Dr. Jan Sefcik

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Jan Sefcik is a Reader and Deputy Head of Department of Chemical and Process Engineering at the University of Strathclyde and an Academic Director of the Doctoral Training Centre in Continuous Manufacturing and Crystallisation. He graduated with IngChem degree in Chemical Engineering from the Slovak Technical University. After a PhD in Chemical Engineering from the University Minnesota he was a Postdoctoral Scholar at the California Institute of Technology in Pasadena and a Senior Research Associate and Lecturer at the Swiss Federal Institute of Technology (ETH) in Zurich before joining Strathclyde in 2005. Since 2006 he has served as an Associate Editor of a Springer journal Chemical Papers. He has supervised over 15 PhD students and published over 60 papers in peer-reviewed journals.

Research Interests

My research expertise is in particle engineering, nanostructured materials and continuous processing with focus on experimental and computational studies of particle formation processes in order to design novel particulate products as well as efficient processes for their manufacturing. My research interests include nucleation, crystallization, colloids, nanomaterials, light scattering, particle sizing, population balance modelling and continuous process development.

Representative Publications

M. Soos, A. S. Moussa, L. Ehrl, J. Sefcik, H. Wu, M. Morbidelli “Effect of shear rate on the aggregates size and morphology investigated under turbulent conditions in stirred tank” Journal of Colloid and Interface Science 319, 577-589 (2008)

M. Soos, M. Lattuada, J. Sefcik “Interpretation of light scattering and turbidity measurements in aggregated systems: Effect of intra-cluster multiple-light scattering” Journal of Physical Chemistry B, 113, 14962-14970 (2009)

A. R. Hirst, S. Roy, M. Arora, A. K. Das, N. Hodson, P. Murray, S. Marshall, N. Javid, J. Sefcik, J. Boekhoven, J. van Esch, S. Santabarbara, N. T. Hunt, R. V. Ulijn “Biocatalytic induction of supramolecular order” Nature Chemistry, 2, 1089-1094 (2010)

K. Vogtt, N. Javid, E. Alvarez, J. Sefcik, M.-C. Bellissent-Funel “Tracing nucleation pathways in protein aggregation by using small angle scattering methods” Soft Matter, 7, 3906-3914 (2011)

N. Javid, K. Vogtt, S. Roy, A. R. Hirst, A. Hoell, I. W. Hamley, R. V. Ulijn, J. Sefcik “Supramolecular structures of enzyme clusters” Journal of Physical Chemistry Letters, 2, 1395–1399 (2011)

P. Hamilton, D. Littlejohn, A. Nordon, J. Sefcik, P. Slavin, P. Dallin, J. Andrews “Studies of particle drying using non-invasive Raman spectrometry and particle size analysis” Analyst, 136, 2168-2174 (2011)

K. Sypek, I. S. Burns, A. J. Florence, J. Sefcik “In situ monitoring of stirring effects on polymorphic transformations during cooling crystallization of carbamazepine” Crystal Growth & Design, 12, 4821-4828 (2012)

A. Jawor-Baczynska, J. Sefcik, B. D. Moore “250 nm glycine-rich nanodroplets are formed on dissolution of glycine crystals but are too small to provide productive nucleation sites” Crystal Growth & Design, doi: 10.1021/cg300150u (2013)