



**Department of  
Mechanical Engineering  
The University of Hong Kong**



## SEMINAR

**Title: Molecular Engineering for Sustainable Energy Systems**

**Speaker: Dr. Min Wu  
Senior Scientist**

**SEA AI Corporation (SES)**

**USA**

**Venue: Room 7-34/35, Haking Wong Building**

**Date: February 24, 2025 (Monday)**

**Time: 2:30pm**

### **Abstract:**

Energy storage has become a crucial issue in the 21st century. Renewable energy sources, such as solar and wind power, are unreliable due to their inherent intermittency. To address this challenge, grid scale energy storage is the key. Meanwhile, the rapid growth of portable electronics and electric vehicles is driving the demand for high energy density batteries.

My research uses molecular engineering to accelerate the development of sustainable energy systems, specifically redox flow batteries and lithium metal batteries. For redox flow batteries, I focus on addressing challenges related to low cycling stability and high manufacturing costs of redox organics. This involves designing a negative electrolyte with a lifetime of several decades, producing a low-cost and stable anthraquinone negative electrolyte, and developing a low-cost and

stable anthraquinone negative electrolyte. In Li metal batteries, I will talk about how to use molecular engineering to develop better electrolytes.

Overall, my research integrates material synthesis, electrochemical engineering, and advanced characterization techniques to accelerate our society's transition into a more sustainable future.