

MATERIAL CHARACTERIZATION

Summary

This course aims to show the wide range of relevant material characterization methods which were widely used in the development of the UGent raw material database and published articles. The trainee will receive a theoretical overview of the different characterization techniques, followed by a demonstration of the equipment at the CESPE labs.

This 1-day course contains one module with both theoretical and hands-on aspects:

- 1) **Module 1: Basic course: Introduction to raw material characterization (1-day)**

MODULE 1: BASIC COURSE

Theoretical

- 1) *Introduction to raw materials/powders*
 - a. Basic fundamentals
- 2) *Powder flowability*
 - a. What is powder flowability?
 - b. How can it be measured/characterized?
 - c. What is the pharmaceutical relevance?
- 3) *Particle size & shape*
 - a. Which parameters do exist?
 - b. What is the pharmaceutical relevance?
- 4) *Density & porosity*
 - a. How can it be measured/characterized?
 - b. What is the pharmaceutical relevance?
- 5) *Moisture*
 - a. How can it be measured/characterized?
 - b. What is the pharmaceutical relevance?
- 6) *Electrostatic charge*
 - a. How can it be measured/characterized?
 - b. What is the pharmaceutical relevance?
- 7) *Viscosity*
 - a. Basic fundamentals
- 8) *Melting point and solid state*
 - a. Basic fundamentals

Practical

The extensive array of characterization equipments at CESPE will be made available to visualize the difference between highly divergent powders. The following equipments will be used:

FT4 Powder Rheometer – Schulze Ring Shear tester – GranuHeap – GranuDrum – GranuCharge – FlowPro – Bulk and tap – Laser diffractor – He-pycnometry – Loss-on-drying – DVS-equipment – Haake Rheometer – DSC-equipment

Upon request, a powder of interest could be tested on the available equipment! For more information, please contact Bram.Bekaert@UGent.be.