

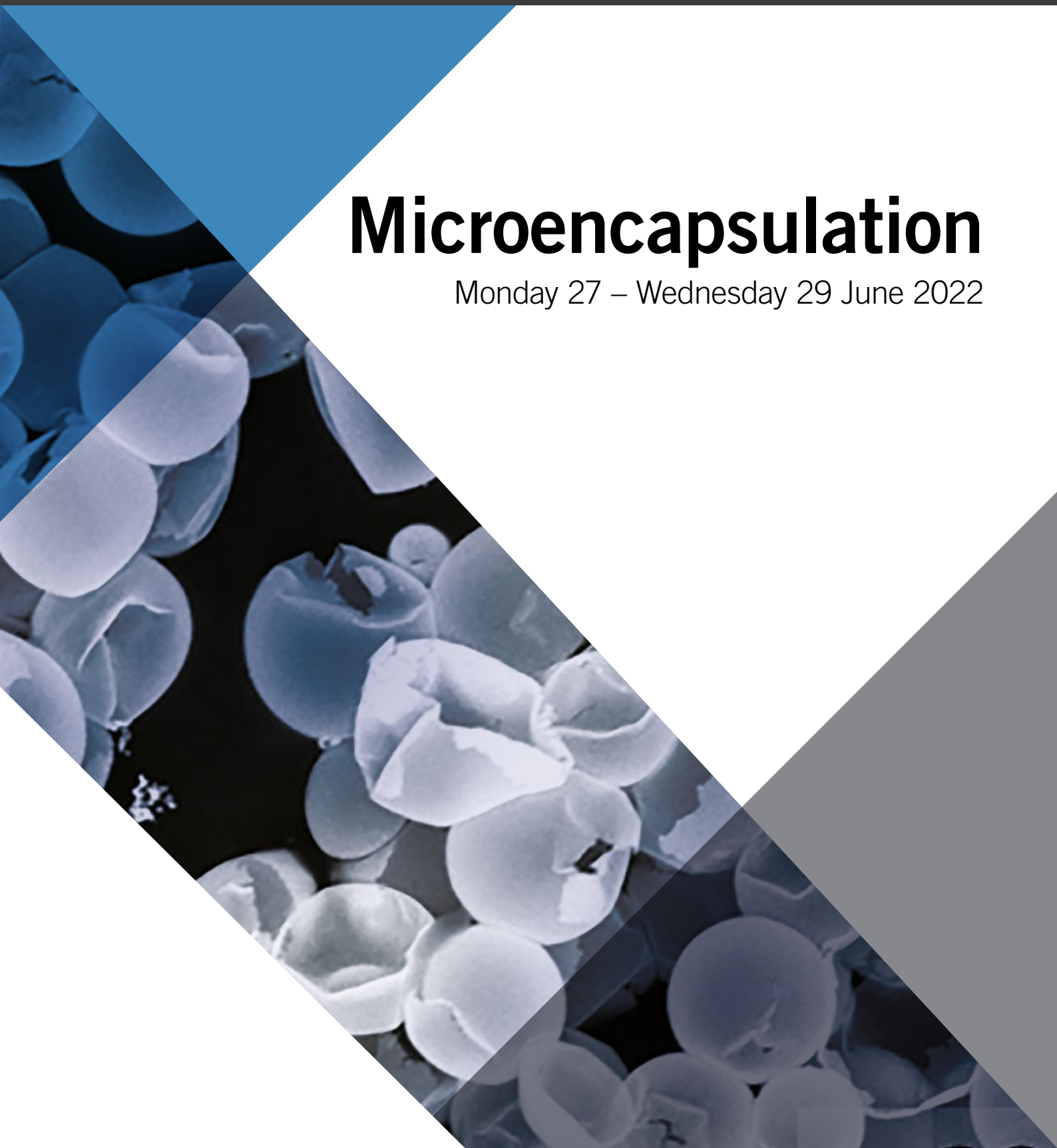
Faculty of Engineering
and Physical Sciences



UNIVERSITY OF LEEDS

Microencapsulation

Monday 27 – Wednesday 29 June 2022



Microencapsulation

Monday 27 – Wednesday 29 June 2022, University of Leeds

About the course

This course covers the basic science and engineering of microencapsulation across a wide range of applications including the important stages of emulsification control, stability and release property control. Whilst the majority of the course involves emulsions, multiple emulsions and particle coating, we also provide a comprehensive description of the range of characterisation tools and their applicability. The emphasis is on understanding the fundamental behaviour of the interactions of the various components in such complex systems. This should provide the basis for a rational approach to formulating and producing micro encapsulates to meet a range of needs.

