

SERVICES CATALOGUE

Research Unit



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



UNIÓN EUROPEA
"Una manera de hacer Europa"

What we do?

R&D Integral Services

The CNH2 Research Unit provides integral services for design, development, characterization and scale-up of systems based on the use of hydrogen as energy vector, covering the entire value chain

Components development from laboratory scale up to low power devices, covering the different technologies for hydrogen or other renewable fuels production and transformation

Exsitu and insitu electrochemical characterization of SO, PEM and MEC: I/V curves, durability testing and accelerated stress testing

Physico-chemical characterization of components before and post-mortem: morphological, compositional and thermal

◆ Low-power systems start-up and validation over the entire temperature range

◆ Components and processes scale-up

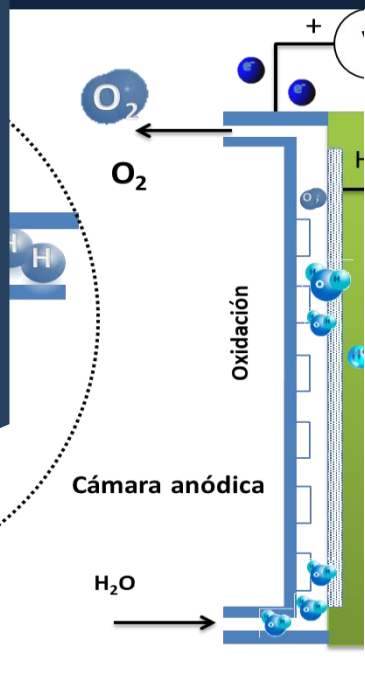
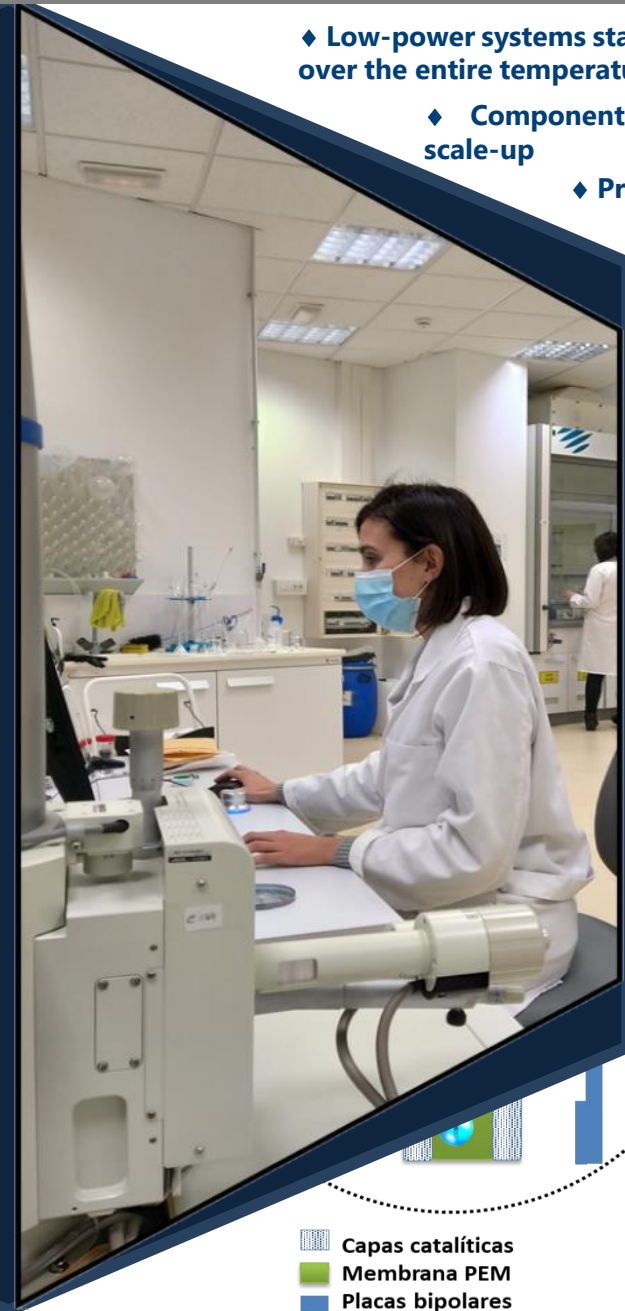
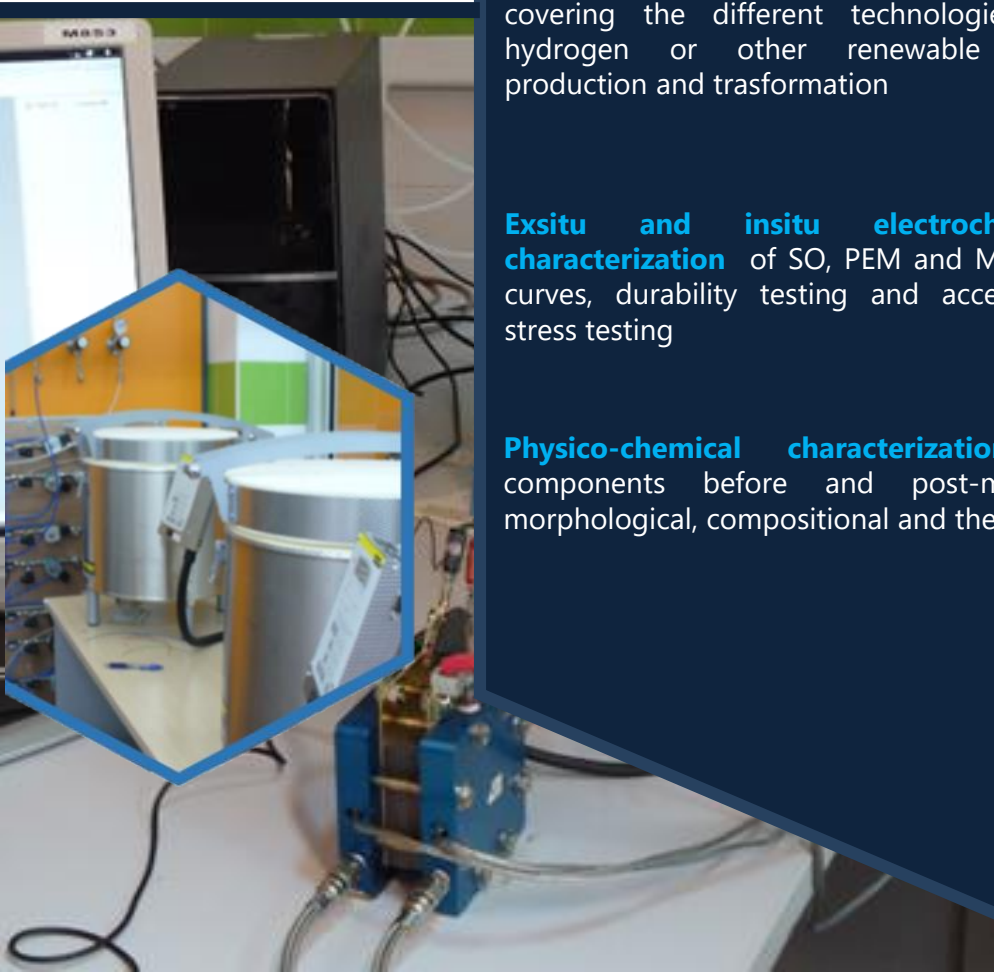
◆ Proposal preparation

◆ Research and characterization services

◆ Treatment and valorization of wastes

◆ Technology transfer

◆ Technical training



Development, characterization and scale-up of electrolysis and fuel cell systems

Components development

- ◆ Synthesis and characterization of a wide range of materials using different techniques
- ◆ Holder manufacture with different geometries by different processes
- ◆ Micro-structured and thickness controlled film thin deposition methods
- ◆ Assembly and integration of components

