# Hydrogen Europe:
# European Hydrogen & Fuel cell Project Database

## Project METPROCELL

Innovative fabrication routes and materials for METal and anode supported PROton conducting fuel CELLs

PCFC is one of the most promising technologies to reach the requirements related to cogeneration application, especially for small power systems (1-5 kWel). The investigation in the concept of advanced thin-film ceramic fuel cell technology at operating intermediate temperature between 400 and 700 °C aims at improving the characteristics (thermal cycling, heat transfer, current collection,.) as well as lowering drastically the costs of the system. The aim of METPROCELL is to develop innovative Proton Conducting Fuel Cells (PCFCs) by using new electrolytes and electrode materials and implementing cost effective fabrication routes based on both conventional wet chemical routes and thermal spray technologies. Following a complementary approach, the cell architecture will be optimised on both metal and anode type supports, with the aim of improving the performance, durability and cost effectiveness of the cells. Specific objectives: - Development of novel electrolyte (e.g. BTi02, BCY10/BCY10) and electrode materials (e.g. NiO-BIT02 and NiO-BCY10/BCY10 anodes) with enhanced properties for improved proton conducting fuel cells dedicated to 500-600°C. - Development of alternative manufacturing routes using cost effective thermal spray technologies such detonation spraying (electrolytes and protective coatings on interconnects) and plasma spraying (anode). - Development of innovative proton conducting fuel cell configurations to be constructed on the basis of both metal supported and anode supported cell designs. - To up-scale the manufacturing procedures based on both conventional wet chemical methods and thermal spraying for the production of flat Stack Cells with a footprint of 12 x 12 cm. - Bring the proof of concept of these novel PCFCs by the set-up and validation of prototype like stacks in two relevant industrial systems, namely APU and gas/micro CHP.

## Project Information

**Type of project :** Research
**Timing :** 01/12/2011 > 31/05/2015
**Project website:** http://www.metprocell.eu/
**Project Budget :** 3.447.874 €

## Funding

European Union through FCH JU: **Grant agreement 277916 - CORDIS link**

## Project partners

**Coordinator :**
TECNALIA Research & Innovation (TECNALIA)
**Partners :**
METPROCELL
CNRS - Centre National de la Recherche Scientifique
DVGW - German Technical and Scientific Association for Gas and Water
TOPSOE FUEL CELL A/S
Ceramic Powder Technology AS
HÖGANÄS AB
MARION TECHNOLOGIES S.A.

## Sub project(s)

# Sub project 1

**Country:** Spain
**Address:**
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**Sub project categories**
Research

Project Id: 1046
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