Technologists (MBOT)
3. Chartered Engineer (C.Eng.), 659374, Engineering Council, UK
4. Member, Institution of Chemical Engineers (MIChemE), UK
5. Professional Member, Malaysian Society of Agricultural Engineers (MSAE)

Attachments

Position	Duration
1. Industrial Attachment. Felda Palm Industries Sdn. Bhd., Kuala Lumpur (Co-composting of oil palm empty fruit bunches)	December 2010 - November 2011
2. Visiting Scholar. National Institution of Advanced Industrial Science and Technology (AIST), Kagami-Yama, Hiroshima, Japan (Bioethanol Production Pilot Plant)	September – October 2009
3. PhD Student Attachment, research area in Carbohydrate Bioengineering. Department of Microbiology and Bioprocess Technology (Prof. Dr. Wolfgang Zimmermann), Institut für Biochemie, Universität Leipzig, Germany	August 2005 – January 2009

Software for Teaching/Research

1. Advanced Process Modeling, gPROMS ModelBuilder (PSE)
2. SuperPro Designer (Intelligen)
3. MATLAB (Mathworks)
4. COMSOL Multiphysics

Teaching Experiences

1. EPF 3801 Reaction Kinetics and Reactor Design (UG)
2. EPF 4301 Process Modeling and Simulation (UG) (*software; MATLAB Simulink and gPROMS*)
3. EPF 5605 Biochemical Reaction Engineering (PG) (*software; gPROMS*)
4. EPF 3103 Biology for Engineers (UG)
5. EPF 4607 Biological Process Engineering (UG) (*software; SuperPro Designer*)
6. EPF 4802 Process and Food Plant Design (UG) (*software; SuperPro Designer*)

Working Experiences

Position		Duration
1.	Associate Professor, Department of Process and Food Engineering, Faculty of Engineering, UPM	March 2017 – present
2.	Interim Researcher, Laboratory of Processing and Product Development, Institute of Plantation Studies, UPM	Nov. 2020 – present
3.	Senior Lecturer, Department of Process and Food Engineering, Faculty of Engineering, UPM	March 2009 – Feb. 2017
4.	Tutor (Bioprocess Engineering), Department of Process and Food Engineering, Faculty of Engineering, UPM	Sept. 2000 – March 2009
5.	Research Assistant (Environmental Eng.), Department of Chemical and Process Engineering, Faculty of Engineering, Universiti Kebangsaan Malaysia (UKM)	April 2000 – Aug. 2000

Administrative Works (Department of Process and Food Engineering)

Position		Duration
1.	Research Coordinator	2021 – present
2.	Head of Department	2015 – 2019
3.	Research Coordinator	2012 – 2014
4.	Head of Bioreactor Engineering Laboratory	2009 – 2014
5.	Development Coordinator	2009 – 2010
6.	Head of Bioprocess Engineering Research Group	2009 – 2012

Special Awards

Title		Year
1.	Silver Medal Award - Food Process Engineering Theme (Title: Study on the potential of rice-husk in lipase immobilization via covalent binding, and its application as packed bed bioreactor system for continuous production of monoacylglycerol (MAG)), FENETT 2022, Chiang Mai, Thailand	2022
2.	Bronze Medal Award - Food Process Engineering Theme (Title: Techno-economic analysis of the process to mitigate palm oil contaminants related to 3-monochloropropane-1,2-diol (3-MCPD)), FENETT 2022, Chiang Mai, Thailand	2022
3.	Excellent Service Award, Universiti Putra Malaysia	2020
4.	Excellent Service Award, Universiti Putra Malaysia	2019
5.	Postgraduate Excellent Teaching Award, Faculty of Engineering, UPM	2018
6.	Excellent Teaching Award, Faculty of Engineering, UPM	2018
7.	Excellent Teaching Award, Faculty of Engineering, UPM	2017
8.	Excellent Service Award, Universiti Putra Malaysia	2016
9.	Excellent Teaching Award, Faculty of Engineering, UPM	2016
10.	Best Paper Award (Title: The solidification of jasmine extract by using electrostatic atomizer, electrospray), CAFEi2016	2016
11.	Excellent Service Award, Universiti Putra Malaysia	2015
12.	Best Poster Award (Title: Development of cellulose nanofiber (CNF) support derived from kenaf bast fibre and its potential in enzyme immobilization), ICASIT 2015, Port Dickson	2015

13.	Best Paper Award (Title: Study on the preparation of cellulose nanofiber (CNF) derived from kenaf bast fibre for the application in enzyme immobilization), Nano- & Bioresource Technology Conference, Universiti Kebangsaan Malaysia	2015
14.	Excellent Service Award, Universiti Putra Malaysia	2014
15.	Gold award (Title: Production of fertilizer from organic materials and agro-waste). Anugerah Kecemerlangan Perhubungan Industri & Alumni 2014 (AKPIM 2014) by UiTM Shah Alam	2014
16.	Bronze Medal (Title: Pinewaste pellet as a feed for herbivores), PRPi14, UPM	2014
17.	Silver Medal (Title: Compost production from palm oil biomass for community application in Bagan Datoh, Perak), Malaysian Agricultural Innovation Challenge (Magic)	2014
18.	Excellent Service Award, Universiti Putra Malaysia	2013
19.	Bronze Medal (Title: Palletization of pineapple agricultural waste for cattle feed), Inova, Zegreb, Croatia	2013
20.	Excellent Teaching Award, Faculty of Engineering, UPM	2012
21.	Excellent Service Award, Universiti Putra Malaysia	2012
22.	Excellent Service Award, Universiti Putra Malaysia	2011
23.	Excellent Teaching Award, Faculty of Engineering, UPM	2011
24.	Silver Medal (Title: The appropriate technology for accelerated and controlled composting process for oil palm biomass, organic and municipal solid wastes), Malaysia Technology Expo 17 – 19 Feb 2011, Malaysia Association of Research Scientists (MARS)	2011
25.	Excellent Teaching Award, Faculty of Engineering, UPM	2010
26.	Gold Medal (Title: Appropriate technology for accelerated composting of oil palm biomass), PRPi09, UPM	2009
27.	PhD Scholarship Award to Germany, Bumiputra Academic Training Scheme (SLAB), Public Service Department Malaysia	2005 – 2009
28.	MSc Scholarship Award to Germany, HRD (S&T) Fund, The Ministry of Science, Technology and Environment (MOSTE), Malaysia	2002 – 2004

Publications

1. **M.N. Mokhtar**, Techno-economic evaluation of a process for the transformation of VitAto sweet potato into value-added products. *Journal of Food Process Engineering*, e14043 (2022)
2. F.I.F.M. Yusree, A.P. Peter, N.A. Zulkifli, M.Z.M. Nor, MSM Basri, **M.N. Mokhtar**, M.K. Awasthi, P.L. Show, Towards green recovery of β-amylase from slurry of sweet potato (Ipomoea batatas) of VitAto variety via liquid biphasic system, *Sustainable Chemistry and Pharmacy*, 25, 100579 (2022)
3. M. Habibiasr, **M.N. Mokhtar**, M.N. Ibrahim, K.F.M. Yunos, N.A. Ibrahim, Effect of drying on the physical and chemical properties of palm kernel oil, *Journal of the Science of Food and Agriculture* (2022)
4. S. Rahmam, M.N. Naim, N.F.A. Bakar, **M.N. Mokhtar**, Atomisation of nanometre-scaled jasmine flower extracts using electrospray method, *International Food Research Journal*, 29 (3), 659 – 666 (2022)
5. F.I.F.M. Yusree, A.P. Peter, M.Z.M. Nor, P.L. Show, **M.N. Mokhtar**, Latest advances in protein-recovery technologies from agricultural waste, *Foods*, 10 (11), 2748 (2021)
6. M.Y. Hasan, M.A. Hassan, **M.N. Mokhtar**, Y. Shirai, A. Idris, Effect of initial carbon to nitrogen ratio on the degradation of oil palm empty fruit bunch with periodic addition of anaerobic palm oil mill effluent sludge, *Pertanika Journal of Science & Technology*, 29 (4), 2435 – 2449 (2021)
7. Y.M. Thang, R. Yunus, **M.N. Mokhtar**, D.R. Appleton, A.J. Asis, P.S. Kong, Roles and Principles of Sterilisation Process in Palm Oil Mills, *Pertanika Journal of Science & Technology*, 29 (4), 2705 – 2722 (2021)
8. A.A. Lawal, M.A. Hassan, M.R. Zakaria, M.Z.M. Yusoff, M.N.F. Norrahim, **M.N. Mokhtar**, Y. Shirai, Effect of oil palm biomass cellulosic content on nanopore structure and adsorption capacity of biochar, *Bioresource Technology* 332, 125070 (2021)
9. A.A. Lawal, M.A. Hassan, M.A.A. Farid, T.A.T. Yasim-Anuar, M.H. Samsudin, M.Z.M. Yusoff, M.R. Zakaria, **M.N. Mokhtar**, Y. Shirai, Adsorption mechanism and effectiveness of phenol and tannic acid removal by biochar produced from oil palm frond using steam pyrolysis, *Environmental Pollution* 269, 116197 (2021)

