

**Name of the organization**

CEA/LITEN

Name of the infrastructure / laboratory

DTBH/LTH (COMEDHY)

Address and country of the infrastructure / laboratory

17 rue des Martyrs - 38054 GRENOBLE Cedex 09

Person responsible of the access / Contact person

Olivier GILLIA

Phone / Fax / Web / Email

33 4 38 78 62 07 / olivier.gillia@cea.fr

Main field of activity of the infrastructure / laboratory

- ▶ Hydrogen Production & Distribution
- ▶ Hydrogen Storage in Hydrides

Short description of the infrastructure / laboratory

The equipment proposed, which is in operation since January 2010, named COMEDHY, enables hydrides materials to be tested in gaseous hydrogen pressures and temperatures. It is designed to understand how hydride behaves in terms of swelling and shrinking under mechanical constraints during absorbing and desorbing hydrogen. The vessel operates at pressures from 0 to 200 bar and temperatures up to 200°C, with an internal volume of 50ml-150ml of hydride.

The influence of the applied mechanical force can be assessed during a few tens of absorption/desorption cycles. A full temperature measurement inside the hydride and the vessel allows establishing the link between mechanical stresses between the hydride and its container and the thermal efficiency of the hydriding reaction. The current method for measuring the absorbed volume is based on the use of mass flow devices. As a consequence, the experiment needs a minimum mass of hydride, absorbing at least 10 NL of hydrogen.

Main research area(s) of the infrastructure / laboratory

Hydrogen Storage by Hydride in demonstrators at a significant scale.

Instruments and tools available for the above mentioned research

Large Glove Box for preparing samples and loading the testing device.



COMEDHY is the device open for H₂FC