
**DR
FAUZIAH MARPANI
(CENG, ICHEME)**



fauziah176@uitm.edu.my



+603-55436510
+6018-2013401

GOOGLE SCHOLAR
SCOPUS
RESEARCHGATE

EXPERIENCE

SENIOR LECTURER/UNIVERSITI TEKNOLOGI MARA

July 2007 – current

I teach core courses in chemical engineering: mass and energy balance, unit operations, heat and mass transfer, process control & instrumentation, particle technology and engineering drawing (autoCAD). I am keen in developing e-content teaching materials for some of the courses. I was actively involved in program latihan khidmat negara (PLKN) as a facilitator during 2007-2011. I was attached with the deputy dean's office as a coordinator for research and industrial linkage, managing research related activities and liaison with industry panels for consultation projects, MOU/MOA, conducting national & international research grants application workshop and academic writing series. I am leading Integrated Separation Technology Research Group (iSTRonG) in a track for development of High Center of Excellence (HiCoE) and we have secured more than RM1million research grants to date and was awarded 5 stars research group excellence in 2019. I successfully secured national grants, FRGS in 3 years consecutively (2017, 2018 and 2019) with a total amount of RM270,000. Currently, I am actively involved in consultation work on Environmental Impact Assessment (EIA) study of various process plants in Malaysia. I would like to expand my research interest in biocatalysis and membrane filtration in bioprocessing and water treatment.

PROFESSIONAL DEVELOPMENT

ATTACHMENT/GOLDEN ECOSYSTEM SDN BHD

August 2018 – July 20019

In the effort to obtain Professional Engineer status with Board of Engineers Malaysia and Chartered Engineer with IChemE, I took 12 months sabbatical leave and attached with a consultant specialized in environmental management and EIA study. I have been exposed to the legislations including acts, rules, regulation and orders practiced by Department of Environment Malaysia. I was involved in the writing of EIA report for the Proposed Development of Pekan Nenas Transfer Station in Johor and Closure Plan Report of a scheduled waste prescribed premise in Pulau Indah, Port Klang.



PHD STUDY/TECHNICAL UNIVERSITY OF DENMARK

November 2012 – April 2016

I was attached in the Center for Bioprocess Engineering, Department of Chemical and Biochemical Engineering, DTU. My research topic is about catalyzing carbon dioxide into useful chemicals with a cascade of enzymes working in reverse in a membrane bioreactor. My experiences include synchronous membrane filtration & product separation (reactive separation technology), various non-covalent enzyme immobilization techniques, complex enzyme kinetics and catalysis and enzyme & cofactor utilization and efficiency. Research outcome was written in four academic articles during the period which has been published in a very high impact journals in the field.

OBJECTIVE

Dedicated and motivated academician with proven experience in research, academic writing, teaching, leadership & organizational skills venturing into consultation work

TUTOR/UNIVERSITI TEKNOLOGI MARA

June 2005 – June 2007

Awarded UiTM Young Lecturer Scheme Scholarship and pursuing MSc (Chemical Engineering) in the field of particle technology and processing. The experiments involving a pilot scale fluidized bed column which could operate up to 5 kg of samples. My research was about binary fluidization of oil palm tree waste (palm kernel shell and palm fibre) with silica sand to simulate a fluidized bed reactor. The findings include powder characterization (SEM images, Geldart's powder classification, particle size distribution, powder flowability parameters), analysis of fluidization hydrodynamics parameters (minimum fluidization velocity, complete fluidization velocity, fluidization index) and observation of fluidization behaviour (flow regime, mixing mechanism). The outcome of the research has been published in four national and international conferences and one journal article.

SKILLS

Critical Thinker
Time Management, Team Player
High Motivation
Self-confidence
Persistence, Persevere,
Meticulous, Multitasker
Strong Work Ethics

MANAGEMENT TRAINEE/TANJUNG OFFSHORE BERHAD

August 2004 – May 2005

I was attached under various departments in the company, liaising in the procurement and tender activities, also exposed to hands on technical training in one of the services branch in Terengganu.



