The Research Center Pharmaceutical Engineering GmbH (RCPE) is a global leader in pharmaceutical engineering sciences. We help our partners create and manufacture advanced medicines for patients worldwide through optimizing products and processes.

For our team / Area 3
we are looking for an active, highly qualified (m/f/x)

SCIENTIST (PhD position)

Model-Based Strategy for Optimal Operation of Bioreactors
PhD foreseen
Ref.No SK129

Duties and responsibilities

Conduct research on modeling, optimization, and control strategies for biological processes in the pharmaceutical industry. The research aims to make conventional operating strategies more efficient, resource-conscious, and cost-effective. This is expected to reduce ecological footprint, minimize resource consumption, and lower production costs, making local routine manufacturing more attractive. These activities are part of an FFG-funded project carried out in collaboration with several industrial and academic partners.

The project tasks, in order of priority, include:

- Modeling of a fermentation unit (fed-batch, various laboratory scales) using data-driven, hybrid, or mechanistic modeling approaches.
- Observer design with intended soft sensor application (model-based estimation of product concentration)
- Design of model-based optimization algorithms
- Implementation algorithms in a simulation environment, followed by deployment on the real system

Requirements

- A MS degree in an engineering field (electrical engineering, biomedical engineering, mechanical engineering, computer science, chemical engineering, biorefinery engineering, mathematics, or related fields)
- Knowledge (or strong interest/ willingness to learn) in control-engineering topics
- Knowledge (or strong interest/willingness to learn) in MATLAB/Simulink as well as in Python or similar tools
- Interest and experience in performing top-level and target-oriented research at the interface of basic science and industrial application
- Readiness to write a PhD thesis, publish in peer-reviewed journals, and participate in international conferences

We offer

- A multidisciplinary and dynamic research environment and access to highly modern infrastructure on the campus of Graz University of Technology
- The best of both worlds: Research and scientific support from academia combined with industrial problem statements and perspectives
- The possibility to address challenges and propose solutions that can transform the current industrial landscape
- Opportunities for career development at the academic and industrial level
- A competitive salary (min. € 47.600,- gross/year, overpayment - depending on qualification - possible).

Contact
https://careers.rcpe.at/

- Possibility to work part-time

At RCPE, we place a strong emphasis on promoting diversity and inclusion.
We are also committed to encouraging women to explore opportunities within our technical environment.
We actively encourage applications from women and, when candidates possess equivalent qualifications, we give preference while considering all relevant aspects and circumstances of all applications.

> **We are looking forward to receiving your application including your CV, a cover letter, your publication record and credentials.**

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