



In-service training course

Powder Formulation: Design principles, Characterisation and Processes

October 10 - 12, 2018

At Hotel Phoenix Copenhagen
in the Heart of Copenhagen, Denmark

**Held again
in Denmark!**

Outcome

Through presentations, exercises and plenum discussions participants will acquire solid knowledge of powder formulation - i.e. what are the challenges and possibilities and what you as formulator should be aware of regarding powder characterisation and process decisions.



Main subjects taught in the course

(see also last pages of flyer for the detailed program)

- Particle technology basics relevant for powder properties
- Powder characterisation
- Design principles for powder handling
- Powder product formulation guidance and case stories
- Powder processes and the influence of formulation:
 - Spray and freeze drying
 - Fluid bed drying, coating and agglomeration
 - Mechanical granulators
 - Powder blending and segregation issues



Target group

The course addresses technicians as well as formulators and process engineers working in the chemical, pharmaceutical, biotech and/or food industry with manufacture or development of powder products.



Form

The course runs for three consecutive days with alternating presentations, exercises and plenum discussions. The course is held in English.

Social event

On the afternoon of the first day the participants are invited to dinner at a nearby restaurant in the heart of Copenhagen.



Registration and further information: Please see the next pages

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Teachers

Søren Vinter Søgaard, M.Sc. (Pharm.), Ph.D.



- Pharmaceutical Formulation Scientist
- Speciality in flow-ability, segregation and compaction properties
- Teaching experience from School of Pharmaceutical Sciences, University of Copenhagen

Peter Dybdahl Hede, M.Sc. (Chem. Eng.), Ph.D.



- Head of R&D in industrial particle technology and powder product formulation
- Teaching experience from The Danish Society of Engineers, Technical University of Denmark and numerous service training courses in particle technology
- Co-founder of seydlitz.dk. Provides in-house seminars and consultancy in powder technology

(Guest speakers)



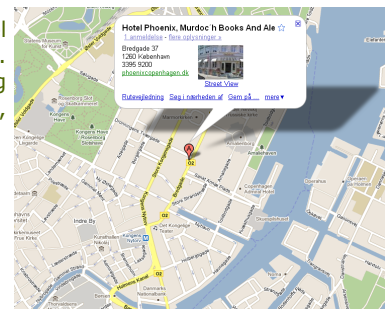
Venue



Hotel Phoenix Copenhagen is a 4-star deluxe hotel housed in one of Copenhagen's historic buildings. Situated in central Copenhagen, near Amalienborg Palace, just a few metres' walk from Nyhavn, Kongens Nytorv, Strøget and other sights.

Address: **Bredgade 37, DK-1260 Copenhagen K, Denmark**

Telephone: **+45 33 95 95 00**
Booking & service: **bookphoenix@arp-hansen.dk**



Fee

The course fee is payable in advance and includes course materials, calculator, coffee & refreshments, lunch all three days and dinner on the first afternoon.

Per delegate EUR 1955,- plus VAT. VAT is reclaimable.

Overnight stay at the delegates own expense can be arranged at the course venue or elsewhere nearby. Please contact Hotel Phoenix Copenhagen at **+45 33 95 95 00** or **bookphoenix@arp-hansen.dk**.

Kindly note that Copenhagen is a very popular destination and that Copenhagen hotels may be fully booked well in advance.

Registration

Binding registration at **www.seydlitz.dk** under "Courses" no later than 1st of September 2018. In case of any questions please contact **Info@seydlitz.dk** or phone **+45 29 49 30 40**.

The course may be subject to cancellation in case of too few participants

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Powder Formulation:

Design principles, Characterisation and Processes

October 10 - 12, 2018

Course contents

Day 1: Subject

| | |
|---------------|---|
| 10.00 - 10.15 | Course introduction |
| 10.15 - 11.00 | Particle size and particle shape, Particle size measurement |
| 11.00 - 12.00 | Dispersion and sample preparation for off- and in-line particle analysis presented by |
| 12.00 - 13.00 | Lunch |
| 13.00 - 13.30 | Influence of particle size and shape on different powder product properties |
| 13.30 - 14.45 | Characterisation of powder flow properties |
| 14.45 - 16.00 | Design of equipment for powder handling |
| 18.30 - 21.30 | Course dinner in Central Copenhagen |



Day 2: Subject

| | |
|---------------|--|
| 9.00 – 11.00 | Introduction to powder formulation How can different industries learn from each other? |
| 11.00 – 12.00 | Food formulation - challenges and solutions in the food industry presented by |
| 12.00 – 13.00 | Lunch |
| 13.00 – 14.00 | Mechanical granulators, High-shear mixers, roller compactors - influence on product properties |
| 14.00 – 14.45 | Spray and freeze drying processes, product morphology and influence on product properties |
| 14.45 – 16.00 | Fluid bed processes: Drying, coating and agglomeration - influence on product properties |



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Course contents - continued

| Day 3: | Subject |
|---------------|---|
| 9.00 – 11.00 | Formulation and process development of tablets for the pharmaceutical industry |
| 11.00 – 12.00 | Powder sampling - theory and practice, Particle blending and segregation issues, |
| 12.00 – 13.00 | Lunch |
| 13.00 - 13.45 | Equipment and processes for powder blending |
| 13.45 – 15.00 | Discussion: Common problems in powder formulation development: When things are not as they should be... How can we help each other? Discussion in plenum of case examples and specific formulation problems raised by the course participants. Plenum case: How can we rethink an existing powder platform? |
| 15.00 – 16.00 | Group case : Instability of food product component: How to overcome a challenging stability issue |
| 16.00 | Final remarks, Course evaluation |