HONOR AND AWARD

Research Group Upgrading The next step is development of Center of Excellence (CoE) in UiTM	2021
5 Star EK Tier 5 Performance Score 2019 (Group Leader) Awarded based on overall score merit achieved more than 80% for the year 2019	2020
IIDEX Gold Award Awarded for the invention/innovation/design of “Advanced nanofibers-PMR for OPW remediation”	2019
5 Star EK Tier 5 Performance Score 2018 (Group Leader) Awarded based on overall score merit achieved more than 80% for the year 2018	2019
Anugerah Perkhidmatan Cemerlang 2017 Awarded based on the quality/quantity of contribution exceeds the normal responsibility requirement for the position	2018
Otto Mønsted Fonds Travel grant for overseas conference in Poland, awarded by the government of Denmark	2015
SLAB/SLAI Scholarship Prestigious scholarship from the government of Malaysia sponsoring full board PhD studies in Technical University of Denmark from November 2012 to April 2016	2012
UiTM Young Lecturer Scheme Prestigious scholarship from Universiti Teknologi MARA and the government of Malaysia sponsoring MSc studies fees and monthly allowance in Universiti Teknologi MARA from Jun 2005 to Jun 2007.	2005

ADMINISTRATIVE EXPERIENCE

National/University

University Representative, *Malaysia Membrane Society (MyMembrane)* (2020-2022)
Ranking Champions (2020-Current)
Copy Editor *Malaysian Journal of Chemical Engineering & Technology* (e-ISSN: 2682-8588) (2020-2022)
Reviewer, Symposium on Frontier Materials & Industrial Applications (SFMIA2019) (2019)
Judge, Poster session, Symposium on Frontier Materials & Industrial Applications (SFMIA2019) (2019)
University Representative, *Malaysia Membrane Society (MyMembrane)* (2018-2022)
Reviewer, *Journal of Oil Palm Research* (2017), *Jurnal Teknologi* (2018), *Scientific reports* (2018), *Regional Chemical Engineering Undergraduate* (2019), *Journal of Applied Membrane Science & Technology* (2020), *Malaysian Journal of Fundamental Applied Sciences* (2021), *Jurnal Teknologi* (2021), *International Journal of Technology* (2021)
Reviewer, 5th International Conference on Global Sustainability and Chemical Engineering 2021

Reviewer, 4th International Conference on Global Sustainability and Chemical Engineering 2018

Reviewer, Symposium on Frontier Materials & Industrial Applications (SFMIA2019) (2019)

Reviewer, Conference on Science and Social Research (CSSR) (2014)

College/School

Head of Internal Audit (2020-2021)

Coordinator of MyRA and Research & Industrial Linkages (2020-current)

Deputy Chairman, 5th International Conference on Global Sustainability and Chemical Engineering 2021 (ICGSCE 2021) (2020-2021)

Head of Integrated Separation Technology Research Group (i-STRonG) (2018-current)

Lead Coordinator, Final Year Design Project (2016-2018)

Head of Logistic Committee, 4th International Conference on Global Sustainability and Chemical Engineering 2018 (ICGSCE 2018) (2018)

Coordinator, Research and Industrial (2018)

Coordinator, Income Generation (2017)

Academic advisor (2007-current)

RESEARCH GRANT

National Grant

FRGS 2019-2021 (RM104,700)

The Role of Metal Oxide and Bacterial Cellulose Incorporated in Hybrid Polymer Membrane for Simultaneous Adsorption, Hydration and **Biocatalytic** Reduction of CO₂

FRGS 2018-2020 (RM81,000)

Mussel-Inspired Surface Modification Mechanism of Metal Chelated Polymer Membrane in Enhancing **Biocatalytic** Removal of Water Micropollutants

FRGS 2017-2019 (RM86,284)

