




Name	Kui Jiao	
Affiliation	Tianjin University, China	
<h2 style="color: red;">Invited Plenary Lecture</h2>		
Presentation Title	Modeling for fuel cell transport phenomena and design	
Abstract (150 words)	<p>This presentation will show the recent progress of fuel cell modeling, including molecular dynamics model for local oxygen transport in nanoscale electrolyte film and catalyst design, lattice Boltzmann (LB) model with real density and viscosity ratios for multiphase transport in porous electrodes and electrode design, 3+1D model for large-size single cell and stack design, 1+1D model for stack and system dynamics and strategy, real-time model for hardware-in-the-loop, and AI-assisted models for fault diagnosis and lifetime prediction. Such modeling methods can also be used for electrolysis cells, which will be addressed.</p>	
Biographical Sketch (150 words)	<p>Kui Jiao is a chair professor at the State Key Laboratory of Engines and the executive deputy director of the National Industry-Education Platform of Energy Storage, at Tianjin University, China. He received his PhD degree in mechanical engineering from the University of Waterloo, Canada, in 2011. His research interest includes fuel cell, electrolysis cell, battery, thermoelectric generator, turbocharger compressor, combustion engine and other energy conversion technologies. He has published several books and more than 200 papers in highly reputed international journals, including Nature. He served as the Chair for several international conferences such as International Conference on Energy and AI. He was granted the “National Natural Science Foundation of China—Outstanding Youth Foundation” and the “UK Royal Society—Advanced Newton Fellowship.” He has led 30+ national and industrial projects and provided modeling and design services in the development of fuel cell engines and electrolysis cells for several major fuel cell manufacturers such as FAW, SAIC Motor, Bosch and Weichai Power. He serves as the founding editor of Energy and AI, associate editor of International Journal of Green Energy, and specialty chief editor of Frontiers in Energy Research. He is the chair of the Energy Storage Division of the International Association for Green Energy, chair of the Energy Storage Division of the Chinese Society for Internal Combustion Engines, and Fellows of the Royal Society of Chemistry (FRSC) and the Institution of Engineering and Technology (FIET).</p>	