

# TTC TECHNOLOGY TRAINING CENTER

Workshop 240

## **GRANULATION & TABLETING PROCESS**

Innovative process and tools to achieve the perfect OSD product. 17 – 19 April 2018



## WHY PARTICIPATING?

This workshop on granulation and tableting is a perfect combination of theory, practical demonstrations and case-studies.

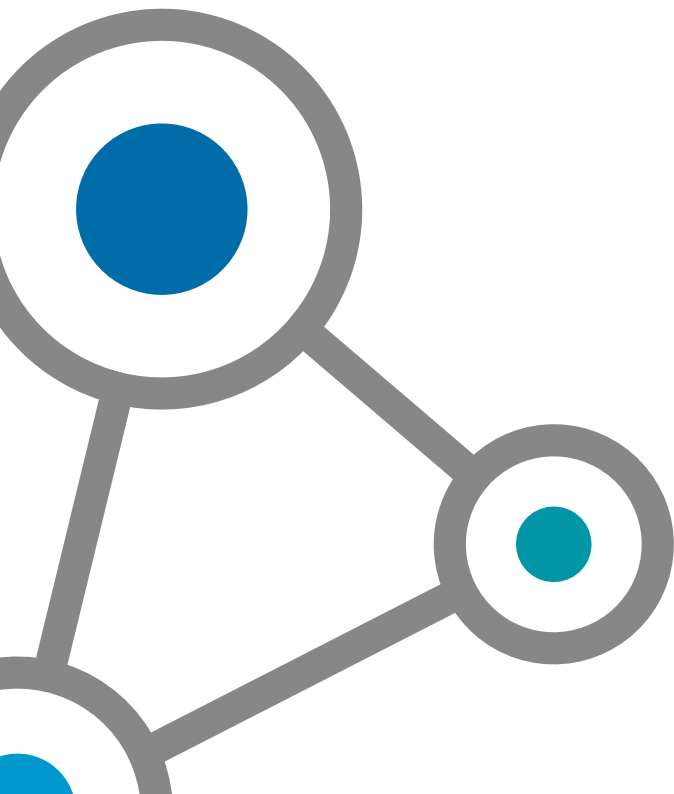
The workshop provides the basics of granulating and compacting and outlines their applications in the powder processing industry.

This workshop is the perfect investment for those who wish to acquire knowledge of the various methods of granulation and compaction.

## WHO SHOULD PARTICIPATE?

Typically, operators and researchers from the pharmaceutical and related industries and academia will profit from this workshop.

However, the workshop is also perfectly suitable for those who want to get a detailed overview of granulation and compaction methods in a short period of time.



## PROGRAM

### TUESDAY, 17 APRIL 2018

11:45 Transfer from hotel to TTC

12:00 Reception and registration, snack buffet

12:30 Introduction. [Andreas Gottschalk](#)

12:45 **Principles of granulation.** Explaining the principles of granulation processes, the physiochemical fundamentals and basic manufacturing operations ranging from low to high-shear processing and from wet to dry granulation. [Markus Thommes](#)

14:00 **High Shear & Fluid Bed Granulation : From theory to application.** Presenting an overview on fundamentals of dry granulation via roller compaction. Furthermore, important process parameters and their influence on product quality are discussed. [Jochen Thies](#)

14:45 Coffee break

15:15 **Inline particle size measurement in fluidized bed coating for agglomerate detection and process control.** Fluidized bed coating of large and small pellets in laboratory scale with model drug and polymer in two steps. Process control by in-line particle size and coating layer thickness measurement as PAT tool. Detection of undesirable agglomeration for process intervention and product quality maintenance. [Bertram Wolf](#)

16:00 **Continuous high-shear granulation.** Unveiling the possibilities of continuous high-shear granulation and explaining how to better control the product specifications. [Gabrie Meesters](#)

16:45 **PAT case study:** Continuous processing and on-line measurement of particle size and distribution. [Mike Mulcahy](#)

