

# LYOSCOPIEDIA<sup>®</sup>

THE FREEZE DRYING SEMINAR

< Basics & New Research Trends 2018 >

Thursday, March 8<sup>th</sup>



*„Advance Through Networks“*

# AGENDA

(Thursday, March 8<sup>th</sup> 2018)

## LYOSCOPEDIA®

THE FREEZE DRYING SEMINAR

Moderator: Dr. Henning Gieseler

08:15 – 08:30	<b>Welcome and Introduction</b>	<b>Dr. H. Gieseler</b> GILYOS GmbH & Freeze Drying Focus Group
<b>Morning Session: “Fundamentals of Freeze Drying” &amp; “Innovations”</b>		
08:30 – 09:15	<b>Fundamentals (Part 1)</b> Introduction; physical concept behind freeze drying; design of a freeze dryer; formulation and role of excipients; physicochemical properties of materials.	<b>Dr. H. Gieseler</b> GILYOS GmbH & Freeze Drying Focus Group
09:15 – 09:30	<b>Coffee Break *</b>	
09:30 – 10:15	<b>Fundamentals (Part 2)</b> Basics of freezing; primary drying; heat and mass transfer principles; conventional end-point monitoring tools; secondary drying step.	<b>Dr. H. Gieseler</b> GILYOS GmbH & Freeze Drying Focus Group
10:15 – 10:30	<b>Coffee Break *</b>	
10:30 – 11:15	<b>New Products and Innovations in Freeze Drying: Where are We Now, Where Do We Want to Go?</b> Review of the most recent (2-3 years) innovations in freeze drying technologies and related supplies; special attention will be paid on process analytical tools (PAT), freeze dryers and analytics.	<b>Dr. M. Gieseler</b> GILYOS GmbH
11:15 – 12:30	<b>Question &amp; Answer Section; Lunch Break; Poster &amp; Equipment Session *</b>	
<b>Afternoon Session: “Current Research Trends in Freeze Drying”</b>		
12:30 – 13:10	<b>Improved Understanding of Product Behavior Using a Complementary Thermal Analysis Approach: LT-FDM and FDVS</b> Use of Light-Transmission Freeze Dry Microscopy (LT-FDM) and Freeze Drying Vial System (FDVS); procedures to determine the collapse temperature, T <sub>c</sub> ; comparison between T <sub>oc</sub> and T <sub>vc</sub> (FDVS); etc.	<b>X. Huang</b> Freeze Drying Focus Group
13:10 – 13:50	<b>Use of a Mini-Freeze Dryer to Optimize Process and Product Development: Opportunities and Challenges</b> Preliminary testing results of a mini-freeze dryer, denoted as “LyoCapsule”; opportunities for product development, process optimization & scale-up / scale-down; merits and demerits.	<b>Dr. A. Braun</b> GILYOS GmbH
13:50 – 14:30	<b>Nucleation Control Technologies in Commercial Freeze Drying: Different Means to the Same End?</b> Review and discussion of various techniques currently available on the market; status in pharmaceutical industry; regulatory concerns; etc.	<b>T. Wenzel</b> GILYOS GmbH & Freeze Drying Focus Group
14:30 – 15:15	<b>Question &amp; Answer Section; Coffee Break; Poster &amp; Equipment Session *</b>	
15:15 – 15:45	<b>Understanding Heat Transfer in Vial Freeze Drying: More Than Just Molded vs. Tubing Vials</b> Design features of molded and serum tubing vials; special focus on heat transfer; vial heat transfer coefficient (Kv), its relevance for freeze drying; examples of vial geometry optimization and impact on Kv.	<b>T. Wenzel</b> GILYOS GmbH & Freeze Drying Focus Group
15:45 – 16:15	<b>PAT in Freeze Drying: MTM and Smart™ Freeze Dryer and Its Possible Future Alternatives</b> Manometric Temperature Measurement (MTM) as a Process Analytical Tool (PAT) for freeze drying; concept, limitations and future alternatives; etc.	<b>Dr. A. Braun</b> GILYOS GmbH
16:15 – 17:00	<b>Freeze Drying from Organic Co-Solvent Systems</b> Process design & performance when freeze drying from co-solvents; product quality attributes; strategies to reduce residual solvents in the final product; merits and demerits; practical examples; etc.	<b>J. Kosan</b> Freeze Drying Focus Group
17:00 – 18:00	<b>Question &amp; Answer Section, Poster &amp; Equipment Session; Wrap-up &amp; End of Seminar *</b>	

\* Possibility to view selected demo equipment, visit poster exhibition and discuss specific questions with seminar speakers.

# REGISTRATION FORM PAGE 1

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THE FREEZE DRYING SEMINAR

### Your Contact Information:

Mr.  Ms.  Dr.  Prof.

