

PAID DIPLOMA / MASTER'S THESIS

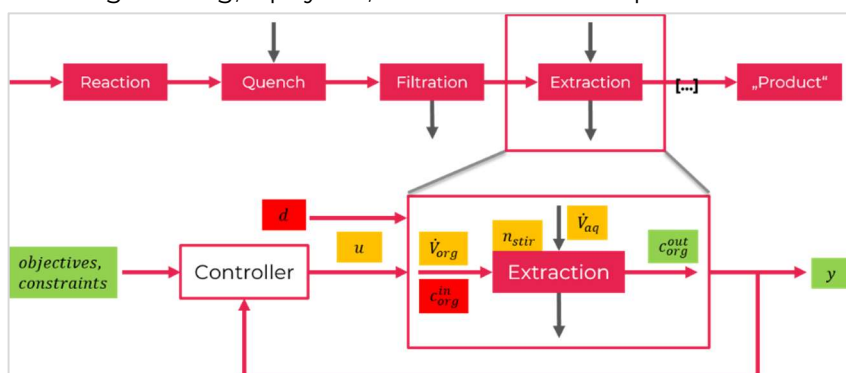
MODELING AND SIMULATION OF A PHARMACEUTICAL UNIT OPERATION FOR CONTROL PURPOSES

Ref. No. DA164

To dedicated students of electrical engineering, biomedical engineering, information and computer engineering, mechanical engineering, physics, chemical and process engineering or related disciplines.

Objective

Within a large project at RCPE we develop a new pharmaceutical production process for highly potent APIs. For continuous operation, a robust control strategy for in-process deviations needs to be found. To this end, a digital twin is created. This Master's Thesis aids the project with developing such a digital twin for one specified unit operation (e. g. solid-liquid separation). Therefore, a link between the process parameters and the critical quality attributes has to be created within the modeling section of this work. Simulation runs on the developed digital twin conclude the work within this thesis. Close linkage to trial runs with small-scale equipment supports the modeling of the unit operation and gives insight into the practical process.



Within your work, you will perform:

- Literature research of existing models of a specified unit operation
- Development of a suitable set of model equations based on literature and physical laws
- Implementation of the developed model into MATLAB/Simulink
- Simulation of the implemented model
- Discussion of the obtained simulation results

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

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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