

CURRICULUM VITAE



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Education

1. University of Sheffield, United Kingdom (May 2017)
 PhD, Automatic Control and System Engineering
 Thesis title: Frequency Domain Analysis and Design of Nonlinear Systems with Application in Chemical Engineering.
2. Vanderbilt University, Nashville, TN (May 2012)
 Bachelor of Engineering, Chemical and Biomolecular Engineering
 Bachelor of Science, Mathematics
 Minor, Chemistry

Work Experience

Position	Duration
1. Senior Lecturer, Department of Chemical & Environmental Engineering, Faculty of Engineering, UPM	September 2017-present
2. Young Academic Scheme, Department of Chemical & Environmental Engineering, Faculty of Engineering	February 2014 - September 2017
3. Teaching Assistant, Department of Chemical & Environmental Engineering, Faculty of Engineering, UPM	March 2013 – January 2014

Publications & Intellectual Property

Journals

1. Tujah, C.E., Ali, R.A., **Nik Ibrahim, N.N.L.**, 2023. Optimization of Sugarcane Bagasse Conversion Technologies Using Process Network Synthesis Coupled with Machine Learning. *Pertanika Journal of Science & Technology*, 31(4).
2. Nasir, N.M., Jusoh, A., Harun, R., **Nik Ibrahim, N.N.L.**, Rasit, N., Ghani, W.A.W.A.K. and Kurniawan, S.B., 2023. Nutrient consumption of green microalgae, *Chlorella* sp. during the bioremediation of shrimp aquaculture wastewater. *Algal Research*, 72, p.103110.
3. Maluin, F.N., Hussein, M.Z., Wayayok, A., **Nik Ibrahim, N.N.L.**, and Hashim, N., 2023. Chitosan nanoparticles as a sustainable alternative nutrient formulation in hydroponically grown *Brassica rapa* subsp. *chinensis* (L.) Hanelt microgreen and its adult vegetable. *Archives of Agronomy and Soil Science*, 69(12), pp.2401-2412.
4. Dirik, C., Biak, D.R.A., **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, p.104717.
5. Ali, R.A., **Nik Ibrahim, N.N.L.**, Ghani, W.A.W.A.K., Sani, N.S., Lam, H.L. (2022) A Hybrid P-Graph And WEKA Approach In Decision-Making: Waste Conversion Technologies Selection. *J. Appl. Sci. Eng.* **2022**, 26, 261–267.
6. Adeyi, A.A., Jamil, S.N.A.M., Abdullah, L.C., **Nik Ibrahim, N.N.L.**, Nourouzi, M. (2022) Efficient sequestration of boron from liquid phase by amidoxime-functionalized poly(acrylonitrile-co-acrylic

acid): experimental and modelling analyses. *Water Sci Technol* (2022) 85 (10): 3055–3071.
<https://doi.org/10.2166/wst.2022.162>

