



Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,500 employees in one of Europe's biggest research centres and help us to shape change!

As a leading research institution for microbial biotechnology, the Institute of Bio- and Geosciences – Biotechnology (IBG-1) focuses on molecular and applied microbiology. Interdisciplinary teams are developing biotechnological processes for tomorrow's industry, with a focus on increasingly automated and miniaturised experiments.

The research group Synthetic Cell Factories wants to contribute to the understanding of bacterial metabolism and we are interested in expanding the biosynthetic capabilities of microorganisms for applied purposes. We focus on the engineering of *Corynebacterium glutamicum* and *Escherichia coli* for the sustainable production of value-added small molecules such as natural products, fine chemicals or pharmaceutical building blocks from biomass and other carbon-rich waste streams. In addition, we are developing new molecular tools for genome editing and high-throughput screening of metabolite producing bacteria at the single cell level using biosensors and fluorescence-activated cell sorting (FACS).

We are offering from February 2026 an interesting

Master Thesis - CO₂-neutral and sustainable production of valuable chemicals in *C. glutamicum*

Your Job:

Achieving sustainability goals in production processes of chemicals remains a major challenge and highly depends on the development of sustainable, circular bioprocesses. Production processes based on CO₂ and other carbon-rich waste streams enable net-zero CO₂-conversions into valuable chemicals. This project aims to design, integrate and optimize metabolic pathways in an engineered *C. glutamicum* strain to enable and optimize net-zero CO₂-production of an valuable chemical based from CO₂ and other carbon-rich waste streams.

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our

Online-Recruitment-System!

Questions about the vacancy?

Get in touch with us by using **our contact form**.

Please note that for technical reasons we cannot accept applications via email.

www.fz-juelich.de

Your responsibilities in detail

- State-of-the art molecular cloning methods
- Design and construction of genetic targets
- Cultivation in cultivation system BioLector XT and shake flasks
- HPLC and GC analytics
- Independent data analysis and presentation of results
- Documentation of the work

Your Profile:

- Master student in biology, biotechnology or related field
- Interest in cloning, microbial cultivations and genetic engineering
- Willingness to learn new methods and engage with subject-related literature
- High degree of independence, motivation and reliability
- Reliable, well-structured and organised working style

Our Offer:

We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We support you in your work with:

- An interesting and socially relevant topic for your thesis with future-oriented themes
- Ideal conditions for gaining practical experience alongside your studies
- An interdisciplinary collaboration on projects in an international, committed and collegial team
- Excellent technical equipment and the newest technology
- Qualified support through your scientific colleagues
- The chance to independently prepare and work on your tasks
- A large research campus with green spaces, offering the best possible means for networking with colleagues and pursuing sports alongside work

In addition to exciting tasks and a collaborative working atmosphere at Jülich, we have a lot more to offer: <https://go.fzj.de/benefits>

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.

The following links provide further information on diversity and equal opportunities:

<https://go.fzj.de/equality> and on specific support options for women:

<https://go.fzj.de/womens-job-journey>