

PostDoc – Crystallization Modelling (m/f/d)



INVITE

Innovation is what drives us. As a non-profit research organization, we develop groundbreaking technologies with our interdisciplinary team that shape the future – and create added value for society.

Our **Vision** is to achieve substantial things through strong partnerships. Together with our broad network of scientific and industrial partners, we create synergies from which everyone benefits.

Technology is our passion, and we love to share it. Through research on industry-relevant scientific questions and further education, we prepare the next generation for the challenges of the future.

For a 2-years industrial collaboration project on the topic of “**Crystallization Modelling**” we are looking for you:

Your tasks and responsibilities

Several crystallization models based on PBE approaches are available in the Process Technologies cluster as Python scripts. These are currently not easily accessible due to tailored development, missing documentation and lack of standardized application workflows.

The objective is to review these models, discuss them with the team, and improve their applicability, with room to actively shape the direction and focus of crystallization modelling in an industrial setting.

- Review and assess existing crystallization models with respect to scope, robustness, numerical stability and current user requirements
- Critical review and further develop the models in line with the state-of-the-art in crystallization modelling and develop a workflow scheme where appropriate
- Enable practical use of the models by providing structured documentation and guidance, including relevant literature, parameter sensitivity, valid assumptions and concepts for experimental determination of model input values (e.g. kinetic parameters)
- Application and validation of the models using data from real industrial crystallization processes, in close exchange with process and operations experts

What you bring with you

- PhD in chemical/process engineering, pharmaceutical science, formulation technology or a related discipline with a focus on crystallization processes
- Experience applying the population balance equations (PBE) in crystal growth modelling or particle technology is strongly desired
- Solid fundamental understanding of crystallization processes and practical laboratory experience in crystallization experiments involving particle nucleation, distribution and growth
- You are taking initiative and you have an independent, goal-oriented way of working
- You enjoy working in an interdisciplinary team in a cross-functional setup
- You have a high ability to structure and solve complex scientific challenges
- You are a team player with strong communication skills, characterized by a high level of commitment and enthusiasm for continuous learning and hands-on bench work
- Good written and spoken English and German skills

What you will take with you

- The work will provide you insights into scientifically and industrially relevant challenges in the area of active ingredient manufacturing.
- You gain experience in working in direct interaction with industrial partners and in an international cross-disciplinary team at INVITE
- The work offers you the opportunity to contribute creatively to the development of new scientific topics

INVITE GmbH strives for a gender-equitable employment structure and therefore expressly welcomes applications from women.

Contact person

Please, send your complete application documents to Dr. Tim Lillotte (lillotte@invite-research.com) and Dr. Jan-Olav Henck (henck@invite-research.com)