


# 16<sup>th</sup> International Green Energy Conference

(IGEC-XVI) | June 30 – July 4, 2024

Name	Tianshou Zhao	
Affiliation	Southern University of Science & Technology	
<h2 style="color: red;">Invited Plenary Lecture</h2>		
Presentation Title	<h3>Flow Cells for Long-Duration Energy Storage</h3>	
Abstract (Approximately 200 words)	<p>Flow cells are those in which a flowable storage medium (e.g.: hydrogen, methanol, ammonia, liquid electrolytes, etc.) allows decoupling power and energy. This talk will show that flow cells are scalable, safe, and particularly flexible in storage duration and site selections. Therefore, flow cells will become game-changing technologies to facilitate the widespread deployment of renewables. In particular, we will show that common scientific issues and practical challenges pertaining to flow cell technologies can be addressed by an interdisciplinary approach combining electrochemistry and engineering thermophysics.</p>	
Biographical Sketch (Approximately 200 words)	<p>Tianshou Zhao is the Director of Energy Institute for Carbon Neutrality, Chair Professor of Mechanical &amp; Energy Engineering, Southern University of Science &amp; Technology (SUSTech). Before joining SUSTech in 2021, he held the named professorship of Engineering and Environment at HKUST. Prof Zhao is an elected academician of the Chinese Academy of Sciences, Fellow of the American Society of Mechanical Engineers, Fellow of the Royal Society of Chemistry, Fellow of the Chinese Society of Chemistry, and a Highly Cited Researcher by Clarivate/Thomson Reuters, and Editor-in-Chief of the <i>International Journal of Heat and Mass Transfer</i>. His research aims to establish the scientific underpinnings for innovations and breakthroughs in energy storage devices. Using an interdisciplinary approach that combines thermo-fluid sciences with electrochemistry, he is exploring the best combination of materials and system structures to enable revolutionary advances in the performance, cost, and lifetime of energy storage devices.</p>	