10. S.B. Idris, R. Shamsudin, M.Z.M. Nor, **M.N. Mokhtar**, S.S.A. Ghani, Proximate composition of different parts of white cassava (Manihot esculenta Crantz) plant as a ruminant feed, *Advances in Agricultural and Food Research Journal*, 2(1) (2021)
11. J.C. Gomez, R. Zakaria, M.M. Aung, **M.N. Mokhtar**, R. Yunus, Synthesis and Characterization of Polyurethanes from Residual Palm Oil with High Poly-Unsaturated Fatty Acid Oils as Additive, *Polymers*, 13 (23), 4214 (2021)
12. N.A. Zulkifli, M.Z.M. Nor, F.N. Omar, A. Sulaiman, **M.N. Mokhtar**, Proximate composition of Malaysia local sweet potatoes, *Food Research*, 5, 73 – 79 (2021)
13. H.S. Hafid, A.S. Baharuddin, **M.N. Mokhtar**, F.N. Omar, M.A.P. Mohammed, M. Wakisaka, Enhanced laccase production for oil palm biomass delignification using biological pretreatment and its estimation at biorefinery scale, *Biomass and Bioenergy* 144, 105904 (2021)
14. J.C. Gomez, R. Zakaria, M.M. Aung, **M.N. Mokhtar**, R.B. Yunus, Characterization of novel rigid-foam polyurethanes from residual palm oil and algae oil, *Journal of Material Research and Technology* 9, 16303-16316 (2020)
15. S. Sulaiman, N.S. Sahat, F.N. Omar, **M.N. Mokhtar**, M.N. Naim, A.S. Baharuddin, M.A.M. Salleh, Chemical-Physical Treatment for Production of Cellulose Nanofiber from Kenaf Bast Fiber, *Journal of Natural Fibers* (2020)
16. S.N. Sulin, **M.N. Mokhtar**, M.A.P. Mohammed, A.S. Baharuddin, Review on palm oil contaminants related to 3-monochloropropane-1,2-diol (3-MCPD) and glycidyl esters (GE), *Food Research* 4, 11-18 (2020)
17. M. Habibiasr, **M.N. Mokhtar**, M.N. Ibrahim, K.F.M. Yunos, N.A. Ibrahim, Study on the Effects of Physical Properties of Tenera Palm Kernel during Drying and Its Moisture Sorption Isotherms, *Processes* 8, 1658 (2020)
18. S. Idris, R. Shamsuddin, M.Z.M. Nor, **M.N. Mokhtar**, S.S.A. Gani, Physicochemical composition of different parts of cassava (Manihot esculenta Crantz) plant, *Food Research* 4, 78 – 84 (2020)
19. M.T. Asghar, Y.A. Yusof, **M.N. Mokhtar**, M.E. Yaacob, H.M. Ghazali, J. Varith, L.S. Chang, Y.N. Manaf, Processing of Coconut Sap into Sugar Syrup using Rotary Evaporation, Microwave and Open-Heat Evaporation Techniques, *Journal of the Science of Food and Agriculture* 100, 4012 – 4019 (2020)
20. N.A. Zukifli, N.M. Salleh, M.Z.M. Nor, F.N. Omar, A. Sulaiman, **M.N. Mokhtar**, Nutritional properties of orange-fleshed sweet potato juice, *Advanced in Agricultural and Food Research Journal* 1 (1) (2020)
21. A.A. Lawal, M.A. Hassan, M.A.A. Farid, T.A.T. Yasim-Anuar, M.Z.M. Yusoff, M.R. Zakaria, A.M. Roslan, **M.N. Mokhtar**, Y. Shirai, Production of biochar from oil palm frond by steam pyrolysis for removal of residual contaminants in palm oil mill effluent final discharge, *Journal of Cleaner Production* 265, 121643 (2020)
22. A.A. Lawal, M.A. Hassan, M.A.A. Farid, T.A.T. Yasim-Anuar, M.Z.M. Yusoff, M.R. Zakaria, A.M. Roslan, **M.N. Mokhtar**, Y. Shirai, One-step steam pyrolysis for the production of mesoporous biochar from oil palm frond to effectively remove phenol in facultatively treated palm oil mill effluent, *Environmental Technology & Innovation* 18, 100730 (2020)
23. M.T. Asghar, Y.A. Yusof, **M.N. Mokhtar**, M.E. Yaacob, H. M. Ghazali, L.S. Chang, Y.N. Manaf, Effect of processing method on vitamin profile, antioxidant properties and total phenolic content of coconut (Cocos nucifera L.) sugar syrup, *International Journal of Food Science & Technology* 55, 2762 – 2770 (2020)
24. S.A.E. Moghaddam, R. Harun, **M.N. Mokhtar**, R. Zakaria, Kinetic and equilibrium modeling for the biosorption of metal ion by Zeolite 13X-Algal-Alginate Beads (ZABs), *Journal of Water Process Engineering* 33, 101057 (2020)
25. A.T. Talib, C.C. Jie, M.A.P. Mohammed, A.S. Baharuddin, **M.N. Mokhtar**, M. Wakisaka, On the nonlinear viscoelastic behaviour of fresh and dried oil palm mesocarp fibres, *Biosystems Engineering* 186, 307 – 322 (2019)
26. A.T. Talib, M.A.P. Mohammed, A.S. Baharuddin, **M.N. Mokhtar**, M. Wakisaka, Mechanical characterization of lignocellulosic fibres using toy bricks tensile tester, *Journal of the Mechanical Behavior of Biomedical Materials* 97, 58 – 64 (2019)
27. S.A.E. Moghaddam, R. Harun, **M.N. Mokhtar**, R. Zakaria, Stability improvement of algal-alginate beads by zeolite molecular sieves 13X, *International Journal of Biological Macromolecules* 132, 592 – 599 (2019)
28. N.S. Abd Rasid, M.N. Naim, H.C. Man, N.F.A. Bakar, **M.N. Mokhtar**, Evaluation of surface water treated with lotus plant; Nelumbo nucifera, *Journal of Environmental Chemical Engineering* 7, 103048 (2019)

