



CURRICULUM VITAE



Ybgh. Professor Ir. Dr. Thomas Choong

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Education

1. Ph.D. Chemical Engineering, 2000, University of Cambridge, UK.
2. M.Eng. Chemical Engineering, 1995, Universiti Teknologi Malaysia.
3. B. Eng. Chemical Engineering, 1991, Universiti Teknologi Malaysia.

Areas of Interest

Process Simulation, Adsorption Science and Technology & Separation Processes

Professional Qualification/ Membership/Affiliation

1. Fellow, Institution of Chemical Engineers, U.K. (F.IChemE)
2. Corporate Member, Institution of Engineers Malaysia (M.I.E.M)
3. Registered Professional Engineer, Board of Engineers Malaysia (P. Eng)
4. Chartered Engineer, U.K. (C. Eng)
5. Member, International Adsorption Society
6. Member, Magdalene College, University of Cambridge
7. Member, Cambridge Philosophical Society

Appointments

Position	Duration
1. Professor, Department of Chemical and Environmental Engineering, Faculty of Engineering, UPM	2012-
2. Head, Unit of Industry & Community Relations, Faculty of Engineering, UPM	2011 - 2013
3. Associate Professor, Department of Chemical and Environmental Engineering, Universiti Putra Malaysia	2005 – 2012
4. R&D Manager / Consultant, Solution Biogen Sdn Bhd.	July 2007 – July 2008
5. Lecturer, Department of Chemical and Environmental Engineering, Universiti Putra Malaysia	2000-2005
6. Tutor, Department of Chemical and Environmental Engineering, Universiti Putra Malaysia	1996
7. Researcher, Membrane Research Lab, Universiti Teknologi Malaysia	1994-1996

Publications

Journals (most recent)

1. Amerhaider Nuar, N.N., Md. Jamil, S.N.A., **Choong, T.S.Y.**, Mat Azmi, I.D., Abdul Romli, N.A., Abdullah, L.C., Chiang, P.C.; Li, F. (2023). Synthesis of Calcium Peroxide Nanoparticles with Starch as a Stabilizer for the Degradation of Organic Dye in an Aqueous Solution. *Polymer*, 15, 1327. <https://doi.org/10.3390/polym15051327>
2. Li, F., **Choong, T.S.Y.**, Abdullah, L.C., Md. Jamil, S.N.A., Amerhaider Nuar, N.N. (2023). Effective Removal of Glyphosate from Aqueous Systems Using Synthesized PEG-coated Calcium Peroxide Nanoparticles: Kinetics Study, H₂O₂ Release Performance and Degradation Pathways. *Polymer*, 15, 775. <https://doi.org/10.3390/polym15030775>
3. Yahya, C.J.F., **Choong, T.S.Y.**, Li, F., Ghani, W.A.W.A.K., Aziz, F.N.A.A., Jamil, S.N.A.M. (2023). Tailing Ash for the Removal of Methylene Blue from Aqueous Solutions by Batch Adsorption. *Processes*, 11, 2282. <https://doi.org/10.3390/pr11082282>
4. Abd Wafti, N. S., **Choong, T.S.Y.**, Lau, H. L. N., Yunus, R., Abd-Aziz, S. (2023). Kinetic study on the production of biodegradable lubricant by enzymatic transesterification of high oleic palm oil. *Process Biochemistry*, 131, 91-100. <https://doi.org/10.1016/j.procbio.2023.06.011>
5. Abd Wafti, N. S., Yunus, R., Lau, H. L. N., **Choong, T. S. Y.** & Abd-Aziz, S. (2022). Enzymatic synthesis of palm oil-based trimethylolpropane ester as biolubricant base stock catalyzed by Lipozyme 435. *Energy*, 260, 125061.
6. How, C. K., Soltani, S., Chuah, T. G., Phuah, E. T. & **Choong, T. S. Y.** (2022, October). Adsorption properties of β -carotene on mesoporous carbon-coated honeycomb monolith: Kinetics, thermodynamics, and regeneration studies. *Korean Journal of Chemical Engineering*, 39(11), 3109–3120.
7. Soltani, S., Khanian, N., Roodbar Shojaei, T., **Choong, T.S.Y.** & Asim, N. (2022). Fundamental and recent progress on the strengthening strategies for fabrication of polyacrylonitrile (PAN)-derived electrospun CNFs: Precursors, spinning and collection, and post-treatments. *Journal of Industrial and Engineering Chemistry*, 110, 329–344.
8. Li, F., **Choong, T. S. Y.**, Soltani, S., Chuah Abdullah, L., Md. Jamil, S. N. A., & Amerhaider Nuar, N. N. (2022). Investigation of Glyphosate Removal from Aqueous Solutions Using Fenton-like System Based on Calcium Peroxide. *Processes*, 10(10), 2045.
9. Amerhaider Nuar, N. N., Md. Jamil, S. N. A., Li, F., Mat Azmi, I. D., Chiang, P. C., & **Choong, T. S. Y.** (2022). Synthesis of Controlled-Release Calcium Peroxide Nanoparticles Coated with Dextran for Removal of Doxycycline from Aqueous System. *Polymers*, 14(18), 3866.
10. Yu, H., Chen, B., Kim, K., Siwayanan, P., **Choong, S. T.**, & Ban, Z. (2022). Source localization for illegal plastic burning in Malaysia via CFD-ANN approach. *Digital Chemical Engineering*, 3, 100029.
11. Tan, W. J., Ban, Z. H., Chen, B. H., Kim, K. S., Siwayanan, P., **Choong, T. S. Y.**, & Lau, K. K. (2022). Enhanced Mitigation of Fire and Explosion Risks due to Hydrogen Leakage Using Targeted Nitrogen Nozzle Spray Approach. *ACS Chemical Health & Safety*, 29(3), 309–318.
12. Soltani, S., Roodbar Shojaei, T., Khanian, N., **Choong, T.S.Y.**, Asim, N., & Zhao, Y. (2022, March). Artificial neural network method modeling of microwave-assisted esterification of PFAD over mesoporous TiO₂-ZnO catalyst. *Renewable Energy*, 187, 760–773.
13. Li, F., **Choong, T.S.Y.**, Soltani, S., Abdullah, L. C., & Md. Jamil, S. N. A. (2022). Kinetic Study of Fenton-Like Degradation of Methylene Blue in Aqueous Solution Using Calcium Peroxide. *Pertanika Journal of Science and Technology*, 30(2), 1087–1102.
14. Abdul Hamida, M.R., **Choong, T.S.Y.**, Mohd Tohir, M.Z., Abdul Karim Ghani, W.A.W., Sutrisna, P.D., Jeong, H.K. (2021). Zeolitic imidazolate framework membranes for gas separations: Current state-of-the-art, challenges, and opportunities, *Journal of Industrial and Engineering Chemistry* 98, 17–41.
15. M. Saber Almohamedabas, S.E., Abdullah, L.C., Md. Jamil, S.N.A., **Choong, T.S.Y.**, Ting, T.M.



