research center pharmaceutical engineering

The Research Center Pharmaceutical Engineering (RCPE) is an interdisciplinary research institute in the area of pharmaceutical process- and product-development in Graz, Austria. Our goal is to establish technology to transform current product and processes development approaches in the pharmaceutical and diagnostics industries into a science-based endeavor together with our partners.

PAID DIPLOMA/ MASTER'S THESIS

Dissolution Kinetics of Drug Crystals in a Polymer Melt

Ref.Nr. DA126

To dedicated students of Pharmacy , Pharmaceutical Engineering , Chemistry , Chemical Engineering , Material Science or related disciplines, we offer an opportunity to write a paid Diploma/Master's thesis.

OBJECTIVE:

Many pharmaceutical dosage forms (e.g. implants, drug delivery devices, oral formulations, etc.) consist of drug crystals dispersed in polymeric melt. During high temperature manufacturing processes the drug crystals dissolve in the polymer (Figure 1). The remaining crystals have a huge impact on drug release rates. In this thesis you will carry out experiments on state-of-the-art equipment on several dispersive drug/polymer systems and quantify the dissolution behavior. Two simultaneously occurring effects need to be considered: (1) Diffusion based mass transport, and (2) particle fragmentation.

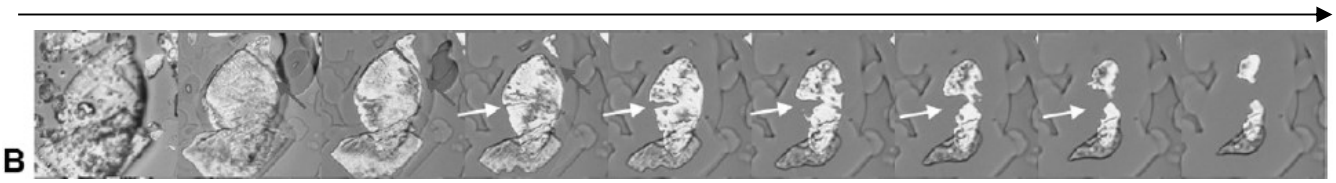

Figure 1: Diffusion and fragmentation of a drug crystal. (Moseson et al., 2019)

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 contractIf 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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