

## PhD student (f/m/d) at the interface of synthetic biology and droplet microfluidics

### About us

The Chair of Chemistry of Biogenic Resources (CBR) focuses on the utilization of enzymes to develop sustainable chemistry solutions. The **Garching** group of CBR is looking for a new PhD student for an international collaborative project under the National Bioeconomy Strategy "Bioeconomy International 2024". In a close collaboration with our partners at the University of Queensland, this project aims at finding and characterizing novel rare earth element binding proteins for applications in bio-mining.

**Qualification:** The successful applicant must have the following

- Master's degree in biotechnology/biochemistry/chemistry/chemical engineering/bioinformatics or related disciplines
- Ability to communicate and collaborate in teams
- A strong motivation to work at the interface of biochemistry and engineering
- Experience in standard molecular biology techniques (PCR, cloning, protein expression, etc.)
- Basic experience in programming using Python, R or similar for data processing and analysis
- Experience in biological assay development is advantageous
- Innate curiosity for or experience with hands-on technical work in areas like microfabrication and electronics

### Tasks:

- Development of a biochemical assays
- Optimization of existing droplet microfluidic workflows and devices
- Creation of metagenomic libraries from environmental DNA samples
- Use of cell-free expression platforms for protein synthesis
- Ultra-high throughput screening of DNA libraries produced from metagenomic samples
- Analysis of high throughput datasets using Python or R
- Communication of findings to international project partners and the scientific community

### We offer:

- A three year contract (65 %) with salary in accordance with TV-L E13
- A familiar and collaborative research environment located at the largest campus of TUM in Garching
- As a TUM doctoral student, you will automatically join TUM graduate school and benefit from further education programs and funding opportunities for stays abroad.

### Application

We are looking forward to receiving your application including a letter of motivation (1 page), a CV, degree certificates and academic transcripts. Please send your application with subject **MAGMA** to [bew\\_cbr@cs.tum.de](mailto:bew_cbr@cs.tum.de) by January 15<sup>th</sup> 2025.

TUM aims to increase diversity at the university and we therefore explicitly favor applications from women as well as from all others who would bring additional diversity to the group. Preference is given to equally qualified disabled candidates. The position is available from February 1<sup>st</sup> 2025.

### Technische Universität München

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