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_

Company: \_\_\_\_\_

Department: \_\_\_\_\_ E-Mail: \_\_\_\_\_

Street: \_\_\_\_\_ ZIP: \_\_\_\_\_

City: \_\_\_\_\_ Country: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

### Your Detailed Billing Address:

\_\_\_\_\_  
\_\_\_\_\_

Company VAT-ID: \_\_\_\_\_

Please state VAT ID number if European-based Company. The number starts with your country code.

Three simple ways to register. Please send the completely filled out form / purchase order to:

E-Mail:	Fax:	Mail:
Attn: Alexandra Braun <a href="mailto:registration@lyoscopedia.com">registration@lyoscopedia.com</a>	0049 931 90705679	FAU Erlangen-Nuremberg Division of Pharmaceutics Attn.: Dr. H. Gieseler Cauerstrasse 4, Haus 6 91058 Erlangen, Germany

I would like to participate on the above mentioned seminar and confirm my registration bindingly. With my signature, I also confirm that I have read, understood and accept the Terms & Conditions as outlined on Page 2 of this registration form.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

# REGISTRATION FORM PAGE 2

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### TERMS & CONDITIONS

1. The seminar will only be performed when a **minimum number (15)** of participants are registered for the above mentioned course.
2. The **seminar fee** is **780 EURO** excluding VAT. **Companies outside of Germany** (but within the EU) must state / provide their **VAT ID number** to benefit from the EU VAT exception regulations.
3. Once you have registered, a confirmation will be sent to you by email. **The payment is immediately due**. Only when the full payment is received, your participation is guaranteed. **Bank fees** related to wire transfers outside of Germany **must be paid by the registrant**.
4. The seminar fee includes the **one-day seminar on March 8<sup>th</sup>**, a **seminar binder** with quality b/w printouts of the talks, **lunch buffet** at the day of the seminar and a **joint dinner in the evening of March 7<sup>th</sup>** (Select Hotel Erlangen, Tennenlohe, cf. next page). The **seminar fee does not include any hotel accommodation** which must be separately organized by the participant.
5. The venue of the seminar is the "**Select**" hotel, located at **Wetterkreuz 7** in **D-91058 Erlangen** (website: <http://erlangen.select-hotels.eu/en>). We have reserved a limited number of **single bedrooms** for the night of March 7<sup>th</sup> until March 8<sup>th</sup>. For details, please contact the hotel directly and mention "**LYOSCOPIEDIA 2018**" to make your reservation. Alternative hotel accommodations are available in the immediate area (e.g. Ibis Budget, B&B, etc.).
6. If you are unable to attend, **substitutions are welcome**. Indicate that you are a substitute attendee by contacting us ideally well before the seminar. Alternatively, you may approach us directly at the day of the seminar.
7. Our **cancellation policy**: Cancellation of your registration is possible **until February 23<sup>th</sup> EoB**. In this case, a **processing fee of 150 €** will be charged. In case the participation is cancelled **after February 23<sup>th</sup>, 2018, the full seminar fee is due**. If you are an unregistered participant and want to attend the event, the seminar fee is charged in cash. On-site registrants are, however, not guaranteed to receive conference materials on the same day.
8. The **organizers (GILYOS, University of Erlangen)** **reserve the right to modify the seminar agenda or announced speakers without notice**, or to cancel the event. If an event must be cancelled, registrants will be notified by the organizers as soon as possible and will receive a full refund of the registration fee. The **organizers will not be responsible for airfare penalties or other costs incurred due to cancellation**.

# REGISTRATION FORM PAGE 3

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THE FREEZE DRYING SEMINAR

### A Comprehensive Overview

#### The Dates

##### Wednesday, March 7<sup>th</sup>

- 19:00:** Reception for all seminar attendees at the hotel bar of the Select Hotel Erlangen.  
**20:00:** Joint dinner in the "Kärntnerstuben" of the hotel.

##### Thursday, March 8<sup>th</sup>

- 08:00:** Meeting of all participants in the (signposted) seminar room.  
**08:15:** Start of the seminar.  
**18:00:** End of the seminar.

#### The Venue (accommodation, joint evening dinner and seminar)

Select Hotel Erlangen  
Wetterkreuz 7  
91058 Erlangen, Germany  
Phone: +49 9131 608 - 0  
Email: [empfang.erlangen@select-hotels.com](mailto:empfang.erlangen@select-hotels.com)  
URL: <http://erlangen.select-hotels.eu/en>

Your contact in the hotel: Jaqueline Zessinger  
(please mention "LYOSCOPEDIA 2018" when making reservations)

#### How to Get There

- By car:** A3, exit „Erlangen-Tennenlohe“ to B4, direction Erlangen; take first exit on B4; turn left to enter the hotel's car park.
- By train:** From Nuernberg or Erlangen main stations, take taxi to hotel (approximate travel time: 25 min from Nuernberg, 15 min from Erlangen).
- By air:** From Nuernberg airport (NUE), take taxi to hotel (approximate travel time: 15 min).