Services

- Electronic fabrication: design, assembly and test of PCBs.
- Microcontroller programming.
- Prototyping through Arduino, Raspberry-Pi, Red Pitaya and Littlebits.
- Scanning, modelling and milling with CNC.
- Engraving and laser cutting of parts in different materials.
- Printing of models in 3 dimensions with PLA and ABS.
- Cutting of vinyl.
- Processing of different materials, components and MEAs.
- Tests of hydrogen production obtained from renewable energies.
- Characterization and test of low power fuel cells.
- Small equipment of hydrogen thermography.

Centro Nacional del Hidrógeno

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FabLab CNH2

FABRICATION LABORATORY (Fab-Lab)

Centro Nacional del Hidrógeno

Fabrication Laboratory (Fab-Lab)

A Fab-Lab is a small-scale workshop for personal digital fabrication, equipped with an array of flexible computer controlled tools and several materials. It is closely aligned with the "open source" movement, offering access to the whole society and scientific and technical community.

Fab-Lab CNH2 is specialized in hydrogen and fuel cell technologies. It is open to external use of scientifics, technicians and overall society. At the Fab-Lab CNH2 it is possible the full fabrication of low power polymeric technology fuel cells and electrolyzers and the development of their BoPs and control systems. The digital equipment and the methods used can reproduce the fabrication processes developed at others Fab-Labs.

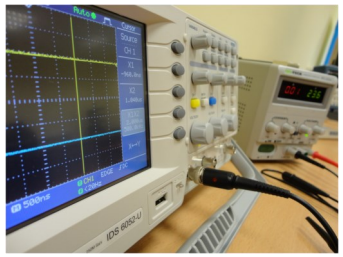
Laboratory areas

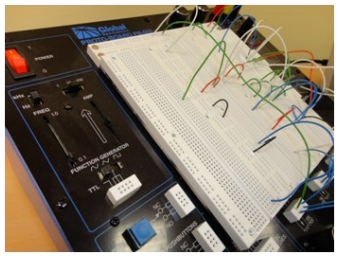
- Electronic Fab. Development of BoPs, control systems and power electronics components manufactured at the laboratory; fabrication of printed circuits prototypes; programming of microcontrollers and control systems.
- Mechanical Fab. Fabrication of fuel cells mechanical components; machining of components, gas plates and accessories; cutting of membrane elements .
- Chemical Fab. Characterization and testing of electrochemical devices and MEAs, catalityc ink deposition and MEAs assembly.

Laboratory Equipment

Electronic Fab

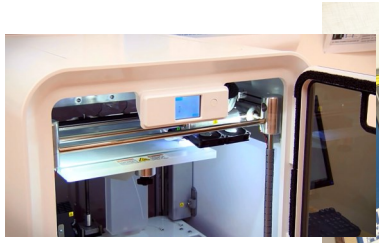
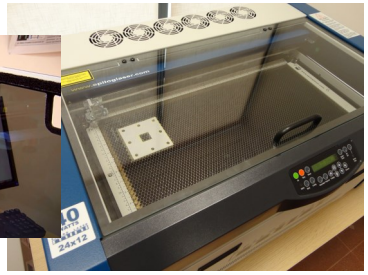
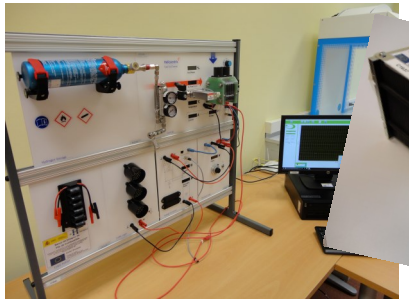
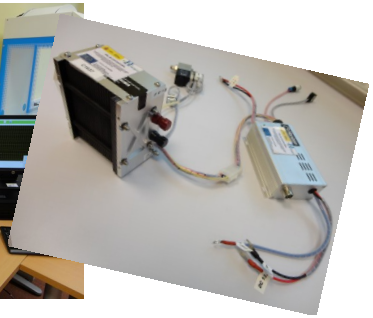
- Open source electronic development boards: Arduino, Raspberry-Pi, Red Pitaya, LittleBits and Arduino Robot.
- Low power programmable electronic charges for fuel cell microstacks and single cells.
- Data acquisition systems with digital and analogic I/O.





Chemical Fab

- Axial hot plates press for MEAs assembly (máximum temperature: 250ºC).
- Airbrush for catalytic ink deposition on membranes.
- Micro fuel cells testing (from 5 mW to 100 W).

Mechanical Fab

- Precision CNC machine for metals miling and drilling. 400W power and 360º oscilating head.
- Precision CNC machine for plastic, wood, cork, plaster, wax modeling, metal miling and 3D objects scanning.
- PLA and ABS plastics 3D printers.
- Vinyl cutter with cutting range from 250 to 340mm and 1000mm length.
- Laser cutting with 40W power for laser cutting and engraving.