7. Ahmad Naim, N.A., Omar, R., **Nik Ibrahim, N.N.L.** (2022) Emergency preparedness and response in palm oil mill and investigation of the employees' emergency preparedness knowledge and attitude. *Process Safety Progress*, 41, S75-S83.
8. Mohd Aisha, S., M Thamrin, N., Ghazali, M.F., **Nik Ibrahim, N.N.L.**, Megat Ali, M.S.A (2022) Non-Linear Autoregressive Dissolved Oxygen Prediction Model for Paddy Irrigation Channel. *TEM Journal*, 11(2), 842-850.
9. Ali, R.A., **Nik Ibrahim, N.N.L.**, Wan Ab Karim Ghani, W.A. et al. (2022) Utilization of process network synthesis and machine learning as decision-making tools for municipal solid waste management. *Int. J. Environ. Sci. Technol.* <https://doi.org/10.1007/s13762-021-03250-0>
10. Lew, P. S., **Nik Ibrahim, N. N. L.**, Kamarudin, S., Thamrin, N. M., & Misnan, M. F. (2021). Optimization of Bokashi-Composting Process Using Effective Microorganisms-1 in Smart Composting Bin. *Sensors*, 21(8), 2847.
11. Maluin, F. N., Hussein, M. Z., **Nik Ibrahim, N. N. L.**, Wayayok, A., & Hashim, N. (2021). Some Emerging Opportunities of Nanotechnology Development for Soilless and Microgreen Farming. *Agronomy*, 11(6), 1213.
12. M Thamrin, N., Megat Ali, M. S. A., Misnan, M. F., **Nik Ibrahim, N. N.L.**, & Shaghaghi, N. (2021). Sustainable surface water dissolved oxygen monitoring at lake 7/1F, Shah Alam, Selangor/Norashikin M. Thamrin...[et al.]. *Journal of Mechanical Engineering (JMechE)*, 8(2), 13-26.
13. Porselvam, U., **Nik Ibrahim, N. N.L.**, & M. Y., Hamdan (2020). Evaluation of Plated versus Grated Process Deck in Floating Production Storage and Offloading (FPSO) from Explosion Perspective using SAFETI OFFSHORE. *Pertanika Journal of Science & Technology*, 28(101).
14. M Thamrin, N., Misnan, M. F., **Nik Ibrahim, N. N.L.**, & Shaghaghi, N. (2020). Long-Range Data Transmission for Online Water Quality Monitoring of the Tembling River in Rural Areas of Pahang, Malaysia. *AMBIENT 2020 : The Tenth International Conference on Ambient Computing, Applications, Services and Technologies*, 28-32.
15. Ali, R. A., **Nik Ibrahim, N. N. L.**, & Lam, H. L. (2019). Conversion technologies: evaluation of economic performance and environmental impact analysis for municipal solid waste in Malaysia. *Processes*, 7(10), 752.
16. Li, L. K., Jamil, S. N. A. M., Abdullah, L. C., **Nik Ibrahim, N. N. L.**, Adekanm, A. A., Nourouzi, M. (2019). Application of feed-forward and recurrent neural network in modelling the adsorption of boron by amidoxime-modified poly(Acrylonitrile-Co-Acrylic Acid). *Environmental Engineering Research*.10 .4491/eer.2019.138

Conference Proceedings

1. Ali, R.A., **Nik Ibrahim, N.N.L.**, Wan Ab Karim Ghani, W.A. et al. A hybrid P-graph and WEKA Approach in Decision-making: A Case Study for Kuala Lumpur, Waste Management, 14th Aun/Seed-Net Regional Conference on Chemical Engineering 2021 in conjunction with 1st International Conference on Innovation in Chemical Engineering And Technology 2021, 2021.
2. Umamaheswari, P., Mohamed Yusoff, H., **Nik Ibrahim, N. N. L.**, Evaluation of Plated vs Grated Process Deck in Typical FPSO from Explosion Perspective, *Loss Prevention Asia 2019*
3. **Nik Ibrahim, N. N. L.**, Asmawi, A., Abdul Kadir, S., Teo, R.M., *Putra BINGO : From Pen and Paper to Digital*, 2019 IEEE Conference on Graphics and Media, 2019



- Ali, R. A., **Nik Ibrahim, N. N. L.**, Optimization of municipal solid waste conversion technology using process network synthesis, International Conference On Environmental Sustainability And Resource Security, 2019.
- Hussin, M. H., Ab Karim Ghani, W. A. W., Lam, H.L., **Nik Ibrahim, N. N. L.**, Alias, A. B. 2018. Understanding Biomass Value Chains and the Environment-Food-Energy-Water Nexus in Biorefinery using P-graph. Biomass-Environment-Food-Energy-Water (BEFEW NEXUS). Hotel Bangi Putrajaya.
- Nik Ibrahim, N. N. L.**, Lang, Z.Q. (2016), A new and efficient method for the determination of Output Frequency Response Function of nonlinear vibration system. Proceedings of the International Conference on Smart Infrastructure and Construction (ICSIC 2016), University of Cambridge, Cambridge, United Kingdom, 27-29 June 2016.

