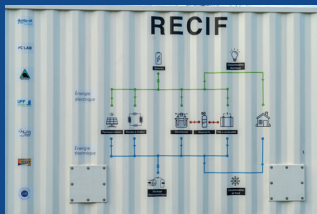


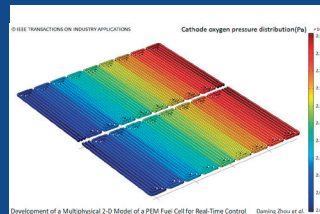
## ACHIEVEMENTS



World's first H<sub>2</sub> refrigerated semi-trailer



Smart electricity and cold cogeneration isolated H<sub>2</sub> micro-grid



Multiphysical simulations from fuel cell to final power system



PEM fuel cells health-state monitoring and diagnosis (FCH-JU)



120 kW PEM fuel cell test bench dedicated to industrial projects



First French FCV fleet deployment

# HYDROGEN ENERGY

Facilities, Equipment  
& Expertise

## FACILITIES FUNDING



AGENCE NATIONALE DE LA RECHERCHE



NEED SOME H<sub>2</sub> EXPERTISE ? PLEASE CONTACT US!



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www.fclab.org

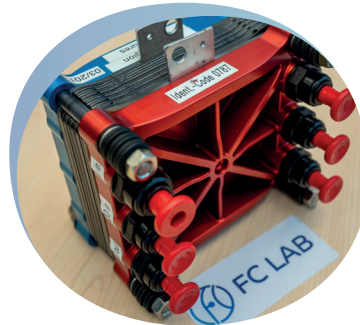




## HYDROGEN ENERGY PLATFORM

600m<sup>2</sup> dedicated to H<sub>2</sub> systems tests

- 8 test rooms
- Fully secured for advanced H<sub>2</sub> testing
- Temperature and hygrometry control
- Gas supply facilities (Hydrogen, Nitrogen, Oxygen, mixed gas...)
- Quality standards: ISO 9001, 14001, 45001



## OUR TESTING CAPABILITIES

- PEMFC stack tests from **500W to 120kW**
- FC system tests up to **160kW**
- SOFC cell and stack test up to 1kW
- PEM electrolyzer stack and system test
- H<sub>2</sub> storage test (partnership with ISTHY test center)
- Connected or off-grid H<sub>2</sub> power supply solution test
- H<sub>2</sub> powertrain test for mobility
- ATEX climatic chambers up to 3m<sup>3</sup>
- Vibrating and climatic test bench compatible with H<sub>2</sub> use :
  - ◇ 6Hz to 25kHz, 75G, 35600N
  - ◇ -45/+120°C, 0 – 100% HR



## OUR OFFER



### TESTING

Access to our testing rooms, access to our test benches after training, support of our technical staff



### STUDIES

Feasibility, sizing, numeric simulations, development of prototypes, tests of prototypes at reduced or full scale



### SCIENTIFIC & TECHNOLOGICAL EXPERTISE

Supporting your projects



### EDUCATION & TRAINING PROGRAMS

Customized from general seminar to specialized program

## OUR EXPERTISE

- More than **20 years** in H<sub>2</sub> expertise
- Very **long duration** tests : 24h/day, 7 days/week, thousands of hours
- **Cold start** and temperature cycling tests
- Advanced **characterization** in extreme range of operating conditions
- **Impedance Spectroscopy** at high voltage and current
- **Ageing** on real and accelerated dynamic cycles