(2021). Trimethylamine functionalized radiation-induced grafted polyamide 6 fibers for p-nitrophenol adsorption. *Scientific Report*.

16. Najeeb, J.; Akram, S.; Mumtaz, M.W.; Danish, M.; Irfan, A.; Touqeer, T.; Rashid, U.; Ghani, W.A.W.A.K.; **Choong, T.S.Y.** Nanobiocatalysts for Biodiesel Synthesis through Transesterification—A Review. *Catalysts* 2021, 11, 171.

17. Lee, K.K.; Low, D.Y.S.; Foo, M.L.; Yu, L.J.; **Choong, T.S.Y.**; Tang, S.Y.; Tan, K.W. Molecular Dynamics Simulation of Nanocellulose-Stabilized Pickering Emulsions. *Polymers* 2021, 13, 668.

18. Ezzuldin M. Saber, S., Md Jamil, S. N. A., Abdullah, L. C., **Choong, T. S. Y.**, & Ming Ting, T. (2021). Insights into the p-nitrophenol adsorption by amidoxime-modified poly (acrylonitrile-co-acrylic acid): characterization, kinetics, isotherm, thermodynamic, regeneration and mechanism study. *RSC Advances*, 11(14), 8150–8162.

19. Soltani, S., Khanian, N., **Choong, T.S.Y.**, Asim, N. and Zhao, Y. (2021). Microwave-assisted hydrothermal synthesis of sulfonated TiO₂-GO core-shell solid spheres as heterogeneous esterification mesoporous catalyst for biodiesel production. *Energy Conversion and Management*. 238, 114165, 1-10.



Conference Proceedings

1. C.K. How, Soraya Hosseini, T.G. Chuah and **Choong, T.S.Y.** (2013) Adsorption of Beta- Carotene onto Mesoporous Carbon Coated Monolith Synthesized via Organic-organic Self- Assembly Approach by using Triblock Copolymer Pluronic F-127, 13' ANST International Symposium on Adsorption Nanoscience and Nanotechnology, October 20-23, 2013, Zhangzhou, China.
2. **Choong, T.S.Y.**, Ahmadun, F.R., Chuah, T.G. and Norzilah Abdul Halif. (2012) The effect of reactor temperature and hydrogen flow rate on carbon nanofibers (CNFs) characterizations and their adsorption capacity, 6th Pacific Basin Adsorption Science & Technology (PBAST-6), 20-23 May 2012, Taipei, Taiwan.
3. Teoh, Y.P., **Choong, T.S.Y.** and Bayesti, I. (2011). Modeling of carbon dioxide adsorption in a monolithic column, 3rd International Congress on Green Process Engineering, 6-8 December 2011, Kuala Lumpur, Malaysia.
4. Ismail, R. and **Choong, T.S.Y.** (2011). Preliminary studies of forward osmosis process, ICCEIB - SOMChE 2011, 28th November - 1st December 2011, Kuantan, Malaysia.

