



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 ($< 0.2 \text{ mg cm}^{-2}$) 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 is 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 a 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 planned 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

This project datasheet was last updated on : 21.11.2017

[Modify this project datasheet](#)