Professorship for Bioprocess Engineering
Straubing Campus for Biotechnology and Sustainability
Technical University of Munich

Validation, Optimization and Scale Up of a Soft Sensor for an Industrial Bioprocess

Master thesis - Start in October 2024

Overall topic: For industrial biotechnology, efficient fermentation processes are crucial. For this purpose, a soft sensor will be developed to optimally control of a specific bioprocess and thus achieve maximum yields in minimum fermentation time. The soft sensor will continuously measure process parameters, which cannot be measured directly with conventional hardware sensors, based on a model. The project consists of a theoretical programming aspect in addition to a practical fermentation aspect using *Escherichia coli*

Aim of this master thesis:

- Validation and Optimization of the current SoftSensor in 2 L and 30 L scale
- Scale up of the SoftSensor from a 2 L to 30 L bioreactor
    - Code adaption
    - Implementation of new parameters

Requirements:

- Passion for programming
- Previous experience in Python
- Ability to work independently
- 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.de).
I will be happy to answer any further questions you may have.

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