

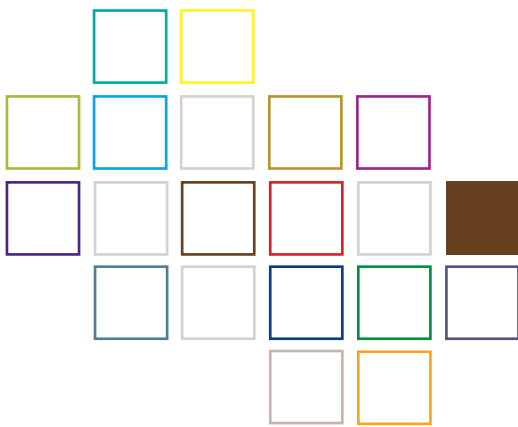
Hard Capsules Advanced Seminar



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14 - 15 November 2024
Waiblingen, Deutschland

Kurs-Nr. 7007



Solid Dosage Forms

Target group

Scientists, managers and laboratory staff dealing with the development, manufacturing, filling, testing and supply of hard gelatin capsules and employees in the field who want to get an deeper inside of hard capsule technology.

In Kooperation mit

SYNTEGON
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This seminar is organized by the focus group Solid Dosage Forms

Course leaders



Thomas Brinz, Syntegon

Thomas Brinz studied Chemistry at the University of Ulm and completed his doctorate in liquid crystalline polymers in 1993. Afterward, he joined the Corporate Research division of Robert Bosch GmbH, where he focused on developing new functional materials.

In 2003, Thomas founded Bosch Lab Systems, specializing in automation solutions for formulation development, specifically High-Throughput Formulation Systems. Since 2009, he has served as the Director of the Engineering Pharma Service department and the OSD Customer Center, initially at Bosch Packaging Technology GmbH and now at Syntegon Technology GmbH. Thomas's expertise lies in process optimization and efficient development technologies, such as automated process development, ensuring cutting-edge solutions in pharmaceutical engineering.



Gabriele Reich, University of Heidelberg

Gabriele Reich is research group leader and academic director at the University of Heidelberg, Institute of Pharmacy and Molecular Biotechnology (IPMB), Dept. of Pharmaceutical Technology and Biopharmaceutics. She holds a pharmacy degree and a PhD in Pharmaceutical Technology from the University of Freiburg i. Br. and has more than 30 years experience in scientific research, academic teaching and international industrial consulting with a proven record of accomplishments in diverse areas of pharmaceutical technology, analytics, biopharmaceutics and polymer chemistry. Her research activities comprise the development of protein delivery systems, hard and soft capsule technology and QbD of solid dosage forms with a special focus on multivariate PAT tools.

Objectives

Hard capsules are a versatile oral dosage form, allowing customized solid single-unit doses to be produced from various solid, liquid and semi-solid formulations. As the manufacture of the empty capsules and the subsequent filling and optional banding or sealing of the capsules are separate unit operations, a huge variety of applications is feasible. Those comprise the preparation of prescriptions in the public or hospital pharmacy, clinical trials, industrial development and production of finished products for the pharmaceutical and dietary supplement market. The successful development of a hard capsule product requires knowledge of the properties of filling materials and empty capsules as well as the proper choice of the filling process. Experts from university and industry will share their experience in the development of powder- and liquid/semisolid-filled hard capsules including combination products. Special focus will be on the different characteristics of commercially available empty capsules, challenges of liquid/semisolid formulations and particle engineering as a prerequisite for powder-filled oral capsules and dry powder inhalation products. Another focus is on the various types of capsule filling machines, the wide range of different filling technologies and innovations in process analytical technology systems. How to identify the most suitable processes for each pharmaceutical application as well as quality issues and troubleshooting in capsule handling and filling will be explained together with new simulation and modeling tools, use of digital twins and continuous manufacturing.

Speakers

- Thomas Brinz, Syntegon, Germany
- Sven Borchert, Pharma Technology, Switzerland
- Eva Faulhaber, RCPE Graz, Austria
- Gabriele Reich, University of Heidelberg, Germany
- Stephan Sacher, RCPE Graz, Austria

This seminar is limited to 24 participants!





