



# SCIENTIFIC UPDATE

*We've got chemistry*



**Madrid,  
Spain**

NH Principe de  
Vergara Hotel

# PRACTICAL CRYSTALLIZATION & POLYMORPHISM

24-25 OCTOBER 2019

A 2 day course  
presented by  
**Dr Will Watson**

"Gained very  
good knowledge about  
particle Crystallization as it  
is a very important part of  
chemical industry at scale up  
stage and it will be helpful to  
design experiments in such  
a way."

PI Industries



# PRACTICAL CRYSTALLIZATION & POLYMORPHISM

Multiple  
attendees  
discounts  
**UP TO 15%**  
available

**24-25 October 2019** Madrid, Spain, NH Principe de Vergara Hotel

## INTRODUCTION

This 2-day course aims to give chemists and chemical engineers a thorough practical knowledge of Crystallization processes. After an introduction the course will cover Crystallization of compounds (including hydrates and solvates), different methods of Crystallization, Polymorphism, salts and co-crystals, Crystallization of chiral compounds and classical resolution, analytical methods for studying the solid state and will finish with some case studies. Real life practical examples will be used throughout the course to exemplify the different aspects of Crystallization and Polymorphism. The course will cover all aspects of the subject including Crystallization of intermediates as well as final products. In addition precipitations and amorphous solids will be covered and the differences between amorphous solids and crystalline solids will be discussed.

## WHO SHOULD ATTEND?

Discovery chemists, process chemists and chemical engineers who want to learn about practical aspects of Crystallization as well as the science and the art of Crystallization.

## IN-HOUSE COURSE

For 8+ people contact us to discuss holding this event In-House -  
[sciup@scientificupdate.com](mailto:sciup@scientificupdate.com)

## COURSE OUTLINE

### DAY 1

#### **Introduction to Crystallization and Polymorphism Solvates and hydrates**

- > Differences between solvates, hydrates and anhydrides/asolvates
- > Characterisation of solvates and hydrates

#### **Principles of Crystallization**

- > Methods of Crystallization
- > Cooling Crystallizations
- > Evaporative Crystallizations
- > Anti-solvent Crystallization
- > Melt Crystallization

#### **Crystallization design/case studies**

- > Designing a Crystallization process

### DAY 2

#### **Polymorphism and Disappearing polymorphs**

- > Polymorphism
- > Polymorph screening
- > Characterising polymorphs
- > Patenting polymorphs

#### **Salts and co-crystals**

- > Salt formation
- > The use of co-crystals
- > Definitions

#### **Chiral compounds/resolution**

- > Crystallization of chiral compounds
- > Classical resolution methods
- > Upgrading ee by Crystallization

#### **Methods of analyzing the solid state**

- > Analytical methods
- > Infra-red, Raman
- > XRPD
- > DSC

#### **Case studies/Conclusions**

## VENUE

#### **NH Hotel Principe de Vergara**

Principe de Vergara 92  
28006 Madrid  
Spain  
+34 91 563 2695

[www.nh-hotels.com/hotel/nh-madrid-principe-de-vergara](http://www.nh-hotels.com/hotel/nh-madrid-principe-de-vergara)

This modern hotel, set in Barrio de Salamanca, is 4 minutes' walk from Avenida de América metro station and 2.7 km from the Museo Arqueológico Nacional.

Accommodation has been reserved at the special rate of €170 per room per night (including breakfast). Please use the hotel booking form, which will be sent to you when you register.





# SCIENTIFIC UPDATE

*We've got chemistry*

**Start** 9.00am - Thursday 24 October

**Finish** 4.30pm - Friday 25 October

**Course dinner** 7.30pm - Thursday 24 October

**Course Fee:** €1,799

Which includes comprehensive course manual,  
refreshments throughout the day, lunch and  
one course dinner.

**Course fee:** €1,799

## COURSE TUTOR

### 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.



[will@scientificupdate.com](mailto:will@scientificupdate.com)

## REGISTRATION

You can either use our fast online  
booking system or mail or fax the  
attached registration form to:

Scientific Update  
Maycroft Place, Stone Cross, Mayfield,  
East Sussex, TN20 6EW, UK  
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.

## At the end of the course, participants will:

Be better placed to apply scientific  
principles to the design and  
development of Crystallization  
processes as well as better  
understanding for problem solving.

The course will be of interest and use  
to both process development chemists  
as well as those working in discovery  
areas, especially when involved in the  
first scale-up batches.

## CONSULTANCY SOLUTIONS

### OUR EXPERTISE

We are specialists in Industrial  
Organic Chemistry, solving problems  
and managing projects in Process  
Research and Development covering  
the following industries:

- > **Pharmaceuticals**
- > **Fine Chemicals**
- > **Agrochemicals**
- > **Flavour & Fragrance**
- > **Specialty Chemicals**

### OUR TEAM

You will be assigned one leading  
consultant but you will benefit  
from our team with over 100 years  
collective industrial experience.