Low-power systems testing

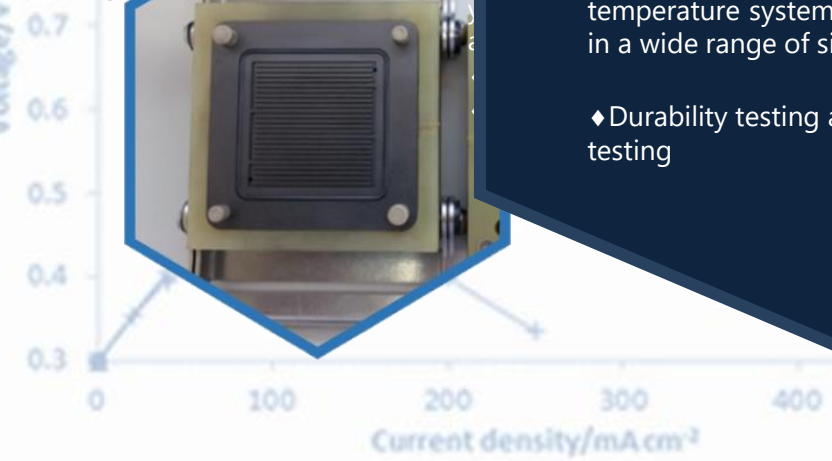
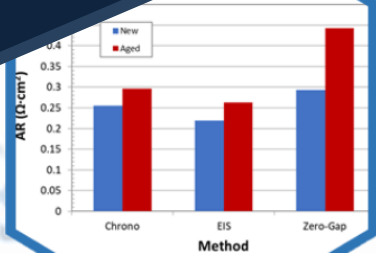
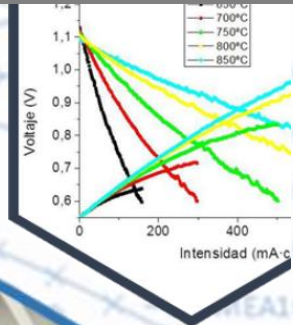
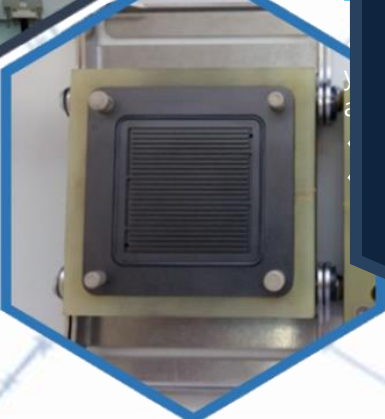
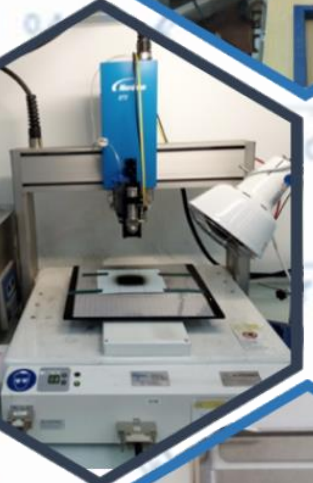
- ◆ Polarization curves for low and high temperature systems with different gases in a wide range of sizes
- ◆ Durability testing and accelerated stress testing

