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| <input type="checkbox"/> Bachelor thesis | <input type="checkbox"/> theoretical |
| <input type="checkbox"/> Construction exercise | <input checked="" type="checkbox"/> experimental |
| <input checked="" type="checkbox"/> Master thesis | <input type="checkbox"/> constructive |

Topic: **Utilization of gasified wood for chemical looping hydrogen production**

Hydrogen will play an important role as a secondary energy carrier in the near future. The reformer steam iron cycle (RESC) offers an efficient way for decentralized on-site hydrogen production using gasified biomass. In this process, a $\text{Fe}_2\text{O}_3/\text{Al}_2\text{O}_3$ based oxygen carrier material is reduced to iron by synthesis gas. In the final step, high-purity hydrogen is released in the re-oxidation of iron by steam.

In processing real gases, such as biogas or gasified biomass, harmful impurities like sulfuric compounds or tars can influence the reactivity and long-term stability of the used oxygen intermediates. The aim of this work is the experimental investigation of the utilization of gasified wood for chemical looping hydrogen production.

The research work includes the following tasks:

- Become acquainted with the topic and the test system.
- Operation of a RESC small-scale test rig.
- Characterization of fundamental effects of trace gas impurities on the chemical looping cycle.
- Evaluation and discussion of the experimental results.

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