

Nucleation - a Transition State to the Directed Assembly of Materials

Faraday Discussion



30 March-
1 April 2015
Leeds, UK

Monday 30 March

12:00	Registration, Lunch	
12:45	Welcome and Introductions Chair of Scientific Committee	
12:55	Outline of Discussion Format Rachel Wood and Susannah May, <i>Royal Society of Chemistry Publishing Editors</i>	
13:00	Introductory Lecture <u>Roger Davey</u> <i>University of Manchester</i>	
	Session 1: Molecular self-assembly and clustering in nucleation processes Session Chair: Sally Price	
14:00	Recent advances in the understanding of two-step nucleation of protein crystals Maria Vorontsova, Dominique Maes, <u>Peter Vekilov</u> , <i>University of Houston</i>	Paper 5114
14:05	On the question of two-step nucleation in protein crystallization Andrea Sauter, Felix Roosen-Runge, <u>Fajun Zhang</u> , Gudrun Lotze, Artem Feoktystov, Robert Jacobs and Frank Schreiber <i>University of Tuebingen</i>	Paper 5038
14:10	High-resolution insights into the early stages of silver nucleation and growth Cornelia Völkle, Denis Gebauer, and <u>Helmut Cölfen</u> <i>University of Konstanz</i>	Paper 4679
14:15	Discussion	
15.30	Afternoon tea	
16:00	Towards an understanding of the nucleation of alpha-para amino benzoic acid from ethanolic solutions: a multi scale approach <u>Dimitrios Toroz</u> , Ian Rosbottom, Thomas Turner, Diana Camacho Corzo, Robert Hammond, Xiaojun Lai, Kevin Roberts <i>University of Leeds</i>	Paper 5218
16:05	New in situ solid-state NMR techniques for probing the evolution of crystallization processes: pre-nucleation, nucleation and growth Colan Hughes, Andrew Williams, Victoria Keast, Vasileios Charalampopoulos, Gregory Edwards-Gau, <u>Kenneth Harris</u> <i>Cardiff University</i>	Paper 5046
16:10	Effect of mixing, concentration and temperature on formation of mesostructured solutions and their role in nucleation of DL-valine crystals <u>Anna Jawor-Baczynska</u> , Jan Sefcik, Barry Moore <i>EPSRC Centre for Innovative Manufacturing in Continuous Manufacturing and Crystallisation</i>	Paper 5156
16:15	Discussion	
17:30	Lightning presentations (Session Chair: Kevin Roberts) – presenters tbc	
18:00	Poster Session and Wine Reception	

Tuesday 31 March

	Session 2: Nucleation kinetics and mechanisms Session Chair: Bill Jones	
09:30	Measuring induction times and crystal nucleation rates Clement Brandel, <u>Joop ter Horst</u> <i>University of Strathclyde</i>	Paper 4680
09:35	Bioinspired magnetite formation from a disordered ferrihydrite-derived precursor Archan Dey, Jos Lenders, <u>Nico Sommerdijk</u> <i>Eindhoven University of Technology</i>	Paper 5209
09:40	Discussion	
10:30	Morning Tea	
11:00	Chiral habit selection on nanostructured epitaxial quartz films Adrian Carretero-Genevriar, <u>Marti Gich</u> , Laura Picas, Clement Sanchez, Juan Rodriguez-Carvajal <i>Institute des Nanotechnologies de Lyon INL</i>	Paper 5198
11:05	On a role of liquid intermediates in nucleation of gold sulfide nanoparticles in aqueous media <u>Maxim Likhatski</u> , Anton Karacharov, Alexander Kondrasenko, Yuri Mikhlin <i>ICCT SB Russian Academy of Sciences</i>	Paper 5223
11:10	Discussion	
12:00	Lunch	
	Session 3: Solvent and additive interactions as determinants in the nucleation pathway Session Chair: Ake Rasmuson	
13:00	Self-association of organic solutes in solution: a NEXAFS study of aqueous imidazole M. Thomason, C. Seabourne, B. Sattelle, G. Hembury, J. Stevens, A. Scott, E. Azizc and <u>S. Schroeder</u> <i>University of Manchester</i>	Paper 4678
13:05	Urea homogeneous nucleation mechanism is solvent dependent <u>Matteo Salvalaglio</u> , Marco Mazzotti, and Michele Parrinello <i>ETH Zurich</i>	Paper 4681
13:10	Influence of solvent on crystal nucleation of risperidone Donal Mealey, Jacek Zeqlinski, Dikshitkumar Khamar, <u>Ake Rasmuson</u> <i>University of Limerick</i>	Paper 5165
13:15	Discussion	
14:30	Afternoon Tea	
15:00	A design equation for low dosage additives that accelerate nucleation Geoffrey G. Poon, Stefan Seritan, and <u>Baron Peters</u> <i>University of California, Santa Barbara</i>	Paper 4676
15:05	The many roles of mellitic acid during barium sulfate crystallization Matthew Boon, Sandra Freeman, Mark Ogden, Allan Oliveira, William Richmond, Brian Skelton, <u>Franca Jones</u> <i>Curtin University</i>	Paper 5097
15:10	Modelling the stochastic behaviour of primary nucleation Giovanni Maria Maggioni, <u>Marco Mazzotti</u> <i>ETH Zurich</i>	Paper 5217

15:15	Discussion
16:30	Close of sessions
19:00	Pre-Dinner Drinks
19:30	Conference Dinner

Wednesday 1 April

	Session 4: Nucleation in complex multi-component and multi-phase systems Session Chair: Beatrice Biscans	
09:00	Do solid-to-solid polymorphic transitions in DL-norleucine proceed through nucleation? Joost van den Ende, Mireille Smets, Daniël de Jong, Sander Brugman, Bernd Ensing, Paul Tinnemans, Hugo Meekes, <u>Herma Cuppen</u> <i>Radboud University Nijmegen</i>	Paper 5203
09:05	Zeolite synthesis in hydrated silicate ionic liquids Leen Van Tendeloo, Mohamed Haouas, Johan Martens, Christine Kirschhock, Eric Breynaert, <u>Francis Taulelle</u> <i>University of Versailles St Quentin en Yvelines</i>	Paper 5225
09:10	Amorphous calcium phosphate phase mediated crystal nucleation kinetics and pathway Shuqin Jiang, <u>Haihua Pan</u> , Yan Chen, Xurong Xu and Ruikang Tang <i>Zhejiang University</i>	Paper 4913
09:15	Discussion	
10:30	Morning Tea	
11:00	Nucleation rate analysis of methane hydrate from molecular dynamics simulations Daisuke Yuhara, Brian Barnes, Donquk Suh, Brandon Knott, Gregg Beckham, Kenji Yasuoka, David Wu, <u>Amadeu Sum</u> <i>Colorado School of Mines</i>	Paper 5076
11:05	Formation of new polymorphs without any nucleation step. Desolvation of the rimonabant monohydrate: directional crystallisation concomitant to smooth dehydration Baptiste Fours, Yohann Cartigny, Samuel Petit, <u>Gerard Coquerel</u> <i>Université de Rouen</i>	Paper 4682
11:10	Localizing and inducing primary nucleation Zoubida Hammadi, Romain Grossier, Aziza Ikni, Nadine Candoni, Roger Morin, <u>Stephane Veesler</u> <i>CINaM-CNRS, Aix-Marseille University</i>	Paper 4683
11:15	Discussion	
12:30	Concluding remarks Allan S. Myerson <i>Massachusetts Institute of Technology</i>	
13:00	Acknowledgements	
13:15	Close of meeting	

Presenting authors are indicated in the programme by an underline. The affiliation is for the presenting author.