29. U.E. Shehu, **M.N. Mokhtar**, M.Z.M. Nor, A.S. Baharuddin, N.M. Nawi, A study on the use of water as a medium for the thermal inactivation of endogenous lipase in oil of palm fruit, *Energies* 12, 3981 (2019)
30. M.T. Asghar, Y.A. Yusof, **M.N. Mokhtar**, M.E. Ya'acob, H.M. Ghazali, L.S. Chang, Y.N. Manaf, Coconut (Cocos nucifera L.) sap as a potential source of sugar: Antioxidant and nutritional properties, *Food Science & Nutrition* 00, 1-11 (2019)
31. U.E. Shehu, T.Q. Chow, H.S. Hafid, **M.N. Mokhtar**, A.S. Baharuddin, N.M. Nawi, Kinetics of thermal hydrolysis of crude palm oil with mass and heat transfer in a closed system, *Food and Bioproducts Processing* 118, 187 – 197 (2019)
32. S. Sulaiman, **M.N. Mokhtar**, M.Z.M. Nor, K.F.M. Yunos, M.N. Naim, Mass transfer with reaction kinetics of the biocatalytic membrane reactor using a fouled covalently immobilised enzyme layer (α–CGTase–CNF layer), *Biochemical Engineering Journal* 152, 107374 (2019)
33. M.A. Adam, A. Sulaiman, A.S. Baharuddin, **M.N. Mokhtar**, K. Subbian, M. Tabatabaei, Characterization of delignified oil palm decanter cake (OPDC) for polymer composite development, *International Journal on Advanced Science, Engineering and Information Technology* 9, 384 – 389 (2019)
34. U.E. Shehu, A.S. Baharuddin, N.M. Nawi, **M.N. Mokhtar**, Modelling and simulation of heat penetration in palm fruitlets during thermal treatment process, *Food Research* 3, 145 – 150 (2019)
35. S.A.E. Moghaddam, R. Harun, **M.N. Mokhtar**, R. Zakaria, Preliminary study on zeolite 13X as a potential carrier for algal immobilization, *Journal of Advanced Research in Materials Science* 53, 1-5 (2019)
36. M.Y. Hasan, M.A. Hassan, **M.N. Mokhtar**, A. Idris, Y. Shirai, Z. Dzulkarnain, M.H. Samsudin, M.H.M. Zainudin, Periodic addition of anaerobic sludge enhanced the lignocellulosic degradation rate during co-composting of oil palm biomass, *Asian Pacific Journal of Molecular Biology & Biotechnology* 26, 1- 10 (2018)
37. K.Y. Phoon, H.S. Ng, R. Zakaria, H.S. Yim, **M.N. Mokhtar**, Enrichment of minor components from crude palm oil and palm-pressed mesocarp fibre oil via sequential adsorption-desorption strategy, *Industrial Crops and Products* 113, 187–195 (2018)
38. H.S. Hafid, N.A. Rahman**, M.N. Mokhtar**, A.T. Talib, A.S. Baharuddin, U.K.M. Shah, Over production of fermentable sugar for bioethanol production from carbohydrate-rich Malaysian food waste via sequential acid-enzymatic hydrolysis pretreatment, *Waste Management* 67, 95 – 105 (2017)
39. S. Saallah, M.N. Naim, **M.N. Mokhtar**, N.F.A. Bakar, M. Gen, I.W. Lenggoro, Preparation and Characterisation of Cyclodextrin Glucanotransferase Enzyme Immobilised in Electrospun Nanofibrous Membrane, *Journal of Fiber Science and Technology* 73 (10), 251-260 (2017) (Scopus)
40. M.A. Adam, A. Sulaiman, N.F.A.A. Pahmy, **M.N. Mokhtar**, M. Tabatabaei, K. Subbian, The Effects of MAPP and OPDC on Physical and Mechanical Properties of OPDC-RPC, *Journal of Mechanical Engineering* 2 (2), 83-97 (2017)
41. N.A. Adam, A. Sulaiman, A.S. Baharuddin, **M.N. Mokhtar**, Z. Busu, T.E.T.Z. Mulok, Synthesis and Characterisation of Silica from Palm Oil Fuel Ash (POFA) Using Alkaline Fusion Method, *Pertanika Journal of Science and Technology* 25, 269-276 (2017)
42. J. Andrew, A. Sulaiman, **M.N. Mokhtar**, A.S. Baharuddin, NM Daud, Development of Palm Oil Extraction Performance Index (EPI) Based on Oil Extraction Rate (OER) and Oil Loss (OL), Pertanika Journal of Science and Technology 25, 335-344 (2017)
43. N.L. Cieh, S. Sulaiman**, M.N. Mokhtar**, M.N. Naim. Bleached kenaf microfiber as a support matrix for cyclodextrin glucanotransferase immobilization via covalent binding by different coupling agents, *Process Biochemistry* 56, 81-89 (2017)
44. S. Sulaiman, N.L. Cieh, **M.N. Mokhtar**, M.N. Naim, S.M.M. Kamal. Covalent immobilization of cyclodextrin glucanotransferase on kenaf cellulose nanofiber and its application in ultrafiltration membrane system*, Process Biochemistry* 55, 85 – 95 (2017)
45. N.S.H.M. Yunos, C.J. Chu, A.S. Baharuddin, **M.N. Mokhtar**, A. Sulaiman, M.A. Rajaeifar, Y.N. Larimi, A.F. Talebi, M. A.P. Mohammed, M. Aghbashlo, M. Tabatabaei. Enhanced oil recovery and lignocellulosic quality from oil palm biomass using combined pretreatment with compressed water and steam, *Journal of Cleaner Production* 142, 3834 – 3849 (2017)
46. N.L. Mohamad, S.M.M. Kamal, **M.N. Mokhtar**, S.A. Husain, N. Abdullah. Dynamic mathematical modelling of reaction kinetics for xylitol fermentation using Candida tropicalis, *Biochemical Engineering Journal* 111, 10-17 (2016)

