

CURRICULUM VITAE



Dr. Mus'ab Abdul Razak
Jabatan Kejuruteraan Kimia dan Alam Sekitar, Universiti Putra Malaysia,
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Education

1. Ph. D. Chemical Engineering, 2013, The University of Queensland, Australia
2. B. S. Chemical Engineering, 2007, University of Delaware, USA.

Areas of Interest

1. Process Safety and Reliability Engineering
2. Process Control and Instrumentation
3. Data Analytics in Chemical Engineering
4. Chemical Engineering
5. Sub- and Supercritical Adsorption on Porous Materials
6. Molecular Simulations

Professional Qualification/ Membership/ Affiliation

1. Graduate Engineer, Board of Engineers Malaysia (BEM)
2. Graduate Member, Institution of Engineers, Malaysia (IEM)
3. Member, Malaysia Process Control Society (MyPCS)

Appointments

Position	Duration
1. Senior Lecturer, Department of Chemical and Environmental Engineering, Faculty of Engineering, UPM	October 2013 – Present
2. Lab Coordinator, Environmental Engineering Laboratory, Department of Chemical and Environmental Engineering, Faculty of Engineering, UPM	May 2014 – January 2015 July 2022 – December 2023
3. Student Affair and Alumni Coordinator, Department of Chemical and Environmental Engineering, Faculty of Engineering, UPM	January 2015 – June 2018
4. Head of Student Affair Unit, Faculty of Engineering, UPM	June 2018 – July 2022
5. Student Affair and Alumni Coordinator, Department of Chemical and Environmental Engineering, Faculty of Engineering, UPM	January 2020 – July 2022
6. Associate Editor, Jurnal Kimia Sains & Aplikasi, Indonesia	January 2019 – Present
7. Coordinator of Master in Process Safety and Loss Prevention (MPSLP), Department of Chemical and Environmental Engineering, Faculty of Engineering, UPM	January 2023 – Present

Publications

Journals (30 recent journals)

1. Boon Chong Choo, **Musab Abdul Razak**, Mohd Zahirasri Mohd Tohir, Dayang Radiah Awang Biak & S. Syafiee (2024) An Accident Prediction Model based on ARIMA in Kuala Lumpur, Malaysia Using Time Series of Actual Accidents and Related Data. *Pertanika Journal of Science and Technology*. (Accepted)

