

Master's thesis

Theoretical

Experimental

Theoretical and Experimental Evaluation of Metal Hydrides for Hydrogen Storage.

The environmentally friendly energy carrier hydrogen enables the short- and long-term storage of renewable energy with high energy density. Among the various hydrogen storage media, reversible metal hydrides operating under low pressure are considered safe and volume-efficient. The main challenge is to find the optimal metal hydride for hydrogen storage in stationary applications.

The aim of this thesis is to give an **overview of available metal hydride alloys** and to **perform tests** regarding:

- the hydrogen storage capacity,
- the temperature profile during cycling and
- the cyclic stability of commercial and/or synthesized materials.

A **critical assessment** of the outcomes will be the basis for the design of a thermal management strategy for hydrogen storage in metal hydrides.

In the Fuel Cell & Hydrogen Working Group at CEET, you can become part of a team of experienced researchers, PhD students with expertise in materials preparation, electrochemistry and cell characterization, as well as other motivated master students. The research group has access to a fully equipped laboratory with the necessary infrastructure for the planned experimental work.

Contact: DI Eveline Kuhnert
eveline.kuhnert@tugraz.at
+43 316 873 – 7978

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