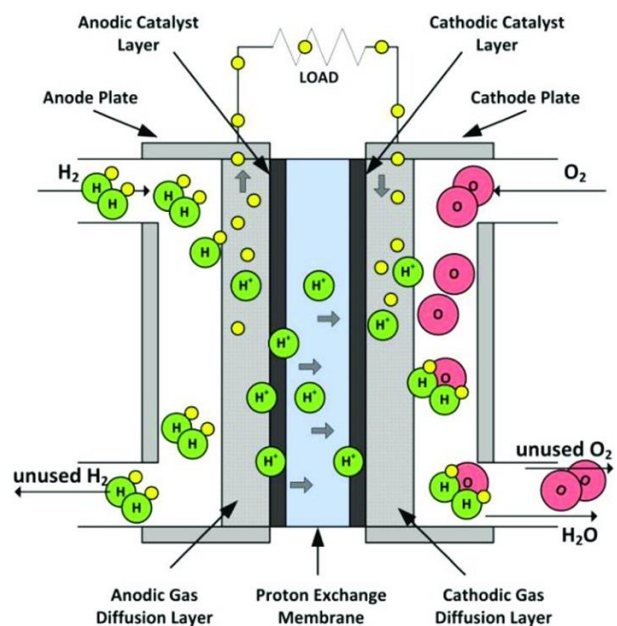


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|--|---|
| <input checked="" type="checkbox"/> Bachelorarbeit | <input checked="" type="checkbox"/> theoretisch |
| <input checked="" type="checkbox"/> Konstruktionsübung/ Projektlabor | <input type="checkbox"/> experimentell |
| <input type="checkbox"/> Masterarbeit | <input checked="" type="checkbox"/> konstruktiv |

Topic: Automation of a test rig for the characterization of polymer electrolyte fuel cells (PEFCs)

Fuel cells offer a perspective for convenient, environmentally friendly power generation. High costs as well as limited lifetime and reliability hinder the wide spread use. Fast, reliable and reproducible characterization methods are needed to eliminate these challenges.

The focus of this work is on the characterization of a PEFC. The aim is to partially automate an existing test rig at CEET.



Working packages include:

- Acquire a basic understanding of electrochemical characterization methods for PEFCs
- Linking the softwares of the potentiostat (ThalesXT) and the test stand (Labview) to control voltage/ current and gas flow rates in one interface
- Practical validation of the partial automatization

A technical background in electrical engineering, software engineering, chemistry or chemical & process engineering is desired. Good programming knowledge in Python and Labview are necessary. Willingness to do hands-on programming work, self-motivation and self-organization are expected. In return, the student can participate in the FC working group at CEET and build on the existing expert knowledge.

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