Chapter in Book

- Nik Ibrahim, N.N.L., Asmawi, A., AbdulKadir, S. (2021), Putra Bingo: Gamifikasi dan Penaksiran Alternatif dalam Memperkayakan Pengalaman Pembelajaran Pelajar in Abdul Rani, M.Z., Man, N. A.(Eds.) Penyelidikan dan Inovasi dalam Pengajaran dan Pembelajaran di Universiti Putra Malaysia (pp.82-90). Selangor, Malaysia. UPM (eISBN 978-967-19652-6-9)

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- Putra Bingo, LY2019008577
- DeMI PUTRA, Literary Work, LY2023W06567
- DeMI PUTRA (Interface), Artistic Work, AR2023W06581

Professional Services

Reviewer

- Process Safety and Environmental Protection
- Journal of Chemistry
- Pertanika Journal of Science and Technology

Conference Committee

- 2nd International Conference on Innovation In Chemical Engineering And Technology (ICICET2023) – Secretary
- Master of Process Safety and Loss Prevention Postgraduate Symposium 2022 – Director II
- 14th Aun/Seed-Net Regional Conference on Chemical Engineering 2021 (RCCHE2021) - Secretary
- 1st International Conference on Innovation In Chemical Engineering And Technology (ICICET2021) - Secretary
- Loss Prevention Asia 2021- Technical Committee
- International Symposium on Applied Engineering and Sciences (SAES2021) – Reviewer
- Virtual Master of Process Safety and Loss Prevention Postgraduate Symposium 2021 – Director II
- Machine Learning Workshop - Trainer
- International Robotic Competition and Exhibition (IRCE 2019) - Committee
- MSKK Postgraduate Symposium 2019 – Certificate and Registration Executive
- 31st Symposium of Malaysian Chemical Engineers (SOMChe 2018) – Session Chair
- 31st Symposium of Malaysian Chemical Engineers (SOMChE 2018) – Technical Committee

Research Project

No.	Project Title	Role	Year	Source of fund	Status
1.	Applying New Methods of Determining Output Frequency Response Function in the Analysis and Design of Chemical Engineering Process	Leader	2018-2021	UPM - Grant Putra	Completed
2.	Developing Bingo Quiz: Gamification as an Alternative Assessment and Analysis of its	Leader	2018-2021	GIPP - Grant For Research In Teaching And Learning	Completed



Effectiveness on Students Learning Experiences

3.	Intelligent Vertical Greenhouse System	Member	2018-2021	MRUN RAKAN RU	Completed
4.	A Real Time Water Monitoring And Treatment Systems Using Effective Microorganism For Water Quality Management At Kuala Keniam Taman Negara Pahang	Member	2019-2021	Lestari UITM	Completed
5.	Thermorheological behavior of polyamide 11 blends and composites	Member	2019-2021	Matching grant	Completed
6.	Real-time Online Water Monitoring and Early Alert System Based on Internet of Things (IoT) for Sustainable Water Catchment Quality	Member	2020-2021	UITM	Completed

Consultancy and Professional Services

No.	Year	Project Title	Authority	Amount
1.	2023-2024	Real time data monitoring for Algae Photobioreactor	WNEC Sdn. Bhd.	RM 45,650.00
2.	2022-2023	Projek Pelan Pengukuhan Inventori Kebangsaan (National Inventory Improvement Plan – NIIP) – Uncertainty Assessment Untuk Data Inventori GHG	KASA	RM 49,983.77
3.	2022	Sustainable Bamboo-Based Value Chain Study	Clarity Crest Sdn Bhd.	RM 37,100.00

