



FREEZE DRYING THEORY & HANDS-ON WORKSHOP

2021
UCL, LONDON

Department of Biochemical Engineering



Freeze Drying Theory & Hands-on Workshop

£595

**Lyophilisation Fundamentals :
Formulation, Process, Containers & Analysis**



Freeze Drying using the Design of Experiments (DoE) Approach



Hands-on Introduction to the SP Scientific Lyostar3: Operation & Instrumentation:



- ControLyo
 - SMART
 - TDLAS
- Review of historical data
- Software programming
- Utilising the sample thief



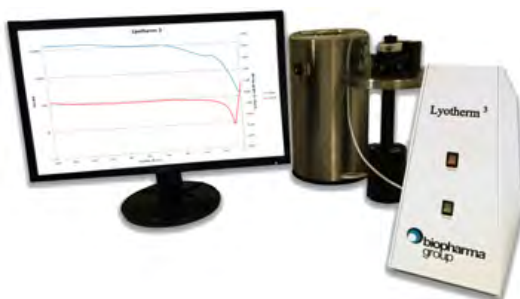
Demonstration of Lyostat Freeze Drying Microscope:

- Set-up
- Loading a sample
- Running a microscopy experiment
 - Creating a results video



Demonstration of Lyotherm DTA/ Impedance Analyser:

- Setting up a sample



TIMETABLE
University College
London

START	END	LECTURE	TITLE	DURATION	PRESENTER
08:30	09:00		<i>Arrival and registration</i>	30	
09:00	09:15	U00	Welcome and Introduction Welcome, introduction to course presenters and the aims of the seminar.	15	Prof. Paul Dalby UCL
09:15	09:20		Safety Induction	5	Dr. Brian O'Sullivan
09:20	10:20	U01	Lyophilisation Fundamentals - Formulation, Process, Containers and Analysis This presentation will provide an overview of the fundamental aspects of freeze-drying, including elements of the formulation, container and process, and the analytical methods that can be applied pre-lyophilisation, during the process and to the freeze-dried product itself.	60	Dr. Kevin Ward Biopharma Group
10:20	10:40		<i>Morning Break</i>	20	
10:40	11:15	U02	Freeze Drying using the Design of Experiments (DoE) Approach The lecture will review the use of Design of Experiments for the optimisation of formulation conditions for freeze-drying processes, aimed at enhancing the stability and shelf life of biopharmaceuticals	35	Prof. Paul Dalby UCL
11:15	12:15	U03	Introduction to the SP Scientific Lyostar 3 This presentation will introduce the features and benefits of the Lyostar 3 freeze-dryer, including system layout, SMART software, ControlLyo controlled nucleation functionality, suitability for scale-up and applicability to working with formulations containing organic solvents.	60	Leslie Mather SP Scientific
12:15	13:00		<i>Lunch Break</i>	45	
13:00	14:15	Lab 1	Group A: Lyostar 3 hands-on session Getting acquainted with operation and instrumentation; Software programming; SMART, Auto-MTM, ControlLyo, TDLAS, review of historical data, utilising the sample thief.	75	Leslie Mather SP Scientific (Lyostar 3)
			Group B: Lyostat & Lyotherm hands-on Using the Lyotherm DTA/impedance analyser; setting up a sample. Lyostat freeze-drying microscope setup, loading a sample, running a microscopy experiment, creating a video.		
14:15	15:30	Lab 2	Group B: Lyostat & Lyotherm hands-on Using the Lyotherm DTA/impedance analyser; setting up a sample. Lyostat freeze-drying microscope setup, loading a sample, running a microscopy experiment, creating a video.	75	Dr. Kevin Ward Biopharma Group
			Group A: Lyostar 3 hands-on session Getting acquainted with operation and instrumentation; Software programming; SMART, Auto-MTM, ControlLyo, TDLAS, review of historical data, utilising the sample thief.		
15:30	15:50		<i>Afternoon Break</i>		
15:50	16:05	U04	Introduction to the Contract Service in the Department The UCL Department of Biochemical Engineering provides the external users to access their unique pilot-scale equipment (e.g. bioreactors, centrifuges, homogenisers, freeze dryers, etc.)	15	Dr. Lourdes Velez Suberbie UCL
16:05	16:30		Question & Answer (Q&A) Session, Wrap-Up, Feedback and Take-Home Messages A final Q&A session to cover any points raised during the seminar and lab sessions.	25	ALL

PRICE

£595

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A list of local hotels will be provided with the registration confirmation.

*fees include morning and afternoon breaks, lunch and full lecture notes

Payment must be made in full before the start of the course to guarantee a place. Payment by BACS or credit/debit card is acceptable - please note we cannot accept payment by cheque. An invoice will be issued on receipt of booking. Payments in credit/debit card will be charged in GBP at the prevailing exchange rate as set by xe.com. An invoice will be issued on receipt of booking. Discounts are also available for academia and multiple bookings from the same company, please contact Sally Potentier at spotentier@biopharma.co.uk for more information.

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