2. Venkatesan, R., Harun, R., Mohamed Yusoff, H., & **Abdul Razak, M.** (2024). Hydrogen safety effect calculation (dispersion and thermal radiation effects) for determination of siting and safe distance. *Process Safety Progress*.
3. Syafie, S., & **Abdul Razak, M.** (2023). H^∞ State-Observer Controller Synthesis for Multiple Time-Delay Systems. *2023 IEEE 11th Conference on Systems, Process & Control (ICSPC)*, 131–136.
4. Choo, B. C., **Abdul Razak, M.**, Dayang Radiah, A. B., Mohd Tohir, M. Z., & Syafie, S. (2022). A review on supervised machine learning for accident risk analysis: Challenges in Malaysia. *Process Safety Progress*, 41(S1), S147–S158.
5. Dirik, C., Awang Biak, D. R., **Abdul Razak, M.**, & Nik Ibrahim, N. N. L. (2022). Externally initiated event in sequential risk assessment for the onshore LNG marine loading arm unit. *Journal of Loss Prevention in the Process Industries*, 75, 104717.
6. Shanmugam, K., & **Abdul Razak, M.** (2021). Assessment on process safety management implementation maturity among major hazard installations in Malaysia. *Process Safety and Environmental Protection*, 149, 485–496.
7. Mashaida Md Sharif & **Musab Abdul Razak**, (2018) Consequence modelling and analysis of hydrogen release from methyl ester hydrogenation plant using PHAST. *Journal of Occupational Safety and Health*, 15(2) p. 35-46
8. Lee, S. H., Choong, T. S. Y., Abdullah, L. C., **Razak, M. A.**, & Ban, Z. H. (2019). Experimental and CFD Modelling: Impact of the inlet slug flow on the horizontal gas-liquid separator. *Energies*, 12(1).
9. Sooriyanarayanan, V., Wen, O. Y., **Razak, M. A.**, Tohir, M. Z. M., Choong, T. S. Y., & Hamid, M. R. A. (2024). Hydrophobic and fire-resistant polydimethylsiloxane/ZIF-8 hybrid coating on cotton textile for efficient oil-water separation. *Journal of Applied Science and Engineering*, 27(11), 3499–3512.
10. Wen, O. Y., Tohir, M. Z. M., Yeaw, T. C. S., **Razak, M. A.**, Zainuddin, H. S., & Hamid, M. R. A. (2023). Fire-resistant and flame-retardant surface finishing of polymers and textiles: A state-of-the-art review. *Progress in Organic Coatings*, 175.
11. Halim, N. K. A., Hussain, S. A., **Razak, M. A.**, & Mohd Yunus, M. A. S. (2020). Eulerian-Eulerian Approach to CFD Simulation of Two-Phase Bubble Column. *IOP Conference Series: Materials Science and Engineering*, 811(1).
12. Mageed, A. K., Radiah, D. A. B., Salmiaton, A., Izhar, S., **Razak, M. A.**, & Ayodele, B. V. (2020). Dehydrogenation of cyclohexanol to cyclohexanone over nitrogen-doped graphene supported Cu catalyst. *Bulletin of Chemical Reaction Engineering & Catalysis*, 15(2), 568–578.
13. Mageed, A. K., Dayang Radiah, A. B., Salmiaton, A., Izhar, S., & **Abdul Razak, M.** (2019). Nitrogen doped graphene-supported trimetallic CuNiRu nanoparticles catalyst for catalytic dehydrogenation of cyclohexanol to cyclohexanone. *Journal of King Saud University - Science*, 31(4), 878–885.
14. Mageed, A. K., Dayang Radiah, A. B., Salmiaton, A., Izhar, S., & **Razak, M. A.** (2018). Study the Thermal Stability of Nitrogen Doped Reduced Graphite Oxide Supported Copper Catalyst. *Journal of Cluster Science*, 29(4), 709–718.
15. Jin Wei, L., Teng Haan, O., Choong Shean Yaw, T., Chuah Abdullah, L., **Abdul Razak, M.**, Cionita, T., & Toudehdeghhan, A. (2018). Heavy metal recovery from electric arc furnace steel slag by using hydrochloric acid leaching. *E3S Web of Conferences*, 34.
16. Lim, J. W., Lee, K. F., Chong, T. S. Y., Abdullah, L. C., **Razak, M. A.**, & Tezara, C. (2017). Phosphorus removal by electric arc furnace steel slag adsorption. *IOP Conference Series: Materials Science and Engineering*, 257(1).
17. Prasetyo, L., **Abdul Razak, M.**, Do, D. D., Horikawa, T., Nakai, K., & Nicholson, D. (2017). On the resolution of constant isosteric heat of propylene adsorption on graphite in the sub-monolayer coverage region. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 512, 101–110.
18. Nguyen, V. T., Fan, C., **Razak, M. A.**, Do, D. D., Nicholson, D., & Ustinov, E. (2013). Development of kinetic Monte Carlo and Bin-Monte Carlo schemes for simulation of mixtures - vapor-liquid equilibria and adsorption. *Chemical Engineering Science*, 102, 220–226.
19. **Abdul Razak, M.a.**, D.D. Do, T. Horikawa, K. Tsuji, & D. Nicholson. (2013). On the description of isotherms of CH₄ and C₂H₄ adsorption on graphite from subcritical to supercritical conditions. *Adsorption*, 19(1): p.131-142.
20. Wang, Y., **M.a. Abdul Razak**, D.D. Do, T. Horikawa, K. Morishige, & D. Nicholson, (2012). A computer simulation and experimental study of the difference between krypton adsorption on a graphite surface and in a graphitic hexagonal pore. *Carbon*, 50(8): p. 2908-2917.

21. Fan, C., **M.a. Abdul Razak**, D.D. Do, & D. Nicholson, (2012) On the identification of the sharp spike in the heat curve for argon, nitrogen, and methane adsorption on graphite: Reconciliation between computer simulation and experiments. *The Journal of Physical Chemistry C*, 116(1): p. 953-962.
22. **Abdul Razak, M.a.**, V.T. Nguyen, L.F. Herrera, D.D. Do, & D. Nicholson, (2011) Microscopic analysis of adsorption in slit-like pores: layer fluctuations of particle number, layer isosteric heat and histogram of particle number. *Molecular Simulation*, 37(12): p. 1031-1043.
23. **Abdul Razak, M.a.**, D.D. Do, & G. Birkett, (2011) Evaluation of the interaction potentials for methane adsorption on graphite and in graphitic slit pores. *Adsorption*, 17(2): p. 385-394.

