

GENERAL INFORMATION

CONFERENCE DESCRIPTION

Researchers from all areas of freeze drying of pharmaceuticals and biologicals converge to discuss emerging technologies, alternatives to conventional freeze drying, mathematical modelling of freeze drying, formulation science and materials characterization, and best practices in freeze drying operations. Networking and information exchange are enhanced by the relaxed setting, social events, and focused fellowship.

Short Course: Fundamentals of a Pharmaceutical Freeze-Drying
Steve Nail and Greg Sacha, distinguished researcher in the science of freeze drying, present a short course primarily intended for those new to the subject, giving insight into basic physics of freeze drying, process monitoring, materials characterization, formulation science and more, spiced with personal anecdotes from many years of practical experience.

Social event evening at Gasthaus Schatten
Wednesday, September 19, 7:00 p.m. – 11:00 p.m.

HOTEL REGISTRATION

A limited contingent of hotel rooms is reserved at a special rate at the **Dorint Sporthotel** (where the conference and the short course take place). The reserved block of rooms for the conference will only be held until **June 25, 2018**. Requests for accommodations after this date will be subject to availability. **Please make reservations directly at the hotel and refer to our reservation contingents.**

Dorint Resort
Mittenwalder Str. 59 | 82467 Garmisch-Partenkirchen, Germany
Phone +49 8821 706 603 | www.dorintresorts.com
Keyword: Freeze Drying Conference

CONFERENCE REGISTRATION



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VENDORS / EXHIBITORS

Vendors/Exhibitors are welcome, please contact directly W. Friess or G. Winter. We offer packages including space at the exhibition, a slot for a company presentation, and one or more participants in the conference/short course.

ORGANIZING COMMITTEE

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For online registration please visit

www.lyo-garmisch.de

Program



FREEZE DRYING OF PHARMACEUTICALS & BIOLOGICALS

SHORT COURSE AND CONFERENCE

September 18–21, 2018

Dorint Hotel
Garmisch-Partenkirchen, Germany



www.lyo-garmisch.de



TUESDAY, SEPTEMBER 18

- 12:30- **An Introduction to Pharmaceutical Freeze Drying - I**
16:30 A short course in the basics taught by Steve Nail and Greg Sacha. This course is primarily intended for those new to the subject

WEDNESDAY, SEPTEMBER 19

- 08:30- **An Introduction to Pharmaceutical Freeze Drying - II**
11:30 A short course in the basics taught by Steve Nail and Greg Sacha. This course is primarily intended for those new to the subject
11:00 **Conference Registration and Welcome Reception**

MATERIALS CHARACTERIZATION AND FORMULATION SCIENCE

- 12:30 Introduction
12:50 **Keynote**
The Importance of Lyophilization in Space Research
Moogega Stricker, NASA
13:30 Water in Lyophiles Re-Visited: Plasticizer, Protein Folding Enabler, Catalyst
Evgenyi Shalaev, Allergan
14:00 Exploring Phase Separation and Mobility in Lyophilized Formulations Using Solid-State NMR Spectroscopy
Eric Munson, University of Kentucky
14:30 **COFFEE BREAK / EXHIBITION**
15:00 Mechanisms of Protein Stabilization Analyzed from In-Situ Raman Investigations during Freeze-Drying Procedures
Alain Hedoux, University of Lille
15:30 Not Only Sugar: Amino Acids in Freeze-Drying of Proteins
Wolfgang Frieß, University of Munich
16:00 Reconstitution Time for High Concentration Lyophilized Protein Formulations: What is Acceptable?
Sajal Patel, MedImmune
16:30 Biopreservation of Cells and Tissues by Freeze-Drying: Applications in Regenerative and Reproductive Medicine
Wim Wolkers, University of Hannover
17:00-17:30 Guided panel discussion
19:00-23:00 **SOCIAL EVENT EVENING** at Gasthaus Schatten

THURSDAY, SEPTEMBER 20

DEVELOPING TECHNOLOGY AND ALTERNATIVES TO CONVENTIONAL FREEZE DRYING

- 08:30 Exploring New Opportunities beyond Vial Freeze-Drying: Aseptic Spray Freeze-Drying and Foam Drying of Complex Biologicals
Serguei Tschessalov, Pfizer
09:00 Gentle Microwave Freeze-Drying of Sensitive Biomolecules
Gerhard Winter, University of Munich;
Ingo Presser, Boehringer Ingelheim;
Ulrich Kulozik, Technical University of Munich
09:40 Introduction to the Exhibition
10:30 **COFFEE BREAK / EXHIBITION**
11:30 Continuous and Controlled Freeze-Drying for Unit Doses
Jos Corver, RheaVita
12:00 A New Concept for the Continuous Freeze-Drying of Pharmaceutical Products in Unit Doses
Roberto Pisano, Politecnico Torino
12:30 **LUNCH / POSTER / EXHIBITION**

PROCESS DESIGN

- 15:00 Impact of Natural Variations in Ice Nucleation Temperature and Vial Position on Drying Time, Collapse, and Protein Stability: Theoretical Analysis and Experimental Studies
Mike Pikal †; Robin Bogner, University of Connecticut
15:30 The Effect of Cooling Rate on Undercooling in Industrial Setting
Greg Sacha, Baxter
16:00 Comparison of Controlled Nucleation Techniques
Andrea Allmendinger, Roche
16:30 Guided panel discussion
17:00-19:30 **WINE AND CHEESE RECEPTION**
POSTER / EXHIBITION

FRIDAY, SEPTEMBER 21

PROCESS CONTROL, MONITORING AND SCALE UP

- 08:30 Combining MEMS and CFD Technologies for Lyophilization Process Understanding and Control
Alina Alexeenko, Purdue University
09:00 Application of Tunable Diode Laser Absorption Spectroscopy as a Process Analytical tool for Lyophilization
Puneet Sharma, Genentech
09:30 Predictive Models of Lyophilization Process for Development, Scale-up/Tech Transfer and Manufacturing
Madeleine Witting, AbbVie
10:00 **COFFEE BREAK**
10:30 Multiplexing 'Single-Vial' Process Analytical Technologies for the Prediction of Ice Interface Temperatures and Drying Rates
Geoff Smith, De Montfort University Leicester
11:00 Infrared Thermography: an Effective PAT for Freeze-Drying Monitoring
Davide Fissore, Politecnico Torino
12:00 Mass Spectrometry in Freeze-Drying: Motivations for Using a Bespoke PAT in Laboratory and Production Environment
Arnab Ganguly, IMA Life
12:30 **Guided panel discussion and Closing**
13:00 **LUNCH**

