



In-situ fabricated hydrogen evolution catalysts for alkaline water electrolysis

Fact Sheet

Project Information

HyCat

Grant agreement ID: 899412

DOI

[10.3030/899412](https://doi.org/10.3030/899412)

Project closed

EC signature date

15 January 2020

Start date

1 December 2020

End date

31 May 2022

Funded under

EXCELLENT SCIENCE - European Research Council (ERC)

Total cost

No data

EU contribution

€ 150 000,00

Coordinated by

FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA



Italy

Project description

Catalyst stability for high hydrogen evolution current

Hydrogen is a potential alternative to fossil fuels. The best way to obtain it is electrolytic water splitting based on renewable energy sources. Hydrogen evolution reaction (HER) electrocatalysts, such as Pt, are the most active but costly and non-resistant over time due to the accumulation of metal nanoparticles on the support. The EU-funded HyCat project proposes solutions to reduce the quantity of noble metal in order to secure catalyst stability by impeding aggregation. The solution will be based on a highly active and stable HER catalyst composed of a nanostructured Cu-Pt porous layer, directly grown onto a Ti current collector by in-situ slow

electrodeposition of Pt. This catalyst provides high hydrogen evolution current and long-term stability under operational conditions.

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > [catalysis](#) > **[electrocatalysis](#)**

[natural sciences](#) > [chemical sciences](#) > [electrochemistry](#) > **[electrolysis](#)**

[natural sciences](#) > [chemical sciences](#) > [inorganic chemistry](#) > **[transition metals](#)**

[engineering and technology](#) > [nanotechnology](#) > **[nano-materials](#)**

[engineering and technology](#) > [environmental engineering](#) > **[energy and fuels](#)**



Programme(s)

[H2020-EU.1.1. - EXCELLENT SCIENCE - European Research Council \(ERC\)](#)_

MAIN PROGRAMME

Topic(s)

[ERC-2019-POC - ERC Proof of Concept Grant](#)

Call for proposal

[ERC-2019-PoC](#)

[See other projects for this call](#)

Funding Scheme

[ERC-POC-LS - ERC Proof of Concept Lump Sum Pilot](#)

Host institution



FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA

Net EU contribution

€ 150 000,00

Total cost

No data

Address

VIA MOREGO 30

16163 Genova



Region

Nord-Ovest > Liguria > Genova

Activity type

Research Organisations

Links

[Contact the organisation](#)

[Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Beneficiaries (1)



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European Union, 2025