17:30 Transfer to hotel

19:30 Workshop Dinner

### WEDNESDAY, 18 APRIL 2018

08:40 Transfer from hotel to TTC

09:00 **Principles of tableting.** Explaining the principle of tableting, incl. most important galenic forms, basic manufacturing operations and role of excipients during processing. [Markus Thommes](#)

10:00	<p><b>Applying different fluidized bed spraying configurations and their impact on granule and tablet quality.</b> Comparing tangential, top and bottom spray granulation processes and discussing the resulting tablet characteristics. <b>Norbert Pöllinger</b></p>
10:45	<p><b>Coffee break</b></p>
11:15	<p><b>Paediatric dosage forms.</b> Covering the principles of galenic formulation and manufacturing processes in the light of regulatory and technical feasibility, highlighting newest trends. <b>Norbert Pöllinger</b></p>
12:00	<p><b>Lunch</b></p>
13:00	<p><b>Twin screw extrusion in pharmaceutical applications.</b> Using the twin screw extrusion technique is becoming more and more common in today's pharmaceutical formulations. The most prominent applications are wet granulation and melt extrusion. Both applications will be introduced and case studies discussed. <b>Dirk Leister</b></p>
13:45	<p><b>From micro to commercial scale - a look at real world equipment.</b> Discovering the variety of state-of-the-art fluidized bed systems for dedicated applications, factory tour. <b>Sales Team</b></p>
14:45	<p><b>Coffee break and transfer to Innovation Center</b></p>
15:00	<p><b>Hands-on demonstration in tableting and fluidized bed processes.</b></p> <ul style="list-style-type: none"> <li>- <b>Fluidized bed granulation</b> in batch-mode with a tangential spray setup</li> <li>- <b>Coating of mini-tablets</b> in a fluidized bed with a Wurster setup</li> <li>- <b>ProCell™</b> continuous fluidized bed granulation</li> <li>- <b>MODCOS wet granulation/drying</b> A modular continuous processing solution</li> <li>- <b>MODCOS direct compaction</b> - from powder to tablet</li> </ul> <p style="text-align: right;"><b>Lilia Sprich &amp; Team Innovation Center</b></p>
17:00	<p><b>Transfer to hotel</b></p>
19:00	<p><b>Workshop dinner</b></p>

## THURSDAY, 19 APRIL 2018

08:40 Check-out from hotel and transfer to TTC

09:00 **Compression of film-coated pellets - key parameters for optimal tablet quality.** Highlighting all relevant factors and their influence on both, drug release and overall tablet production requirements, to enable a fast start in developing multiple unit pellet systems in tablet form. [Karl-Gerhard Wagner](#)

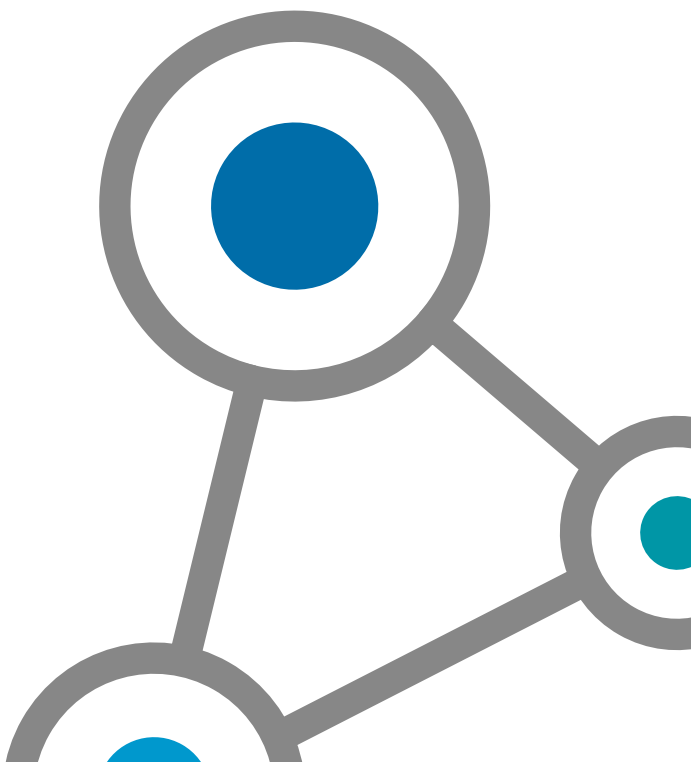
10:00 **Overview of excipients for granulation and tableting.** Providing an insight into the common excipients for tableting and the various fluidized bed processes such as granulation, pelletization and coating. [Paul Smith](#)

