



**27th International Workshop on Industrial Crystallization
BIWIC 2022
31 August – 2 September 2022, Dipoli, Otakaari 24, Espoo**

e-posters

The e-posters are in the alphabetical order according to the surname of the first author.

Title	Authors	Institution	Screen No.	Presenta- tion time
Process Intensification of Polymorphs Continuous Crystallization	<u>R. Achermann</u> ¹ , B. Bodák ¹ , L. Bosetti ¹ , A. Košir ¹ , D. Biri ¹ , and M. Mazzotti ^{1*}	ETH Zurich, Zurich, Switzerland	4	Thursday 10.25-10.35
Application of ultrasound tomography in reactive crystallization processing of calcium carbonate	<u>S. Aghajanian</u> ^{1*} , M. Soleimani ² , P. Koulountzios ² , T. Rymarczyk ³ and T. Koiranen ¹	1 LUT University, Lappeenranta, Finland. 2 University of Bath, Bath, United Kingdom. 3 Research & Development Centre Netrix S.A, Lublin, Poland.	5	Thursday 10.25-10.35
Crystallization for phosphorus recovery from wastewater: Evaluation of the processes with different phosphate products	<u>Salman Amjad, Haiyan Qu</u>	Department of Green Technology, University of Southern Denmark, Odense, Denmark	5	Friday 10.10-10.20
Recovery of magnesium hydroxide from real bitterns	<u>G. Battaglia</u> ^{1*} , M. A. Domina ¹ , R. Lo Brutto ³ , J. L. Rodriguez ² , M. Fernandez de Labastida ² , J. L. Cortina ² , A. Pettignano ³ , A. Cipollina ¹ , A. Tamburini ¹ , G. Micale ¹	Dip. Ingegneria, UNIPA, V.le delle Scienze, 90128 Palermo, Italy 2 UPC-BarcelonaTECH, Barcelona, 08930, Spain 3 Dip. Fisica e Chimica-Emilio Segrè,	5	Thursday 10.35-10.45

Title	Authors	Institution	Screen No.	Presentation time
		UNIPA, V.le delle Scienze,90128 Palermo, Italy		
Size and Shape Modification of Plate-like Crystals using a Cyclical 3-Stage Process	<u>D. Biri</u> ¹ , A. Jaeggi ¹ , P. Binel ¹ , A.K. Rajagopalan ² , and M. Mazzotti ^{1*}	1 ETH Zurich, 2 University of Manchester	1	Thursday 10.25-10.35
Bovine Serum Albumin crystallization by using hanging drop with phyllosilicate	<u>Keigo Chiba</u> I. Hirasawa*, F. Kohori	Waseda university, Tokyo, Japan	3	Thursday 10.25-10.35
Using advanced image analysis methods to unravel the effect of rotation-induced shear on nucleation of paracetamol	<u>C. Devos</u> ¹ , C. Xiouras ² , T. Van Gerwen ¹ , and S. Kuhn ^{1*}	1 KU Leuven, 2 Chemical Process R&D, Crystallization Technology Unit, Janssen R&D	7	Thursday 10.25-10.35
Investigations of pharmaceutical compounds co-crystallization for application to chiral resolution assisted by supercritical CO ₂	<u>F. Ercicek</u> ^{1,2*} , C. Harscoat-Shiavo ² , M.Marchivie ¹ , S. Marre ² and P. Subra-Paternault ¹	1 CNRS, Univ. Bordeaux, CBMN, UMR 5248, F-33600 Pessac, France 2 CNRS, Univ. Bordeaux, ICMCB, UMR 5026, F-33600 Pessac, France	1	Thursday 10.35-10.45
Crystallization process strategies for sustainable soda ash production	<u>S. Ghaffari</u> ^{1,*} , P. Schulze ² , M. Gutierrez ¹ , , H. Lorenz ¹	1 Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany; 2 SChPrEngCo, Scientific Chemical Engineering Consultancy, Magdeburg, Germany;	4	Thursday 10.45-10.55
Solvent and additive selection for controlling the particle size distribution of cinnarizine in anti-solvent crystallization	R. Holm ¹ and <u>H. Qu</u> ^{2*}	1 Department of Physics, Chemistry and Pharmacy 2 Department of Green Technology, University of Southern Denmark, Odense, Denmark	5	Thursday 15.10-15.20
Molecular mechanism of liquid-liquid phase separation in crystallization process	YunHai Huang, Jingkang Wang, Na Wang, Xin Huang, Ting Wang, and Hongxun Hao*	School of Chemical Engineering and Technology, Tianjin University	1	Thursday 15.10-15.20

