Technische Universität Graz
Institut für Chemische Verfahrenstechnik und Umwelttechnik
Leitung: Univ.-Prof. Dr.techn. Viktor Hacker

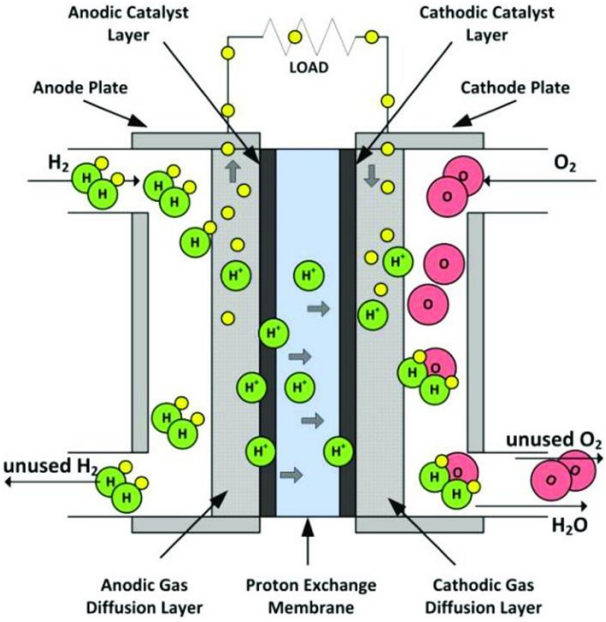
☒ Bachelorarbeit ☒ theoretisch

☒ Konstruktionsübung/ Projektlabor ☒ experimentell

☐ Masterarbeit ☐ konstruktiv

Topic: **Process engineering challenges in the manufacturing 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. Process engineering related challenges in the manufacturing and characterization of PEFC need to be solved quickly.



The focus of this work is on the core of a PEFC, the membrane electrode assembly (MEA). The aim is to understand challenges in the MEA production and characterization.

Working packages include:

- Literature review MEA production and characterization techniques
- Literature review on process-engineering related challenges during production and characterization (quality control, cleanliness etc.)
- Evaluation of possible strategies to overcome these challenges
- Optional: on-site production and characterization of a single-cell PEFC

The desired background of the student is chemical & process engineering or chemistry. Willingness to do a comprehensive literature work, self-motivation and self-organization is expected. In return, the student can participate in the FC working group at CEET and build on existing expert knowledge.

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Chemical Engineering and Environmental Technology