

Forschungspraktikum/Bachelor thesis /Master thesis

Exploring Factors Influencing the Rheological Behavior of Pharmaceutical Powders

Motivation

The success of any industrial process depends on the ability to handle the materials used. When attempting to classify these materials into the commonly known physical states of gas, liquid and solid, powders present a challenge. Powders play a role in about 75% of all industrial processes, mainly in the chemical, pharmaceutical and food industries. On the one hand, powders consist of solid particles; on the other hand, powders show a liquid-like behavior. One of the challenges in successfully processing cohesive powders is the impact of rheological powder behavior, which is affected by multiple factors, including process parameters and material properties, based on current studies.

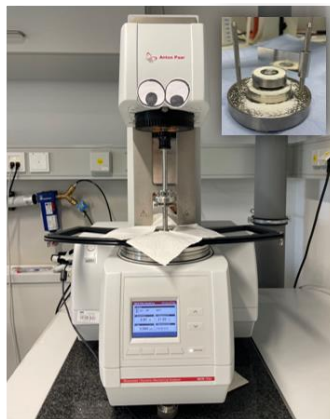


Bild 1: Instruments for the characterization of powders

Work objectives

The aim is to investigate cohesive pharmaceutical powders by using our instruments, Anton-Paar MCR702e (Bild 1). The specific aim of the Master's thesis is to introduce and validate a new index for rheological evaluation.

We are looking for students who enjoy process engineering with powder and work independently and carefully.

Work packages:

- Test on the measuring system: rheometer, Qicpi (dynamic image analysis), Helos (particle size and particle size distribution with laser diffraction) and so on.
- Data analysis
- Documentation of the results.

Start

Immediately

Technische Universität München

Lehrstuhl für Systemverfahrenstechnik

Yuan Tan

Gregor-Mendel-Straße 4 (EG02), 85354 Freising

Tel. +49 8161 71-5172

Yuan.tan@tum.de