



## **Developing next generation energy processes with AI and machine learning**

### **SEMINAR**

**Date:** 11 April, 2023 (Tuesday)  
**Time:** 4:30 p.m.  
**Venue:** Room 7-34, Haking Wong Building, HKU

**Speaker:** Prof. Jin Xuan  
Chair Professor and Associate Dean  
Faculty of Engineering and Physical Sciences  
University of Surrey  
UK

#### **Abstract:**

The cross-disciplinary area of energy and artificial intelligence is undergoing rapid development recently. In this talk I will cover a number of innovative applications of AI that address the critical challenges in energy processes and materials, and the recent development of bespoke AI technologies and methodologies for advancing energy, decarbonization and sustainable development, such as data-driven approaches and optimization algorithms. I will showcase (1) how we can develop AI-based techno-economics analysis and optimisation for emerging carbon capture processes, and (2) the development of performance-driven machine learning design of fuel cell electrodes.

#### **Short Biography:**

Professor Jin Xuan graduated with a PhD in energy engineering from The University of Hong Kong in 2012. His academic career in the UK started in 2014, when he took up a Lectureship in the School of Engineering and Physical Sciences at Heriot-Watt University. Professor Xuan joined Loughborough University in 2018 as a Senior Lecturer, was promoted to Professor and awarded a Personal Chair in Low Carbon Processes in 2019 and became Head of the Department of Chemical Engineering in 2020. In 2022, Prof Xuan joined the University of Surrey as the Associate Dean (Research and Innovation) for the Faculty of Engineering and Physical Sciences. He is the Editor of Energy and AI (Elsevier), and the founding Editor-in-Chief of the new journal Digital Chemical Engineering (IChemE). Professor Xuan is currently leading the £4.5 million UKRI Interdisciplinary Centre for Circular Chemical Economy. Professor Xuan is the recipient of the Beilby Medal and Prize 2020 jointly from SCI, RSC and IoM3, Highly Commended Prizes for the ICHEM Global Awards (Research Project, 2019) and IET Innovation Award in Energy and Power (2018) and Scottish Energy News Researcher of the Year Award in Energy and Materials in 2015.

**ALL INTERESTED ARE WELCOME**

**For further information, please contact Prof. D.Y.C. Leung at 3917 7911.**