The course offers a programme of academic and industry cooperation taking delegates from the basic science through to manufactured products. Recent updates to the course mean that we are now also focusing on alternatives to historical microencapsulation systems in response to the recent microplastics regulations, which is driving the industry towards developing biodegradable alternatives. This year's course will feature sessions to better understand the regulation environment, to specifically describe alternative microcapsule shell materials that are more environmentally friendly and some discussion around biodegradability testing.

What our previous delegates say:

"The course was comprehensive and a lot of effort was invested to make it as broad and professional as possible. The presentations were great and it gave us a greater glimpse of the microencapsulation field which is extremely helpful."

"A good overview of the basic science involved in microencapsulation to better understand and design these complex systems"

"A useful course on the techniques of microencapsulation, as well as a balance of talks from industry and academia"

Course aims

On completion of this short course, you will have an understanding of:

- developing a rational approach to formulate or modify emulsions for optimal processing behaviour and use available laws and scaling relations to predict behaviour.
- the various methods to turning emulsions into encapsulates, including the process conditions that impact their final properties and behaviour.
- selecting characterisation devices and defining measurement procedures for a specific application.
- evaluating and interpreting experimental data.
- biodegradability and alternatives to microplastics.

Who should attend

Scientists and engineers in the chemical, petroleum, polymers, coatings, inks, food, pharmaceutical, cosmetics, and general chemical industries with responsibility for R&D projects, process engineering, manufacturing or product formulation involving incorporating micro-encapsulates into formulated products.

Course Directors

Dr Olivier Cayre, University of Leeds

Professor David York, Visiting Professor, University of Leeds (formerly of P&G)

Visit the course website for information on the course directors and their experience.

View the full programme and book your place online at <http://eps.leeds.ac.uk/short-courses>

Programme

Monday 27 June 2022

Basic science and key points around microencapsulation – what you need to know to get started

09:30 Registration

10:00 Introduction to the course

10:10 Map to guide you through the course: microencapsulation methods vs product requirements
Professor David York

10:50 Important properties of system to encapsulate (Hansen solubility parameter)
Professor Steven Abbott, TCNF & University of Leeds

11:30 Coffee

11:50 Important Capsule Properties
Dr Olivier Cayre

Spray drying

12:30 Introduction to spray drying for encapsulation
Professor David York

13:10 Lunch

14:10 Droplets and sprays in encapsulation: background in forming droplets from nozzles and common process units
Dr Phil Threlfall-Holmes, TH Collaborative Innovation & Visiting Professor, University of Leeds, (formerly of AkzoNobel)

14:50 Demonstration session 1

Release Rates in Alginate Systems (title to be confirmed)
Ben Lobel, University of Leeds

Membrane emulsification: Monodisperse droplet production
Faye Sanderson, Micropore

16:05 Tea

Coating of particles

16:25 Process – fluid bed coaters, pan coaters
Professor David York

17:05 Particle functionalization by core-shell or matrix-encapsulation in fluidized beds from an industrial perspective
Didier Schons, Glatt

17:35 End of day one

Tuesday 28 June 2022

Coating of particles cont...

09:00 Industry presentation on coating of solid particles using fluid beds
Dr. Henning Falck/Tom Wyrwat, Neuhaus Neotec

09:40 Single step and solvent-free plasma functionalization and encapsulation of particles
Rik Verschuere, Partix

10:20 Coffee

10:40 How to decide on an affordable microencapsulation method – economics behind encapsulation
Professor David York

Emulsion-based methods

11:20 Focus on emulsion-based encapsulation methods: what the rest of the course contains
Dr Olivier Cayre

11:30 Microplastics regulations
Clare Liptrot, Croda

12:10 Lunch

13:10 Industry perspective : EU regulations and impact on industry with regards environmental impact and micro plastics with respect to formulated products
Andre Barros, Procter & Gamble

