



### Name of the organization

TECNALIA RESEARCH & INNOVATION

### Name of the infrastructure / laboratory

HYMAT

### Address and country of the infrastructure / laboratory

Mikeletegi Pasealekua, 2. e-20009 San Sebastian. Spain

### Person responsible of the access / Contact person

Jean Baptiste JORCIN / Pablo CORENGIA / Iñaki AZKARATE

### Phone / Fax / Web / Email

P. +34 946430850 / Fax +34 946460900

W. [www.tecnalia.com](http://www.tecnalia.com) / E-amil. [jbaptiste.jorcin@tecnalia.com](mailto:jbaptiste.jorcin@tecnalia.com)

### Main field of activity of the infrastructure / laboratory

- ▶ Cross-cutting issues
- ▶ Materials Behaviour

### Short description of the infrastructure / laboratory

The Hydrogen-MATerials testing activity (HyMAT) of TECNALIA is supported in several testing equipment that allow an evaluation of the behaviour of materials in hydrogen service conditions. The effect of hydrogen in the mechanical properties of materials can be evaluated by some series of testing. Hydrogen Assisted Stress Cracking (HASC): The sensitivity of materials to HASC is evaluated by a combination of mechanical, corrosion and electrochemical testing. The hydrogen can be produced by chemical or electrochemical ways. After the test, the specimen is characterized by means of chemical analysis and optical and scanning electron microscopy.

### Main research area(s) of the infrastructure / laboratory

Materials behaviour , Hydrogen Embrittlement

### Instruments and tools available for the above mentioned research

Main equipment used in this Laboratory consists of mechanical testing machines, electrochemical equipment, hydrogen sulfide source, chemical and microstructural characterization equipments and general laboratory equipment.



Hydrogen Assisted Stress cracking testing configuration based on SSRT equipment



Hydrogen Assisted Stress cracking testing configuration based on dynamometric rings



Microstructural and Chemical Characterization Equipment