

# APV Expert Workshop Tableting:

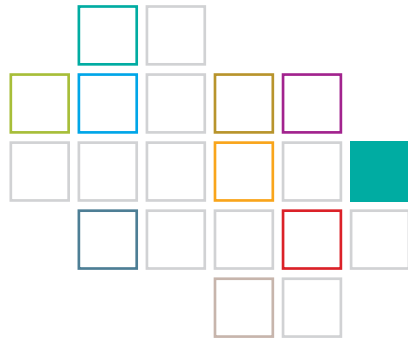
- Comparison of tablet presses for production and development based on different formulations
- Hands-on experiences
- Sound knowledge transfer by well-known speakers



26 – 27 April 2017  
Dortmund, Germany

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## Pharmaceutical Manufacturing Solid Dosage Forms

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Arbeitsgemeinschaft für Pharmazeutische Verfahrenstechnik e.V.  
Gemeinnütziger wissenschaftlicher Verein  
International Association for Pharmaceutical Technology



A workshop organised by the focus group Solid Dosage Forms

## Programme

Wednesday, 26 April 2017, 09:00 - 19:00

### Welcome address and house keeping information

Markus Thommes  
Technical University Dortmund, Dortmund, Germany

### Aspects on tablet formulation

- Categories and quality attributes of tablets
  - Tablet excipients
  - Drug release from immediate release and prolonged release tablets
  - Formulation aspects of immediate release and prolonged release tablets
  - Unit operations and manufacturing routes
- Göran Alderborn  
University of Uppsala, Uppsala, Sweden

### Assessment of the mechanical properties of compacted API, Excipients and Tablets

- Mechanical properties of materials
  - Characterization Methods
  - Hiestand Indices Approach
  - Amidons Prediction Model
  - Compaction Simulation as a characterization tool
- Felipe Amado Becker  
F. Hoffmann-La Roche AG, Basel, Switzerland

### Practical course part I with experiments on machines in small groups

#### Physics of powder compression and compaction

- Powder compressibility and compression mechanisms
  - Analytical powder compression
  - Assessment of friction during powder compression
  - Bonding in tablets and tablet mechanical strength
  - Powder compactibility
- Göran Alderborn  
University of Uppsala, Uppsala, Sweden

### Investigation of process-induced transformations in formulation matrix

- Solid form diversity & need for understanding solid form changes
  - Formulation aspects affecting phase transformation behaviour of API during drug product manufacturing processes
  - Experimental designs for the investigation of phase transformations during various unit operations of tablet manufacturing processes:
    - Dry granulation
    - Tableting
  - Case studies
- Dhara Raijada  
F. Hoffmann-La Roche AG, Basel, Switzerland

### Minitablets

- Definition and classification
  - Toolings
  - Differences to larger tablets
  - Application studies
- Ines Wening  
Mundipharma Research GmbH & Co. KG, Limburg, Germany

### Reliable Data Acquisition in Tableting

- State-of-the-art sensor technology for force (strain gage vs. piezo) and displacement (inductive vs. incremental)
  - Installation aspects and traps in real world
  - Basic steps to data analysis
  - Dynamic aspects on production presses
  - Calibration and plausibility checks
- Mathias Hucke  
Hucke Software, Solingen, Germany

### Practical course part II with experiments on machines in small groups

# APV Expert Workshop Tableting

Thursday, 27 April 2017, 08:00 - 16:00

## Practical course part III with experiments on machines in small groups

### Compaction simulators - do I really need one?

- Concepts and essentials
- Purpose and limitations
- Comparison: StylOne, Flexitab, Fette 102 i

Karl Gerhard Wagner

Rheinische Friedrich-Wilhelms-University, Bonn, Germany

### Predictability of tablet properties

- Chemometrics
- PCA
- Modelling

Annette Bauer-Brandl

University of Southern Denmark, Odense, Denmark

### Different Concepts: Tableting Machines

- Different Machine Types/Concepts
- Machine Concepts for Different Tablet Types
- Machine Concepts: Normal Products/ HAS Products
- Installation Concepts for Tableting Machines and Subequipment
- Outlook: Future Trends

Michael Dorn

F. Hoffmann-La Roche AG, Basel, Switzerland

### Evaluation of the results of the practical demonstrations

Peter Kleinebudde

Heinrich Heine University Düsseldorf, Düsseldorf, Germany

### Summary of practical course and short presentations of the vendors

Programme is subject to change

## Chairmanship

Annette Bauer-Brandl

University of Southern Denmark

Peter Kleinebudde

Heinrich Heine University Düsseldorf

Markus Thommes

Technical University Dortmund

## Objectives

Tablets are the most important and most common form of medicine worldwide.

In the past few years scientific knowledge has emerged, especially in the field of tablets, which allows us to turn from the "art of tableting" to a knowledge-based development and production of tablets. On this basis the participants will be offered the basics of formulation development and the production of tablets.

In small groups the internship is conducted under the supervision of experienced instructors on various tablet machines ranging from production to development presses. Each participant will actively participate in trials for the production of tablets and various methods for their characterization. On the basis of selected examples, typical approaches and solutions are shown, which are subsequently discussed in detail.

At the end of the course, the participants should have basic knowledge about the solution of tableting tasks.

The focus is on the natural sciences and engineering aspects of tableting. Regulatory aspects, such as cleaning or validation are not dealt with.

Dedicated lectures dealing with:

- Formulations
- Mechanical properties
- Compression and compaction theory
- Process induced transformations
- Minitablets
- Data acquisition
- Compaction simulators
- Predictability of tablet properties
- Technical concepts of tablet presses

## Target Group

Addressed to everybody who wants to gain insight into theory and practice of tableting during development, production, and quality control. The course is targeted at academic staff and experienced laboratory or manufacturing employees who seek a better understanding of processes, formulations and their interactions in order to gain an overview of tableting issues.

## Location

Lab-Course:  
Technische Universität  
Dortmund  
Emil-Figge-Str. 68  
44227 Dortmund

Lectures:  
Technologie Zentrum Dortmund  
GmbH  
Emil-Figge-Str. 76-80  
44227 Dortmund

I herewith revocably authorise  
APV to use my E-mail address to  
send me APV relevant material  
including current programme  
information. My acceptance can  
be cancelled at any time in writing

## Date

Course no. 6681  
from 26 April 2017 09:00 h  
to 27 April 2017 16:00 h

## Registration fee

Industry	1690 EUR
Authorities	845 EUR
Students*	178 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: +49 6131 9769-0  
Fax: +49 6131 9769-69  
e-mail: apv@apv-mainz.de

## Hotel reservation

IBIS Dortmund West  
Sorbenweg 2  
44149 Dortmund  
Phone +49 231 9695-0  
Fax +49 231 9695-444

Special rate:  
Single room incl. breakfast buffet from 81 EUR per night.

NH Dortmund  
Königswall 1  
44137 Dortmund  
Phone +49 231 9055-0  
Reservations +49 30 22388599

Special rate:  
Single room incl. breakfast buffet from 119 EUR per night.

Participants should make their own hotel reservation referring to the APV seminar.

Deadline for special conference rate: 14 March 2017.

Mainz, January 2017

## APV Expert Workshop Tableting, Course no. 6681

### Registration

As soon as you have found a seminar of your interest, it is very easy to register for it via fax, 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 we will certainly help you with further questions you may have.

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