Title	Authors	Institution	Screen No.	Presentation time
IMPRESS H2020 project: Towards higher purities of biochemicals by crystallization	Mitra Ila ^{1*} , Anna Zaykovskaya ^{1*} , Marjatta Louhi-Kultanen ¹ , Erik Temmel ² , Manfred Stepanski ² , Michael Ginter ³ , Ben McKay ⁴ , Siu-Ha Soo-Tang ⁴ , Ed de Jong ⁴	1 Department of Chemical and Metallurgical Engineering, School of Chemical Engineering, Aalto University, Espoo, Finland 2 Sulzer Chemtech Ltd, Winterthur, Winterthur, Switzerland 3 Vogelbusch Biocommodities GmbH, Vienna, Austria 4 Avantium, Amsterdam, Amsterdam, The Netherlands	8	Thursday 10.25-10.35
Best practices in automating and optimizing the collection and analysis of large turbidity-temperature datasets from polythermal crystallization	<u>A. S. M. Jackson</u> ¹ , D. Goberdhan ² , P. J. Dowding ² , and K. J. Roberts ^{1*}	1 Centre for Doctoral Training in Complex Particulate Products and Processes, School of Chemical and Process Engineering, University of Leeds, Leeds, United Kingdom; 2 Infineum UK Ltd, Abingdon, United Kingdom	8	Thursday 10.45-10.55
The Nucleation Mechanism of a Model Diesel Fuel within Fractionation Driven Crystallization and the Impact of Additives			8	Thursday 15.10-15.20
Solubility and Nucleation Kinetics of a Series of Representative Single and Mixed Diesel n-Alkanes in Dodecane and Toluene			8	Friday 10.10-10.20
Imaging and Image Processing for 3D Crystal Facetted Growth Measurement and Crystal Shape Characterisation of L-Glutamic Acid	<u>A. S. M. Jackson</u> ¹ , Cai Y Ma ¹ , David C. Hogg, ² K. J. Roberts ¹	1 Centre for Doctoral Training in Complex Particulate Products and Processes, School of Chemical and	9	Thursday 10.25-10.35

Title	Authors	Institution	Screen No.	Presentation time
		Process Engineering, University of Leeds, Leeds, United Kingdom; 2 School of Computing, University of Leeds, Leeds, United Kingdom		
Crystallization for shape & size	Denes Janke, Zsofia Szalay, Adam Demeter	Gedeon Richter Plc. Budapest, Hungary	2	Friday 10.10-10.20
Isostructurality or Not: A Deep Insight into the Selective Formation of Spironolactone Solvates	Lihong Jia, Ling Zhou and Qiuxiang Yin	School of chemical engineering and technology, Tianjin University	1	Thursday 10.45-10.55
Towards enhanced wastewater treatment by IC High-pressure Desalination technology	M. Kankaanpää ^{1*} , W. Ljapidevskij ¹ , T. Albrecht ¹ , M. Linjama ² , and <u>M. Louhi-Kultanen</u> ³	1 Oy Infraconsulting Ab Ltd, Helsinki, Finland; 2 Tampere University, Tampere, Finland; 3 Aalto University, Espoo, Finland;	8	Thursday 10.35-10.45
Control of crystal shape in the batch crystallization process	J. Prlić Kardum ^{1*} , Martina Hrko- vac ² , Matija Gretić ³	1 Faculty of Chemical Engineering and Technology, Zagreb, Croatia; 2 GenePlanet Ltd., Zagreb, Croatia; 3 Genera, Inc., Part of Dechra Pharmaceuticals PLC Group, Rakov Potok, Croatia	5	Thursday 10.45-10.55
In situ monitoring of crystallization by SRS using unsupervised multivariate approach	<u>R. Kersaudy</u> ^{1*} , E. Gagnière ¹ , S. Labouret ¹ , D. Colson ¹ , N.Caillol ² , D. Mangin ¹	1 Université Claude Bernard Lyon 1, LAGEPP, Villeurbanne, France 2 Axel'One, Solaize, France	7	Thursday 10.35-10.45
Particle Design Through Combined Continuous Slug Flow Crystallization and Particle Isolation	<u>A.C. Kufner</u> , C. Steenweg, J. Habicht, and K. Wohlgemuth*	TU Dortmund University, Laboratory of Plant and Process Design, Dortmund, Germany;	7	Thursday 15.10-15.20