Conference Proceedings (30 recent Conference Proceedings)

1. Venkatesan, R., Harun, R., Mohamed Yusoff, H., & **Abdul Razak, M.** (2024). Hydrogen safety effect calculation (dispersion and thermal radiation effects) for determination of siting and safe distance. *Loss Prevention Asian 2023 (LPA 2023) 21-22 August 2023, Kuala Lumpur, Malaysia.*
2. Abdul Munir, A. Z. & **Abdul Razak, M.** (2023) The involvement of OSH practitioners in Malaysia handling psychosocial and health promotion at workplace. *37th Conference Asia Pacific Occupational Safety & Health Organization (APOSHO 2023) 24-25 October 2023, Shah Alam, Selangor, Malaysia.*
3. Syafiie, S., & **Abdul Razak, M.** (2023). H^∞ State-Observer Controller Synthesis for Multiple Time-Delay Systems. *2023 IEEE 11th Conference on Systems, Process & Control (ICSPC) 16 December 2023, Melaka, Malaysia.*
4. **Musab Abdul Razak**, Amalina Hamdani, Alex Tan Chiang Shen, Nur Syafiqah Debayan & Ishataheera Mahmood (2023) Reliability Analysis on Turbine Driven Offshore Compressor System Failure using FT-BN Evaluation. *2nd International Conference on Innovation in Chemical Engineering and Technology 2023 (ICICET 2023) 4-5 September 2023, Serdang, Selangor, Malaysia.*
5. Choo, B. C., **Abdul Razak, M.**, Dayang Radiah, A. B., Mohd Tohir, M. Z., & Syafiie, S. (2022). A review on supervised machine learning for accident risk analysis: Challenges in Malaysia. *Loss Prevention Asia 2021, (Online).*
6. Nur Khairunnisa Binti Abd Halim, **Abdul Razak, M.** & Hussain, S.A., (2018). Impact of sparger design on air-sparged quadrilateral bubble column. *31st Symposium of Malaysian Chemical Engineers 5-6, December 2018, Kuala Lumpur, Malaysia.*
7. Nur Khairunnisa Binti Abd Halim, **Abdul Razak, M.** & Hussain, S.A., (2018). Hydrodynamical studies of sparger design on gas holdup profile in quadrilateral bubble column. *International UNIMAS STEM 11th Engineering Conference 12-14, September 2018, Kuching, Sarawak, Malaysia.*
8. Jin Wei, L., Teng Haan, O., Choong Shean Yaw, T., Chuah Abdullah, L., **Abdul Razak, M.**, Cionita, T., & Toudehdehghan, A. (2018). Heavy metal recovery from electric arc furnace steel slag by using hydrochloric acid leaching. *E3S Web of Conferences*, 34.
9. **Abdul Razak, M.a.**, & D.D. Do, (2016). On the description of the unusual isosteric heat versus loading for propylene adsorption on graphite. *Chemeca Conference 25-28 September 2016, Adelaide, Australia.*
10. **Abdul Razak, M.a.**, Z. Liu, L.F. Herrera, & D.D. Do, (2011). Evaluation of characterizing coal structure using molecular simulation. *Asia Pacific Coal bed Methane Symposium 3-6, May 2011, Brisbane, Australia.*
11. Fan, C., **M.a. Abdul Razak**, & D.D. Do, (2009). Evaluation of the adsorption potentials of argon and methane on the adsorption behavior on carbon surfaces. *Asia Pacific Coal bed Methane Symposium 24-26, September 2009, Xuzhou, Jiangsu, China.*

Books (If any)

Chapter in Books (If any)

Research Grants

No	Project Title	Amount (RM)	Year	Source of Fund
1	Simulation Studies on Hydrocarbon Adsorption under Sub- and Supercritical Conditions on Carbonaceous Solid for Natural Gas Storage	58,000	2016-2018	Putra Grant (IPM)
2	Investigation of Crystal Nucleation, Diffusion and Sorption Properties of Isostructural Dual-Linker SOD Zeolitic-Imidazolate Frameworks Crystal	110,000	2021-2024	Fundamental Research Grant Scheme (FRGS) Fasa 1/2021