Honours and Awards

Title	Award Authority	Award Type	Year
Gold Medal at Putra InnoCreative Poster Competition 2023	UPM	National	2023
Anugerah Perkhidmatan Cemerlang	UPM	National	2023
Finalist Anugerah Fellowship Naib Canselor UPM Kategori Pengajar Muda	UPM	National	2022
Silver Award in Innovation and Invention Challenge College of Engineering 2021	UITM	National	2021
Silver Award in 4 th Digitalised International Invention, Innovation and Design Johor 2021	UITM	International	2021
Gold Award in 3rd International Putra InnoCreative Carnival in Teaching and Learning	UPM	International	2020
Gold medal in Invention, Innovation and Design Competition FKE 2019	UITM	National	2019

Gold medal in International Robotics Competition and Exhibition	CLAWAR	International	2019
Silver award in 2nd International Putra InnoCreative Carnival in Teaching and Learning	UPM	International	2019
4th place in Hackathon – Connected Mangrove 2019 by Ericsson	Ericsson, UPM, UTM, Celcom, Xpand, JPT	National	2019

Student Supervision

PhD (Main Supervisor)

No	Name	Title	Status
1.	Rabiatul Adawiyah binti Ali	Integrated Process Network Synthesis and Machine Learning as a Basis for Decision Making Framework in Municipal Solid Waste Management	Graduated

2.

PhD (Co-Supervisor)

No	Name	Title	Status
1.	Dirik Cengiz	LNG Onshore Terminal Risk Assessment Using a Hybrid Method of Temporal Fault Tree Analysis and Monte Carlo Simulation	Ongoing
2.	Nurfarahana Binti Mohd Nasir	Microalgae Biomass Harvesting Utilizing Filamentous Fungus from Wastewater Phycoremediation and Biofuel Production	Ongoing
3.	Noorsuria Binti Suradi	Establishment An Energy Management And Efficiency Model To Be Implemented In A Commercial Building	Ongoing
4.	Soh Ming Lun	Synthesis, Formulation, Characterization, And Applications Of Oil Palm-Based New Insulating Fluid	Ongoing

Master by research (Co-Supervisor)

No	Name	Title	Status
1.	Lau Kia Li	Performance Of Amidoxime-Modified Poly(Acrylonitrile-Co-Acrylic Acid) For The Removal Of Boron In Aqueous Solution	Graduated
2.	Mohd Shahril Bin Kamarudin	Mitigating The Environmental Impact Of Coal- Fired Power Plants: A Comprehensive Analysis Of Pollution Emissions Through Dispersion Modelling	Ongoing

Master by coursework (Supervisor)

No	Name	Title	Status
1.	Safwan bin Abdul Salam	Evaluation of Process Safety Management in Lab Scale Pilot Plant in Research Centre	Graduated
2.	Saeed Abdulhalim	An implementation of fuzzy logic controller for safety performance in Anti-Sway Gantry Crane System.	Graduated



3.	Vincent Tay Hsiang Hong	Analysis of Lost of Primary Containment (LOPC) Causes and Development of Reduction Strategy in X Company	Graduated
4.	Dhiviya A/P Vegayan	Risk Assessment and Awareness Among Workers on Safe Handling of Liquid Nitrogen Storage in Sensor Lab of Company A	Graduated
5.	Syahrul Nizam Bin Shaharuddin	Evaluation Of Process Saety Management (PSM) Implementation Among Ageing Plant In Johor	Graduated
6.	Umamaheswari Porselvam	Evaluation of Plated vs Grated Process Deck FPSO from Explosion Perspective using Safeti Offshore	Graduated
7.	Mohd Fareed Annuar Mazlan	Evaluation on The Compliance of The Safety Devices Installation at Petrol Stations in Terengganu	Graduated

Research Areas

Process System Engineering
Chemical Process Control
Frequency Domain Design and Analysis
Education Engineering
Optimization
Sustainability