Synergistic Mechanism in **Biocatalytic** Graphene Oxide-based Polymer Membrane Filtration of Water Micropollutants

FRGS 2010-2013 (RM62,400)

Molecular Recognition, Self-assembly and Stereoselectivity of Additives on the Habit of Host Molecules of α -Amino Acid, co-investigator

FRGS 2010-2012 (RM50,000)

Basic Study of Drying Kinetics of Nephelium Lappaceum (Rambutan) by Multi-Drying Methods, co-investigator

University Grant

LESTARI 2017-2019 (RM20,000)

Alcohol Dehydrogenase (ADH) Immobilization on Polymer Membrane for Reactive Separation of Methanol

LESTARI 2017-2019 (RM20,000)

Synthesis of Hybrid Cyclodextrin/Alginate Aerogels via Chemical Cross-Linking for Drug Delivery System, co-investigator

RIF 2012-2014 (RM10,000)

Investigation on Crystal Disorder of High-Value Added Chemicals from Milling Process

PUBLICATION

Book Chapter

Nur Hidayati Othman, Norhasyimi Rahmat, Nur Hashimah Alias, **Fauziah Marpani**. Composite perovskite-based material for chemical-looping steam methane reforming to hydrogen and syngas. In Imran Khan, Anish Khan, Mohammad Mujahid Ali Khan, Shakeel Khan, Francis Verpoort and Arshad Umar (Ed.), *Hybrid Perovskite Composite Materials* (pp. 315-333). Woodhead Publishing. <https://doi.org/10.1016/B978-0-12-819977-0.00015-9>

Nur Hidayati Othman, **Fauziah Marpani**, Nur Hashimah Alias, Munawar Zaman Shahrudin, Noor Fauziah Ishak, Norin Zamiah Kassim Shaari (2020). Synthetic polymer-based membranes for the removal of volatile organic compounds from water. In Ahmad Fauzi Ismail, Wan Norharyati Wan Salleh and Norhaniza Yusof (Ed.), *Synthetic Polymeric Membranes for Advanced Water Treatment, Gas Separation, and Energy Sustainability* (pp. 135-157). Elsevier. <https://doi.org/10.1016/B978-0-12-818485-1.00007-1>

Fauziah Marpani (2011). Nilai-nilai murni dalam kehidupan berumahtangga. In Kamaruzzaman Muhammad, Ismie Roha Mohamed Jais, Erlane K Ghani and Faizah Mohamad (Ed.), *Renungan* (pp. 123-136). UiTM. ISBN 9789670171104.

Journal Publication

Nurul Syazana Fuzil, Nur Hidayati Othman, Nur Hashimah Alias, **Fauziah Marpani**, Mohd Hafiz Dzarfan Othman, Ahmad Fauzi Ismail, Woei Jye Lau, Kang Li, Tutuk Djoko Kusworo, Izumi Ichinose, Mohammad Mahdi A Shirazi (2021). A review on photothermal material and its usage in the development of photothermal membrane for sustainable clean water production. *Desalination*, 517. <https://doi.org/10.1016/j.desal.2021.115259>

Norhayati Abdul Rahman, **Fauziah Marpani**, Nur Hidayati Othman, Nur Hashimah Alias, Junaidah Jai, Nik Raikhan Nik Him (2021). Biocatalytic reduction of formaldehyde to methanol: Effect of pH on enzyme immobilization and reactive membrane performance. *Bulletin of Chemical Reaction Engineering & Catalysis*, 16 (3). <https://doi.org/10.9767/bcrec.16.3.10568.472-480>

Nurul Syazana Fuzil, Nur Hidayati Othman, Nur Ain Shazwani Roslee Ab Jamal, Ana Najwa Mustapa, Nur Hashimah Alias, Aqilah Dollah, Nik Raikhan Nik Him, **Fauziah Marpani** (2021). Bisphenol A adsorption from aqueous solution using graphene oxide-alginate beads. <https://doi.org/10.21203/rs.3.rs-221643/v1>

