



# Hydrogen Europe: European Hydrogen & Fuel cell Project Database

## Project CRESCENDO

Critical Raw material Electrocatalyst Replacement ENabling Designed post-2020 PEMFC

CRESCENDO will develop highly active and long-term stable electrocatalysts of non-platinum group metal (nonPGM) catalysts for the PEMFC cathode using a range of complementary and convergent approaches, and will redesign the cathode catalyst layer so as to reach the project target power density and durability requirements of 0.42 W/cm<sup>2</sup> at 0.7 V, and 1000 h with less than 30% performance loss at 1.5 A/cm<sup>2</sup> after 1000 h under the FC-DLC, initially in small and ultimately full-size single cells tested in an industrial environment on an industrially scaled-up catalyst. The proposal includes the goal of developing non-PGM or ultra-low PGM anode catalysts with greater tolerance to impurities than current low Pt-loaded anodes. It will develop and apply advanced diagnostics methods and tests, and characterisation tools for determination of active site density and to better understand performance degradation and mass transport losses. The proposal builds on previous achievements in non-PGM catalyst development within all of the university and research organisation project partners. It benefits from the unrivalled know-how in catalyst layer development at JMFC and the overarching expertise at BMW in cell and stack testing, and in guiding the materials development to align with systems requirements.

## Project Information

**Type of project :** Research

**Timing :** 01/01/2018 > 31/12/2020

**Project Budget :** 2.739.602 €

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## Funding

European Union through FCH JU: [Grant agreement 779366 - CORDIS link](#)

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## Project partners

**Coordinator :**[CNRS - Centre National de la Recherche Scientifique](#)**Partners :**[BMW AG](#)[CNRS - Centre National de la Recherche Scientifique](#)[CEA - Commissariat à l'énergie atomique et aux énergies alternatives](#)[Johnson Matthey Fuel Cells Limited](#)[JOHNSON MATTHEY PLC](#)[University of Modena and Reggio Emilia \(UNIMORE\)](#)[IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE](#)[PRETEXO](#)[TECHNISCHE UNIVERSITAET BERLIN](#)[UNIVERSITE DE MONTPELLIER](#)

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## Sub project(s)

### Sub project 1

**Country:** France**Address:**

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**Sub project categories**

Research

Project Id: 1225

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