Electrochemical characterization

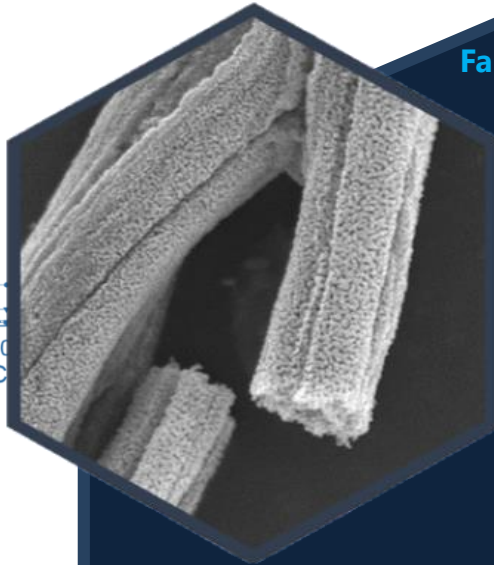
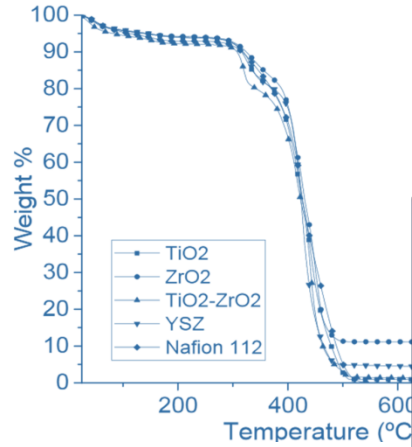
- ◆ Corrosion resistance tests for materials over electrolysis and fuel cells environments
- ◆ Interfacial contact resistance tests
- ◆ Electrochemical impedance spectroscopy tests

Waste treatment and valorization

- ◆ Biological processes for energetic valorization of wastewaters and industrial wastes
- ◆ Mechanical processing of waste



Cross-cutting services for all hydrogen technologies

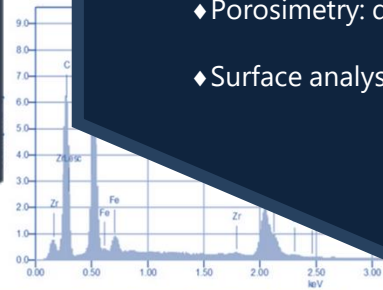
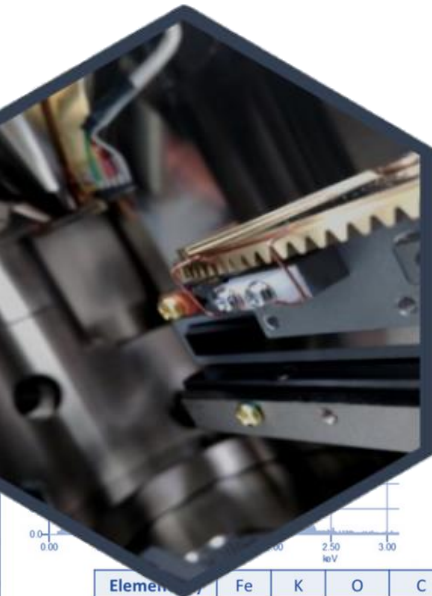


Fab-Lab

- ◆ Prototypes and components manufacture by 3D printing
- ◆ Machining of different materials
- ◆ Laser cutting and engraving of components in different materials
- ◆ Plastic waste recycling and revalorization line
- ◆ Digital manufacturing technologies courses
- ◆ Development of medical devices against COVID-19

Physico-chemical characterization

- ◆ Thermal tests to evaluate the physico-chemical response of materials with changes in temperature
- ◆ Compositional analysis
- ◆ Porosimetry: diameter, pore size, absolute surface area
- ◆ Surface analysis: texture, thickness, defect inspection



Element	Fe	K	O	C	Mg	S	Ca	Cr	Ni	Zr
New Sample	0	0.15	12.97	54.76	0	2.08	0	0	0	30.14
Aged Sample	9.05	2.71	16.39	59.41	0.44	0.78	2.93	1.1	1	9.87



MOLIENDA



RESIDUO ACONDICIONADO



EXTRUSIÓN

MAQUINARIA



Together we can,
let us help you.

Inquiries and request for proposal at:

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