47. S. Saallah, M.N. Naim, I.W. Lenggoro, **M.N. Mokhtar**, N.F.A. Bakar, M. Gen. Immobilisation of cyclodextrin glucanotransferase into polyvinyl alcohol (PVA) nanofibers via electrospinning. *Biotechnology Reports* 10, 44-48 (2016)
48. S. Sulaiman, **M.N. Mokhtar**, M.N. Naim, A.S. Baharuddin, M.A.M. Salleh, A. Sulaiman. Development of cellulose nanofiber (CNF) derived from kenaf bast fibre and its potential in enzyme immobilization support, *Malaysian Journal of Analytical Sciences* 20 (2), 309 – 317 (2016)
49. S. Sulaiman, **M.N. Mokhtar**, M.N. Naim, A.S. Baharuddin, M.A.M. Salleh, A. Sulaiman. Study on the preparation of cellulose nanofiber (CNF) from kenaf bast fibre for enzyme immobilization application. *Sains Malaysiana* 44, 1541 – 1550 (2015)
50. W.S.S.A.W. Sharifudin, A. Sulaiman, **N. Mokhtar**, A.S. Baharuddin, M. Tabatabaei, Z. Busu, K. Subbian. Presence of residual oil in relation to solid particle distribution in palm oil mill effluent, *BioResources* 10, 7591-7603 (2015)
51. N. Sahad, A.M. Som, A.S. Baharuddin, **N. Mokhtar**, Z. Busu, A. Sulaiman. Recovery of residual crude palm oil (RCPO) from oil palm decanter cake (OPDC) using D-limonene, *Advanced Materials Research* 1113, 405-410 (2015)
52. J.C. Gomez, **M.N. Mokhtar**, A. Sulaiman, A.S. Baharuddin, Z. Busu. Recovery of residual crude palm oil from the empty fruit bunch spikelets using environmentally friendly processes, *Separation Science and Technology,* 50, 1677 – 1683 (2015)
53. J.C. Gomez, **M.N. Mokhtar**, A. Sulaiman, R. Zakaria, A.S. Baharuddin, Z. Busu. Study on residual oil recovery from empty fruit bunch by combination of water and steam process, *Journal of Food Process Engineering* 38, 385 – 394 (2015)
54. S. Sulaiman, **M.N. Mokhtar**, M.N. Naim, A.S. Baharuddin, A. Sulaiman. A review: potential usage of cellulose nanofibers (CNF) for enzyme immobilization via covalent interactions, *Applied Biochemistry and Biotechnology* 175, 1817-1842 (2015)
55. N.S.H.M. Yunos, A.S. Baharuddin, K.F.M. Yunos, H.S. Hafid, Z. Busu, **M.N. Mokhtar**, A. Sulaiman, A.M. Som. The physicochemical characteristics of residual oil and fibers from oil palm empty fruit bunches, *BioResources* 10, 14-29 (2015)
56. M.A.K.M. Zahari, H. Ariffin, **M.N. Mokhtar**, J. Salihon, Y. Shirai, M.A. Hassan. Case study for a palm biomass biorefinery utilizing renewable non-food sugars from oil palm frond for the production of poly (3-hydroxybutyrate) bioplastic, *Journal of Cleaner Production* 87, 284–290 (2015)
57. N.L. Mohamad, S.M.M. Kamal, **M.N. Mokhtar**. Xylitol biological production: a review of recent studies, *Food Reviews International* 31, 74-89 (2015)
58. A.T. Talib, **M.N. Mokhtar**, A.S. Baharuddin, A. Sulaiman. Effects of aeration rate on degradation process of palm empty fruit bunch with kinetic-dynamic modeling. *Bioresource Technology,* 169, 428 – 438 (2014)
59. S. Saallah, M.N. Naim, **M.N. Mokhtar**, N.F.A. Bakar, M. Gen, I.W. Lenggoro. Transformation of cyclodextrin glucanotransferase (CGTase) from aqueous suspension to fine solid particles via electrospraying. *Enzyme and Microbial Technology*, 64-65, 52 – 59 (2014)
60. M.F. Zainuddin, R. Shamsudin, **M.N. Mokhtar**, D. Ismail. Physicochemical properties of pineapple plant waste fibers from the leaves and stems of different varieties. *BioResources* 9, 5311 – 5324 (2014)
61. N. Sahad, A.M. Som, A.S. Baharuddin, **N. Mokhtar**, Z. Busu, A. Sulaiman. Physicochemical characterization of oil palm decanter cake (OPDC) for residual oil recovery. *BioResources* 9, 6361 – 6372 (2014)
62. M.A. Adam, A. Sulaiman, C.M.S. Said, A.M. Som, A.S. Baharuddin, **M.N. Mokhtar**. Preliminary study of oil palm decanter cake natural polymer composite (OPDC-NPC). *Advanced Materials Research*, 911, 40 – 44 (2014)
63. N.A. Edama, A. Sulaiman, K.H.K. Hamid, S.N.A. Rahim, A.S. Baharuddin, **M.N. Mokhtar**. Encapsulation of multi-enzymes on waste clay material: preparation, characterization and application for tapioca starch hydrolysis. *Applied Mechanics and Materials*, 548, 77 – 82 (2014)
64. A. Sulaiman, N. Othman, A.S. Baharuddin, **M.N. Mokhtar**, M. Tabatabaei. Enhancing the halal food industry by utilizing food wastes to produce value-added bioproducts. *Procedia-Social and Behavioral Sciences* 121, 35-43 (2014)
65. H.S. Ng, C.W. Ooi, P.L. Show, C.P. Tan, A. Ariff, **M.N. Mokhtar**, E.P. Ng, T.C. Ling. Recovery of Bacillus cereus cyclodextrin glycosyltransferase using ionic liquid-based aqueous two-phase system, *Separation and Purification Technology* 138, 28–33 (2014)
66. W.A.W. Razali, A.S. Baharuddin, L.A. Zaini, **M.N. Mokhtar**, F.S. Taip, R. Zakaria. Effect of seed sludge quality using oil palm empty fruit bunch (OPEFB) bio-char for composting. *BioResources* 9, 2739 – 2756 (2014)

67. S.N.A. Rahim, A. Sulaiman, N.A. Edama, A.S. Baharuddin, **M.N. Mokhtar**. Factorial design analysis of a tapioca slurry saccharification process using encapsulated enzymes. *BioResources* 9, 3361 – 3368 (2014)
68. M.S. Mohamed, J.S. Tan, S. Kadkhodaei, R. Mohamad, **M.N. Mokhtar**, A.B. Ariff. Kinetic and modeling of microalga *Tetraselmis* sp. FTC 209 growth with respect to its adaption toward different tropic conditions. *Biochemical Engineering Journal* 88, 30 – 41 (2014)
69. H.S. Ng., C.W. Ooi, **M.N. Mokhtar**, P.L. Show, A. Ariff, J.S. Tan, E.P. Ng, T.C. Ling. Extractive bioconversion of cyclodextrins by *Bacillus cereus* cyclodextrin glycosyltransferase in aqueous two-phase system. *Bioresource Technology* 142, 723 – 726 (2013)
70. A.S. Baharuddin, A. Sulaiman, D.H. Kim, **M.N. Mokhtar**, M.A. Hassan, M. Wakisaka,Y. Shirai, H. Nishida. Selective component degradation of oil palm empty fruit bunches (OPEFB) using high-pressure steam. *Biomass & Bioenergy* 55, 268 – 275 (2013)
71. M.S. Mohamed, J.S. Tan, R. Mohamad, **M.N. Mokhtar**, A. Ariff. Comparative analyses of response surface methodology and artificial neural network on medium optimization for *Tetraselmis sp*. FTC209 grown under mixotrophic condition. *The Scientific World Journal*, ID 948940 (2013)
72. S. Shahrazi, S. Saallah, **M.N. Mokhtar**, A.S. Baharuddin, K.F.M. Yunos. Dynamic mathematical modeling of reaction kinetics for cyclodextrins production from different starch sources using *Bacillus macerans* cyclodextrin glucanotransferase. *American Journal of Biochemistry and Biotechnology* 9(2), 195 – 205 (2013)
73. N. Abdullah, N.L. Chin, **M.N. Mokhtar**, F.S. Taip. Effects of bulking agents, load size or starter cultures in kitchen-waste composting. *International Journal of Recycling of Organic Waste in Agriculture* 2(3), 1 -10 (2013)
74. M.A.K.M. Zahari, H. Ariffin, **M.N. Mokhtar**, J. Salihon, Y. Shirai, M.A. Hassan, Factors affecting poly(3-hydroxybutyrate) production from oil palm fond juice by *Cupriavidus necator* (CCUG52238). *Journal of Biomedicine and Biotechnology*, ID 125865 (2012) (current: *Biomed Res Int*)
75. M.A.K.M. Zahari, M.R. Zakaria, H. Ariffin, **M.N. Mokhtar**, J. Salihon, Y. Shirai, M.A. Hassan. Renewable sugars from oil palm frond juice as an alternative novel fermentation feedstock for value-added products. *Bioresource Technology* 110, 566 – 571 (2012)
76. H.S. Ng, C.P. Tan, **M.N. Mokhtar**, S. Ibrahim, A. Ariff, C.W. Ooi, T.C. Ling. Recovery of Bacillus cereus cyclodextrin glycosyltransferase and recycling of phase components in an aqueous two-phase system using thermo-separating polymer. *Separation and Purification Technology* 89, 9 – 15 (2012)
77. F. Ellouze, N.B. Amar, **M.N. Mokhtar**, W. Zimmermann, A. Deratani. Fractionation of homologous CD6 to CD60 cyclodextrin mixture by ultrafiltration and nanofiltration. *Journal of Membrane Science* 374(1-2), 129 – 137 (2011)
78. H.S. Ng, C.P. Tan, S.K. Chen, **M.N. Mokhtar**, A. Ariff, T.C. Ling. Primary capture of cyclodextrin glycosyltransferase derived from *Bacillus cereus* by aqueous two phase system. *Separation and Purification Technology* 81(3), 318 – 324 (2011)
79. M.N. Ahmad, **M.N. Mokhtar**, A.S. Baharuddin, L.S. Hock, S.R.A. Ali, S. Abd-Aziz, N.A.A. Rahman, M.A. Hassan. Changes in physicochemical and microbial community during co-composting of oil palm frond with palm oil mill effluent anaerobic sludge. *BioResources* 6(4), 4762 – 4780 (2011)
80. Q. Qi, **M.N. Mokhtar**, W. Zimmermann. Effect of ethanol on the synthesis of large-ring cyclodextrins by cyclodextrin glucanotransferase. *Journal of Inclusion Phenomena and Macrocyclic Chemistry* 57(1-4), 95 – 99 (2007)

