Hydrogen Europe:
European Hydrogen & Fuel cell Project Database

Project IMPACT

Improved Lifetime of Automotive Application Fuel Cells with ultra low Pt-loading

The main objective of the planned project IMPACT is to increase the life-time of fuel cells with membrane-electrode assemblies containing ultra low Pt-loading (< 0.2 mg cm-2) for automotive applications. The economic requirements to reduce Pt loading leads to the challenge to maintain durability and performance, an aspect which has not been addressed sufficiently in public projects and studies. A durability of 5000 h under dynamic operation conditions with ultra low loading is envisioned for automotive applications. IMPACT aims at improving significantly durability in the automotive application at reduced PGM loadings by material development and MEA development. Development ist performed on the main components of the cell, namely the membrane, the gas diffusion media and the electrodes. The basis for the durability is extensive testing at the industrial and research partner`s facilities under diverse and highly dynamic conditions and comprehensive and detailed analysis and evaluation of degradation processes and their importance for fuel cell performance loss. This analysis is utilized for the derivation of mitigation strategies by component modification and optimization of operation modes. The mitigation strategies are experimentally validated and consecutively lead to a demonstration of the improved durability in an predefined stack. IMPACT also aims at providing a cost analysis and an evaluation of the technical feasibility for large scale utilization of the project achievements. Recommendation and dissemination activities are planed within scientific workshops, publication of the results in scientific journals, and using project fact sheets.

Project Information

Type of project : Research
Timing : 01/11/2012 > 31/10/2016
Project website: http://www.eu-project-impact.eu/
Project Budget : 9.144.498 €

Funding

European Union through FCH JU: **Grant agreement 303452 - CORDIS link**

Project partners

Coordinator :
DLR - German Aerospace Center
Partners :
CEA - Commissariat à l'énergie atomique et aux énergies alternatives
CNR - Consiglio Nazionale delle Ricerche
Johnson Matthey Fuel Cells Limited
ZSW - Zentrum für Sonnenenergie- und Wasserstoffforschung Baden-Württemberg
JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION
ITM POWER (TRADING) LIMITED
HOCHSCHULE ESSLINGEN
TECHNISCHE UNIVERSITAET BERLIN
INSTITUT NATIONAL POLYTECHNIQUE DE TOULOUSE
GWANGJU INSTITUTE OF SCIENCE AND TECHNOLOGY
SOLVAY SPECIALTY POLYMERS ITALY S.P.A.

Sub project(s)

Sub project 1

Country: Germany
Address:
Linder Hoehe 51147 KOELN
Sub project categories
Research

Project Id: 1021
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