Technische Universität Berlin

Technische Universität Berlin offers an open position:

Research Associate (Postdoc) - salary grade 13 TV-L Berliner Hochschulen

Part-time is may be possible

Faculty II - Institute of Chemistry, Chair of Organometallic Chemistry/Organometallic Chemistry
Reference number: II-266/25 (starting at the earliest possible / limited until 28/02/2027 / closing date for applications 25/07/25)

Working field:

About the Project:
The project "ClearWater" focuses on employing a photocatalytic approach for the complete decomposition of soluble water contaminants into non-toxic molecules, using a photocatalyst developed and patented at TU Berlin. Laboratory-scale demonstrations have already showcased the effectiveness of this approach, revealing its capability to decompose various anthropogenic trace substances using visible light in the presence of a suitable oxidizing agent. The results show that the photocatalytic approach is a far more efficient alternative to established methods. Through funding from VIP+, the project aims to realize a demonstrator in collaboration with industry and public sector partners. This demonstrator will facilitate market-oriented validation, marking a significant milestone toward commercialization.
The project also involves close cooperation with numerous project partners and stakeholders. Therefore, a structured approach to work, as well as the documentation and presentation of results, are important cornerstones for successful collaboration. Additionally, the role encompasses diverse responsibilities, including internal communication, organizing and facilitating project meetings, compiling and delivering presentations, coordinating workshops, and representing the project at conferences. The successful candidate will take the lead in project outcomes within the framework of scientific exploitation. The role includes essential administrative tasks such as ordering materials and chemicals, coordinating the team, planning travel, as well as preparing reports and presentations for the project, to be submitted to project sponsors and other stakeholders.

What we are aiming for:
As part of extensive decomposition experiments on a laboratory scale, the photocatalyst was tested for its reactivity and efficiency in the photocatalytic decomposition of various classes of pollutants in aqueous solution using visible and sunlight, and an oxidizing agent. The compounds under investigation (e.g., pharmaceutical residues, hormones, steroids, biomolecules, synthetic nitriles, benzene, polymer compounds, dyes, and fluorinated compounds) are currently often only partially or not at all removed from wastewater and accumulate in our water treatment cycle. The goal is to further develop the technology into a demonstrator that complements and optimizes traditional methods as a fourth cleaning stage. To realize a demonstrator capable of decomposing larger volume flows, a variety of work is required. This includes investigations into the scope of application (screening), catalyst stability, reaction management, and optimization, as well as the synthesis of the catalyst on a larger scale. In addition to chemical expertise, an engineer will also be involved in the project, who will deal with the design, construction, building, and commissioning of the demonstrator. In extensive field tests, this will be technologically evaluated in collaboration with partners. This also includes assessing potential applications, economic viability, and environmental compatibility. Finally, a strategy for technology transfer should be developed.
With "ClearWater," you are part of an exciting technological development in the field of wastewater treatment.

Requirements:

We are looking for a scientist with a successfully completed scientific university degree (Master, Diploma or equivalent) and a doctorate in the field of Chemistry, Environmental Chemistry, or Chemical Engineering, with a focus on catalysis for the removal of micropollutants in water or a comparable relevant field of research. The candidate should possess in-depth expertise in materials chemistry, heterogeneous catalysis, kinetic studies, reactor design, and reactor construction. A good knowledge of German and/or English is required and a willingness to acquire any missing language skills.

Desirable:
Experience in the development and application of innovative technologies and processes for wastewater treatment is desirable. Additional advantages include theoretical and practical knowledge in the area of photocatalysis and in the development of reaction systems (reaction and separation processes) for the implementation of large-scale industrial processes. You are expected to work independently and creatively, share enthusiasm for new challenges, have the ability to work in a team, and strong interpersonal skills.
A very good knowledge of German is an advantage in order to be able to fully fulfil the administrative tasks involved. A very good command of English is required for communication with the international team.

Please send your application with the **reference number** and the usual documents by e-mail (preferably in one file!) to **andrea.rahmel@tu-berlin.de**.

By submitting your application via email you consent to having your data electronically processed and saved. Please

note that we do not provide a guaranty for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/ .

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities. Applications from people of all nationalities and with a migration background are very welcome.

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