HyCentA focuses exclusively on research and development of hydrogen and shows a wide range of expertise on production, storage and application issues. Furthermore, the HyCentA has specific know-how in security and approval matters of hydrogen applications and was a consultant for the European Commission for the approval of hydrogen-powered vehicles.
HyCentA has an outstanding and well-equipped testing infrastructure and acts as a focal point and information platform for hydrogen-related research and development activities. The research facility of the hydrogen test center consists of: a refueling station for 350 bar gaseous hydrogen (Austria’s first hydrogen filling station), the most advanced fuel cell system integration test bed in Europe, a 1000 bar high-pressure test bed for gaseous hydrogen and two test rooms for gaseous and liquid hydrogen for experiments with components and systems.

Activities:

- Customer-specific hydrogen test setups and experiments with hydrogen
- Expertise in questions of safety, standards and regulations
- Economic and environmental analyses Thermodynamic analysis of processes and systems
- Research and development of PEM fuel cell systems and electrolysers
- Conceptual design of compressed hydrogen gas-systems
- Conceptual design, development and construction of power-to-gas plants with different electrolysis technologies
- Scientific research, lectures and publications

HyCentA facilitates the use of hydrogen as a renewable energy source and the development of electrochemical systems and peripherals, both as independent research projects, as well as in cooperative projects with academic institutions, industrial companies and international partners.

New product development:

Highly integrated fuel cell analysis infrastructure: HIFAI

References:

- HIFAI-RSA:
- W2H:
- FC REEV:
• FCH Media:

• E-LOG-BioFleet:
  Fuel Cell Range Extender

References:

• HyCar1::
  Modification of a CNG vehicle (Mercedes Benz E 200 NGT) for the operation with mixtures of methane and hydrogen (2009-2010)

References:
ScienceDirekt

• Fully automated functional testing of cryogenic tank systems for liquid hydrogen, designed by MAGNA STEYR Fahrzeugtechnik for the BMW Hydrogen 7 (2006-2008)

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Products / Applications
Scientific research, lecturing and publications

Reference:
published by Springer Vieweg Wiesbaden, 2012

Test beds

Custom-specific test bed setups and experiments

Example: RSA-HIFAI, a Highly Integrated Fuel Cell System Analysis Infrastructure
Engineering services

Engineering services for PEM-electrolyser, power-to-gas plants, fuel cell systems and hydrogen infrastructure

Example: Power-to-gas plant wind2hydrogen in Auersthal for production and storage of hydrogen in the natural gas grid

Hydrogen refueling

Refueling of hydrogen powered vehicles up to 350 bar (planned expansion to 700 bar)