10:45 Coffee break

11:15 **GMP compliant cleaning of pharmaceutical equipment.** Outlining points to consider for the optimized cleaning of equipment in the pharmaceutical industry, including regulations, cleaning parameters, cleaning procedures and hygienic design. [Jochen Berger](#)

12:00 Summary and snack buffet

12:30 Transfer to Basel, German Railway Station (Badischer Bahnhof), Basel, Swiss Railway Station (SBB) and EuroAirport



## SPEAKERS

Jochen Berger	Ecolab (Schweiz) GmbH, Switzerland
Dirk Leister	ThermoFisher Scientific, Germany
Dr. Gabriele Meesters	DSM Food Specialties, The Netherlands
Mike Mulcahy	Innopharma Labs, Ireland
Dr. Norbert Pöllinger	Glatt GmbH, Germany
Dr. Paul Smith	Colorcon, United Kingdom
Lilia Sprich	Glatt GmbH, Germany
Prof. Dr. Markus Thommes	Technische Universität Dortmund, Germany
Dr. Jochen Thies	Glatt AG, Switzerland
Prof. Dr. Karl-Gerhard Wagner	Universität Bonn, Germany
Prof. Dr. Bertram Wolf	Hochschule Anhalt, Germany

## MODERATION

Andreas Gottschalk, Technology Training Center, Germany

## DETAILS

- >> The participation fee is € 1.490,- (exclusive of VAT).
- >> This fee includes participation, accompanying course notes, daytime catering and dinner. Any other expenses are to be borne by the attendee.
- >> Free attendance granted to a limited number of students.
- >> Participation is limited. Registrations will be confirmed on a first come first serve basis.
- >> Courses taking place in Germany are subject to Value Added Tax (VAT).
- >> Each participant will receive a certificate of attendance at the end of the course.
- >> **Registration deadline: 01 March 2018**

## ORGANIZATON AND LOCATION

### TTC - Technology Training Center

Regina Bernstein / Andreas Gottschalk / Bianca Nowak

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For further information or online registration please visit us on

[www.ttc-binzen.de](http://www.ttc-binzen.de)

## REGISTRATION

Workshop:

### GRANULATION & TABLETING PROCESS

17 – 19 April 2018

Name

Company

Department

Function

Address

Phone

Fax

E-mail

Yes, I want to receive information about future TTC workshops.

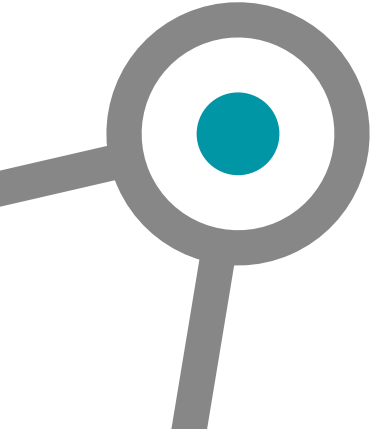
Signature

Accomodation required from

Check-in day:

Check-out day: \_\_\_\_\_ = \_\_\_\_\_ nights

(Approx. 100,00 €/night incl. breakfast)



## **Technology Training Center**

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