


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

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Name	Shan-Tung Tu	
Affiliation	East China University of Science and Technology	
<h3>Invited Plenary Lecture</h3>		
Presentation Title	<b>The Pathway Towards Safe Applications of Hydrogen Energy: From History to the Future</b>	
Abstract (Approximately 200 words)	<p>Safety has long been a major barrier for the application of new energy. Learning from the history and evolution of steam and nuclear power may provide valuable insights into developing a reliable pathway toward the safe application of hydrogen energy. The transition from conventional power to hydrogen energy, while technologically distinct, offers several historical and operational lessons that may guide the safe and effective deployment of hydrogen energy systems, which includes emphasizing safety technology innovation through design, manufacturing and regulation by learning from failures, implementing comprehensive risk assessments and mitigating strategies, harmonizing standards, investing in research on safety technologies, and improving public perception and acceptance. The ongoing researches are reviewed with emphasis on developing advanced risk assessment models and tools to evaluate the safety implications of hydrogen technologies across various applications, the compatibility of materials with hydrogen under different operating conditions to ensure the integrity and safety of infrastructure, storage systems, and components, safe and efficient methods for storing hydrogen, including compressed gas storage, liquid hydrogen storage, and solid-state hydrogen storage materials, and establishing robust safety standards and regulations for hydrogen technologies.</p>	
Biographical Sketch (Approximately 200 words)	<p>Shan-Tung Tu, received his B.Eng degree in 1982 and Ph.D degree in 1988 from Nanjing Tech University, is a Chair professor of East China University of Science and Technology. He had also been a guest scientist at the Royal Institute of Technology in Sweden. He was elected as an academican of China Academy of Engineering in 2019. Prof. Tu has devoted his research to the area of high temperature engineering, including thermal effect on materials, structural integrity assessment and design of high temperature equipment against failures. He has received a number of distinguished awards, including China National Science and Technology Progress Award, National Technology Invention Award, China Youth Science and Technology Award, ASME Best Paper Award, among others. He has been a fellow of The Chemical Industry and Engineering Society of China (since 2020), the honorary president of Chinese Pressure Vessel Institution (since 2010) and the honorary president of Chinese Materials Institution (since 2015) of China Mechanical Engineering Society, Chairman of China Structural Integrity Consortium, Chairman of Asian Oceanic Regional Committee of International Council for Pressure Vessel Technology, and a member of reliability committee of IFToMM. He is currently an honorary professor of the University of Nottingham. He is also serving as an editorial board member for a number of journals, including Applied Energy, Adv. Applied Energy, Frontiers of Chemical Sciences and Engineering, Int J Pres Ves and Piping, J of Materials Science and Technology, etc.</p>	