Chair of Energy Systems
TUM School of Engineering and Design
Technical University of Munich

Term Project / Research Internship

(constructive)

Setup of a High-Temperature Electrolysis System

Description

Reversible solid oxide cells (rSOC) generate electricity in fuel cell mode and convert electricity into hydrogen and methane in electrolysis mode. Their economic viability depends largely on the lifetime of the cells. In the joint project Life4rSOC, we are investigating the degradation of SOC short stacks together with a start-up.

In this project, you will build the electrolysis test rig mechanically. Starting from the P&ID, you will plan the pipe routing on site and install the piping. You will mount and pipe the equipment, apply the thermal insulation, and design the enclosure and extraction system. You will work mainly hands-on in the lab and workshop; your documentation (assembly plan, parts list, photos) will form the basis for operating and maintaining the test rig.

Requirements

- Practical skills and enjoyment in building process equipment (piping and apparatus construction)
- Knowledge of process engineering or mechanical engineering; reading P&IDs
- Helpful: experience with Item profile systems and CAD
- Willingness to attend a safety briefing (working with flammable and toxic gases)

Work Packages

1. Familiarization, safety briefing and review of the P&ID
2. Planning of the pipe routing and on-site installation of the piping (leak testing)
3. Mounting of the apparatus and valves
4. Thermal insulation of pipes and apparatus
5. Enclosure of the Item frame
6. Documentation (assembly plan, parts list, photos)

Start	Available immediately
Scope	Term project or research internship, 11 ECTS each (330 h)
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