


# 15<sup>th</sup> International Green Energy Conference (IGEC XV) | July 10-13, 2023 | In-person & online

Name	Mohamed Mohamedi	
Affiliation	Institut National de la Recherche Scientifique (INRS)	
<h2 style="color: red;">Invited Keynote Lecture</h2>		
Presentation Title	<p><b>Progress in the design and fabrication of membraneless air-breathing microfluidic fuel cells for electronic applications</b></p>	
Abstract (Approximately 200 words)	<p>Portable energy sources are under continuous pressure to increase power output and lifetime while decreasing size and weight for meeting the power requirements of the actual and upcoming electronic portable devices. Micro fuel cells appear as an attractive solution and can offer the mobility and freedom sought by the consumer. Furthermore, this technology has important environmental benefits because the fuels can be obtained from sustainable organic sources. Among the different categories of fuel cells, mixed-reactant air-breathing micro fuel cells are new concept of generating electricity. Essentially, in these systems, the fuel and oxidant (oxygen from air) are mixed in a single stream with the use of a selective cathode (inactive towards the fuel). There are a number of advantages associated to the use of mixed-reactant air-breathing micro fuel cells including the no need of a polymer membrane electrolyte, external pumps, reduced weight and volume, simplified manifolding, reduced sealing requirements and, overall, they have simpler designs, implying great potential for low-cost commercialization. The presentation will discuss our progress in the design and fabrication of mixed-reactant air-breathing microfluidic membraneless fuel cells power supply for portable electronics.</p>	
Biographical Sketch (Approximately 200 words)	<p>Dr. Mohamed Mohamedi graduated from the Institut National Polytechnique de Grenoble (INPG), France. He actually works as a research-professor at Institut National de la Recherche Scientifique (INRS), Canada, where he leads the Electrochemistry and Micro Energy Sources Laboratory. His research is focused on the science, engineering and technology of electrochemical devices, in particular energy conversion (fuel cells) and storage devices (metal-air batteries and supercapacitors), implantable biological fuel cells power sources for medical applications and electrochemical sensors for diabetes detection and monitoring. Dr Mohamedi is the recipient of the Tajima Prize from the International Society of Electrochemistry (ISE), the Electrochemistry Communications Award, the Research fellow of the Japan Society for the Promotion of Science (JSPS), the Research Fellow of the 21st Center of Excellence at the Center for Practical Nano-Chemistry of Waseda University (Japan), the Research Fellow of the New Industry Creation Hatchery Center of Tohoku University (Japan), and the Research Fellow of the New Energy and Industrial Technology Development Organization (NEDO) Japan.</p>	