



Name	Joel Pauchet	
Affiliation	CEA-LITEN, Grenoble, France	
Invited Keynote Lecture		
Presentation Title	Some developments and results to better understand transfers in PEMFCs and improve their performance	
Abstract (150 words)	<p>Numerous progresses (material, design, operation modes...) have been done since the first Proton Exchange Membrane Fuel Cell (PEMFC) in 1960 and this technology is now considered as a promising alternative solution to combustion engines for transport applications. To be even more attractive, it is still necessary to increase its performance and durability, reduce its cost and the usage of strategic raw materials. CEA is being involved in these fields since years and has contributed to improve this technology, develop European Network and knowledge, both with academic and industrial partners. This talk is focused on some key technological, experimental and numerical results obtained within recent European Projects with CEA as a partner, and aiming at improving performance and durability of PEMFC. Discussion will cover some technological developments, the analysis of water management scenarii to better control flooding, an approach to better understand performance limitations to reduce Pt loading, porous media improvements...</p>	
Biographical Sketch (150 words)	<p>Joël PAUCHET has been working on fluid mechanics since 1986. He has been involved during 15 years at ALSTOM then at CNES (French National Space Center) in technological and fundamental research on aero/hydrodynamics, cavitation, turbulence, heat/mass transfer and combustion. He is currently working at CEA (The French Alternative and Atomic Energies Commission) since 2001 where he is senior expert on PEMFCs. With his teams, he has developed and/or contributed to develop specific experimental (liquid visualization, μsensors...) and numerical approaches (continuous models, Pore Network Models...) to better understand transfers in PEMFCs that can affect their performance and durability, especially under two-phase conditions. Joël PAUCHET has also been contributing to several European research projects on PEMFC, either as coordinator, scientific manager, WP leader, or contributor. He has developed numerous collaborations with industries and academia worldwide and is author or co-author of patents, scientific publications, oral presentations and invited talks at international conferences.</p>	