As a member of the Helmholtz Association, Forschungszentrum Jülich makes an effective contribution to solving major challenges facing society in the fields of information, energy, and bioeconomy. It focuses on varied tasks in the area of research management and utilizes large, unique, scientific infrastructure. Come and work with around 6,100 colleagues across a range of topics and disciplines at one of Europe’s largest research centres.

The IBG-1 “Systems Biotechnology” is working on the development of bioprocesses based on a systems biology fundament. Both whole cell and cell free approaches are pursued. As central tools, quantitative bioanalytic methods (metabolomics, fluxomics, proteomics) and mathematical models are developed both for a detailed characterization of the complex biochemical networks inside a living cell and for the investigation of whole bioprocesses. These projects are complemented by the development of microfluidic devices for single cell analysis for which newly developed biosensors are applied. We are offering a

**PhD position - industrial biotechnology / bioeconomy**

**Activities and responsibilities**

The project aims at developing potential biofinery processes for selected organic acids based on two engineered model organisms. Your work will focus on the characterization of existing producer strains toward their conversion efficiency for different industrially relevant feedstocks (including waste streams such as molasses, crude glycerol and black liquor). You will work closely together with colleagues from metabolic engineering as well as down-stream processing and the performance data obtained from your cultivation experiments will directly support further strain and process optimization.

**Your tasks in detail:**

- comparative characterization of engineered Ustilago and Corynebacterium strains using our Mini Pilot Plant technology
- laboratory evolution experiments to improve growth on the most relevant feedstocks
- support of further rational strain optimization based on the newly generated knowledge
- optimization and scale-up of selected production processes in lab-scale bioreactors
- participation in conferences in Germany and abroad (incl. presenting your research results)
- exchange with internal and external project partners
- preparing scientific publications and project reports
- mentoring students

**Qualification profile**

- MSc degree in Biotechnology, Bioengineering, Chemistry, Biochemistry or comparable disciplines, with an overall grade of at least “good” (or equivalent, e.g. cum laude)
- expertise in microbial cultivation technology and bioprocess development
- basic knowledge on metabolism of prokaryotic and eukaryotic organisms
- experience in mathematical modelling is an advantage
- fluent command of written and spoken English
- high degree of independence and commitment
- very reliable and conscientious style of working
- excellent ability to cooperate and work in a team

We offer

- outstanding scientific and technical infrastructure – ideal conditions for successfully completing a doctoral degree
- a highly motivated group as well as an international and interdisciplinary working environment at one of Europe’s largest research establishments
- chance of participating in (international) conferences and project meetings
- continuous scientific mentoring by your scientific advisor
- doctoral degree conferred by RWTH Aachen University
- further development of your personal strengths, e.g. via a comprehensive further training programme
- above average pay equivalent to 75% of pay group 13 of the Collective Agreement for the Public Service (TVöD EG 13)

Information on employment as a PhD student at Forschungszentrum Jülich can be found here [here](http://www.fz-juelich.de/gp/Careers_Docs)

Applications are welcome in English or German.

Forschungszentrum Jülich promotes equal opportunities and diversity in its employment relations.

We also welcome applications from disabled persons.

**Send application to**

We look forward to receiving your application until 01.03.2020 via our Online-Recruitment-System!

Questions about the vacancy?

Contact us by mentioning the reference number 2020-013: career@fz-juelich.de

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

We are a member of the [Network of German Research Centres](https://www.bmbf.de/de).