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# 2021 WORLD FUEL CELL CONFERENCE

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Name	Zixi Wang	
Affiliation	<b>Department of Mechanical Engineering, Tsinghua University, China</b>	
<h2 style="color: red;">Invited Keynote Lecture</h2>		
Presentation Title	<b>High performance sealing technology for stack assembly in proton exchange membrane fuel cell (PEMFC)</b>	
Abstract (Approximately 200 words)	<p>In a proton exchange membrane fuel cell (PEMFC), sealing stability is necessary to the high performance and safety of stack assembly. Reliable sealing also determines the consistency of mechanics, durability, and manufacturability of the fuel cell stack assembly. This study aims to systematically review the current high performance sealing technology, with emphasis on the structural strategy of stacks. A coupled relationship was established to analyze the contact properties of membrane electrode assembly (MEA) and sealing components. In sealing materials, the specific performances, such as, airtightness, permeability, and stress relaxation, were introduced to realize reliable assembly, together with ageing resistance. In the assembly process, several forming processes of sealing components were proposed to optimize the geometrical and material parameters in the industrialization production of PEMFC. A promising development trend in sealing technology for stack assembly was addressed to achieve the much higher performance of PEMFC.</p>	
Biographical Sketch (Approximately 200 words)	<p>Dr. Zixi Wang graduated from Bauman Moscow State Technical University, Russia. Associate Professor at the Department of Mechanical Engineering, Tsinghua University, China. Senior Deputy Director, Institute of Design and Engineering; Director, Joint Research Centre for Plastic Sealing, Tsinghua University, China. His research interests are the failure analysis and reliability design of machinery, sealing technology, structural optimization design, reactor sealing in hydrogen fuel cell, rubber polymer and plastic seals, friction and wear of materials, flow through porous media, hydrogen storage. Most funding supports are from the National Science and Technology Major Projects, National Natural Science Foundation of China, Aviation Funding. Excellent research track record is at the sealing materials, computational fluid dynamics, magnetic suspension bearing, sealing engineering and tribology. He has published more than 50 peer-reviewed papers in top journals, and has 50 authorized invention patents.</p>	