Provisional Programme

Spray Drying and Atomisation of Formulations
Tuesday 2 – Thursday 4 April 2019

Tuesday 2 April 2019
Spray Drying and Atomisation Basics

09:00 Registration and coffee
09:30 Welcome and group introduction – what do delegates want to get from the course?
Dr Jim Bullock, iFormulate Ltd
09:40 Introduction to spray drying, how does it compare with other drying techniques, mechanisms and impact of the formulation on process and plant design
Professor David York, University of Leeds (formerly of Procter and Gamble)
10:20 Fluid properties and rheology
Professor Andrew Bayly, University of Leeds (formerly of Procter and Gamble)
10:40 Coffee
11.00 Atomisation
Professor Phil Threlfall-Holmes, TH Collaborative Innovation & Visiting Professor at the University of Leeds, (formerly of AkzoNobel)
11.20 Drying the particle
Filip Van der Gucht, ProCept
11.45 Hands-on laboratory demonstration sessions
(a) Feedstock/rheology: Soyeb Manga, University of Leeds
(b) Particle sizing: Umair Zafar, University of Leeds
(c) Drying parameters: Filip Van der Gucht, ProCept
(d) Atomisation: Dr Phil Threlfall-Holmes, TH Collaborative Innovation & Visiting Professor, University of Leeds, (formerly of AkzoNobel)
(e) Characterisation of spray dried powders: Professor David York
(f) Single droplet: Professor Andrew Bayly, University of Leeds
12.00 Lunch
13.45 Spray drying: basic models, energy balance
Professor Andrew Bayly, University of Leeds
16.20 Scale up of spray drying processes
Henrik Schwartzbach, GEA
16.50 Water in our World, Water in our Materials
Dr Daryl Williams, Imperial College London
17.25 End of day one
19.00 Course Dinner

Wednesday 3 April 2019
Industrial Formulation Case Studies

08:45 Coffee
09:00 Welcome
Dr Jim Bullock, iFormulate Ltd
09:10 Phase changes in spray drying
09:35 **Spray drying with two-fluid nozzles; atomisation, scale-up and modelling**  
Ian Kemp, GSK

10:20 **Coffee**

10:40 **Engineering particle structure**  
Professor Andrew Bayly, University of Leeds (formerly of Procter and Gamble)

11:15 **Spray drying of pharmaceuticals**  
Dr. Andrew Naylor, Upperton

11:50 **Application of spray dried materials in the pharmaceutical industry – what, where and how much?**  
Andrew Parker, Catalent Pharma Solutions

12:25 **Modelling of the spray drying process using empirical inputs**  
Henrik Schwartzbach, GEA

13:00 **Lunch**

13:45 **Hands-on laboratory demonstration sessions**  
(a) **Feedstock/rheology**: Soyeb Manga, University of Leeds  
(b) **Particle sizing**: Umair Zafar, University of Leeds  
(c) **Drying parameters**: Filip Van der Gucht, ProCept  
(d) **Atomisation**: Dr Phil Threlfall-Holmes, TH Collaborative Innovation & Visiting Professor, University of Leeds, (formerly of AkzoNobel)  
(e) **Characterisation** of spray dried powders: Professor David York  
(f) **Single droplet**: Professor Andrew Bayly, University of Leeds

15:35 **Tea**

15:55 **Processing science in an infant milk formulae factory**  
Dr Ing. Jewe Schroeder, Danone

16:30 **Spray drying for encapsulation and congealing**  
Filip van der Gucht, ProCept

17:00 **Panel Discussion (all speakers): future challenges and opportunities**

17:10 Wrap-up: what would delegates still like covering?

17:20 Trouble shooting forum/expert consultation session followed by networking drinks reception, nibbles and poster session

18.50 **End of day two**

**Thursday 4 April 2019**

**Powder finishing, modelling and future developments**

08.45 **Coffee**

09.05 **Welcome**  
Dr Jim Bullock, iFormulate Ltd

09.15 **Agglomeration and build-up in the spray drying tower**  
Stefan Egan, Procter and Gamble

09.45 **Managing moisture in practice**  
Sophie Samain, Nestle Switzerland

10.20 **Product design by fluid bed systems as downstream units of spray dryers**  
Henning Falck, Neuhaus Neotec

10.50 **Coffee**

11.10 **Modelling and scale up of spray drying**  
Dr Pedro Valente, Hovione

11.40 **Future directions in atomisation technologies for pharmaceutical applications**  
Dr Pedro Valente, Hovione

12.15 **Mechanistic model enhanced digital design and digital operation of spray drying processes**  
Dr David Slade, Process Systems Enterprise Ltd (PSE)

12.45 **Lunch**

13.30 **Innovative electrostatic spray dryer**  
Dr Audrey Maudhuit, Spraying Systems Co. & Fluid Air

14.05 **Dryer operation and operational challenges**  
George Svonja, Dedert

14.35 **Particle separation; cyclones, filters etc**  
Professor David York, University of Leeds

15.10 Coffee and close