

Connecting the Dots for Energy Sovereignty: Chemical Solutions to Electrification

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Date July 15, 2026 (Wednesday)

Time 3 – 4 pm

Venue Mr and Mrs Lee Siu Lun Lecture Theater (LT-K),
Academic Building, HKUST, (Lifts 31-32) ([Location](#))

Abstract

“Every megawatt of domestically produced renewable energy is a unit of energy sovereignty.” While many pieces of technologies have become available, several scientific and technological challenges needed to be solved to build the paths to an electric society. In this talk, I will describe our work in ion exchange membranes, electrocatalysis, energy devices, and even protein engineering that are relevant to green hydrogen and green fuel production, cyclic carbon economy, long duration energy storage, as well as electrochemical lithium mining. I will present new machine learning methods for both analyzing and predicting the performance and stability of electrochemical devices. When relevant, I will discuss our perspectives of best paths forward to practical implementation. But above all, I will show how technological challenges drive the discovery of fundamental knowledge in science and engineering.

About the Speaker

Xile Hu was born in 1978 in Putian, Fujian Province, China. He received a B.S. degree from Peking University (2000) and a Ph.D. degree from the University of California, San Diego (2004; advisor: Prof. Karsten Meyer). He carried out a postdoctoral study at the California Institute of Technology (advisor: Prof. Jonas Peters) before joining the faculty of the École Polytechnique Fédérale de Lausanne (EPFL) as a tenure-track assistant professor in 2007. He was promoted to associate professor in January 2013 and full professor in June 2016. In 2023 he co-founded a startup NovaMea and serves as its chairman.

He directs an interdisciplinary research program to develop chemistry that has a potential societal impact, for example, more sustainable and efficient methods to make bio-active compounds, non-precious electrocatalysts and fluorine-free membranes for renewable energy conversion and storage, or improved electrochemical devices. He is highly cited researcher by Clarivate Analytics every year since 2017 till today. His work is recognized by many awards such as the Resonate Award in Sustainability Sciences of California Institute of Technology (2018), the International Award of Catalysis of the International Association of Catalysis Societies (2020), the Robert K. Grasselli Award in Catalysis of the European Federation of Catalysis Society (2023), and the IUPAC-Zhejiang NHU International Award for Advancement in Green Chemistry Experienced Chemist Award (2023). In 2017 he received the National Latsis Prize of Switzerland, the highest Swiss award for a researcher under 40. He is a Fellow of European Academy of Sciences and a Member of the Academia Europaea.

All are Welcome