Awards/Recognition (Current)

Num	Name of awards	Title	Award Authority	Award Type	Year
1					

Professional Services/Consultation

No	Year	Title	Authority	Amount
1	2014-2015	COMPASS Market Risk – Value at Risk – Monte Carlo	Triaset Sdn. Bhd.	RM 15,000

Student Supervision

PhD (Main Supervisor)

No.	Name	Title	Status
1	Choo Boon Chong	Application Of Machine Learning in Risk Analysis for Industrial Accidents	Ongoing
2	Wang JingJing	Preparation of Cu-Al ₂ O ₃ Particles and Their Fenton Effect on Environmental Estrogen Catalytic Degradation Performance Research	Ongoing
3	Krsna a/p Anand	Enhancing Separation Efficiency of ZIFs through Structural Modification via Molecular Modeling	Ongoing

MS without Thesis (Main Supervisor) for Master in Process Safety & Loss Prevention (MPSLP)

No.	Name	Title	Status
1.	Abdul Fattah b. Ab Razak	Design Study on Temperature Abuse Reduction in Raw Material Cold Storage	Graduated
2.	Siti Norfaidah Jastinawani bt. Jasmi	Design Study on Temperature Abuse on Surimi-Based Products	Graduated
3	Nur Faheza binti Mohd Yusor	Design Safety and Analysis of Pressure Valve	Graduated
4	Vasudevan Varadan	Quantitative Risk Assessment for Refinery Storage Tank Failing	Graduated
5	Mohd Abu Holek bin Mohd Noor	A Baseline Study on Safety Perceptions of Solar Turbines Inc Employees	Graduated
6	Nor Mahfuzah Abdul Rahman	Prevalence of Possible Carpal Tunnel Syndrome and Its Related Factors Among Office Worker at Company A	Graduated

No.	Name	Title	Status
7	Abdullah Masoud Saif al-Obaidani	Emergency Response Planning Network during Gonu Cyclone Disaster in Muscat City of Oman 2007	Graduated
8	Mohd Tarmizi bin Mohd Ali	Life Data Analysis of Crude Oil Transfer Pump (COTP) on an Offshore Central Processing Platform off the coast of Sabah, Malaysia	Graduated
9	Mashaida Md Sharif	Consequence Modelling and Analysis of Hydrogen Release from Methyl Ester Hydrogenation Plant Using PHAST	Graduated
10	Norauji Syazwi Binti Norzalli	Evaluation Of Safety Barriers Performance At The Ammonia Storage Tank	Graduated
11	Muhammad Haziq Bin Muhd Nor Han	Safety assessment in chemical industries: Comparison of fault tree analysis (FTA) and Bayesian networks (BNs) approaches at splitting column of an Oleo-chemical Company	Graduated
12	Kumaran a/l Shanmugam	Assessment on process safety maturity level among major hazard installations (mhi) in malaysia	Graduated
13	Amalina binti Hamdani	Reliability analysis of hydrocarbon gas facility using fault tree analysis and monte carlo simulation	Graduated
14	Ishataheera binti Mahmood	Quantitative Risk Assessment Study	Graduated
15	Boniface Yaw Ik	Modeling of Hydrogen Sulfide Dispersion at Natural Gas Liquid Plant Using Aloha	Graduated
16	Dharishaan Vengadesan	Qualitative & Quantitative Inherent Safety Assessment at Early Stage of Process Design at Semiconductor Industry	Graduated
17	Rubachandran Venkatesan	Hydrogen Safety Effect Calculation (Dispersion and Thermal Radiation Effects) for Determination of Siting and Safe Distance	Graduated
18	Alex Tan Chiang Shen	Risk Analysis Study through Integrating Fault Tree Analysis (FTA) into Bayesian Network (BN) for Hydrogenation Unit	Graduated
19	Ahmad Zuhdi bin Abdul Munir	The Involvement of Malaysian OSH Practitioners in Handling Psychosocial and Health Promotion Programme at Workplace	Ongoing
20	Narendran Subramaniam	Airborne Metal and Mineral Dust Exposure Assessment and Evaluation in Mitigating Related Health Risks in Metal and Mineral Industries	Ongoing