Graz University of Technology
Institute of Chemical Engineering and Environmental Technology
Working Groups:
Chemical Reaction Engineering / Process Technology and Chemical Thermodynamics
Assoc.Prof. Dr. Susanne Lux / Assoc.Prof. Dr.Thomas Wallek

Within the Institute of Chemical Engineering and Environmental Technology, the Working Groups **Chemical Reaction Engineering** and **Process Technology and Chemical Thermodynamics** deal with all aspects of sustainable processes.

To expand our scientific team in a new research field on **plasma-assisted synthesis of green ammonia** we are searching for a

University project assistant (PhD position)

for 40 hours per week starting at the beginning of 2025 (March 2025).

Ammonia is a widely produced chemical used primarily for fertilizers. It also has potential in the energy industry as a derivative of hydrogen. It can contribute to achieving climate targets by storing hydrogen as ammonia, which has a higher energy density for transportation and can be stored under mild conditions. The current Haber-Bosch process for ammonia production is energy-intensive, relies on fossil fuels, and is only economically viable on a large industrial scale. To fully utilize the potential of ammonia for the energy transition and sector coupling, a decentralized, efficient, and scalable production method is necessary. This project aims to optimize the synthesis of green ammonia from nitrogen and green hydrogen using green electricity in a non-thermal plasma reactor, with the goal of achieving CO_2 emission-free production.

Your field of activity:

- Scientific research on plasma-assisted ammonia synthesis
- Development of an overall carbon-neutral process concept for ammonia production
- Collaboration with 4ward Energy Research GmbH and Prozess Optimal CAP GmbH
- Publishing in high-quality peer-reviewed journals

Your profile:

- Master's degree in chemical engineering or technical chemistry or physics (or equivalent)
- Knowledge in chemical reaction engineering
- Interest in (catalytic) gas phase reactions
- General interest in the subject area of novel, carbon-neutral technologies
- Commitment, flexibility and reliability
- Organizational talent, communication skills and good appearance
- Excellent knowledge of data evaluation software, MS-Office

We offer:

- Exciting work in an emerging field of research
- Excellent working atmosphere among young and motivated researchers and pleasant working environment
- Excellent lab infrastructure and hands-on-experience in practical applications

Please send your comprehensive application documents and any queries to:

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