

## Job Description:

The project aims to develop a combined 3-step chemo-biological process for conversion of CO<sub>2</sub> from real industrial sources and renewable H<sub>2</sub> into jetfuel. To achieve this goal, a 2-step biological process chain is established where in a first step CO<sub>2</sub> and H<sub>2</sub> are converted into acetate in a gas fermentation process using acetogens (e.g. *A. woodii*) and acetate is subsequently upgraded into a suitable fuel chemical by genetically engineered bacteria (e.g. *E. coli*, *V. natriegens*).

### Tasks PhD position 1:

- Quantitative process development and optimization of continuous microbial gas fermentation process
- Genetic engineering to optimize production organism
- Quantitative data evaluation (e.g. carbon and energy balancing)

### Tasks PhD position 2:

- Development of a suitable host organism for efficient acetate utilization and conversion into target fuel chemical
- Quantitative process development and optimization
- Quantitative data evaluation (e.g. carbon and energy balancing)

Both PhDs will have the chance to

- participate in conferences in Austria and abroad (to present your results in talks/posters)
- work together with industrial project partners
- prepare scientific publications and project reports
- supervise students (MSc and BSc)

### Your Profile:

- MSc degree in Biotechnology, Bioengineering, Chemistry, Biochemistry or comparable
- Expertise in microbial fermentations and bioprocess development (including balancing)
- Knowledge of physiology and metabolism of prokaryotic organisms
- Experience in metabolic modeling is a plus (for PhD 2)
- High degree of independence and commitment
- Very reliable and conscientious style of working
- Excellent ability to cooperate and work in a team

### What we offer:

- Excellent technical infrastructure
- Intensive training phase for practical lab work to successfully kick off your PhD
- Continuous scientific mentoring by supervisor
- Doctoral degree conferred by Technische Universität Wien
- Positions start from 10/2019 or soon after and are fixed for the duration of the project (3 years)
- Salary is 14 x € 2,162.42 per year, 5 weeks paid vacation time annually

TU Wien seeks to increase the number of women employed in this area and therefore particularly welcomes applications from women.