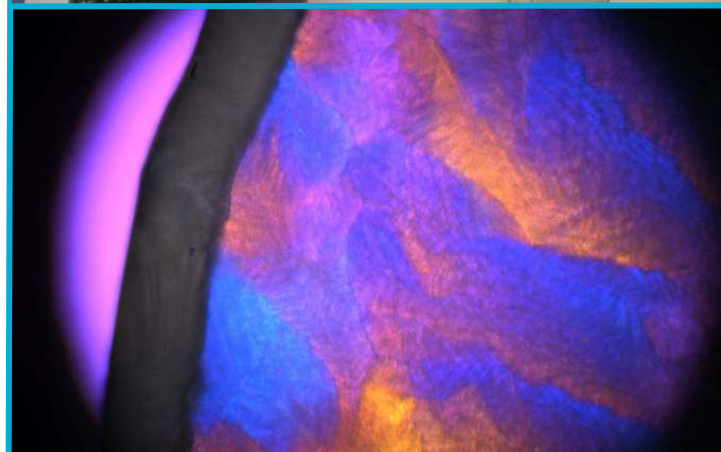


18th - 19th October 2016 | La Tête d'Or Centre de Congrès, Lyon, France | €1250

## Freeze drying experts BTF present a two-day course on the science and practice of developing product and process for freeze drying.

\*Please note: This course follows the same format as those run in Winchester, and will be conducted in French and hosted by Director of BTF, Antione Babin with Thomas Peacock MSc.

- Practical instruction that can be easily applied to real life situations
- Key concepts that will affect job roles including product research, formulation and process development, quality control, micro biologists, chemists and pharmacists
- Product characterization methods, interpretation and application of analytical data
- Formulating for freeze drying: concepts, key considerations and practical methodology
- Key concept of product freezing including ice structure, cooling rates and supercooling, glass transitions, solute crystallisation, eutectic behaviour, and the use of buffers
- Understanding primary drying: The principles and practicalities of sublimation, controlling heat and mass transfer, understanding and avoiding processing defects
- Temperature Measurement – Methods, equipment and products, design features and pros and cons of different temperature monitoring systems
- Product characterisation techniques such as freeze drying microscopy and thermal methods
- Benefits and drawbacks of different types of trays, vials and stoppers
- Systematic cycle development for efficient, reliable processes
- Scaling up to production: formulation, process and equipment issues
- Using PAT in development and troubleshooting
- Residual moisture content: effect on stability and shelf life and different analyses
- Benefits of lyophilisation over other stabilization methods
- Analysis of freeze dried product focusing on moisture and thermal analysis
- Lectures conducted in French with English and French notes available.



## About BTF

Biopharma Technologies France (BTF) is a new company based in Lyon, specialising in freeze drying and evaporation technologies.

BTF is unique in the French territory in presenting a range of expert services (consultancy and training) in conjunction with processing equipment. Our systems are sourced from world leaders in the fields of evaporation and lyophilization. We are proud to offer each client a personalized service.

BTF is part of Biopharma Group and sister company to BTL. BTL runs freeze drying training courses in a variety of locations worldwide, for more information visit [www.biopharma.co.uk/training-courses](http://www.biopharma.co.uk/training-courses).

### Your Course Host:

#### Antoine Babin

Director at Biopharma Technologies France (BTF)



### Thomas Peacock MSc

After an MSc in Pharmaceutical Analysis Tom specialised in the field of lyophilisation. Tom has managed many commercial freeze-drying projects typically involving formulation development and characterisation, looking at key product factors and designing robust and efficient cycles. Tom has significant expertise in freeze drying microscopy and has travelled widely lecturing on freeze drying.



## Venue

The Espace Tête d'Or offers flexible business space in the heart of Lyon. The Convention Centre enjoys a central and easily accessible location, 10 minutes from Lyon Part Dieu station, 5 minutes from motorway access (Paris, Geneva, Marseille, St Etienne) and 20 minutes from the Airport Saint Exupéry International. Free parking is available onsite.

Details of local hotels will be provided for attendees to make their own reservations.

### Espace Tête d'Or

103 boulevard de la Bataille de Stalingrad - 69100 Lyon-Villeurbanne  
+33 (0) 4 78 94 69 00, [www.espacetetedor.com](http://www.espacetetedor.com)



# Timetable

## Day 1

### 09.00 Welcome & Course Opening

**Introduction to Freeze Drying Technology** The advantages and challenges of freeze drying

**Product Freezing** How ice structure and solute behaviour can affect freeze drying

### Break

**General Concepts of Formulation** Benefits and drawbacks of different excipients and issues affecting usage

**Primary Drying** The vapour pressure differential; balancing heat and pressure for optimal drying

### Lunch (included)

**Temperature Measurement** A vital parameter for successful processing—discussion of tools and methods

**Formulation Characterization (1)** Use of freeze drying microscopy for determination of critical temperatures

### Break

**Formulation Characterization (2)** Discussion of thermal methods of analysis including DTA, DSC, Zsinφ

**Workshop 1 Review of Freeze Dried Materials** An exercise to visually assess freeze-dried product and diagnose process defects

## Day 2

**09.15 Vials, Stoppers & Barrier Technology** Technologies available and the benefits for different applications

**Secondary Drying, PAT & Endpoint Determination** Monitoring & cycle considerations

### Break

**Cycle Design & Scale-Up** Practical methodologies for developing cycles

**SMART and ControLyo Technology** Using the latest technologies for process development and control

### Lunch (included)

**Freeze Drying of Proteins** The unique challenges posed by large complex molecules, from characterization to product / process design

**Freeze Dried Product Analysis** Methods for analysing freeze-dried product, including moisture determination, thermal analysis and other methods

**Workshop 2—Problem Solving and Scale-Up Scenario**

**Ends 15.45**

Timetable shown is representative and may be subject to change.



# Course details and booking form

Name	
Job Title	
Organisation	
Address	
Invoice Address (if different)	
Phone	
Fax	
Email	
Please reserve	places

Email to: [elysabeth@biopharmatech.fr](mailto:elysabeth@biopharmatech.fr), or book online at [www.biopharma.co.uk/training/courses/](http://www.biopharma.co.uk/training/courses/)

**Date:** 18th - 19th October 2016

**Location: Espace Tête d'Or**

103 boulevard de la Bataille de Stalingrad - 69100 Lyon-Villeurbanne, FRANCE. +33 (0) 4 78 94 69 00

[www.espacetetedor.com](http://www.espacetetedor.com)

**Standard Fee: €1250**

**Early Bird Rate: €1060** - Early Bird Rate available when registration & payment is made by 31st June 2016.

Discounts also available for group booking and academia.

Contact Elysabeth Sheppard for more information:

[elysabeth@biopharmatech.fr](mailto:elysabeth@biopharmatech.fr), N° vert: 0805 101 674 or +44 (0)1962 841092.

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 recommended local hotels will be provided with the delegate information.

Fees include morning and afternoon breaks, lunch and full lecture notes.

Other course types and locations are also available — see [biopharma.co.uk/training-courses](http://biopharma.co.uk/training-courses) for more.

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 us for details.

Cancellation in writing more than 5 weeks before the course start date will incur a service charge of 30% of the applicable fee. No refunds can be made for cancellation after this date. Substitutes will be accepted at any time. Transfer to another scheduled course must be made in writing and a service charge will be incurred.

Full T&Cs available on request.



**Biopharma Technologies France:**  
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