

FREEZE DRYING TECHNOLOGY: A PRACTICAL GUIDE TO PROCESS DEVELOPMENT

4-5 JUNE, 2025

WINCHESTER, UNITED KINGDOM



Course overview

This course, 80% classroom-based and 20% laboratory-based, offers an in-depth understanding of freeze drying theory and practice. It covers formulation design and characterization, freezing and sublimation fundamentals, and Process Analytical Technology (PAT), along with product analysis and Quality by Design (QbD). Laboratory sessions provide opportunities to observe analytical techniques, explore practical aspects of freeze-drying equipment, and discuss cycle design strategies, bridging theory with real-world applications for a detailed learning experience.

Suitable for industries including:

- ✓ Pharma R&D to Production
- ✓ Diagnostics
- ✓ Lyo Processing & Production
- ✓ Biotechnology
- ✓ Cytotoxics

What is covered in the price?



Over 12h of freeze drying content



Printed learning materials (full lectures notes)



Lunch & Refreshments



Course schedule

Day 1: Fundamentals of Freeze Drying



Start the course with a comprehensive introduction to freeze-drying technology, exploring the principles behind product freezing, including controlled nucleation, and the science of primary and secondary drying. Delve into the key aspects of formulation design and characterization methods, highlighting their importance in successful lyophilization. Gain insights into process monitoring and analytical technologies, which are critical for optimizing freeze-drying processes. The day concludes with a hands-on group activity, evaluating the appearance of lyophiles and applying theoretical knowledge to practical observations.

Day 2: Advanced Techniques and Product Analysis



Day 2 builds on foundational knowledge, focusing on cycle development through both classical iterative approaches and modern Quality by Design (QbD) strategies, including SMART software. Understand how to scale up processes and ensure robustness, followed by sessions on advanced product analysis techniques, such as moisture content measurement, thermal analysis, and evaluation of appearance, structure, and mechanical properties. The afternoon is dedicated to a detailed laboratory session, split into two parts, where participants gain practical experience with freeze-drying processes. The course concludes with a final wrap-up and Q&A session, providing an opportunity to solidify learnings and address specific challenges.

****Course agenda available upon request****



Dr. Edmond Ekenlebie

Edmond joined Biopharma in 2014 as a Senior Scientist after earning a PhD from Aston University and an MSc in Pharmaceutical Science with Management from Kingston University. A licensed pharmacist since 2006, he previously managed roles as a Locum and Superintendent Pharmacist while running a nutraceuticals business. Dr. Ekenlebie now provides consultancy, training, and conference expertise to clients globally, staying active in research.

Mervyn Middleton

After earning a BSc (Hons) in Biochemistry from the University of Portsmouth in 2009, Mervyn joined Biopharma Group where he worked through to 2015, gaining expertise in product analysis and freeze drying cycle development. Returning in 2021 as a Senior Scientist, Mervyn has worked on over 50 projects, including pre-lyophilised and lyophilised product characterisation, formulation development, freeze drying cycle optimisation, process auditing, and consultancy across all stages of lyo development and scale-up.

Dr. Kevin Ward

Kevin joined Biopharma Group in 2000. As R&D Director, he has built up a team of dedicated freeze-drying scientists, worked on over 4000+ projects for more than 500 client companies across the globe, developed 3 analytical instruments, run more than 400 training courses, and successfully secured funding for numerous collaborative research projects.

Registration

Use our online form to register for this training courses. We will contact you to confirm payment details, number of attendees and course choice.

Please note that multiple bookings from the same organisation can qualify for a discount, contact us for more details.

BOOK YOUR SPOT



Accomodation

Please note that the cost of accommodation is not included in the course fee and that bedroom bookings must be made by the participants. A list of local hotels will be provided with the registration confirmation.

Cost: £1,800

Early Bird Rate: £1,530
(deadline April 22nd 2025)

Contact us

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