### OUR APPROACH

We will sign a CDA and discuss your  
project by telecom or webinar to  
assess what benefits we can offer.  
This initial consultation (up to 4 hours)  
is free of charge. After which we will  
offer a detailed proposal with the  
service we can provide tailored to  
your individual requirements.



# PRACTICAL CRYSTALLIZATION & POLYMORPHISM



## FAST ONLINE REGISTRATION

Look for the **BOOK NOW** button on the event of your choice  
[www.scientificupdate.com](http://www.scientificupdate.com)

24-25 October 2019 Madrid, Spain

No. of attendees  @ €1,799

### Special Offer!

Register 2 delegates and receive 5% on 2nd booking  
Register 3 delegates and receive 10% on 3rd booking  
Register 4 or more delegates and receive a 15% discount

### First attendee

|   |                      |
|---|----------------------|
| Company   | <input type="text"/> |
| Title (Dr/Prof/Mr/Mrs/Ms)   | <input type="text"/> |
| First name  | <input type="text"/> |
| Surname   | <input type="text"/> |
| Job Title   | <input type="text"/> |
| Address   | <input type="text"/> |
|   | <input type="text"/> |
|   | <input type="text"/> |
| Post Code / Zip   | <input type="text"/> |
| Country   | <input type="text"/> |
| Tel   | <input type="text"/> |
| Fax   | <input type="text"/> |
| Email   | <input type="text"/> |
| Mobile  | <input type="text"/> |
| Special Diet  | <input type="text"/> |
| I would like to subscribe to your FREE bi-monthly newsletter<br>What's new in Process Chemistry? <input type="checkbox"/> |                      |

### Second attendee **SAVE 5%**

|   |                      |
|---|----------------------|
| Title (Dr/Prof/Mr/Mrs/Ms)   | <input type="text"/> |
| First name  | <input type="text"/> |
| Surname   | <input type="text"/> |
| Job Title   | <input type="text"/> |
| Tel   | <input type="text"/> |
| Fax   | <input type="text"/> |
| Email   | <input type="text"/> |
| Special Diet  | <input type="text"/> |
| I would like to subscribe to your FREE bi-monthly newsletter<br>What's new in Process Chemistry? <input type="checkbox"/> |                      |

### Third attendee **SAVE 10%**

|   |                      |
|---|----------------------|
| Title (Dr/Prof/Mr/Mrs/Ms)   | <input type="text"/> |
| First name  | <input type="text"/> |
| Surname   | <input type="text"/> |
| Job Title   | <input type="text"/> |
| Tel   | <input type="text"/> |
| Fax   | <input type="text"/> |
| Email   | <input type="text"/> |
| Special Diet  | <input type="text"/> |
| I would like to subscribe to your FREE bi-monthly newsletter<br>What's new in Process Chemistry? <input type="checkbox"/> |                      |

### Invoice Address (if different to delegate address)

|                 |                      |
|-----------------|----------------------|
| Address         | <input type="text"/> |
|                 | <input type="text"/> |
|                 | <input type="text"/> |
| Post Code / Zip | <input type="text"/> |
| Country         | <input type="text"/> |
| Tel             | <input type="text"/> |
| Fax             | <input type="text"/> |

☐ Please invoice my company

|                 |                      |
|-----------------|----------------------|
| Purchase Order: | <input type="text"/> |
| Promotion Code: | <input type="text"/> |

### Payment Methods

Payment will be made by:

☐ Cheque ☐ Bank Transfer ☐ Credit Card

In Currency:

☐ Euros ☐ GBP\* ☐ or Dollars\*

We accept the following credit cards:



Amex\*



Mastercard



Visa

To pay by credit card a secure link will be provided once you receive your booking confirmation email, this will then take you to a secure payment gateway.

\*payments via Amex can only be made in US dollars

#### \* Currency Payments

If you select to pay in Dollars, or GBP the amount charged will be based on the exchange rate at the time of preparing the invoice.

#### Discounts

Complete the details for either two or three delegates and your discount will automatically be applied. This offer only applies where all delegates are booked simultaneously and at the same billing address.

#### Cancellations

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 fee less £300 (or equivalent in €/£) processing fee. Unfortunately refunds are not possible within 1 month of the course date. Substitutions can be made at any time.

#### Data Protection

Scientific Update Ltd is registered under the Data Protection Act 1998. We will store your information securely and only share your contact details with other attendees at this event. If you are happy for your details to be passed to any third parties please tick here: ☐

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

**Please complete this form and fax to +44 (0)1435 872734**

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