Title	Authors	Institution	Screen No.	Presentation time
Revealing the Molecular Mechanism of Cosolvency: The Tolbutamide Case	<u>Xin Li</u> , Na Wang*, Xin Huang, Ting Wang, Lina Zhou and Hongxun Hao*	School of Chemical Engineering and Technology, Tianjin University	1	Friday 10.10-10.20
Inter-relationship between Intermolecular Interactions and Lattice Energetics in the Crystal Structures of Pharmaceutical Materials	Cai Y Ma, Alexandru Moldovan, Andrew G P Maloney, and Kevin J Roberts	University of Leeds, The Cambridge Crystallographic Data Centre	9	Thursday 10.35-10.45
Oiling out in: Are we missing the precursor phase for nonclassical crystallization?	<u>Rajaboopathi Mani</u> ¹ , Marjatta Louhi-Kultanen ^{1*} , Leena Peltonen ² , Clare Strachan ²	1 Aalto University, Espoo, Finland; 2 University of Helsinki, Helsinki, Finland	2	Thursday 10.25-10.35
Modelling of Batch Cooling Crystallisation Processes: Effect of Crystallisation Kinetics on Crystal Size Distribution	S.Mohd Noor, C.Y.Ma, T.Mahmud, R.Y. Penchev and K.J.Roberts	Centre for Doctoral Training in Complex Particulate Products and Processes, School of Chemical and Process Engineering, University of Leeds, Leeds, United Kingdom;	9	Friday 10.10-10.20
Operational analysis of a novel reactive crystallizer for the production of Magnesium Hydroxide from waste brines	<u>C. Morgante</u> ¹ , F. Vassallo ¹ , G. Battaglia ¹ , F. Vicari ² , A. Cipollina ^{1*} , A. Tamburini ¹ and G. Micale ¹	1 Università degli Studi di Palermo, ResourSEAs SrL, Palermo, Italy 2 ResourSEAs SrL, viale delle Scienze Ed.16, Palermo, Italy	6	Thursday 10.25-10.35
The influence of chiral Glutamic acid additive on chiral resolution of aspartic acid	Thitapond Nulek ^{1,a} and Adrian E. Flood ^{1,b}	Department of Chemical and Biomolecular Engineering, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, 555 Moo 1, Payupnai, Wang Chan, 21210 Rayong, Thailand.	3	Thursday 10.45-10.55
A Novel Strategy for Deracemization using Periodic Fluctuations of Concentration	Kritsada Intaraboonrod and Adrian Flood*	Department of Chemical and Biomolecular Engineering, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and	3	Thursday 15.10-15.20

