Tuesday 15 May 2018

Characterisation of Physical Properties of Particles

09:00 Registration and Coffee
09:30 Introduction
Professor Mojtaba Ghadiri, University of Leeds
10:00 Sampling and sample preparation for particle characterisation
Professor Mojtaba Ghadiri, University of Leeds
- Origins of problems in particle property analysis
- Sampling from particulate systems
- Sample preparation
10:45 Coffee
11:10 Particle size analysis
Dr Tina Bonakdar, University of Leeds
- Principles of size analysis
- State-of-the-art instruments for particle sizing
12:40 Lunch
13:25 Particle shape and structure characterisation
Dr Mehrdad Pasha, University of Leeds
- Shape and shape description
- Surface morphology and structure
- Application to density determination
14:25 Suspension rheology
Dr David Harbottle, University of Leeds
- Introduction to the principles of suspension rheology
- Particle structuring in suspensions
- Measurement of suspension rheology
15:55 Tea
16:15 Bulk flow of powders
Professor Norman Harnby, University of Bradford
- Cohesive and free-flowing powders
- Segregation and structure
- Application of characteristics to process design
17:45 End of day one
19:00 Course Dinner

Wednesday 16 May 2018

Characterisation of Mechanical Properties of Particles

09:00 Mechanical properties of powders
Professor Mojtaba Ghadiri, University of Leeds
- Introduction to mechanical properties of powder
- Characterisation of deformation and breakage of particles
- Characterisation by nano-indentation
- Particle breakage under brittle and semi-brittle failure modes
- Impact and side crushing of single particles
- Bulk compression and crushing
10:30 Coffee
10:55 Bulk characterisation of powders
Dr Colin Hare, University of Surrey
- Shear cells and powder rheometry
- Frictional properties
- Consolidation and unconfined yield stress
12:25 Lunch
Wednesday 16 May 2018 continued..

Characterisation of Mechanical Properties of Particles

13.10 Electrostatics in powder systems
   Professor Mojtaba Ghadiri, University of Leeds
   • Fundamentals of tribo-electrification of powders
   • Measurements of tribo-electrification of powders
   • Industrial applications of electrostatics in powder systems

14:40 Tea

15:00 Powder characterisation practical demonstrations (Laboratories)

17.30 End of day two

Thursday 17 May 2018

Characterisation of Chemical Properties of Particles

09:00 Adhesion
   Dr Umair Zafar, University of Leeds
   • Principles
   • Measurement techniques
   • State-of-art in the field

10:15 Coffee

10:40 Solubility and dissolution of particles
   Dr David Berry, The Centre for Process Innovation (CPI)
   • Principles
   • Applications

12:10 Lunch

13.55 Tabletting and compaction of powders
   Dr Csaba Sinka, University of Leicester
   • Fundamentals of tabletting and compaction of powders
   • Industrial use of tabletting and compaction

14.25 Tea

14.45 Determination of Powder Surface Energy and Surface Chemistry
   Dr Jerry Heng, Imperial College London
   • Principles
   • Applications to powders

16:15 End of day three and course