

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



WE ARE OFFERING A

PAID DIPLOMA/ MASTER'S THESIS

Investigation of the Impact of Fluid Viscosity on the Flow Field and Mixing in Twin Screw Extruders
Ref.Nr DA137

To dedicated students of mechanical engineering, process engineering, fluid dynamics or related disciplines, we offer an opportunity to write a paid Diploma/Master's thesis.

The project is conducted in close cooperation with extruder suppliers and the pharmaceutical industry.

OBJECTIVE:

This work is part of a broader cooperative network between extruder suppliers and pharmaceutical companies. The objective of this work is to help in developing the simulation framework for pharmaceutical twin-screw extruders. The extrusion process is used increasingly in the pharmaceutical industry for the manufacturing of advanced pharmaceuticals and specific dosage forms. Due to the process complexity, the use of different simulation technologies is inevitable for successful and waste free product development. The specific task of this thesis is the testing of different viscosity models and the evaluation of its impact on the flow field and mixing performance of individual extruder screw elements. The dedicated simulation method for this work is Lagrangian Smoothed Particle Hydrodynamics method. The candidate will have support in the execution of the tasks from a team of scientists working in this field.

WITHIN THE FRAMEWORK OF THIS DIPLOMA/ MASTER'S THESIS WE OFFER THE FOLLOWING:

- Extensive participation in a top-level and industrially relevant research project in an international environment
- Supervised training in the task
- Assistance of experienced staff with the implementation of innovative ideas
- Access to highly modern infrastructure on campus of Graz University of Technology
- Assistance with the publication of results
- Adequate compensation and opportunities for personal and professional development

FINANCING:

- Compensation on the basis of a service contract

IF YOU ARE INTERESTED IN WRITING YOUR THESIS AT THE INTERFACE BETWEEN UNIVERSITY RESEARCH AND INDUSTRY/ BUSINESS AND TO CONTRIBUTE TO THE OPTIMIZATION OF PRODUCT AND PROCESS DEVELOPMENT IN THE PHARMACEUTICAL INDUSTRY, PLEASE CONTACT US INDICATING THE REFERENCE NUMBER.

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