

**shaping the sustainable
hydrogen society
through research!**

The extra-university research organisation HyCentA Research GmbH at Graz University of Technology is Austria's leading company in applied hydrogen technology research. Equipped with an outstanding technical infrastructure and state-of-the-art simulation tools, technologies such as electrolyzers, hydrogen storage and fuel cells are in the focus of our international high-level research for future energy systems.

To strengthen our competent and dynamic team, we are looking for the following position:

PhD student – Development of a new generation of PEM Electrolysis Cells for High Pressure Application

Degree of employment: Fulltime (39,5 hours/week)
Job-ID: 240103

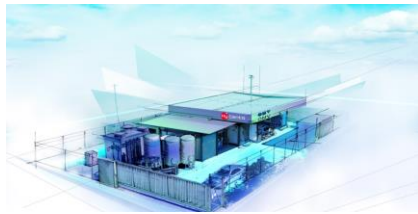
Your field of activity/responsibility:

The overall objective is the development of a next generation 5 kW PEM electrolysis stack for green hydrogen production within the COMET center subproject "ProGen".

- Extensive literature research on state-of-the-art PEM cell components as well as current research developments
- Development of application scenarios and requirement analysis
- Development of advanced testing strategies based on DoE
- Adapting an existing PEM single cell test bed towards high pressure application and 24 h operation

Single cell testing

- Benchmarking of existing systems
- In-depth understanding of degradation mechanisms
- Material characterization through polarization curves, electrochemical impedance spectroscopy, gas diffusion electrode, rotating disc electrode and SEM imaging
- Electrochemical testing of optimized MEA at higher output pressure



Stack testing

- Development of a 5-kW stack based on the optimized single cell configurations including a profound sealing concept
- In-situ characterization through polarization curves and electrochemical impedance spectroscopy at different temperatures and at higher output pressure up to 80 bar
- Life-time and state of health monitoring by performing long-term testing and ASTs with an advanced testing protocol

Your profile:

- Structured approach to complex issues in research and development and in solving practical problems
- Hands-on mentality
- Interest in varied work consisting of laboratory and office work
- Ideally experience with electrolysis
- Comprehensive understanding of current technologies in the hydrogen sector and the associated energy systems based on the underlying thermodynamic principles is an advantage
- Completed Master's degree in a technical field (mechanical engineering, electrical engineering, physics, chemistry, chemical engineering, energy engineering, etc.)
- High level of commitment, ability to work in a team and willingness for further development and training
- Enjoy technical troubleshooting and problem solving with project partners
- Language skills: Fluent written and spoken English and German

We offer:

- Collaboration in a renowned high-tech research institution in Graz
- Excellent working atmosphere and pleasant working environment
- Challenging work and creative freedom in an exciting field of activity
- Minimum salary of € 3.578,80 gross/month
- In addition, we offer numerous benefits, such as flexible working conditions and individual training and career opportunities

Gender equality is an important part of our corporate culture, which is why we particularly encourage women to apply and join our team.

Please submit your CV, motivation letter and certificates via e-mail to jobs@hycenta.at