Nurshahira Hazwani Hamran, **Fauziah Marpani**, Nur Hidayati Othman, Nik Raikhan Nik Him, Nur Hashimah Alias and Junaidah Jai (2020). Effect of pH on membrane fouling during alcohol dehydrogenase immobilization in PES membrane. *Malaysian Journal of Chemical Engineering & Technology*, 3 (2). <https://doi.org/10.24191/mjct.v3i2.11232>

Nurul Fatin Diana Junaidi, Nur Hidayati Othman, Nurul Syazana Fuzil, Muhammad Shafiq Mat Shayuti, Nur Hashimah Alias, Munawar Zaman Shahrudin, **Fauziah Marpani**, Woei Jye Lau, Ahmad Fauzi Ismail, Nor Farah Diana Aba (2020). Recent development of graphene oxide-based membranes for oil–water separation: A review. *Separation and Purification Technology*, 258 (1). <https://doi.org/10.1016/j.seppur.2020.118000>

Nik Raikhan Nik Him, Syuhadah Badrul Hisham, Farah Nasyitah Esa, **Fauziah Marpani**, Nur Hidayati Othman (2020). Crude oil degradation by laccase *Pseudomonas aeruginosa* NR. 22. A driving force of bioremediation. *Internation Journal of Conservation Science*, 11(3), 757-764. http://ijcs.ro/public/IJCS-20-51_Raikhan.pdf

Nurul Fatin Diana Junaidi, Nur Hidayati Othman, Munawar Zaman Shahrudin, Nur Hashimah Alias, **Fauziah Marpani**, Woei Jye Lau, Ahmad Fauzi Ismail (2020). Fabrication and characterization of graphene oxide–polyethersulfone (GO–PES) composite flat sheet and hollow fiber membranes for oil–water separation. *Journal of Chemical Technology & Biotechnology*, 95(5), 1308-1320. <https://doi.org/10.1002/jctb.6366>

Najihah Jamil, Nur Hidayati Othman, Munawar Zaman Shahrudin, Mohd Rizuan Mohd Razlan, Nur Hashimah Alias, **Fauziah Marpani**, Lau Woei Jye, Pei Sean Goh, Ahmad Fauzi Ismail (2020). Effects of PEBA-X coating concentrations on CO₂/CH₄ separation of RGO/ZIF-8 PES membranes. *Jurnal Teknologi*, 8(2). <https://doi.org/10.11113/jt.v8i2.13872>

Farazatul Harnani Ismail, **Fauziah Marpani**, Nur Hidayati Othman, Nik Raikhan Nik Him (2019). Simultaneous separation and biocatalytic conversion of formaldehyde to methanol in enzymatic membrane reactor. *Chemical Engineering Communications*, Article in press. <https://doi.org/10.1080/00986445.2019.1705795>

Fauziah Marpani, Muhammad Kiflain Zulkifli, Farazatul Harnani Ismail, Syazana Mohamad Pauzi (2019). Immobilization of alcohol dehydrogenase in membrane: Fouling mechanism at different transmembrane pressure. *Journal of the Korean Chemical Society*, 63(4), 260-265. <https://doi.org/10.5012/jkcs.2019.63.4.260>

Fauziah Marpani, Manuel Pinelo, Anne S. Meyer (2017). Enzymatic conversion of CO₂ to CH₃OH via reverse dehydrogenase cascade biocatalysis: Quantitative comparison of efficiencies of immobilized enzyme systems. *Biochemical Engineering Journal*, 127, 217-228 (review article). <https://doi.org/10.1016/j.bej.2017.08.011>

Fauziah Marpani, Zsuzsa Sárossy, Manuel Pinelo, Anne S. Meyer (2017). Kinetics based reaction optimization of enzyme catalysed reduction of formaldehyde to methanol with synchronous cofactor regeneration. *Biotechnology and Bioengineering*, 114(12), 2762-2770. <https://doi.org/10.1002/bit.26405>

