



### Name of the organization

Karlsruhe Institute of Technology (KIT)

### Name of the infrastructure / laboratory

MHtest

### Address and country of the infrastructure / laboratory

Institute of Nanotechnology (INT)

Hermann-von-Helmholtz Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

### Person responsible of the access / Contact person

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

► Hydrogen Storage

### Short description of the infrastructure / laboratory

The laboratory facilities for solid storage materials include state-of-the art and sophisticated instrumentation that allows accurate H<sub>2</sub> storage measurements at different pressure/ temperature conditions with a unique combination of chemical, volumetric, gravimetric and calorimetric analysis techniques.

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

Investigation of hydrogen storage materials

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

Chemical composition can be analyzed by an Elemental Analyzer (CE Instruments). For H storage properties 3 specially designed PCT volumetric systems are available (0-150 bar, 300-700 K), a NETZSCH STA 409C Thermal Analyzer for combined TGA-DTA-MS experiments, a SETARAM Thermal Analyzer for combined TGA-DSC-MS measurements and DSC experiments under reactive atmosphere up to 300 bar, a NETZSCH Phoenix high pressure DSC for high pressure calorimetry. Structural characterization is possible with a BRUKER Advance D8 X-ray diffractometer, Moessbauer spectrometry (Fe, Sn), a Perkin-Elmer Spectrum GX FTIR spectrometer, a Perkin-Elmer Laser Raman spectrometer, several SEM microscopes (LEO Gemini) with EDX option and an ultra-high resolution transmission electron microscope (FEI Titan CS 80-300) with FIB as a possibility for sample preparation.



HP-DSC



Physio-/Chemisorption apparatus



Powder X-ray diffractometer