



SCIENTIFIC UPDATE

We've got chemistry

UNDERSTANDING POLYMORPHISM & CRYSTALLISATION ISSUES IN THE PHARMACEUTICAL INDUSTRY

19-21 SEPTEMBER 2018

Lisbon, Portugal
Sana Malhoa Hotel

"Really useful course
with a lot of 'take home'
messages. Wonderful
lecturers as well."

Almirall



A 3 day course given by
Dr Terry Threlfall and
Dr Will Watson

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UNDERSTANDING POLYMORPHISM & CRYSTALLISATION ISSUES IN THE PHARMACEUTICAL INDUSTRY

A 3 day course given by Dr Terry Threlfall and Dr Will Watson

19-21 September 2018 Lisbon, Portugal, Sana Malhoa Hotel

Multiple attendees discounts
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INTRODUCTION

Crystallisation has been described as one of the most difficult unit operations to control. This is partly because the primary nucleation event, particularly in batch crystallisers, is difficult to control reproducibility without seeding, partly because secondary nucleation processes which result are highly scale and process dependent and partly because of the delicate balance between thermodynamic and kinetic factors in crystallisation processes which operate far from equilibrium.

The consequence of these features can be poor reproducibility of purity, particle size distribution, morphology and crystal structure. The latter phenomenon, known as polymorphism, is a subject which has been and remains an important issue across the pharmaceutical, pigment, agrochemical, explosive and fine chemical industries, where the physical form of the product affects the properties (stability, colour, dissolution rate etc) of the finished product.

It is important, therefore, for chemists who are developing crystallisation operations to understand in detail the key physical processes which occur and which need to be under control – irrespective of whether the process utilises cooling, evaporative, or drown-out crystallisation. This course will teach chemists and engineers some fundamental aspects of crystal chemistry, nucleation and crystal growth, the operation of batch crystallisers and methodologies of characterisations. Because polymorphism is such an important issue the course will cover this in some detail, particularly addressing the case of disappearing (or appearing) polymorphs, when a new form of a product in development (or even worse, in manufacture) suddenly appears. Case studies will be used to illustrate important issues.

COURSE OUTLINE

Day One

- > Registration
- > Introduction to Crystallisation and Polymorphism
- > What is Polymorphism?
- > Solvates and Hydrates
- > Principles of Crystallisation
- > Analytical Principles
- > Industrial Case Studies
- > Identifying Polymorphs – Spectroscopic methods
- > Identifying Polymorphs – Thermal and Thermodynamic Methods
- > Screening for Polymorphs

Day Two

- > Directing Polymorphic Form
- > Crystallisation Methods
- > Monitoring Crystallisation Processes
- > Scale Up of Crystallisation Processes
- > Identifying Polymorphs – Crystallographic Methods
- > Industrial Case Studies
- > Disappearing Polymorphs
- > Polymorphs and Patents

Day Three

- > Amorphous Forms
- > Crystallisation of Chiral Compounds
- > Determining Stability/Construction of Phase Diagrams
- > Industrial Case Studies
- > Salts and Cocrystals
- > Case Studies

VENUE

Sana Malhoa Hotel Av Jose Malhoa
1099 – 089
LISBON Portugal
P. +351 21 006 1803
www.sanahotels.com

Located in a main financial district, this glass-fronted business hotel is a 7-minute walk from a metro stop and 5 km from Praça do Comércio's trendy shops and nightlife.

The modern rooms come with free Wi-Fi, flat-screen TVs and minibars. Suites add verandas and sitting areas with sofas. There's 24-hour room service.

Breakfast is included and served in a Mediterranean restaurant with an atrium dining room. Other amenities include a lobby bar/piano lounge, plus a health club with a fitness area, a sauna, and a whirlpool tub. Parking is complimentary.

A limited number of rooms have been reserved at the hotel for the special rate of €160 per night including breakfast and VAT. A hotel booking form will be sent when you register.



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Start 9.00am - Wednesday 19 September
Finish 3.30pm - Friday 21 September
Course dinner 6.30pm - Wednesday 19 September
Course Fee: €2,010
Which includes comprehensive course manual, refreshments throughout the day, lunch and one course dinner.

Course Fee: €2,010

COURSE TUTORS

Dr Terry Threlfall

University of Southampton

Terry Threlfall obtained his Chemistry Degrees and Law degree at

London University. He has a synthetic organic chemistry background (post doctoral studies with Professor Eschenmoser in Zurich) and 30 years in the pharmaceutical industry (May & Baker Ltd.) successively as Section Head Spectroscopy, then Pigment Research, Head of Department Physical Chemistry, Process Research Manager, Principal Scientist with responsibility for patent maintenance world-wide against infringement. He became Industrial Liaison Executive in the Chemistry Department at the University of York in 1991 where he subsequently was a Research Fellow. He is currently at the University of Southampton. His current research interests include relating molecular structure to crystal structure, exploring the mechanism of seeding and crystallisation processes and application of spectroscopic and thermal methods to polymorph crystallisation and solid-state transitions.



Dr Will Watson

Technical Director, Scientific Update

Will Watson gained his PhD in Organic Chemistry from the

University of Leeds in 1980. He joined the BP Research Centre at Sunbury-on-Thames and spent five and a half years working as a research chemist on a variety of topics including catalytic dewaxing, residue upgrading, synthesis of novel oxygenates for use as gasoline supplements, surfactants for use as gasoline detergent additives and non-linear optical compounds.

In 1986 he joined Lancaster Synthesis and during the next 7 years he was responsible for laboratory scale production and process research and development to support Lancaster's catalogue, semi-bulk and custom synthesis businesses. In 1993 he was appointed to the position of Technical Director, responsible for all Production (Laboratory and Pilot Plant scale), Process Research and Development, Engineering and Quality Control. He helped set up and run the Lancaster Laboratories near Chennai, India and had technical responsibility for the former PCR laboratories at Gainesville, Florida. He joined Scientific Update as Technical Director in May 2000. He is also involved in an advisory capacity in setting up conferences and in the running of the events. He is also active in the consultancy side of the business.



IN-HOUSE COURSE

For 8+ people contact us to discuss holding this event In-House - sciup@scientificupdate.com

@ will@scientificupdate.com

Who should attend?

- > Organic Chemists - working in the pharmaceutical, pigment, agrochemical, explosives or fine chemicals industries
- > Development and Production Chemists
- > Chemical Engineers and Analysts

REGISTRATION

You can either use our fast online booking system or mail or fax the attached registration form to:
Scientific Update
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Fax Number +44 1435 872734

How to Pay

When you register online, you can have the option to pay via credit card (Mastercard or Visa). A receipted invoice will be automatically generated once paid and sent via email. Should your company wish to pay by cheque or bank transfer bank details will be supplied with an invoice.

Bank Transfer or Cheque

Should your company wish to pay by cheque or bank transfer, on booking you can choose between paying in either €, \$ or £. All bank details will be supplied with an invoice.

Group Discounts

Group discounts are available on two or more attendees - see registration form. This offer only applies if bookings are made simultaneously and from the same billing address.

Confirmation of your registration

These will be sent via email.

Late Applications

For late applications, please register online or fax the completed registration form, including credit card payment information.

Cancellations/Refunds

Should you be unable to attend and cancel in writing no later than 1 month before the start of the course, Scientific Update will refund your registration less £300 (or equivalent in €/€) processing fee. Unfortunately refunds are not possible after that date. Substitutions can be made at any time.

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Cancellations

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For full terms of business and payment details please see our website

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