

# **Evaluation of Co-Substrate Inhibition in an Industrial Bioprocess**

## Bachelor Thesis or Research Internship (15 ECTS) - Start in May 2024

Inhibition is a common challenge in the field of bioprocess engineering. It occurs when the substrate or product concentration has a toxic effect on the production organism, reducing the growth rate of the cells within the bioreactor. This can result in reduced reaction rates and even complete cessation of microbial activity. Therefore, it is crucial to evaluate substrate inhibition and develop strategies to overcome it. In this project, an existing inhibition model in Python will be further optimized, and more experimental data will be generated. For the fermentation, a high throughput bioreactor and a 2-L Bioreactor will be used.

### **Responsibilities:**

- Adaption and further optimization of an existing python model
- Fermentation in a high throughput bioreactor (BioLector)
- Fermentation in a 2-L bioreactor (IKA Habitat)
- Analysis by HPLC
- Data analysis

#### **Requirements:**

- Previous experience in Python
- Ability to work independently
- Microbiological fundamentals (theoretical and practical)
- Fermentation experience preferred but not required
- TUM student

#### We offer

- Insight into an industrial bioprocess
- Brand new lab equipment
- A friendly work enviroment
- Your own workstation with a desktop computer

#### Application

If you are interested, please contact Dennis Beerhalter (dennis.beerhalter@tum). I will be happy to answer any further questions you may have.

#### **Privacy policy**

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