Conference Posters / Proceedings

1. N.L. Cieh, **M.N. Mokhtar**, A.S. Baharuddin, M.A.P. Mohammed. Rice husk as carrier for lipase immobilization and its application in continuous monoacylglycerol production using a packed bed bioreactor. The 6th Postgraduate Colloquium for Environmental Research 2022 (POCER 2022), 9 – 11 Jun 2022, Langkawi
2. S.N. Sulin, M.A.P. Mohammed, A.S. Baharuddin, **M.M. Mokhtar**. Techno-economic analysis of palm oil mill after addition of unit procedures for 3-monochloropropane-1,2-diol (3-MCPD) mitigation. The 6th Postgraduate Colloquium for Environmental Research 2022 (POCER 2022), 9 – 11 Jun 2022, Langkawi
3. N.A. Zahari, **M.N. Mokhtar**. Potential of nata de coco as pectinase immobilization support for guava juice clarification and techno-economic analysis of its process design. The 6th Postgraduate Colloquium for Environmental Research 2022 (POCER 2022), 9 – 11 Jun 2022, Langkawi

4. N.L. Cieh, **M.N. Mokhtar**, A.S. Baharuddin, M.A.P. Mohammed. Study on the potential of rice-husk in lipase immobilization via covalent binding, and its application as packed bed bioreactor system for continuous production of monoacylglycerol (MAG). FENETT 2022 Online International & National Conference, 4 April 2022, Chiang Mai, Thailand
5. S.N. Sulin, M.A.P. Mohammed, A.S. Baharuddin, **M.N. Mokhtar**. Techno-economic analysis of the process to mitigate palm oil contaminants related to 3-monochloropropane-1,2-diol (3-MCPD). FENETT 2022 Online International & National Conference, 4 April 2022, Chiang Mai, Thailand
6. S.N. Sulin, **M.N. Mokhtar**, M.A.P. Mohammed, A.S. Baharuddin. Review on palm oil contaminants related to 3-monochloropropane-1,2-diol (3-MCPD) and glycidol esters (GE), The 5th International Conference on Agricultural and Food Engineering, (CAFEi2020), 3-4 February 2021, Kuala Lumpur
7. N.L. Cieh, **M.N. Mokhtar**, A.S. Baharuddin, M.A.P. Mohammed, Application of biomass residual oil in production of monoacylglycerol (MAG) through enzymatic glycerolysis using immobilized lipase, The 5th International Conference on Agricultural and Food Engineering, (CAFEi2020), 3-4 February 2021, Kuala Lumpur
8. N.S. Sahat, **M.N. Mokhtar**, A. Sulaiman, R. Zakaria, Enzymatic membrane reactor system for interesterification of palm oil using covalent binding techniques to produce cocoa butter equivalent, The 4th International Conference on Agricultural and Food Engineering, (CAFEi2018), 7-9 November 2018, Putrajaya
9. U.E. Shehu, A.S. Baharuddin, N.M. Nawi, **M.N. Mokhtar**, Modeling and simulation of heat transfer through palm fruitlets during thermal treatment process. The 4th International Conference on Agricultural and Food Engineering, (CAFEi2018), 7-9 November 2018, Putrajaya
10. **M.N. Mokhtar**, Dynamic mathematical modeling and simulation of militube sterilization process, The 4th International Conference on Agricultural and Food Engineering (CAFEi2018), 7-9 November 2018, Putrajaya
11. C.C. Jie, A.S. Baharuddin, M.A.P. Mohammed, A. Sulaiman, M. Wakisaka, **M.N. Mokhtar**, Residual oil recovery from POME and EFB at palm oil mill. The 4th International Conference on Agricultural and Food Engineering, (CAFEi2018), 7-9 November 2018, Putrajaya
12. N.L. Cieh, **M.N. Mokhtar**, A.S. Baharuddin, M.A.P. Mohammed, Enzymatic production of monoacylglycerol (MAG) from biomass residual oil by immobilized lipase from *candida antarctica*. The 4th International Conference on Agricultural and Food Engineering, (CAFEi2018), 7-9 November 2018, Putrajaya
13. S.N. Sulin, **M.N. Mokhtar**, Residual crude palm oil resources and recovery method: A Review, MSAE Convention, 21 March 2019, Putrajaya
14. N.A. Zulkifli, M.Z.M. Nor, **M.N. Mokhtar**, A Sulaiman, Strategies for sustainable production of starch from sweet potato, MSAE Convention, 21 March 2019, Putrajaya
15. **M.N. Mokhtar**, Biochemical reaction engineering in biological processes, International Conference on Chemical and Process Plant Engineering (ICCPE2018), 26 July 2018, Petaling Jaya
16. L.C. Ng, S. Sulaiman, **M.N. Mokhtar**, M.N. Naim, A.S Baharuddin. Immobilization of cyclodextrin glucanotransferase from *Bacillus macerans* on bleached kenaf bast micro-fibre, The 3rd International Conference on Agricultural and Food Engineering (CAFEi 2016), 23 – 25 August 2016, Kuala Lumpur
17. K.Y. Phoon, H.S. Ng, **M.N. Mokhtar**, R. Zakaria, H.S. Yim. Enrichment of vitamin E from crude palm oil by adsorption-desorption process, The 3rd International Conference on Agricultural and Food Engineering (CAFEi 2016), 23 – 25 August 2016, Kuala Lumpur
18. S. Rahmam, M.N. Naim, **M.N. Mokhtar**, N.F.A Bakar. The solidification of encapsulated jasmine extract using electrostatic atomizer (electrospray), The 3rd International Conference on Agricultural and Food Engineering (CAFEi 2016), 23 – 25 August 2016, Kuala Lumpur
19. A.T. Talib, **M.N. Mokhtar**, A.S. Baharuddin. Mathematical modeling of co-composting of oil palm empty fruit bunch, The 7th International Conference on Sustainable Agriculture for Food, Energy and Industry in Regional and Global Context (ICSAFEI 2015), 25 – 27 August 2015, Universiti Putra Malaysia
20. S. Sulaiman, **M.N. Mokhtar**, M.N. Naim, A.S. Baharuddin, M.A.M. Salleh, A. Sulaiman. Chemical-Mechanical treatment effects on cellulose nanofiber (CNF) from kenaf as a support for covalent immobilization of CGTase enzyme, The 7th International Conference on Sustainable Agriculture for Food, Energy and Industry in Regional and Global Context (ICSAFEI 2015), 25 – 27 August 2015, Universiti Putra Malaysia
21. S. Sulaiman, **M. N. Mokhtar**, M. N. Naim, A. S. Baharuddin, M. A. M. Salleh, A. Sulaiman. Study on the preparation of cellulose nanofiber (CNF) derived from kenaf bast fibre for the application of enzyme immobilization, Conference on Nano- & Bioresource Technology 2015, 28 – 29 March 2015, Universiti Kebangsaan Malaysia

