

RESUME

Xin Ying Kong

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Research Areas

Her research focuses on catalysis, photochemistry, and novel nanomaterials development, with an emphasis on waste-to-chemicals transformations including plastic upcycling into valuable compounds, biomass valorization into fine chemicals, and carbon dioxide reduction into fuels. She is interested in developing novel catalysts for environmental remediation and energy harvesting using green and sustainable approaches.

Academic Qualifications

2015 – 2019 Ph.D. in Chemical Engineering, Monash University
 2019 Visiting Ph.D. Student, Harvard University
 2011 – 2014 Bachelor's in Chemical Engineering (First Class Honors), Monash University

Professional Experience

2024 – present Lee Kuan Yew Postdoctoral Fellow, Nanyang Technological University, Singapore
 2024 – 2025 Research Affiliate, Lawrence Berkeley National Laboratory
 2021 – 2023 SNAS ASEAN Postdoctoral Fellow, Nanyang Technological University, Singapore
 2020 Lecturer, SGEI University (teaching-oriented university)

Academic Honors and Awards

2025 The Asian Scientist 100
 2025, 2024 World's Top 2% Scientists by Stanford University and Elsevier
 2024 MIT Technology Review Innovators Under 35 (TR35) - Asia Pacific Region
 2024 Lee Kuan Yew Postdoctoral Fellowship
 2023 Merdeka Award Grant (Awarded by the Royal Patron of Malaysia, His Royal Highness Sultan Nazrin Shah, funded by Shell and Petronas)
 2021 SNAS ASEAN Postdoctoral Fellowship (Funded by the Singapore National Academy of Science and the National Research Foundation of Singapore)
 2019 Jeffrey Cheah Travel Grant for Southeast Asia Studies at Harvard University

Professional Service

- Member of MIT Technology Review Innovators Under 35 Asia Pacific Region, Associate Member of Institution of Chemical Engineers (IChemE), Member of Board of Engineers Malaysia (BEM), Member of Malaysia Nanotechnology Association (MNA)
- Youth Editorial Board Member of Nano-Micro Letters (IF: 36.3) and Chinese Journal of Catalysis (IF: 17.7), Guest Editor for Catalysis Today (IF: 5.3), Topic Editor for Frontiers in Nanotechnology (IF: 3.8), Associate Editor for Frontiers in Fuels

Selected Journal Publications (>4,200 citations, *h*-index: 32, source: Google Scholar)

- [1] Z. Shi, C. Li, W. Liu, Z. Jiang, H. Chen, **X. Y. Kong***, L. Wang, Y. Huang*, D. Xia, L. Ye* (2024). High-entropy effect breaking the oxo wall for selective high-valent metal-oxo species generation, *ACS Catalysis*, 14, 14796-14806. (Q1, IF: 13.1)
- [2] L. Zhang, S. R. Choo, **X. Y. Kong***, T. P. Loh* (2024). From biomass to fuel: Advancing biomass upcycling through photocatalytic innovation. *Materials Today Chemistry*, 38, 102091. (Q1, IF: 6.7)
- [3] C. Li, **X. Y. Kong**, M. Lyu, X. T. Tay, M. Đokić, K. F. Chin, C. T. Yang, E. K. X. Lee, J. Zhang, C. Y. Tham, W. X. Chan, W. J. Lee, T. T. Lim, A. Goto, M. B. Sullivan, H. S. Soo (2023). Upcycling of non-biodegradable plastics by base metal photocatalysis, *Chem*, 9, 2683-2700. (Top 10%, IF: 19.6)
- [4] H. Wu, **X. Y. Kong**, X. Wen, S.-P. Chai, E. C. Lovell, J. Tang, Y. H. Ng (2021). Metal-organic framework decorated cuprous oxide nanowires for long-lived charges applied in selective photocatalytic CO₂ reduction to CH₄. *Angewandte Chemie – International Ed.*, 60, 8455-8459. (Top 10%, IF: 16.9) (Highly cited paper)
- [5] W. X. Chan, **X. Y. Kong**, S. R. Choo, H. S. Soo (2024). Photocatalytic upcycling of plastics containing aliphatic C–C bonds into versatile chemicals. *Chem Catalysis*, 4, 101044. (Q1, IF: 11.6)
- [6] M. Estahbanati, **X. Y. Kong**, A. Eslami, H. S. Soo (2021). Current developments in the chemical upcycling of waste plastics using alternative energy sources. *ChemSusChem*, 14, 4152-4166. (Q1, IF: 6.6)

Patents

- [1] H. S. Soo, C. Li, T. T. Lim, **X. Y. Kong**, Upcycling of plastics by photocatalytic tandem C-H oxidation/C-C cleavage to platform chemical feedstocks, **PCT patent: WO 2024/155238 A1**, 2024.
- [2] T. P. Loh, **X. Y. Kong**, Development of metal-free photocatalysts for converting a diverse range of plastics and mixed plastics into high-value compounds at ambient conditions, **PCT patent: WO 2025/226218 A1**, 2025.