

Scientific Update | Training Courses 2010



Understanding Polymorphism & Crystallisation Issues in the Pharmaceutical Industry

A Two and a Half Day Course



22 - 24 March 2010
The Radisson SAS Hotel
Nice, France

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Understanding Polymorphism & Crystallisation Issues in the Pharmaceutical Industry

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Fee

£1250.00 including lunch & refreshments, the course dinner on Monday 22 March and the comprehensive course manual.

Course 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 down-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

Introduction to Crystallisation
What is Polymorphism
Analytical Principles
Cooling Crystallisations
Drown-outs and Other Crystallisation Methods
Workshop Session
Identifying Polymorphs 1 - Spectroscopic Methods
Identifying Polymorphs 2 - Crystallographic Methods
Screening for Polymorphs

Day Two

Solvates and Hydrates
Monitoring of Crystallisation Processes
Identifying Polymorphs 3 - Thermal and Thermodynamic Methods
Case Studies
Controlling Polymorph Crystallisation
Workshop Session
Disappearing Polymorphs
Polymorphs and Patents

Day Three

Salts and Cocrystals
Scale Up of Crystallisation Processes
Workshop Session
Amorphous Forms
Question/Discussion

“A good general introduction to the topic.”
Niles Clauson-Kaas A/S

Tutors



Dr Terry Threlfall, University of Southampton Terry 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 are in relating molecular structure to crystal structure through structural systematics, and in the application of Raman spectroscopy to crystallisation and to solid-solid transition processes.



Derek Robinson gained his PhD in Physical Organic Chemistry from the University of St. Andrews in 1981. After completing two years post doctoral research at the University of Strathclyde, he joined the Pharmaceutical Research and Development group at Parke-Davis/Warner Lambert. During the next eleven years he was responsible for the development and optimisation of synthetic routes to novel drug candidates, organising the scale-up to pilot plant and transfer to production facilities. He was manager of synthetic chemistry laboratories at Pontypool, Wales and Freiburg, Germany. Since 1995 he has been an associate lecturer at Scientific Update. Derek has developed courses on Good Manufacturing Practices (GMP), Basic Organic Chemistry for Chemical Engineers and Statistical Experimental Design for Chemists. He also tutors the Chemical Development in the Fine Chemical and Pharmaceutical Industries course. He has also worked with fine chemical companies to help develop documentation procedures and GMP training courses. He can be contacted by email on derek@kolvox.net

Who Should Attend?

Organic Chemists working in the pharmaceutical, pigment, agrochemical, explosives or fine chemicals industries

Development and Production Chemists

Chemical Engineers and Analysts

Venue



The Radisson SAS Hotel
223 Promenade des Anglais, 06200 Nice, France
Telephone: +33 4 93 37 17 17 | Fax: +33 4 93 71 21 7
www.radissonblu.com/hotel-nice

The Radisson SAS Hotel enjoys a privileged position on the famous Promenade des Anglais. It is centrally located between the city centre with the romantic old town and the new “Arenas” business centre. Accommodation has been reserved at the special rate of €145 for single occupancy (including breakfast). This is for a city view room. A sea view room will be €180. There will be a supplement of €15 per night for double occupancy. Please use the hotel booking form, which will be sent when you register.

General Information

The course begins with registration from 8.45am on Monday 22 March and finishes at approximately 1pm on Wednesday 23 March. There is a course dinner for all delegates on Monday 22 March.

The organisers reserve the right to change the published programme of events and course content as circumstances dictate.

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Substitutions/Cancellations Should you be unable to attend and cancel in writing no later than 28 days prior to each event date, Scientific Update will refund your registration less £300 processing fee. It is regretted that after this date refunds are not possible. Substitutions can be made at any time.

For late applications please register on line at www.scientificupdate.co.uk or fax the completed registration form, including credit card payment information.

Venue/Accommodation You will be sent details of how to reserve your accommodation with your event confirmation details.

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