Associate Professor. Sung-Fu Hung

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Sung-Fu Hung received his Ph.D. degree in chemistry from National Taiwan University in 2018. His Ph.D. research was recognized with the 2019 IUPAC-Solvay International Award for Young Chemists. He subsequently conducted postdoctoral research in the Sargent group at the University of Toronto in 2019. In 2020, he joined the Department of Applied Chemistry at National Yang Ming Chiao Tung University as an Assistant Professor and was promoted to Associate Professor in 2025.

Prof. Hung has published 138 SCI-indexed journal articles, including works in *Nature Synthesis*, *Nature Energy*, *Nature Catalysis*. His publications have achieved an H-index of 65 and accumulated more than 26600 citations (Google Scholar). He has been listed among the World's Top 2% Scientists (2021-2025) and was named a Highly Cited Researcher by Clarivate Analytics (2023-2025).

Prof. Hung's research interests focus on the synthesis of nanomaterials for electrochemical catalysis, advanced catalytic reactor design, and the development of in-situ/operando characterization techniques. In catalyst design, he has developed acid-free single-atom catalysts, array-type single-atom architectures, tandem catalytic systems, metal–organic framework (MOF) catalysts, copper–carbon nanofiber composites that leverage nanoscale spatial confinement, and tin dioxide hollow-sphere catalysts. Through X-ray emission spectroscopy (XES) and resonant inelastic X-ray scattering (RIXS), he demonstrated that modulation of metal d-orbital electronic structures is a key factor governing enhanced catalytic activity.

In parallel, Prof. Hung has advanced the development and optimization of flow reactors by systematically addressing limitations associated with gas diffusion and liquid-phase convection, thereby substantially improving mass transport and enabling single-product catalytic current densities to reach industrially relevant, mass-production benchmarks. He also established in-situ X-ray spectroscopic and Raman spectroscopic platforms compatible with flow-reactor operation, allowing direct interrogation of dynamic changes in metal active centers and reaction intermediates under realistic catalytic conditions. In reactor and experimental design, he places particular emphasis on minimizing perturbations to the intrinsic catalytic environment, enabling the faithful resolution of critical elementary reaction steps.