



Technische Universität Berlin



Technische Universität Berlin offers an open position:

Student assistant (40 hours per month)

Fakultät III: Prozesswissenschaften, Institut für Prozesswissenschaften- und Verfahrenstechnik, FG Dynamik und Betrieb technischer Anlagen

Reference number: III-SB-0052-2025 (starting at the earliest possible / limited until 30.11.2025 / closing date for applications 08/08/25)

Working field:

Collaboration in the exciting EU project HySTrAm on innovative ammonia synthesis on the way to a green hydrogen economy: An improved Haber-Bosch (HB) synthesis has the potential to significantly reduce the specific energy demand in ammonia production. It is a promising candidate for long-term storage of surplus renewable power. An integration of sorption and reaction in a single unit is however challenging due to the different operating conditions required for both mechanisms to proceed. Modeling and computer-aided simulations help by providing insight into promising process design alternatives.

The student will be given the opportunity to get to know the field of ammonia synthesis and process intensification as well as to gain important experience in the field of process modeling, simulation and optimization. The student will support the following work within the project:

- Literature research on modern HB plant concepts (10%)
- Assist extension of existing dynamic models in MOSAICmodelling and data-driven modeling (30%)
- Assist the dynamic process simulation/optimization with Python/CasADi (40%)
- Help with sensitivity studies and comparison with experimental literature data, also using a digital-twin of a built pilot-plant (20%)

Requirements:

MUST criteria:

- Good knowledge of chemical reaction engineering / thermodynamics
- Good knowledge on equation-based process modeling- Experience in the dynamic simulation of processes
- Good language skills German and/or English required; willingness to acquire the respective missing language skills

CAN criteria:

- Successful participation in modeling/simulation & optimization modules is an advantage
- Basic programming skills (in Matlab or Python)

Party responsible for specialist area / point of contact for job posting: Prof. Dr.-Ing. Jens-Uwe Repke / Carl Sengoba, M.Sc. - sekr@dbta.tu-berlin.de

Period of employment: immediately until 30.11.2025

Apply to: sekr@dbta.tu-berlin.de

Please submit your written application including cover letter, your CV, certificate of enrollment, and where applicable, current transcript of records, with the reference number to the place of employment indicated above.

In the interest of promoting equality opportunities for men and women, applications from women with suitable qualifications are particularly encouraged.

The vacancy is also available on the internet at
<https://www.personalabteilung.tu-berlin.de/menuue/jobs/>

