



Powder Technology in Pharma, Food and Chemistry

Do you know your powder well enough?

There is a multitude of powders used within the pharmaceutical, chemical and food industries. The processing and handling of powder also involves a multitude of operations such as production of powder particles, enlargement or reduction of particle size, encapsulation, powder transport, rehydration, powder blending, etc. A clear understanding of the characteristics of powders is required in order to carry out these operations in an optimal manner. Parameters such as particle size distribution, particle shape, flow properties, interparticulate forces, etc. have a significant impact on the powder properties and the handling of powder.

AIM

The aim of the course is twofold: on the one hand, to provide participants with a better understanding of powder products and processes. On the other hand, to supply participants with tools to stimulate new ideas of development and improvement of powder products and processes. At completion of the course the participant will have gained a basic understanding of modern powder technology.

COURSE OUTLINE

This is an intensive three-day course. During part of Day 1 and 3 participants will be divided in smaller groups, the Round tables focusing on specific themes. This provides participants with an opportunity to deepen their knowledge in specific fields and to exchange experience with others from different areas of work. Participants will be asked to submit questions and their own problems prior to the start of the course. Their specific questions will be highlighted during the course. At the evening of Day 1 a Course dinner will take place.

Day 1

Characterization:

- Tools for characterization of powders
- Powder rheology
- Particle size and morphology
- Surface chemistry of powders
- Interparticulate forces in powders

Keynote lectures will be given on powder rheology and surface chemistry of powders. **Round table 1: Rheology and surface chemistry of powders.**

Day 2

Processes:

- Dry blending versus segregation
- Rehydration of powders
- Transport of powders
- Movement of particles in fluids, fluidisation, etc.
- Sampling and inline measurements

Speed-lab exercises and demos. During this popular course section the participants will be given the possibility to make some hands on trials as well as take part of a number of short demos of various techniques, phenomena and analytical devices.

Day 3

Participants are given a possibility to choose the direction of Day 3, depending on their area of interest.

- **Alternative A (Pharma):** Granulation, agglomeration, coating, encapsulation, tableting and inhalation of powders. **Round table 2: Powder formulation for tableting and for inhalation.**
- **Alternative B (Food and Chemistry):** Spray drying and fluidisation: equipment, design of formulations for spray drying, practical applications. **Round table 3: Spray-drying and fluidization.**

Participants can also choose between Round table 2 and Round table 3. In the afternoon of Day 3 joint lectures will also be given on milling and sieving of powders.



WHO SHOULD ATTEND?

This is an introductory course on powder and powder processing for academics and engineers. Persons from industry or academia that work with powder within production, R & D, QA or QC will benefit by participating in this course. University researchers will benefit from a deeper insight into real industrial problems.

CONTACT

For course information, please contact Mirka Fahlander at Lund University Commissioned Education, Ph. +46-46-222 0777 or mirka.fahlander@education.lu.se

For practical information, please contact Andreas Bryngelson, Ph. +46-46-222 1460 or andreas.bryngelson@education.lu.se

SCHEDULE AND FEE

September 20-22, 2017.

The course will take place at Lund University. The course fee is SEK 16.600, excluding VAT. The course fee includes tuition, documentation, diploma, coffee, lunch and a dinner on Day 1.

The course will be held from 8.15 am to 5 pm on all days except for Day 1 which starts at 9 am.

Registration deadline is July 18, 2017. Registration is binding. Substitution of participants is allowed at any time at no charge, however it is advisable that such should take place at the start of the course.

REGISTRATION: <https://dinkurs.se/PowderTech2016>

LECTURERS



Stefan Ulvenlund has a PhD in Inorganic Chemistry and is the Chief Scientific Officer at the contract research company CR Competence AB in Lund. He also holds the professorship in Formulation Technology at Lund University. Stefan has around 20 years of experience in the fields of applied chemistry and formulation science, primarily within pharmaceuticals (including 13 years at AstraZeneca), but also in cosmetics, personal care, agrochemicals and other businesses.



Jamie Clayton is Operations Director at powder characterisation company Freeman Technology Ltd, in Tewkesbury, UK. He graduated from University of Sheffield with a degree in Control Engineering and is responsible for all daily activities of the company. He has extensive experience in applications and method development for rheometers and work closely with customers worldwide across

the powder processing industries.

Christer Rosén, Ph.D., has long-standing industrial experience in producing and handling powders while holding the position

of R&D Technical Director at the Swedish spray-drying company Källbergs Industri AB. He is a Senior Industrial Advisor at Lund University and was previously Assistant Lecturer at the Department of Food Technology.

Björn Bergenståhl, professor in Food Technology at Lund University since 1998. For more than 15 years, he worked as researcher and section manager at YKI Institute for Surface Chemistry in Stockholm. He has a long-term experience in applied surface and colloid chemistry in industrial systems (chemical technical, paint, paper, mining, pharmaceutical and food industry) and on surface properties of solid systems obtained through drying. Another area of interest is the influence of the surface physics on the functional properties of industrial powders (wettability, dispersability and flowability).

Marie Wahlgren, Professor, has worked in the field of physical chemical characterisation of proteins since 1987 at the Department of Food Technology at Lund University. At Ferring AB as Head of Formulation she worked with oral and parenteral delivery of pharmaceutical peptides. After her return to the University in 2000, the scope of powder delivery problems studied has been broadened.

Anna Fureby, PhD, Senior scientist and Group Manager at Life Science section, SP Technical Research Institute of Sweden. Anna has a background from Department of Biotechnology at LTH. She has almost 20 years' experience of formulation, microencapsulation, characterisation and innovation in powders for food, pharma and nutrition at YKI and SP in Stockholm.



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