Fauziah Marpani, Jianquan Luo, Ramona Valentina Mateiu, Anne S. Meyer, Manuel Pinelo (2015). In situ formation of a biocatalytic alginate membrane by enhanced concentration

polarization. *ACS Applied Materials & Interfaces*, 7(32), 17682-17691.
<https://doi.org/10.1021/acsami.5b05529>

Jianquan Luo, **Fauziah Marpani**, Rita Brites, Lisbeth Frederiksen, Anne S. Meyer, Gunnar Jonsson, Manuel Pinelo (2014). Directing filtration to optimize enzyme immobilization in reactive membranes. *Journal of Membrane Science*, 459, 1-11.
<https://doi.org/10.1016/j.memsci.2014.01.065>

Fauziah Marpani, Norazah Abd Rahman, Nornizar Anuar, Azil Bahari Alias, Tajuddin Md Jahi (2008). Cold flow binary fluidization of oil palm residues mixture in a gas-solid fluidized bed system. *Pertanika Journal of Science & Technology*, 16, 201-212.

Indexed Proceeding

Farazatul Harnani Ismail, **Fauziah Marpani**, Nik Raikhan Nik Him (2020). Immobilization of Alcohol Dehydrogenase in membrane: Fouling mechanism at different enzyme concentration. *IOP Conference Series: Materials Science and Engineering*.
<https://doi.org/10.1088/1757-899X/736/5/052024>

S Mohamad Pauzi, D Anak Halbert, S Azizi, NAA Ahmad, N Ahmad, **F Marpani** (2019). Effect of organic antifoam's concentrations on filtration performance. *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/1349/1/012141>

Conference Paper

International conference

Fauziah Marpani, Farazatul Harnani Ismail, Nur Hidayati Othman (2019). Graphene oxide based polymer membrane in reactive separation of formaldehyde to methanol. *14th International Conference on Catalysis in Membrane Reactors (ICCMR14)*, Eindhoven, Netherlands.

Fauziah Marpani, Jianquan Luo, Manuel Pinelo, Anne S. Meyer (2015). Biocatalytic alginate membrane by enhanced concentration polarization. *12th International Conference on Catalysis in Membrane Reactors (ICCMR12)*, Szczecin, Poland.

Fauziah Marpani, Norazah Abd Rahman, Azil Bahari Alias, Nornizar Anuar, Tajuddin Md Jahi (2008). Minimum fluidization velocities of mixtures of palm oil residues and sand. *7th International Conference on Sustainable Energy Technologies*, Seoul, Korea.

National conference

Norhayati Abdul Rahman, **Fauziah Marpani**, Farazatul Harnani Ismail, Junaidah Jai, Nur Hidayati Othman, Nur Hashimah Alias, Nik Raikhan Nik Him (2021). Biocatalytic reduction of formaldehyde to methanol: Effect of pH on membrane fouling and reactive membrane performance. *Regional Congress on Membrane Technology (RCOM2020)*, 16-17 Januari 2021, Johor Bahru, Johor.

Farazatul Harnani Ismail, **Fauziah Marpani**, Nik Raikhan Nik Him (2019). Immobilization of Alcohol Dehydrogenase in membrane: Fouling mechanism at different enzyme concentration. *Energy Security and Chemical Engineering Congress 2019 (ESChE 2019)*, Pulau Pinang.

Farazatul Harnani Ismail, **Fauziah Marpani** (2018). Immobilization of alcohol dehydrogenase (ADH) in membrane: Fouling mechanism at different transmembrane pressure. *National Congress on Membrane Technology (NATCOM)*, Johor Bahru, Johor.

Faridatul Akmal Mohd Jamali Norasikin Jamburi, **Fauziah Marpani**, Nornizar Anuar, Syafiza Abd Hashib (2013). A study on the formation of ibuprofen-sucrose co-crystals induced by milling. *IEEE Symposium on Humanities, Science and Engineering Research 2013*, Pulau Pinang.

