



Hydrogen Europe: European Hydrogen & Fuel cell Project Database

Project ISH2SUP

In situ H₂ supply technology for micro fuel cells powering mobile electronics appliances

In the project two novel solutions for fuelling micro fuel cells are studied and developed to a demonstration level. The primary application area is fuel cell based power sources of portable electronic appliances such as cell phones, mp3-players and laptop computers, but also similar niche products. A generally recognized fact is that today's battery technology is not sufficient for many of those applications despite expected progress in the field due to the increasing number of features implemented. Fuel cell technology provides in principle a solution to the problem by enabling the use of chemical energy storages. The low temperature PEM technology is inherently feasible choice for consumer products because of the close-to-human nature of the applications provided that logistics of hydrogen can be solved. In the project we consider a solution, which combines hydrogen PEM with fuelling technology, where hydrogen is stored in a chemical form in a primary fuel and released in-situ on-demand bases. This provides benefits as to DMFC technology. The fuel cell using hydrogen can be made in a more compact size because of higher volumetric power density. The primary fuel can be stored in a disposable or recycled cartridge, which is changeable and logistically easily available. Two different technologies to produce hydrogen will be considered. One is based on NaBH as the fuel and the other on catalyzed electrolysis of methanol. The project has two main objectives: - Firstly, to show that the both technologies consider are feasible and fulfil the RCS requirements of mobile/portable electronic appliances in consumer markets. - Secondly, to find the best ways to build up logistics for fuelling using disposable or recycled cartridges. The power range targeted in the practical development work for demonstration is 5 - 20 W. Feasibility of the cartridge technologies and applications will be, however, explored in a wider range from 0.5 W up to 100 W level.

Project Information

Type of project : Research

Timing : 01/01/2010 > 31/03/2013

Project Budget : 1.684.530 €

Funding

European Union through FCH JU: [Grant agreement 245294 - CORDIS link](#)

Project partners

Coordinator :

[Aalto University \(former TKK - Helsinki University of Technology\)](#)

Partners :

[CEA - Commissariat à l'énergie atomique et aux énergies alternatives](#)

MYFCAB

OY HYDROCELL LTD

[Sub project\(s\)](#)

Sub project 1

Country: Finland

Address:

OTAKAARI 1 00076 AALTO

Sub project categories

Research

Project Id: 1031

This project datasheet was last updated on : 21.11.2017

[Modify this project datasheet](#)