

EDUCATION

- 2021-2025 **PhD Chemical Engineering**, Department of Chemical and Biological Engineering
The Hong Kong University of Science and Technology
- 2017-2020 **MA Chemical Engineering**, Wuhan University
- 2017-2020 **BA Water Science and Technology**, Wuhan University

SELECTED PROJECT EXPERIENCE

- 10/2021 – 8/2025 **Development of High-Performance and Long-Life Alkaline Membrane Fuel Cells**
Proposed a hydrogen spillover strategy and designed Pt-WO₃ material to decrease the noble metal usage by 75% in fuel cell anodes
Developed non-noble Ni-based metal anodes to replace platinum
Collaborated with 1 researcher on the optimization of fuel cell testing
Conducted in-situ experiments, e.g., Raman, ICP-MS

SELECTED PUBLICATIONS

- 2025 **Liu G**, Liu Y, Qiu X, Zhang B, Jang J, Cui Y, Xiao F, Zhao Q, Wang W, KIM Y, Xing W, Shao M. **Inert copper incorporation enables the high activity and durability of NiW electrocatalyst for alkaline hydrogen oxidation reaction**. *Advanced Energy Materials*. 2025:2405127.
- 2025 **Liu G**, Liu S, Delmo EP, Chen W, Wu J, Sun Y, Lu M, Zhang Y, Gao P, Su D, Shao M. **Enhancing hydrogen oxidation reaction kinetics of platinum surfaces by intermediates spillover**. *Nano Energy*, 2025, 111354.
- 2024 Wu J, Gao X, **Liu G**, Qiu X, Xia Q, Wang X, Zhu W, He T, Zhou Y, Feng K, Wang J. **Immobilizing ordered oxophilic indium sites on platinum enabling efficient hydrogen oxidation in alkaline electrolyte**. *Journal of the American Chemical Society*. 2024, 146(29):20323-32. (co-first author)
- 2024 Zhang B, Wang J, **Liu G**, Weiss CM, Liu D, Chen Y, Xia L, Zhou P, Gao M, Liu Y, Chen J. **A strongly coupled Ru–CrO_x cluster–cluster heterostructure for efficient alkaline hydrogen electrocatalysis**. *Nature Catalysis*. 2024, 7(4):441-51.

SELECTED CONFERENCE PAPERS

- 2024 **Liu G**, Shao M,. **(Invited) Efficient Ternary NiCuW Hydrogen Oxidation Catalysts for Anion Exchange Membrane Fuel Cells**. ECS Meeting Abstracts. MA2024-01. 2037-2037.

SELECTED CONFERENCE

- 2024 **'Efficient Ternary NiCuW Hydrogen Oxidation Catalysts for Anion Exchange Membrane Fuel Cells'**. Oral presentation at 245th Electrochemical Society meeting, California
- 2024 **'Effective Non-Precious Anodes for Alkaline Fuel Cells'**. Oral presentation at 22nd National Electrochemical Congress, Haikou

HONORS

- 2025 RedBird Academic Excellence Award at HKUST