Fauziah Marpani, Norazah Abd Rahman, Nornizar Anuar (2010). Fluidization of binary mixtures: Oil palm biomass with sand. *World Engineering Congress (WEC) 2010*, Kuching Sarawak.

Fauziah Marpani, Norazah Abd Rahman, Azil Bahari Alias, Tajuddin Md Jahi (2009). Binary mixture fluidization behaviour of oil palm residues with silica sand. *Conference on Science and Social Research (CSSR) 2008/2009*, Melaka.

Fauziah Marpani, Nornizar Anuar, Norazah Abd Rahman (2006). Fluidization of oil palm residues in binary particle system. *Symposium of Malaysia Chemical Engineers (SOMChE) 2006*, Shah Alam, Selangor.

Thesis

Fauziah Marpani (2018). Reactive separation technology: Enzyme immobilization and redox enzyme kinetics in membrane bioreactor systems. Technical University of Denmark, Lyngby, Denmark. (Doctoral thesis)

Fauziah Marpani (2008). Fluidization of oil palm waste with sand in binary particle system. Universiti Teknologi MARA, Selangor, Malaysia. (Master's thesis)

Other Publication

Fauziah Marpani (2015). Biocatalytic alginate membrane. *Graduate school yearbook 2015*, 107-108. Technical University of Denmark.

Fauziah Marpani (2014). Reactive separation technology: Biomimetic enzyme immobilization on polymeric membrane. *Graduate school yearbook 2014*, 131-132. Technical University of Denmark.

CURRENT SUPERVISION

PhD

Fauziah Othman (2020831472)

Mussel-inspired Membrane Surface Functionalization for Synergistic Adsorption and Biocatalytic Oxidation of Aquatic Micropollutants

Fatin Nasreen Ahmad Rizal Lim (2021721615)

Metal Oxide Hybrid Membrane for Simultaneous Adsorption, Hydration and Biocatalytic Reduction of Carbon Dioxide

MSc

Amirah Syakirah Zahirulain (2021358645)

Enzyme-embedded Metal Organic Framework Composite towards Enhanced Enzyme Stability during Biocatalysis in Membrane Bioreactor

Nur Umami Anisa Muhammad Rasidi (2021908055)

Surface Functionalization of Polymer Membrane in Enhancing Biocatalytic Removal of Water Micropollutants

Nurul Syazana Fuzil (2020741763)

Development Of Portable Solar-Driven Nanophotothermal Membrane System For Clean Water Production (Soclean)

Nur Ain Shazwani Roslee Ab. Jamal (2020205772)

Development of Paper-based Microfluidic Analytical Device (UPADS) Supported onto PANI Membranes for Heavy Metal Detections

Nur Shafiqah Jamaluddin (2020226616)

Development of Bio-Inspired Cellulose Coated MXENE/Polyacrylonitrile Nanofibers using Electrospinning Technique

Farazatul Harnani Ismail (2017387399)

Multifunctional Graphene-oxide based Polymer Membrane in the Removal of Micropollutant

PROFESSIONAL AFFILIATION

Institution of Chemical Engineers (IChemE), 2008-Present

Chartered Member 99944903 (since 05/2021)

Malaysia Board of Technologist, 2018-present

Professional Technologist (Chemical Technology) PT18050460

Graduate Technologist GT18050795

Board of Engineers Malaysia

Graduate member 54900A

REFERENCE

Prof Dr Norazah Abd Rahman [Dean]

College of Engineering

Universiti Teknologi MARA

40450 Shah Alam

Selangor, Malaysia

Email: noraz695@uitm.edu.my

Prof Anne S. Meyer [PhD Supervisor]

Department of Chemical and Biochemical Engineering

Technical University of Denmark

Soltofts Plads, Building 229

Kgs. Lyngby, Denmark

Email: asme@dtu.dk