Senior Expert Science & Technology (m/f/d) – Bioprocess Modeling & Simulation

Job ID
REQ-10051725

6 04, 2025

Austria

Location: Schaftenau, Austria

Role Purpose:
25 years of experience in cell culture process development, with tons of data to be explored. Join the Drug Substance Development team in Schaftenau as a Senior Expert Science & Technology (m/f/d) – Bioprocess Modeling & Simulation to bring new innovative medicines to patients by utilizing the full power of advanced modeling & AI tools!

About the Role

We are looking for a scientist with a strong background in digitalization, modeling & simulation, and AI applications to support and advance our upstream bioprocess development efforts. This role is

ideal for a technically skilled and strategically minded individual who thrives at the intersection of biotechnology and data science.

Your responsibilities include, but are not limited to:

- Lead the design, development, and deployment of advanced modeling and simulation strategies for upstream cell culture processes, including: -- Mechanistic, data-driven, and hybrid models, Digital twins for process optimization and scenario analysis and Model Predictive Control (MPC) and integration with Process Analytical Technology (PAT)
- Identify and implement AI and generative AI (genAI) solutions to extract insights from structured and unstructured data sources (e.g., ELNs, LIMS, scientific publications).
- Collaborate with global stakeholders to align modeling strategies, share best practices, and contribute to the development of modeling standards and platforms.
- Support cross-functional digitalization initiatives within global Drug Substance Development, including data infrastructure, lab automation, and digital workflows.
- Mentor junior scientists and contribute to the strategic direction of the modeling and simulation roadmap.
- Ensure compliance with data integrity, quality, and regulatory standards in all modeling and digitalization activities.

What you'll bring to the role:

- Education /Experience:
  - PhD in Biotechnology, Biochemical Engineering, Bioinformatics, Data Science, Physics, Mathematics or a related field with 2+ years of relevant professional experience in process modeling and digitalization, or MSc with 6+ years of experience.
- Languages:
  - Fluent in English; German is a plus.
- Technical Expertise:
  - Demonstrated experience in modeling and simulation of industrial processes, ideally in bioprocessing and upstream cell culture.
  - Deep knowledge in one or more of the following areas:
    - Machine learning and hybrid modeling approaches
    - Mechanistic modeling (e.g., mass balances, kinetic models)
    - Digital twin development and real-time process control
  - Experience with generative AI (e.g. LLMs, diffusion models) for knowledge extraction, process design, or automation is a strong plus.
  - Proficiency in some relevant tools and platforms as e.g:
    - Programming languages: Python, R, MATLAB
    - Modeling software: gPROMS, Aspen Plus, Simulink
    - AI/ML frameworks: TensorFlow, PyTorch, scikit-learn
  - Understanding of bioprocessing principles and unit operations is advantageous.

Adjustments for Applicants with Disabilities: If because of a medical condition, physical disability or a neurodiverse condition you require an adjustment during the recruitment process, please reach out to disabilities.austria@novartis.com and let us know the nature of your request as well as your contact

information. The support which we can provide will include advice on suitable positions as well as guidance at all stages of the application process. Austrian law provides candidates the opportunity to involve the local disability representative, Behindertenvertrauensperson (BVP), in the application process. If you would like to request this, please let us know in advance as a note on your CV.

In accordance with Austrian law, we are obliged to disclose the minimum salary as stated in the collective bargaining agreement. For this position the minimum salary is € 61,400/year (on a full time basis). In most cases, the actual salary will be higher, as we strive to maintain a competitive position in the market and consider your previous experience, qualifications and individual competencies

Why Novartis: Helping people with disease and their families takes more than innovative science. It takes a community of smart, passionate people like you. Collaborating, supporting and inspiring each other. Combining to achieve breakthroughs that change patients' lives. Ready to create a brighter future together? https://www.novartis.com/about/strategy/people-and-culture

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Benefits and Rewards: Read our handbook to learn about all the ways we'll help you thrive personally and professionally: https://www.novartis.com/careers/benefits-rewards

Development

Business Unit
Innovative Medicines

Austria

Schaftenau

Company / Legal Entity
AT33 (FCRS = ATO33) Novartis Pharmaceutical Manufacturing GmbH

Functional Area
Research & Development

Job Type
Full time

Employment Type
Regular

Shift Work
No

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Novartis is committed to building an outstanding, inclusive work environment and diverse teams' representative of the patients and communities we serve.

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