

Master-Thesis

Flow investigation on a generic water electrolysis test rig.

Motivation & Background

Hydrogen can be used both as an environmentally friendly fuel and as a storage medium for solar and wind energy. However, only a negligible proportion of hydrogen is currently produced directly from renewable energies using electrolysis. To improve the efficiency of this process, the formation of bubbles at the electrode is therefore being investigated. For this purpose, the bubbles are already being examined using optical measurement technology. However, simultaneous flow measurement is desirable for a better understanding of the process.

In this master's thesis, a generic electrolysis cell will be used to supplement the existing setup with the option of flow analysis and initial measurements will be carried out.

Are you interested? Don't hesitate to contact me.

Tasks

- Familiarization with the basics of optical measurement technology with a focus on PIV and PTV
- Adaptation of the generic electrolysis cell for flow measurement
- Carrying out measurements
- Preparation and presentation of the results

Focus areas

- | | |
|---------------|-------|
| Experiment | ● ● ● |
| Construction | ● ○ ○ |
| Modeling | ○ ○ ○ |
| Data analysis | ● ● ○ |

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21.10.2024

Start from

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