Title	Authors	Institution	Screen No.	Presentation time
		Technology, 555 Moo 1, Payupnai, Wang Chan, 21210 Rayong, Thailand.		
Antisolvent crystallization of rare earth sulfate hydrates	<u>Nitin Pawar</u> , Meher Geetika Sanku, Kerstin Forsberg and Michael Svärd*	Department of Chemical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden	5	Friday 10.20-10.30
Lignin Fractionation: Development Towards a Continuous Precipitation Process	<u>Arulselvan Ponnudurai*</u> , Peter Schulze, Andreas Seidel-Morgenstern, and Heike Lorenz	Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany;	4	Thursday 15.10-15.20
Influence of Aspartic Acid and Glutamic Acid Additives on Calcium Pyrophosphate Crystallization	<u>S.Polat, Q. An, H.B.Eral</u>	Process&Energy Department,3ME, Delft University of Technology, The Netherlands	6	Thursday 10.45-10.55
Batch cooling crystallization process for the food-grade phytosterols	<u>Rantamäki P.</u> ^{1,2} , Kavakka J. ² , Oinas P. ¹ and Louhi-Kultanen M. ¹	1 Aalto University, Espoo, Finland 2 Stora Enso Oyj, Biomaterials division, Finland/Sweden	6	Friday 10.10-10.20
Screening for a Conglomerate Co-crystal of the Racemic Compound Praziquantel	Peerapon Rapeenun ^{1,2} , Charline Gerard ² , Clement Pinetre ² , Yohann Cartigny ² , Paul Tinnemans ³ , Rene de Gelder ³ , Adrian Evan Flood ¹ , Joop H. ter Horst ²	1 Vidyasirimedhi Institute of Science and Technology, 555 Moo 1, Payupnai, Wang Chan, 21210 Rayong, Thailand 2 SMS Laboratoire Sciences et Methodes Separatives, Universite de Rouen Normandie, France 3 Institute for Molecules and Materials, Radboud University, The Netherlands	7	Friday 10.10-10.20
Understanding the Impact of Crystal Chemistry on the Comparative Crystallisation of Entacapone Polymorphic Forms and their Directed Nucleation on Gold Templates	Cai Y Ma ¹ , Ana Kwokal ² , Dawn Geatches ³ , Ya-Wen Hsiao ³ , and <u>Kevin J Roberts</u> ^{1,*}	1 Centre for the Digital Design of Drug Products, School of Chemical and Process Engineering, University of Leeds, Leeds, LS2 9JT, UK;	9	Thursday 10.45-10.55

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		2 Syngenta, Jealott's Hill International Research Centre, Bracknell, RG42 6EY, UK; 3 Science and Technologies Facilities Council, Daresbury Laboratory, Sci-Tech Daresbury, Warrington WA4 4AD, UK		
Machine Learning, Imaging and Image Processing for 3D Crystal Shape Characterisation	Cai Y Ma ¹ , David C Hogg ² , Robert B Hammond ¹ , and <u>Kevin J Roberts</u> ^{1,*}	1 Centre for the Digital Design of Drug Products, School of Chemical and Process Engineering, University of Leeds, Leeds LS2 9JT, UK; 2 School of Computing, University of Leeds, Leeds LS2 9JT, UK	9	Thursday 15.10-15.20
John Neil Sherwood (1933-2020): An Appreciation	Kevin J Roberts	Centre for the Digital Design of Drug Products, School of Chemical and Process Engineering, University of Leeds, Leeds LS2 9JT, UK	9	Friday 10.10-10.20
Description of phase diagrams of pharmaceuticals using PC-SAFT for Solvent Selection	<u>M. Sadeghi</u> ^{1,*} , V. Tenberg ¹ , A. Seidel-Morgenstern ¹ and H. Lorenz ¹	Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany	2	Thursday 10.35-10.45
Solubility Prediction of Chiral Cocrystals for Development of Chiral Resolution Processes	<u>Sarita Songsermsawad</u> ^{1,2} , <u>Oleksii Shemchuk</u> ² , <u>Tom Leyssens</u> ² , <u>Adrian Flood</u> ¹	1 Vidyasirimedhi Institute of Science and Technology, Thailand Catholic University of Louvain, Belgium	2	Thursday 10.45-10.55

Title	Authors	Institution	Screen No.	Presentation time
Improving productivity of internally seeded cooling crystallization with Direct Nucleation Control	<u>K. Sugita</u> ^{1*} , J. Unno ