• Cooling of PEM Fuel Cell using Two-phase Boiling Heat Transfer - Eun Jung Choi, Seoul National University
  ➢ In this paper, novel cooling system using two-phase boiling heat transfer method has been experimentally investigated. The result demonstrates that two-phase cooling method shows better cooling performance in proper temperature maintenance and temperature uniformity within the cell than water cooling system.

• Numerical Study of Droplet Impact on Inclined Surface: Viscosity Effects - Biao Zhou, University of Windsor
  ➢ The Volume of Fluid (VOF) method has played a major role in the numerical simulation of liquid water behaviors in proton exchange membrane fuel cells (PEMFCs). In this study, using VOF method, the effects of viscosity with/without the dynamic contact angle (DCA) on the droplet deformation and dynamics are investigated.

• Durability of Polybenzimidazole High Temperature PEM Fuel Cell - Vamsikrishna Bandlamudi, HySA Systems Integration & Technology Validation Competence Centre
  ➢ The aim of this work is to study the durability of a unit polybenzimidazole (PBI) PEM fuel cell over a certain period of time under real life operating conditions.

• Maximize Fuel Cell Performance by Reducing Electrical Contact Resistance Between Coated Bipolar Plates and Gas Diffusion Layers - Henrik Ljungcrantz, Impact Coatings AB
  ➢ Impact Coatings AB provides coating solutions for metal bipolar plates (BPP) in different fuel cell applications. The purpose of the coating is to greatly improve the corrosion resistance of the BPP, and to also enhance it with an electrically conductive surface. Otherwise, large power losses can occur in the interfaces between the BPPs and the gas diffusion layers (GDLs). These losses are directly related to the electrical contact resistance (ECR) in each junction and a low ECR is very desirable. In the present study, we investigate how the ECR is affected by different combinations of coatings and GDLs.

• Influence of Ionomer Structures and Ratios on Performance and Degradation of PEM Fuel Cells - Samaneh Shahgaldi, 20/20 Laboratory for Fuel Cell and Green Energy RD&D, Department of Mechanical and Mechatronics Engineering, University of Waterloo
  ➢ In this study, the importance of ionomer structures and ratios on cell performance and degradation are investigated. Among important parameters such as the types of membrane, catalyst structures, catalyst support and manufacturing process for membrane electrode assembly (MEA), the impact of
ionomer structures and ratios on cell durability has not received adequate attention.

- **Deep Insight into Degradation of a PEMFC in Reformate Hydrogen for Stationary Applications** - Irina Profatilova, FrenchCommissary for Atomic Energy and Alternative Energies
  
  - Detailed study of a PEMFC degradation under reformate hydrogen for stationary applications. The present work aims in identification of the main performance loss mechanisms at a single cell level and understanding of catalyst active layers and membrane ageing in the course of stationary operation.