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2021 WORLD FUEL CELL CONFERENCE

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Name	Xiao-Zi Yuan	
Affiliation	National Research Council Canada	
<h2 style="color: red;">Invited Plenary Lecture</h2>		
Presentation Title	Quality Control of PEM Fuel Cell Components	
Abstract (Approximately 200 words)	<p>As industry is commercializing the proton exchange membrane (PEM) fuel cell technology, especially for transportation applications, the need for quality control (QC) of the PEM fuel cell and its components is stringent. QC is an essential part of fuel cell industrialization, providing means to reduce cost of components, enhancing the reliability of the final product, and offering specification guidance for new entrants in the supply chain. Also, the fuel cell industry has an imperative demand arising from the lack of standard methods, protocols and tools for the incoming, in-process and final QC of PEM fuel cell components. In support of the industrialization of fuel cell technology, National Research Council Canada (NRC) has been reorienting its fuel cell activities towards manufacturing issues to tackle specific challenges linked to the component specification definition, standardization and QC. Around QC, NRC has worked closely with fuel cell OEMs, suppliers, and knowledge providers via international collaborations, conducted a number of projects related to QC and developed tools and methods for component QC. This talk presents some of the activities conducted at NRC around QC, in particular, the development of book of attributes for fuel cell components, including membrane, catalyst coated membrane, catalyst layer, gas diffusion layer, bipolar plate, ink, and gasket.</p>	
Biographical Sketch (Approximately 200 words)	<p>Dr. Xiao-Zi Yuan is a Research Officer at the Energy, Mines & Environment (EME) Research Centre of the National Research Council Canada (NRC). Dr. Yuan received her B.S. and M.Sc. in Corrosion and Protection from Nanjing University of Technology in 1991 and 1994, respectively and her Ph.D. in Material Science from Shanghai Jiaotong University in 2003. Beginning in 2004, she carried out a three-year postdoctoral research program supported by Natural Sciences and Engineering Research Council (NSERC). In 2007, Dr. Yuan joined NRC. At NRC, she has participated and led many projects related to fuel cells and batteries. Her research interests include PEM fuel cells, Li-ion batteries, Zn/Li air batteries, vanadium redox flow batteries, and other types of electrochemical devices and energy storage systems. Her research areas range from cell design, electrode material and structure to cell testing, diagnosis, and durability. So far Dr. Yuan has published over a hundred and thirty research papers in refereed journals, and produced four books and six book chapters. In 2014 and 2016, Dr. Yuan was listed as Highly Cited Researcher by Thomson Reuters under the Engineering Section.</p>	