

Expert Discussion Panel

Panel Topic: The Circular Economy and the Fuel Cell/Hydrogen Industry

- Panel Date/Time: Friday, August 20, 2021, from 9:50 am – 10:50 am EDT (UTC-4)

Panel Session Description:

The world is running out of resources such as freshwater, fossil fuels, rare earths, and precious metals. Circular economy concepts, including repurposing, reusing, and converting waste into resources, are viewed as a solution. The battery industry has been actively involved with the integration of circular economy concepts. In contrast, fuel cell and water electrolysis industries are critically lagging. Circular economy ramifications extend to education, legislation, and science and engineering. As a result, a diverse panel of experts from academic, governmental, and industrial organizations is selected to sensitize conference attendees and explore and identify avenues to integrate circular economy concepts.

Panel Moderator: Dr. Jean St-Pierre, University of Hawaii

Expert Panelists:

- Dimitrios Papageorgopoulos, United States Department of Energy
- Javier Dufour, IMDEA Energy Institute, Madrid
- Jason Cox, Johnson Matthey, London
- Jean St-Pierre, University of Hawaii

Biography of Panelists:



Dimitrios Papageorgopoulos is the Program Manager for Fuel Cell Technologies in the U.S. Department of Energy's (DOE's) Hydrogen and Fuel Cell Technologies Office, where he oversees efforts focused on the development of fuel cells for transportation, stationary and cross-cutting applications. He has more than 20 years of combined experience in research, technology development and management in areas related to surface science, catalysis, and hydrogen and fuel cell technologies. Prior to joining DOE in 2009, Dimitrios was Head of Catalyst Development at CMR Fuel Cells. Previous positions include those at the Energy Research Centre of the Netherlands (ECN), the FOM Institute for Atomic and Molecular Physics (AMOLF) Amsterdam, and at the Ecole Polytechnique Fédérale de Lausanne (EPFL). Dimitrios is a graduate of the Federal Executive Institute's Leadership for a Democratic Society Program. He received his PhD in Natural Sciences (Chemistry), as a Marie Curie fellow, at the University of Cambridge.



Javier Dufour, Research Professor and Head of the Systems Analysis Unit of IMDEA Energy Institute (Spain). Professor at Rey Juan Carlos University, SMART-E² Chair (Spain). Currently, he is Deputy Leader of the Cross-Cutting Activities Technical Committee of Hydrogen Europe Research. Formerly, he was Operating Agent of Task 36 “Life Cycle Sustainability Assessment of Hydrogen Energy Systems” IEA Hydrogen TCP (01/01/15-31/12/17), Chair of the Spanish Network on Life Cycle Assessment -esLCA- (05/11/12-20/06/18) and Vice-chair of Cross-Cutting Research Activities of Hydrogen Europe Research (01/07/16-02/07/20). Currently, his research interests are focused on life cycle sustainability assessment and eco-design of hydrogen systems.



Jason Cox BA, MBA, ACMA

Commercial Director, Fuel Cells, Johnson Matthey

Jason studied at the London School of Economics and Manchester Business School in the UK before training to become a qualified accountant. He has worked for a number of multinational companies in various roles over the last 20 years. The majority have been in the Energy and Chemicals sectors, moving between accounting, project finance, business development, strategy and commercial roles. Most recently he joined Johnson Matthey Plc in 2018, working in their Platinum Group Metals business. In this role he developed their current strategy on the use and recycling of these products and other scarce raw materials linked to growing sustainable technology needs. From this he moved to his current role as Commercial Director for their Fuel Cells business in 2020.



Jean St-Pierre, PhD, PEng, is a graduate of Polytechnique, Montréal, Canada and holds 3 engineering degrees from this institution (PhD, MScA, BIng). More than twenty-five years of his industrial and academic career has been devoted to the development of proton exchange membrane fuel cells including aspects such as water management, freezing, degradation mechanisms, mathematical modeling, diagnosis and measurement methods, electrocatalysis, pure oxygen operation for space and air independent applications, and reactant stream unit operations (gas separation and fuel reforming catalysts). He previously held principal research scientist and research professor positions at respectively Ballard Power Systems (1995-2005), an acknowledged fuel cell manufacturing leader, and the University of South Carolina (2006-2010), formerly the site of the sole National Science Foundation industry/university collaborative research center for fuel cells. He is currently a researcher at the University of Hawaii – Manoa and focuses on fuel cell and related technology activities. His work has led to more than 115 journal papers, book chapters, and conference proceedings, and to more than 30 granted, published, and provisional patents. He is an advisory board member of *Sci* and editorial board member of *Electrochem* and *Molecules*. He is a member of the Electrochemical Society, the International Society of Electrochemistry, the American Association for the Advancement of Science, and Sigma Xi.