Programm

Thursday, 14 November 2024, 13:00 - 18:00 h

Friday, 15 November 2024, 08:00 - 16:00 h

Welcome adress

Gabriele Reich and Thomas Brinz

1. Hard capsules – general aspects

- Versatility of the dosage form
- Market share and perspectives
- Gelatin versus non-gelatin hard capsules / Pros and cons
- Special intrinsic capsule shell properties, e.g. gastro-resistance
- Titanium dioxide substitutes

Gabriele Reich

2. Capsule manufacturers – actual trends and developments

N.N.

3. Capsule handling

- Continuous and intermittent motion machine types
- Automatic capsule handling process
- Trouble shooting in capsule handling

Thomas Brinz

4. Powder filling in capsules

- Material science & particle engineering for solid powders
- Filling technologies like tamping pin, dosator, and drum dosing
- Filling of low weights and low amounts
- Simulation and Modeling

Eva Faulhammer and Thomas Brinz

5. Dry powder inhalation products

- Material characteristics & particle engineering requirements for powder/solids
- Capsules for inhalation
- Inhalation process and devices
- Main challenges in filling powders for inhalation
- Simulation and Modeling

Eva Faulhammer

6. Liquid/Semisolid-filled Capsules

- Lipid-based formulations
- Challenges to transform a liquid/semisolid formulation into a single unit oral dosage form
- Rationales to decide between soft capsule and hard capsule technology
- How to select the appropriate capsule type
- Liquid Filling process
- Capsule sealing and banding process

Gabriele Reich and Thomas Brinz

7. Combination Products

- Advantages and limitations of fixed-dose combination products
- Hard capsules versus other dosage forms, e.g. tablets, soft capsules
- Filling of pellets, tablets and capsules in capsules
- Filling technologies for combination filling

Gabriele Reich and Thomas Brinz

8. PAT and Control strategies

- Quality-by-design (QbD) and Continuous Manufacturing
- Modeling, soft sensors and digital twins
- Process Analytical Technology (PAT) e.g., capacitive, NIR, μ -wave, X-ray and Control strategies

Stephan Sacher

9. Peripheral Equipment

- Feeding, polishing, dedusting, printing and final inspection of capsules

Sven Borchert

Location

Syntegon Technology GmbH
Stuttgarter Str. 130
71332 Waiblingen
Germany

Registration fee

Industry	1690 EUR
Authority/University	845 EUR
Students*	250 EUR

(free of VAT according to § 4,22 UStG)
Coffee breaks, luncheons, dinner and electronic proceedings included.

* Limited places for full time students available; written evidence must be submitted.

Registration

APV-Geschäftsstelle
Kurfürstenstraße 59
55118 Mainz/Germany
Phone: 0049 6131 97 69 0
E-mail: apv@apv-mainz.de
Web: www.apv-mainz.de

You will receive a confirmation of your registration with the invoice.

Hotelreservation

Best Western Plus Hotel Fellbach-Stuttgart
Tainer Str. 9
70734 Fellbach
Telefon: 0049 711 58590
mail: reservierung@bestwestern-fellbach.de

We kindly ask you to book your hotel room yourself directly at the hotel by phone or email.
We have blocked a contingent on the special rate of **114.00 € incl. breakfast and VAT. Reservation code: APV.** The rate is available until 09 October 2024.

Date

Course no.: 7007
from 14 November 2024 13:00 h
to 15 November 2024 16:00 h

Hard Capsules Advanced Seminar, 14 - 15 November 2024, Waiblingen, Course no. 7007

Registration

As soon as you have found a seminar of your interest, it is very easy to register for it via e-mail or online. We will process your registration promptly and certainly are available for any questions that may arise.

Registration confirmation

After your registration was successfully processed, you will receive a confirmation.

Before the event

A few days before the event starts, you will receive important information about the seminar, such as time, date, addresses etc.

After the event

You will receive a certificate confirming your participation. Furthermore, we would like to ask you to fill-in our evaluation sheet to make sure we get better every time.

Follow-up

After the event, we are open to receive any suggestions and critique that might arise during the seminar and will certainly help you with further questions you may have.

Declaration of consent in respect of data protection

By registering for this seminar, I agree that the APV uses my data for the purpose of processing the order and provides me with all relevant information.

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