



**Crystallisation Science & Engineering  
Wednesday 17 – Friday 19 January 2018**

School of Chemical and Process Engineering (SCaPE), Faculty of Engineering

Programme		
Wednesday 17 January 2018		
08:45 - 09:15	Registration and coffee	
09:15	Introduction	
Crystallisation Fundamentals		
09:30 – 10:15	Crystallisation route map	Professor Kevin Roberts SCaPE, University of Leeds
10:15 – 11:00	Nucleation & crystal growth	Dr Diana Camacho SCaPE, University of Leeds
11:00 – 11:15	Coffee	
11:15 – 12:00	Crystal morphology & habit modification	Dr Ian Rosbottom SCaPE, University of Leeds
12:00 – 12:45	Fundamentals of polymorphism	Dr Robert Hammond SCaPE, University of Leeds
12:45 – 13:30	Lunch	
13:30 – 14:15	Solid-state analysis	Dr Gerry Steele PharmaCryst Consulting Ltd
14:15 – 15:00	Screening for polymorphs (solid form selection)	Dr Bob Docherty Pfizer, Sandwich (to be confirmed)
15:00 – 15:45	Characterisation of pseudo polymorphs (TGA, DVS, IGC)	Dr Gerry Steele PharmaCryst Consulting Ltd
15:45 – 16:00	Tea	
Laboratory Demonstrations		
16:00 – 17:15	D1 – Nucleation kinetics	Dr Tariq Mahmud & Dr Diana Camacho SCaPE, University of Leeds
	D2 – Growth kinetics	Dr Xiaojun Lai & Dr Tom Turner SCaPE, University of Leeds
17:15	End of day one	
19:00	Course dinner	

Thursday 18 January 2018		
Crystallisation Processes		
08:45	<b>Coffee</b>	
09:00 – 09:50	Batch crystallisation: Process development & scale up	<b>Professor Chris John Price</b> Chemical & Process Engineering, University of Strathclyde
09:50 – 10:40	Hydrodynamics, mixing & heat transfer in batch crystallisers	<b>Dr Tariq Mahmud</b> SCaPE, University of Leeds
10:40 – 10:55	<b>Coffee</b>	
10:55 – 11:45	Continuous crystallisation: Process development & scale up	<b>Christian Melches</b> GEA
11:45 – 12:30	Solvent selection: properties and solubility	<b>Professor John Blacker</b> School of Chemistry, University of Leeds
12:30 – 13:15	<b>Lunch</b>	
13:15 – 14:00	Post crystallisation unit operations: Filtration and drying	<b>Dr Amgad Moussa</b> Syngenta, Mönchwilten
Measurements & Control		
14:00 – 14:40	Particle size measurements & characterisation	<b>Dr Tina Bonakdar</b> SCaPE, University of Leeds
14:40 – 14:55	<b>Tea</b>	
14:55 – 15:35	Particle properties & performance	<b>Dr Richard Storey</b> Astra Zeneca
15:35 – 16:15	Process spectroscopic techniques (IR, UV-vis, Raman)	<b>Dr Xiaojun Lai</b> SCaPE, University of Leeds
Laboratory Demonstrations		
16:15 – 17:30	D3 – Particle characterisation	<b>Dr Tina Bonakdar</b> SCaPE, University of Leeds
	D4 – Raman spectroscopy	<b>Dr Xiaojun Lai</b> SCaPE, University of Leeds
17:30	Poster and drinks reception followed by close of day two	

Friday 19 January 2018		
08:45	Coffee	
Measurements & Control (cont.)		
09:00 – 09:45	Control of crystallisation processes for PSD	Dr Tariq Mahmud SCaPE, University of Leeds
Co-Crystals		
09:45 – 11:15	Fundamentals of co-crystallisation and case studies of recent developments	Dr Mingzhong Li De Montfort University Professor Anant Paradkar University of Bradford
11:15 – 11:30	Coffee	
Crystallisation Modelling & Software Demonstrations		
11:30 – 12:15	Molecular to crystal science modelling route map	Dr Robert Hammond SCaPE, University of Leeds
12:15 – 13:00	Software demonstration: VISUAL HABIT	Dr Jonathan Pickering SCaPE, University of Leeds
13:00 – 13:45	Lunch	
13:45 – 14:30	Population balance modelling of crystallisation processes	Dr Antonia Borissova SCaPE, University of Leeds
14:30 – 15:15	Model-based design of crystallisation processes	Niall Mitchell Process Systems Enterprise (PSE), London
15:15 – 16:00	Software demonstration: The gCRYSTAL modules of gPROMS FormulatedProducts	Dr Niall Mitchell PSE
16:00 – 16:15	Wrap-up and feedback from delegates	Dr Xiaojun Lai Dr Tariq Mahmud