14:00 Emulsion theory, importance of miscibility/cLogP, how useful is HLB of surfactants, Pickering emulsions/colloidosomes
Professor Brent Murray, University of Leeds

14:40 Tea

15:00 Demonstration session 2

Spray drying
Professor David York

Metal shell capsules preparation – achieving retention and triggered release of small volatile actives
To be confirmed

16:15 Membrane emulsification: applications in encapsulation/coacervation and biodegradable polymers
David Palmer, Micropore

16:55 Interfaces into shells: past and current encapsulation and release methods
Dr Olivier Cayre

17:35 End of day two

Wednesday 29 June 2022

Emulsion-based methods: turning emulsions into core-shell microcapsules

09:00 From interfacial polymerisation to inorganic shells – potential for evolving microcapsule systems
Dr Olivier Cayre

09:40 Controlling fragrance retention in microcapsules for Consumer Products
Ian Harrison, Givaudan

10:20 Coffee

10:40 Pickering emulsions for food applications with emphasis on the controlled delivery of actives
Fotis Spyropoulos, University of Birmingham

11:20 Biodegradability
Lynette Holland, Xampla

12:00 Trouble shooting forum

12:45 Lunch

13:45 Key properties and evaluation
Dr Nicole Hondow, University of Leeds

14:25 Characterisations of release and biodegradability of capsules and other properties
Dr Olivier Cayre and Amna Khatun, University of Leeds

15:05 Evaluating mechanical properties and release rates – techniques, challenges and watch outs
Professor David York/Dr Olivier Cayre

15:45 Optional lab tour

16:30 End of day three and course

Please note, although we remain devoted to the programme specified, we reserve the right to vary the programme in detail if required to do so by factors beyond our control.

Further information

Course Fees

The following course fees include the cost of tuition, course materials, lunches and light refreshments:

£999 Monday 27 – Wednesday 29 June 2022

Venue

The course venue will be within the Faculty of Engineering and Physical Sciences at the University of Leeds. The University campus is a 20 minute walk from Leeds city train station.

Please note, car parking for visitors is unavailable at the University. The nearest public car park is Woodhouse Lane (multi-storey) at LS1 3HQ.

Accommodation

Delegates are responsible for their own accommodation and a list of hotels close to the University will be sent out with the joining instructions.



How to Book

Please book your place for this course through our secure Online Store, using debit or credit card, following the instructions below:

1. Visit our Online Store at: <http://store.leeds.ac.uk>
2. Select Conferences and Events in the left-hand navigation bar and 'CPD Faculty of Engineering and Physical Sciences'
3. Select the relevant course, click on 'Book Event' and complete your booking details

You will receive an automatic confirmation email within 24 hours of your booking.

Get in touch

Helen Forsyth
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W: <https://eps.leeds.ac.uk/short-courses>

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Terms and conditions for booking

Payment by debit/credit card

Payment should be made at the time of booking via the Online Store.

Payment via purchase order and invoice

A purchase order document should accompany your booking form. Our standard terms of payment are 30 days from date of invoice, however payment must be made prior to attendance. Attendance may be refused if payment has not been received.

Where a delegate cancels a registration

For cancellations made within seven days of booking: a full refund is payable unless the course starts within the next seven days, in which case the full fee is payable and no refunds will be made.

For cancellations made after seven days of booking: written cancellations received up to 15 working days before the course will be subject to an administrative charge of 20% of the total fee. Within 15 working days of the course the full fee is payable and no refunds will be made.

For non-attendance: the full fee is payable and no refunds will be made but copies of the course materials will be sent to the registered delegate. Substitutions may be made at any time.

Changes made by the University of Leeds

The course programme may have to be re-scheduled or the speakers changed for reasons outside our control. The University of Leeds reserves the right to cancel or postpone a course, in which case fees will be refunded in full. In the event of cancellation, the University will not be held liable for delegates' travel or accommodation expenses.

Data/Privacy

Your right to privacy is important to us. We will only use your information to provide information on our CPD courses and relevant events. We will not pass your details on to any other organisations. The ways in which your personal data may be used when you provide it to us are defined in our Privacy Notice at <https://eps.leeds.ac.uk/privacy>.

If you have opted in to receive details of future CPD courses from us you can unsubscribe at any time by emailing us at cpd@engineering.leeds.ac.uk and your details will be removed from our database.



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