WANTED

CHASE

PhD position

Real-Time Optimization and Control of Microbial Fermentation Processes

Research Scientist with diploma/master's degree in the field of control engineering, mathematics, biotechnology, chemical or process engineering on a part-time basis (30h/week), limited to 36 months.

to strengthen our team at the Vienna site, starting from January 2027:

CHASE is a European Research and Technology Organization for Chemical Systems Engineering with its headquarters in Austria. We enable companies in the chemical process industry to make their production more energy-efficient, more resource-saving and more sustainable.

In interdisciplinary and transdisciplinary partnership with renowned universities, successful companies and committed stakeholders, we support companies in the fields of chemistry, petrochemistry, gas, pharmaceuticals, plastic, and pulp manufacturing to create products for our daily use in a more efficient and more eco-friendly way.

We are seeking a skilled and motivated person to join our team, focusing on generic modelling, real-time optimization and control of microbial fermentation processes. In this role, you will develop and implement algorithms for model-based monitoring and control, integrating mechanistic models of microbial production processes with available Process Analytical Technologies (PATs) with the ultimate goal to deploy them on industrial hardware. The monthly salary is EUR 2848,81.

We are looking forward to hearing from you: personal@chasecenter.at
Reference number: 032
Application: until October 31st, 2026

CHASE your future

You will contribute to the following tasks:

- Comprehensive collection of literature on state-of-the-art techniques for model-based monitoring and economic control architectures to assess, select and formulate the appropriate approach(es)
- Development and validation of a real-time process monitoring strategy by combining a calibrated mechanistic model with available PAT
- Definition of optimization targets for the selected bioprocess and control strategy, e.g. weighing between process yield and sustainability goals
- Development and validation of algorithms for the real-time control strategy
- Deployment of the control strategy on industrial hardware and experimental validation during a microbial fermentation process in our laboratory
- Participation in project meetings and publication of results in international journals and at conferences

Your expertise:

- Master's degree or diploma in Control engineering, Mathematics, Physics, Biotechnology, Chemical Engineering, Process Engineering, or a related field
- Experience with numerical integration methods (ODEs, PDEs, DAEs), (mixed-)integer (non-)linear programming and sound mathematical background
- Experience with control theory
- Proficiency in Python / Julia / Matlab
- Experience with lab work; experience with microbial fermentation processes is beneficial
- Familiar with Git and collaborative code development
- Creative and goal-oriented mindset, with the ability to work independently and present research at scientific conferences
- Strong ability to collaborate with cross-functional teams and stakeholders, with excellent interpersonal skills
- Excellent verbal and written communication skills, with a good command of English

CHASE your career

We are committed to providing a framework for your professional growth:

- State of the art research infrastructure, focus on digitization (Industry 4.0)
- Excellent working atmosphere with strong ties to and interactions with academia
- The possibility to apply your research skills in an application-oriented and industry-relevant context
- Flexible working hours and home office days
- Additional training in diverse fields such as machine learning, or project management
- The monthly salary is EUR 2848,81

For further information, please contact:
Jan Niklas Pauk, Senior Research Scientist – Bioprocess Technologies
janniklas.pauk@chasecenter.at

We look forward to receiving your application (cover letter, CV, academic certificates, transcript of records, employment references), including the reference number of the job posting, to the following email address:
personal@chasecenter.at

By submitting your application documents, you expressly consent to the transmission of your application documents to the partners involved in CHASE.

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