

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

PAID DIPLOMA / MASTER'S THESIS

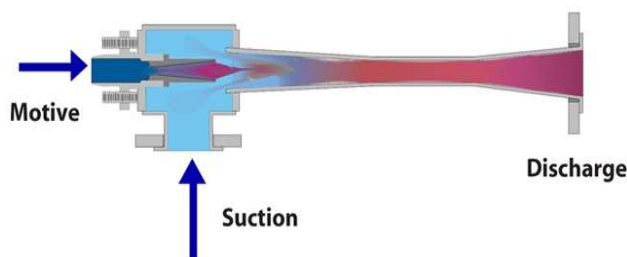
THE DYNAMICS OF A JET EJECTOR

Ref. No.DA166

To dedicated students of mathematics, physics, chemical engineering, mechanical engineering and related disciplines we offer an opportunity to write a paid Diploma/Master's thesis.

Objective

At RCPE, we have extensive experience in using a manufacturing line for the production of pharmaceutical tablets via twin-screw wet granulation. One step in this process deals with transferring dried granules from a fluid bed dryer to a mill via a vacuum transfer system. Despite our expertise, blockage in the vacuum transfer system often occurs for no apparent reason. In order to better explore potential causes for this blockage, we want to develop a predictive model of the vacuum transfer system based upon a coupled computational fluid dynamics – discrete element model. (CFD-DEM).



The boundary condition on the suction side, which is created by a jet ejector, is an important part of such a model. In this work you will therefore analyze the transient performance of a jet ejector and develop a reduced-order model that can be used as a boundary condition for more thorough CFD-DEM analyses of the vacuum transfer process.

Required skills

- Fluid mechanics and transport phenomena, mathematics (ordinary and partial differential equations), thermodynamics.

Withing 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

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.

Contact

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