22. M.A.K.M. Zahari, **M.N. Mokhtar**, H. Ariffin, Y. Shirai, M.A. Hassan. Case study for a palm biomass biorefinery utilizing renewable sugars from oil palm frond for the production of poly(3-hydroxybutyrate) bioplastic. The 13th Annual International Symposium on Bioplastics, Biocomposites and Biorefinery: Moving Towards a Sustainable Bioeconomy, 19 – 24 May 2014, Guelph, Kanada
23. M.F. Zainuddin, R. Shamsuddin, **M.N. Mokhtar**, I. Dahlan. Effect of moisture content on tensile strength of pineapple waste pellet, National Conference on Agricultural and Food Mechanization 2014, 20 – 22 May 2014, Kota Kinabalu, Sabah
24. S. Saallah, M.N. Naim, **M.N. Mokhtar**. Preparation and application of CGTase in nanobiocatalyst system. Concluding Workshop on 'Novel amylomaltases for the synthesis of large-ring cyclodextrins", 20 – 22 February 2013, Chulalongkorn University, Bangkok, Thailand
25. H. S. Ng, T. C. Ling, **M. N. Mokhtar**. Separations of cyclodextrins using aqueous two-phase system (ATPS), The 2nd International Conference on Agricultural and Food Engineering 2012 (CAFEi 2012), 26-28 November 2012, Palm Garden Hotel IOI Resort, Putrajaya, Malaysia
26. M.H. Asr, M.N. Ibrahim**, M.N. Mokhtar**, K.F.M. Yunos, N.A. Ibrahim. Selected properties of oil palm kernel, The 2nd International Conference on Agricultural and Food Engineering 2012 (CAFEi 2012), 26-28 November 2012, Palm Garden Hotel IOI Resort, Putrajaya, Malaysia
27. M.F. Zulkifli, U.K.M. Shah, **M.N. Mokhtar**, R. Mohamad. Effect of gas flow rate on recovery of acetone-butanol-ethanol (ABE) via gas stripping, 31st Symposium of the Malaysia Society for Microbiology, 13 – 15 December 2012, Kota Kinabalu, Sabah, Malaysia
28. M.F. Zulkifli, U. K. M. Shah, R. Mohamad, **M.N. Mokhtar** and N.A.M. Remli. Utilization of rice straw hydrolysate for Aceton- Butanol-Ethanol production by *Clostridium acetobutylicum* ATCC 824. International Congress of the Malaysia Society for Microbiology 2011, 8 – 11 December 2011, Penang, Malaysia
29. **M.N. Mokhtar**. Biocatalytic production of large-ring cyclodextrins. In Kick-off Workshop 'Novel amylomaltases for the synthesis of large-ring cyclodextrins', October 13 – 15, 2008, University of Leipzig, Germany
30. **M. N. Mokhtar**, M. Gruner and W. Zimmermann. Optimization of biocatalytic synthesis of large-ring cyclodextrins. Tagung der VAAM/GBM, March 9 –11, 2008, Frankfurt, Germany
31. **M. N. Mokhtar**, M. Gruner and W. Zimmermann. Optimization of biocatalytic synthesis of large-ring cyclodextrins. Sächsischer Biotechnologietag, November 28, 2007, Dresden, Germany
32. Q. Qi, **M. N. Mokhtar** and W. Zimmermann. Effects of Ethanol on the Synthesis of Large-Ring Cyclodextrin by Cyclodextrin Glucanotransferase. 5th Biotechnology Symposium, May 18-19, 2006, Center for Biotechnology and Biomedicine, Leipzig, Germany
33. Q. Qi, **M. N. Mokhtar** and W. Zimmermann. Effects of Ethanol on the Synthesis of Large-Ring Cyclodextrin by Cyclodextrin Glucanotransferase. XIII International Cyclodextrins Symposium, May 14-17, 2006, Turin, Italy
34. **M. N. Mokhtar** and W. Zimmermann. Biocatalytic Synthesis of Large-Ring Cyclodextrins. 4th Leipzig Research Festival for Life Sciences, December 16, 2005, Leipzig, Germany

Patents

1. **M.N. Mokhtar**, A.S. Baharuddin, M.A.M. Salleh, M.N. Naim, S. Sulaiman, N.L. Cieh. Method of fabricating supported ultrafiltration membrane, supported ultrafiltration membrane and enzymatic membrane reactor thereof. PI 2017703915, Malaysia Patent Application (2017)
2. A.S. Baharuddin, A. Sulaiman, **M.N. Mokhtar**, N.M. Nazmi, C.C. Jie, N.S.H.M. Yunos, A.M. Som, Z. Busu, R. Yunus, M. Wakisaka, Integrated system for processing oil palm empty fruit bunches (OPEFBs). PI 2017703897, Malaysia Patent Application (2017)
3. A.S. Baharuddin, A. Sulaiman, **M.N. Mokhtar**, N.S.H.M. Yunos, J.H.C. Gomez, A.M. Som, Z. Busu, R. Yunus, C.C. Jie. Palm oil recovery. UI 2015701621, Malaysia Patent Application (2015)
4. **M.N. Mokhtar**, A. Sulaiman, A.S. Baharuddin, J.H.C. Gomez, Z. Busu, R. Yunus. A method for crude oil removal from empty fruit bunches. PI2014701620, Malaysia Patent Application (2014)
5. M. A. Hassan, A.S. Baharuddin, L.S. Hock, A. Sulaiman, M. Z. M. Yusoff, E. K. Bharin, **M.N. Mokhtar**, H. Nishida, Y. Shirai, M. Wakisaka. A method for treating oil palm biomass. PI2011000731, Malaysia Patent Application (2011)
6. M.A. Hassan, H. Ariffin, M.A.K.M. Zahari, M.R. Zakaria, J. Salihon, **M.N. Mokhtar**, Y. Shirai. Renewable sugars from oil palm waste. PI2011004440, Malaysia Patent Application (2011)
7. W. Zimmermann, **M.N. Mokhtar**, K.-U. Lauckner. Process for the preparation of cyclodextrins composed of more than eight glucose units. European Patent Application EP 09153819.9 (2009)

Chapter in Books (If any)

1. N. Abdullah, N.L. Chin, **M.N. Mokhtar**, F.S. Taip. Effects of bulking agents, load size or starter cultures in aerobic-waste composting. In 'Biological Treatment of Solid Waste', E.C. Rada (Editor). CRC Press, Bota Raton (2016)
2. M.T. Asghar, Y.A. Yusof, **M.N. Mokhtar**, M.E. Yaacob, Y.N. Manaf, L.S. Chang. Production and application of coconut palm sugar. In ' The Coconut Palm (Cocos nucifera) Production, Cultivation and Uses', P.K. Ghosh (Editor) (2021)

Research Grants

	Project Title (Project Leader)	Amount (RM)	Year	Source of Fund	Status
1.	Process development of starch and by-products from sweet potatoes	139,000	2018 – 2022	GP-IPB (RMC-UPM)	Ongoing
2.	Development of novel immobilized biocatalyst system for interesterification of RBD palm oil	25,000	2018 – 2020	GP-IPS (RMC-UPM)	Completed
3.	Evaluation on post-harvesting and processing of fresh fruit bunch towards minimizing free fatty acids accumulation in palm fruitlet and crude palm oil	25,000	2018 – 2020	GP-IPS (RMC-UPM)	Completed
4.	Evaluation of reaction kinetic with mass transfers in enzymatic membrane reactor using cellulose nanofiber fouling technique	50,000	2017 – 2019	GP (RMC-UPM)	Completed
5.	Production of biodiesel from recovered residual oil in palm oil milling process	54,000	2017-2020	Matching Grant UPM-Kyutech	Completed
6.	Study on surface modification of kenaf micro- and nanofibers for enhancing enzyme immobilization loading and stability	15,000	2014-2016	GP-IPS (RMC-UPM)	Completed
7.	Cellulose nanofiber as a potential support for immobilization of cyclodextrin glucanotransferase via covalent binding	118,700	2014-2016	FRGS (KPT)	Completed
8.	Subtopic: Recovery of crude palm oil from empty fruit bunch and unstripped fruit bunch	238,658	2012-2017	LRGS (KPT)	Completed
9.	Development of nano-biocatalyst system from kenaf based cellulose nanofibers (CNF)	15,000	2014-2016	GP-IPS (RMC-UPM)	Completed
10.	Development of nanofiber biocatalyst system	172,000	2012-2014	Sciencefund (MOSTE)	Completed
11.	Study of reaction kinetic with and energy transfers of aerobic composting in a closed system	44,000	2010-2012	FRGS (KPT)	Completed

12.	Study of adsorption process and implementation of periodic rotary adsorption for separating bioproduct	30,000	2009-2011	RUGS	Completed

Postdoctoral Supervision

	Name	Duration
1.	Dr. Farah Nadia Omar	2018 – 2020

Student Supervision

PhD (Main Supervisor)

	Name	Title	Status
1.	Siti Naderah Sulin	Design and techno-economic analysis of palm oil mill towards zero 3-MCPD and GE precursors	Ongoing
2.	Ng Lin Cieh	Production of MAG from residual palm oil using enzyme immobilization technology	Ongoing
3.	Nur Shakira Sahat	Enzymatic interesterification of palm oil using fouled nanofiber-lipase on membrane reactor	Ongoing
4.	Dr. Umar Etsu	Dynamic mathematical modeling of free fatty acid accumulation in fresh oil palm fruit (*Elaeis guineensis Jacq.*)	Graduated (2020)
5.	Dr. Mina Habibiasr	Physicoproperties of palm kernel and mathematical modeling of its dehydration process	Graduated (2020)
6.	Dr. Safwan Sulaiman	Covalent immobilization of α-CGTase on cellulose nanofiber derived from kenaf bast for enzymatic membrane reactor	Graduated (2018)
7.	Dr. Ng Hui Suan	Application of aqueous two-phase system on recovery of *Bacillus cereus* cyclodextrin glycosyltransferase and cyclodextrins	Graduated (2013)