Books

1. Ghufran R., Chuah T. G., **Thomas S. Y. Choong**, Wan Ramli, W. D. and Aiman Abdalla A. S. (2002) Air Pollution. MUCED-I&UA, University Malaya, Kuala Lumpur.
2. Ghufran R., Chuah T. G., Thomas S. Y. Choong, Wan Ramli, W. D. and Aiman Abdalla A. S. (2003) Air Pollution. MUCED-I&UA, University Malaya, Kuala Lumpur, *e-Book*, ISBN 983-2904-01-3.

Patent

1. **Thomas S.Y. Choong**, Luqman Chuah Abdullah, Soraya Hossein, Mohd Rasool (2016) Method and composition for making mesoporous carbon coated monolith. Malaysian Patent (MY-156271-A).
2. Luqman Chuah Abdullah, **Thomas S.Y. Choong** and Rozana Dewi (2010) Building products having phase change materials and method of making the same. Malaysian Patent (PI 2010002239).
3. Luqman Chuah Abdullah, Mohsen Nourouzi Mobarekeh, **Thomas S.Y. Choong** and Azni Idris (2010) Method of adsorbing dye in aqueous solution. Malaysian Patent (PI 2010005028).
4. Norhafizah Abdullah, Chong, G.H., Robiah, Y. and **Thomas S.Y. Choong** (2008). Supercritical antisolvent (SAS) system for the production of nanoparticles. Malaysian Patent (PI 20083984).
5. Fakhru'l-Razi Ahmadun, Mohd. Halim Shah Ismail, and **Thomas S.Y. Choong**, An improved continuous sterilisation process for palm oil mill processing. Malaysian Patent (PI 20032588).

Research Grants

On-going

No	Project Title	Amount (RM)	Year	Source of Fund
1.	Population balance modelling of nano calcium peroxide synthesis with controllable particle size distribution via homogeneous precipitation with urea	87,535	Nov 2020 -	FRGS
2.	Synthesis and Characterization of Nano Calcium Peroxide for Pollutant Removal	100,000	Apr 2021 -	Geran UPM

Completed

No	Project Title	Amount (RM)	Year	Source of Fund
1.	Carbon coated monolith vacuum pressure swing adsorption for CO ₂ capture	168,200	Dec 2016 – March 2019	Geran UPM
2.	Development of continuous pulsed loop reactor for synthesis of ester-based biodegradable fluid	145,000	Oct 2011 – Sept 2014	Exploratory Research Grant SchemeM
3.	Monolithic stirrer reactor for glycerolysis of palm oil	168,000	Oct 2010 – Sept 2012	RUGs Fund
4.	Forward osmosis for oilfield produced water treatment	280,000	Oct 2010 – Sep 2012	RUGs Fund



5.	CO ₂ capture using activated carbon monolith cyclic adsorption	44,000	July 2010 – Jun 2012	FRGS
6.	Modelling and optimisation of a starch yogurt pasteurisation in tubular heat exchanger	44,000	July 2010 – Jun 2012	FRGS
7.	Development of loop reactor for the production of palm based TMP ester	192,800	Oct 2009 – Sept 2011	MOSTI Science Fund

Awards/Recognition (Current)

No	Name of awards	Title	Award Authority	Award Type	Year
1.	World's Top 2% scientist	Single-year World Top 2% scientist	Top 2% of Scientist Database/ Stanford University	International	2022
2.	Advisory Committee	Advisory Committee	SOMChE 2022	International	Aug 2022

Professional Services/Consultation

No	Year	Title	Authority	Amount (RM)
1.	2017	Preparation of Adsorbent for CO ₂ Capture from Coal Fire Power Plant Bottom Ash Biovalley Project, Ministry of Development	TNB Research Sdn Bhd	55,000
2.	2015 –	(Specialist Consultant)	Sarawak state Government	
3.	2014	Process calculations of a distillation column for ethanol purification (Project Leader)	Kawan Dynamics Sdn Bhd	12,000
4.	2012-13	Process calculations of an ester manufacturing plant	Kawan Dynamics Sdn Bhd	8,000
5.	2013	Chemical Engineering Design	Solution Bioforce Sdn Bhd	2,000

Teaching and Supervision Experience

Teaching

1. Process and Plant Design
2. Coordinator for Final Year Design Project
3. Process Engineering
4. Chemical Process Safety
5. Mass Transfer
6. Process Control and Instrumentation
7. Chemical Engineering Fluid Mechanics
8. Chemical Engineering Lab
9. Engineering Maths
10. Noise Pollution Control
11. Adsorption Engineering
12. Green Engineering

Supervision

- 19 PhD students (10 completed, 9 on-going)
- 26 MSc students (20 completed, 6 on-going)
- 19 Master projects (16 completed, 3 on-going)
- More than 100 Students in Undergraduate Design Project and Undergraduate Research Project