

Making research results usable for society and the economy!

On the campus of the University of Bremen, the first “innovate! Center” of the Joachim Herz Foundation, is being created. It aims to bring research results in the field of ‘Materials for Sustainable Technologies’ into application more quickly ([see press release](#)). To this end, the Joachim Herz Foundation and the University of Bremen have jointly established the

“innovate!Center MaTeNa (Materials - Technologies - Sustainability)”

in the legal form of a gGmbH as an affiliated institute of the University of Bremen. We are seeking as soon as possible:

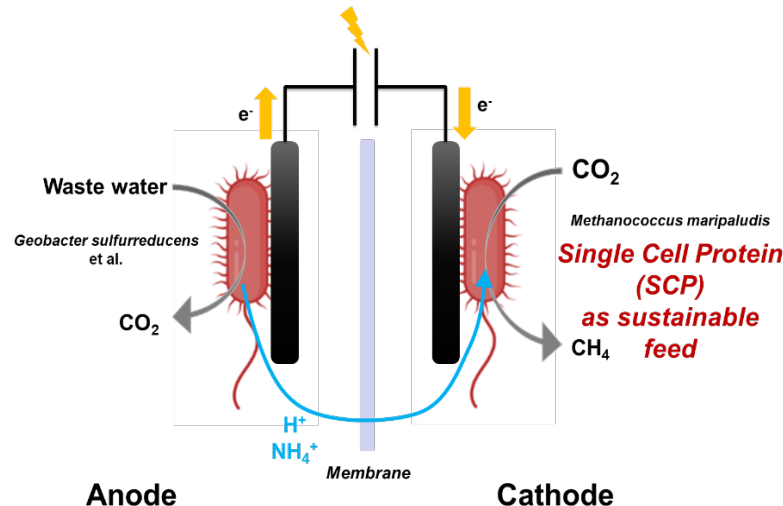
Research assistant (m/f/d)

from the field of

Mechanical Engineering, Process Engineering, Biotechnology (or similar)

in the transfer project

“Production of single-cell protein from electricity and CO₂ as a sustainable feed for aquaculture”



Background

The use of single cell proteins (SCP) instead of fishmeal as feed in aquaculture is a promising approach to reduce the exploitation of natural fish stocks. Currently, SCP are produced in a comparatively laborious process based on organic carbon sources or by means of gas fermentation (CH₄, H₂). In contrast, microbial electrosynthesis enables the production of SCP directly from electricity and CO₂, and can also be coupled with the treatment of wastewater and residues (e.g. from the food industry) (see figure). While the technology has already been demonstrated in the laboratory (TRL 4), the concept is now to be gradually transferred to application together with partners from research and industry. The aim of the five-year transfer project is the development and testing of an up-scaled microbial electrosynthesis cell for the production of SCP (TRL 6) and, based on this, possibly the founding of a start-up.

Your tasks

Your task is the development and characterization of an up-scaled microbial electrosynthesis cell for SCP production using the microorganism *Methanococcus maripaludis*. In coordination with microbiologists, you will first develop an initial cell design, identify suitable separator membranes and implement a cell harvesting process. In the next step, you will investigate the scalability of the electrosynthesis cell and derive the design of an up-scaled prototype. Finally, you will be responsible for its construction, optimization and in-depth characterization – supported by experienced engineers and partner companies from industry. Ideally, you will pursue the spin-off of a corresponding start-up together with colleagues and with the support of the *MaTeNa Innovate! Center*.

While you are employed by the gGmbH, you will be fully integrated into the [Environmental Process Engineering working group](#) (Prof. Dr.-Ing. Sven Kerzenmacher) at the [Center for Environmental Research and Sustainable Technologies \(UFT\)](#) at the University of Bremen. The interdisciplinary team researches the fundamentals, materials and processes of sustainable environmental and biotechnology. The focus is on new (electro)biotechnology processes, such as those relevant for energy-efficient wastewater treatment, bioproduction and the recovery of recyclable materials.

Your profile

Qualifications and experience:

- You have completed a university degree (Master's level) in mechanical engineering, process engineering, biotechnology or a related field.
- You have knowledge of plant design as well as reaction engineering and have already gained experimental experience in a laboratory.
- You know and ideally already have practical experience in the use of common software tools for data evaluation and simulation (e.g. COMSOL, MatLab, Python) and 3D design (e.g. Inventor, SolidWorks, etc.).

Skills and competencies you should bring with you:

- Strong analytical skills.
- Ability to communicate project results clearly, both verbally and in writing.
- Strong interpersonal and teamwork skills.
- Good communication skills in English.

Personal qualities we would like to see in you:

- Enjoy working in an international and interdisciplinary team at the interface between science and business.
- Enthusiasm for transferring a new technology from the laboratory to practical application.
- Initiative, the ability to work in a team and a sense of responsibility.
- A goal-oriented, careful and structured way of working.
- Ideally, you have an entrepreneurial spirit and can imagine founding a company based on the project results.

We offer you

- An exciting research topic in a meaningful and application-oriented project.
- Collaboration in an interdisciplinary and highly motivated team with scope for your own ideas.
- A collegial and dynamic environment with flat hierarchies, which will also encourage and support you in starting-up a spin-off company.
- A five-year position with the possibility of a doctorate or scientific qualification (PostDoc).
- Attractive working conditions and remuneration in line with TvÖD (E 13).

Contact

If you have any questions, please contact Prof. Dr.-Ing. Sven Kerzenmacher at kerzenmacher@uni-bremen.de or +49 421 218-63331, to whom you can also send your application documents (cover letter, CV, certificates as a pdf file) by e-mail, stating the earliest possible starting date.

We look forward to receiving your application!