PhD (Co-Supervisor)

	Name	Title	Status
1.	Al Qassab Ali Abdulkareem Ridha	In-house production of cellulase for the application in the enhancing of palm oil recovery process	Ongoing
2.	Dr. Lawal Abubakar Abdullahi	Treatment of palm oil mill effluent final discharge by biochar adsorption	Graduated (2021)
3.	Dr. Asghar Muhammad Tuseef	Processing of coconut SAP into syrup and granular sugar using different evaporation techniques for economical production	Graduated (2021)
4.	Chu Chang Jie	Residual oil recovery from oil palm biomass	Ongoing
5.	Dr. Javier Hernando Chavarro Gómez	Synthesis of polyurethanes from EFB recovered oil with algae oil as additive for food packaging applications	Graduated (2020)
6.	Dr. Seyed Amirebrahim Emami Moghaddam	Improvement of algal-alginate bead stability by zeolite molecular sieves 13X and its application in biosorption	Graduated (2019)
7.	Ahmad Tarmezee Talib	Biomechanics of oil palm fibre biodegradation	Ongoing

PhD (Co-Supervisor)

	Name	Title	Status
8.	Sarah Idris	Characterization of local cassava (*Manihot Esculenta*) and flour processing	Ongoing
9.	Syuhaidah Rahman	Encapsulation of bioactive compound from jasmine flower using beta-cyclodextrin via electrospray	Completed (2020)
10.	Dr. Loo Yu Xiang	Production of biosugars from oil palm empty fruit bunches stalk	Graduated (2019)
11.	Dr. Thang Yin Mee	Monitoring chemical changes of binding carbohydrates and simulation of temperature profiles during sterilization of oil palm fruit bunches	Graduated (2022)
12.	Dr. Muhamad Yusuf Hassan	Compost hybrid modeling of organic waste	Graduated (2020)
13.	Dr. Nurul Lina Mohamad	Modeling of xylitol production based on xylose fermentation by Candida topicalis	Graduated (2018)
14.	Dr. Mohd Shamzi Mohamed	Modeling and engineering design of multiple impeller system for pilot scale fermentation	Graduated (2014)
15.	Dr. Mior Ahmad Khushairi Mohd Zahari	Production of polyhydroxyalkanoates (PHA) from oil palm fronds	Graduated (2013)

MS with thesis (Main Supervisor)

	Name	Title	Status
1.	Ng Lin Cieh	Effect of different coupling agents in covalent enzyme immobilization on kenaf micro fibre	Graduated (2018)
2.	Phoon Kah Yee	Enrichment of bioactive minor components from CPO and PPMFO by sequential adsorption-desorption technique	Graduated (2018)
3.	Shahinaz Shahrazi	Enzymatic reaction kinetic and adsorption process in cyclodextrins production from selected starches	Graduated (2015)
4.	Ahmad Tarmezee Talib	Kinetic-dynamic modeling of co-composting of oil palm empty fruit bunch with rabbit manure in a closed system with mass and energy transfer	Graduated (2015)
5.	Javier Hernando Chavarro Gómez	Oil removal from oil palm empty fruit bunches spikelet by applying steam and water processes	Graduated (2014)

MS with thesis (Co-Supervisor)

	Name	Title	Status
1.	Norbaiti Jarabe	Effect of palm kernel re-heating process at kernel crushing plant (KCP)	Ongoing
2.	Nor Shaerah Abd Rasid	Surface water treatment via phytoremediation process using aquatic perennial plants (*Nelumbo Nucifera*)	Graduated (2019)
3.	Noor Seribainun Hidayah Md Yunos	Residual oil removal from oil palm empty fruit bunches using high pressure water spray system	Graduated (2015)

MS with thesis (Co-Supervisor)			
	Name	**Title**	**Status**
4.	Muhammad Fakhri Zainuddin	Development of pineapple waste pellets and in vitro digestibility study for herbivore	Graduated (2015)
1.	Mohamad Firdaus Zulkifli	Production and recovery of biobutanol from rice straw using clostridium sp.	Graduated (2014)
2.	Wan Aizuddin Wan Razali	Composting evaluation of oil palm empty fruit bunches with palm oil effluent anaerobic sludge	Graduated (2014)
3.	Norazlin Abdullah	Optimization of food waste composting	Graduated (2011)
4.	Yeoh Chui Yen	Composting of palm oil mill waste by additional of microbes mixture	Graduated (2011)

Final year project for Bachelor (Main-Supervisor)			
	Name	**Title**	**Status**
1.	Fazleen Syahira Rizalman	Techno-economic study on palm oil refinery with chlorides, 3-MCPD, and GE removal	Ongoing
2.	Nur Izatie Izham	Development of sustainable design of monoacylglycerols production from crude palm oil using SuperPro Designer	Graduated (2021)
3.	M. Iqbal Mohd Yamin	Development of sustainable design of cocoa butter equivalent (CBE) production from RBD oil using SuperPro Designer	Graduated (2021)
4.	Nur Artiqah Ideris	Comparison between batch, continuous and semi-continuous palm oil milling	Graduated (2020)
5.	Nor Zalifah Razali	Thermal treatment of sugarcane juice by using capillary tube	Graduated (2020)
6.	Nurhanisah Mohammed Salleh	Extraction and concentration of sweet potato juice	Graduated (2019)
7.	Ho Yik Jeng	Sweet potato juice clarification by immobilized pectinase on sodium alginate-cellulose nanoparticles	Graduated (2018)
8.	Norshuhadah Shahdan	Sweet potato – glucose production by using immobilized glucoamylase on sodium alginate-cellulose nanoparticle	Graduated (2018)
9.	Shazreen Joseph Chan	Microbubble separation technology for residual palm oil from discharge sludge water	Graduated (2017)
10.	Nurul Azira Zahari	Immobilization of pectinase on nata de coco for guava juice clarification	Graduated (2017)
11.	Muhammad Izwan Norman	Baseline study of phospholipids in palm oil biomass	Graduated (2016)
12.	Syahmi Adli Ismail	Process recovery of vitamin E from oil palm mesocarp fiber	Graduated (2016)
13.	Tan Qee Chow	Study on the effects of temperature and water content on crude palm oil (CPO) quality	Graduated (2015)

Final year project for Bachelor (Main-Supervisor)

