University of Bremen

UVT

Postdoctoral position in Microbiology/Biotechnology
Salary level 13 TV-L (100%)

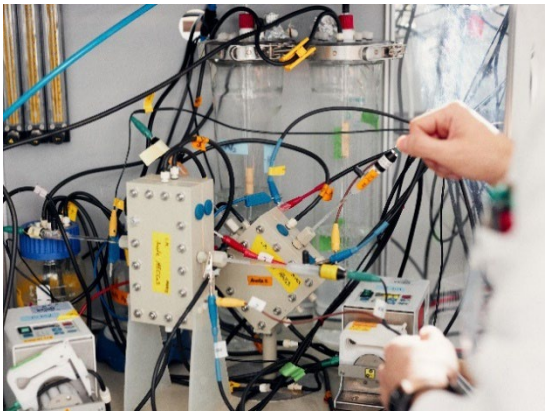
In the field of

Advancing the application of novel electroactive organisms and extremophiles in microbial electrochemical technologies

Push the boundaries of environmental biotechnology - on Earth and beyond! The Research Group *Environmental Process Engineering* at the University of Bremen is seeking a postdoctoral researcher (m/f/d) to explore novel electroactive microorganisms for microbial electrochemical technologies. Join our interdisciplinary team as we tackle challenges from wastewater treatment to bioplastic production — even under the extreme conditions of a future settlement on Mars.

Job description

Background:



The interdisciplinary research group Environmental Process Engineering (Prof. Dr. Sven Kerzenmacher) researches the fundamentals, materials and processes of sustainable environmental technology and biotechnology. A large focus lies on the development of microbial electrochemical technologies for energy-efficient wastewater treatment, bioproduction and the recovery of recyclable materials. With respect to fundamental research, we employ techniques such as Magnetic Resonance Imaging (MRI), Laser-induced fluorescence (LIF), and Particle Imaging velocimetry (PIV) to understand the limiting processes in biofilms and optimize the design and operation of corresponding bioreactors. On the more application-oriented side, we develop scale-up strategies for microbial electrochemical technologies, including the experimental identification of optimized materials and the realization of pilot-scale plants. Last but not least, we are interested in identifying new products and applications for microbial electrochemical technologies, ranging from Single Cell Protein production for the use in aquaculture, to bioplastic production under the resource-constrained conditions of a future settlement on Mars. Our interdisciplinary team consists of people from the fields of engineering, chemistry, physics, and biology.

We are now seeking a postdoctoral candidate (m/f/d) with a background in microbiology or environmental biotechnology to complement our team. The successful candidate will contribute to advancing the application of extremophiles and novel electroactive organisms in microbial electrochemical technologies. We are specifically interested in the identification and application of microorganisms that offer new production capabilities (e.g., synthesis of complex organic molecules), are able to degrade a broader range of substrates (e.g., recalcitrant compounds), or are able to withstand extreme environmental conditions (e.g., pH, temperature, salinity). The position offers the opportunity for independent research that not only supports ongoing research activities, but also opens up new research avenues. Candidates with a strong interest in building a research portfolio and applying for third-party funding are especially encouraged to apply. The position is available at the next possible date and fixed-term for initially 3 years, subject to approval of funding. The employment is governed by the Act of Academic Fixed-Term Contract, §2 (1) (Wissenschaftszeitvertragsgesetz – WissZeitVG). Therefore, candidates may only be considered for appointment if they still have the respective qualification periods available in accordance with § 2 (1) WissZeitVG.

Your tasks:

- Developing and pursuing your own independent research agenda with respect to the application of extremophiles and/or novel electroactive organisms in microbial electrochemical technologies
- Supporting the research group in the field of microbiology and supervision of the microbiological part of the lab
- Supervision of students and participation in teaching
- Preparation/writing of scientific manuscripts for publication in internationally renowned journals and presentations and scientific exchange at conferences
- Ideally, contributing to the acquisition of third-party research funding and helping to expand the group's research portfolio

We offer:

- An international and highly motivated inter-disciplinary team with a collaborative spirit
- A state-of-the-art laboratory for advancing microbial electrochemical technologies
  A dynamic research environment with exciting collaboration opportunities across the different faculties of the University, with non-university research institutes (Fraunhofer, Leibniz, Max Planck, Alfred Wegener Institute), as well as industrial partners
- Mentoring and training towards an academic career and the possibility to pursue a habilitation (postdoctoral lecturing qualification)
- Career development support beyond academia, with exposure to applied research, innovation, and cross-sector collaboration

Requirements

- Above-average academic university degree (PhD or equivalent) in microbiology, biotechnology or a related field
- Ambitious person who wants to drive his/her/their own research agenda at the intersection of physics, biology, and engineering within an interdisciplinary team
- Previous experience in the field of microbial electrochemical technologies and extremophiles
- Solid practical experience in microbiology, molecular biology (microbial community analysis, FISH, qPCR, etc.) and chemical analytics (e.g. HPLC, IC, GC, LC-MS, etc.)
- Good English language skills in oral communication and writing of scientific reports (C1-level or comparable experience)

How to apply

Please send your application documents by **15th of July** via email as one compiled pdf-document to Prof. S. Kerzenmacher (kerzenmacher@uni-bremen.de). It should contain your ***Academic CV*** (including list of publications, if applicable), ***copies of BSc/ MSc/ PhD degree transcripts and certificates*** (as well as work references, if applicable), the ***contact information for 2 referees***, and a ***Statement of Interest*** (1-page maximum) detailing specifically what motivated you to apply for the position, why you are interested in the proposed research topic and outlining your skills and experience that fit the post. For further information and in case of questions, please do not hesitate to contact Prof. Kerzenmacher directly using the above email address.

General hints

The university is family-friendly, diverse and sees itself as an international university. We therefore welcome all applicants regardless of gender, nationality, ethnic and social origin, religion/belief, disability, age, sexual orientation and identity. As the University of Bremen intends to increase the proportion of female employees in academia, women are particularly encouraged to apply. Disabled applicants will be given priority if their professional and personal qualifications are essentially the same. Please note that any costs related to applications and interviews cannot be refunded.