

FREEZE DRYING TECHNOLOGY: PROCESS DEVELOPMENT IN PRACTICE

24-26 MARCH, 2026
WINCHESTER, UNITED KINGDOM



Course overview

This course offers an opportunity to combine class-based learning with a significant practical element, where approximately 40% of the time will be spent carrying out hands-on freeze drying and related analytical techniques in the laboratory.

The class-based element covers the journey from formulation design and characterisation, through the fundamentals of freezing and sublimation and related Process Analytical Technology (PAT), to aspects of product analysis and Quality by Design.

The laboratory-based sessions will include freeze drying microscopy, differential scanning calorimetry and impedance analysis of a simple formulation - the data are then used to create a freeze drying cycle, which is completed during the course.

What is covered in the price?



18h of freeze drying content



Printed learning materials (full lectures notes)



Lunch & Refreshments



Joint dinner with training participants

Suitable for industries including:

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

Course schedule

Day 1: Fundamentals & Formulation in Freeze Drying



Get introduced to freeze drying with key concepts in freezing, drying stages, and formulation fundamentals. Dive into hands-on lab sessions with advanced tools like Lyostat 5 for freeze drying microscopy and Lyotherm 3 for frozen-state analysis, building a strong scientific foundation in formulation characterisation.

Day 2: Cycle Development & Process Monitoring



Explore both classical and software-driven approaches to cycle development, including SMART® and ControLyo™ technologies. Participants will engage in lab sessions covering preparation, loading, and real-time cycle monitoring. The day closes with a group evaluation on lyophile appearance, reinforcing practical cycle development skills.

Day 3: Advanced Product Analysis & Cycle Termination



Focus on analysing freeze dried products with techniques for assessing residual moisture, thermal properties, and structural integrity. Lab sessions emphasize hands-on analysis using MDSC, KF titration, and structural testing with MicroPress, concluding with a Q&A session for a comprehensive wrap-up.

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

About our instructors

Dr. Bhaskar Pandya



Bhaskar joined Biopharma Group in 2021 as a Senior Scientist after earning a PhD on single-vial freeze drying monitoring using vial impedance spectroscopy (TVIS) at De Montfort University, UK. At Biopharma's Winchester lab, Bhaskar manages collaborative pharma and diagnostics projects and provides consultancy for new and existing products. He also holds a Master's by Research (MRes) from University College London, enhancing his expertise in the field.

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 lyo 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.

Venue information

Biopharma House, Winnall Valley Road
Winchester, SO23 0LD, United Kingdom

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



Accommodation

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: £3,220

Early Bird Rate: £2,720

Deadline: 11th February 2026

Contact us

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