	Name	Title	Status
14.	Ruben a/l Thiruchelvam	Immobilization of phospholipase A1 enzyme for the degumming of crude palm oil	Graduated (2015)
15.	Wan Nurhakimah Wan Abd. Hamed	Study on the effect of water ratio and soaking time for crude palm oil recovery from residual oil in empty fruit bunch	Graduated (2015)
16.	Hazierah Mohd Helmey	Immobilization of cyclodextrin glucanotransferase on microfiber from oil palm empty fruit bunch spikelet	Graduated (2014)
17.	Muhammad Naim Muhammad Khatib	Immobilization of cyclodextrin glucanotransferase (CGTase) on magnetic chitosan microparticles support	Graduated (2014)
18.	Chu Chang Jie	Enzymatic treatment of bird nest	Graduated (2013)
19.	Ng Lin Cieh	CGTase immobilization on kenaf fibers and its application in starch modification	Graduated (2013)
20.	Lim Kok Wai	Biodiesel synthesis by enzymatic transesterification reaction of palm oil and ethanol using immobilized *Burkholderia cenocepacia* lipase on kenaf fiber	Graduated (2012)
21.	Nurul Buhirah Abd Rahman	Dynamic mathematical modeling of acetone-butanol-ethanol (ABE) fermentation from mixed of carbon sources using *Clostridium acetobutylicum* ATCC 824	Graduated (2012)
22.	Tan Mei May	Dynamic mathematical modeling of reaction kinetics for poly(3-hydroxybutyrate) production from mixed sugars using *Cupriavidus necator* NCIMB11599	Graduated (2012)
23.	Awangku Fazrulji Mehdi	Co-composting of empty fruit bunch and palm oil mill effluent anaerobic sludge in 80 L vertical closed bioreactor	Graduated (2011)
24.	Chen Lai Feng	Theoretical study of aerobic composting with energy and mass transfers	Graduated (2011)
25.	Woo Joo Ann	Enzymatic production of cyclodextrins from local sago and tapioca starch using cyclodextrin glucanotransferase from *Bacillus macerans*	Graduated (2011)
26.	Chew Kui Ling	Dynamic mathematical modelling and simulation of poly(-hdroxybutyrate-co-3-hydroxyvalerate) production by fed-batch fermentation using VFAS from POME	Graduated (2010)
27.	Hamizah Hamdan	Study of dynamic mathematical modeling and simulation of composting process in a closed system	Graduated (2010)
28.	Nurul Haliza Hassan	Theoretical studies of cyclodextrin glucanotransferase production by batch and continuous cultivation	Graduated (2010)

Final year project for Bachelor (Main-Supervisor)			
	Name	**Title**	**Status**
29.	Tong Eng Peng	Study of the characteristic of koji and moromi fermentation	Graduated (2010)

Capstone Design Project for Bachelor (Main-Supervisor)		
	Title	**Year**
1.	Design of semi-batch galacto-oligosaccharides (GOS) powder production plant	2021/22
2.	Design of isomalto-oligosaccharides (IMO) production from local sweet potato (VitAto)	2020/21
3.	Design of hydrolyzed soybean protein powder production	2019/20
4.	Design of vinegar production from coconut water	2018/19
5.	Design of sugar production from sweet potato	2017/18
6.	Design of high unsaturated fat olein by enzymatic interesterification and dry fractionation process	2016/17
7.	Design of crude palm oil (CPO) production	2015/16
8.	Design of palm olein production	2014/15

Journal Reviewer

1. Bioresource Technology
2. Biochemical Engineering Journal
3. Carbohydrate Biopolymers
4. Food and Bioproducts Processing
5. Food Process Engineering
6. Journal of Cleaner Production
7. Process Biochemistry
8. Journal of Oil Palm Research
9. Applied Biochemistry and Biotechnology
10. International Food Research Journal
11. Journal of Molecular Catalysis A
12. Journal of Applied Microbiology
13. Food Bioscience
14. Waste Management
15. 3 Biotech
16. The Open Fuels & Energy Science Journal
17. Polish Journal of Chemical Technology

Invited Speaker

1. Research Seminar Series 5/2022, “Title: Transformation of agricultural products into value-added products: Perspective of process engineering”, organized by Institute of Plantation Studies, Universiti Putra Malaysia, 26th May 2022
2. International Conference on Chemical and Process Plant Engineering (ICCPE – 2018) “Title: Biochemical reaction engineering in biological processes”, organized by Universiti Teknologi Petronas, 26th July 2018
3. International Conference on Renewable Energy Science and Technology (ICREST – 2017) “Title: Reaction kinetics in anaerobic digestion of agricultural wastes for production of biogas”, organized by Alagappa University, India, 10 – 11th March 2017
4. Talk on “Enzyme Immobilization Technology”, organized by AFETD-Institute Engineers Malaysia, 9th August 2016
5. 2-day course on algal biotechnology. “Topic: Bioconversion of microalgae products”, organized Faculty of Engineering, UPM, 29 – 30th August 2016

6. LRGS Workshop VII "Enhancing productivity and sustainability of palm oil milling industry: Oil recovery from empty fruit bunches and unstripped fruit bunches" organized by UTM,21-22nd January 2016

Industrial Collaboration

	Project	Duration/Year
1.	Research collaborations (Co-composting, residual oil recovery, FFB grading etc.), Felda Global Ventures (FGV) Holdings Berhad	2012 – current
2.	PhD student scholarship to Nurul Shakirah (Yayasan Sime Darby) – joined supervision, Sime Darby Research Sdn. Bhd.	2018 – 2021
3.	Residual oil recovery from oil palm empty fruit bunches, FTJ Bio Power Sdn. Bhd.	2016
4.	Compost production from organic wastes and agro-wastes, Highbiz Trading Sdn. Bhd.	2013 - 2014
5.	Serdang Biomass Town, Ministry of Agriculture, Forestry and Fisheries (Japan) – National Solid Waste Management Department – Subang Jaya Town Council	2011 – 2014
6.	Semi-commercial scale in EFB composting using closed bioreactor, Felda Palm Industries Sdn. Bhd.	2010 - 2011

Other Contributions

	Position	Duration/year
1.	Stakeholders panel for Postgraduate Program (Process Plant Operation), Universiti Malaysia Pahang	2021 – present
2.	Coordinator for Shared Courses for new curriculum structure (2021-2025), Faculty of Engineering, UPM	2021
3.	MyGRANTS Panel of Research Management Centre, UPM	2019 - present
4.	Mentor for young lecturer in Foundation Teaching Course, Universiti Putra Malaysia	2021, 2018
5.	Panel for TVET Standard Development (level 6), Malaysia Qualification Agency (MQA)	2019 - 2020
6.	Chairperson, The 4th International Conference on Agricultural and Food Engineering (CAFEi2018), Kuala Lumpur	2018
7.	Subject Matter Expert for Steinbeis Malaysia Foundation	2017
8.	Committee Member / Co-Opted Member of Agricultural and Food Engineering Technical Division, The Institution of Engineers, Malaysia	2010 – 2011, 2015 – 2016, 2016 – 2017, 2017 - 2018
9.	Secretariat for The International Conference on Agricultural and Food Engineering (CAFEi2012), Kuala Lumpur	2012, 2014, 2016
10.	Panel of Judge for 23rd International Invention, Innovation & Technology Exhibition, ITEX2012, Kuala Lumpur	2012
11.	Working Group Member for Serdang Biomass Town and UPM Biorefinery Complex	2011
12.	Committee for Occupational Safety and Health, Faculty of Engineering, Universiti Putra Malaysia	2011

Professional Course/Meeting Attend

	Course/Meeting	Year
1.	ASEAN Council on Agricultural and Biosystem Engineering (ACABE) Meeting, Selangor	2018
2.	Special Talent Program (Academic Group) – Challenges of Human Resource Governance, UPM	2017
3.	Special Talent Program (Academic Group) – University Constitution, UPM	
4.	National Convention of Agricultural Engineers, Malaysia Society of Agricultural Engineers	2017
5.	Palm Oil Milling Technology Colloquium 2016 (POMTeC'16), Institute of Advanced Technology, UPM	2016

6.	National Convention of Agricultural Engineers, Malaysia Society of Agricultural Engineers	2016
7.	Indepth Seminar Presentation “Refining, fractionation, texturization, and manufacturing of edible oil and fats downstream products from palm and palm kernel oil”, Institute of Advanced Technology, UPM	2016
8.	Palm Oil Milling Technology Colloquium 2015 (POMTeC’15), Institute of Advanced Technology, UPM	2015
9.	Professional Engineering Course, Malaysia Society of Agricultural Engineers	2015
10.	International Workshop on SMART Farming XI: Delivering Appropriate Precision Technologies & Management Practices in Agricultures, UPM	2014
11.	Two-Day Course on “Precision in Crop Farming: Concept and Application”, MSAE	2014
12.	Palm Oil Milling Technology Colloquium 2013 (POMTeC’13), Institute of Advanced Technology, UPM	2013
13.	Engineering Management Practice, Board of Engineers Malaysia	2010
14.	Code of Ethics / Regulations, Board of Engineers Malaysia	2010
15.	Safety & Health at Work, Board of Engineers Malaysia	2010
16.	UPM’s Program for High Performance Organization Culture, Port Dickson, N. Sembilan	2009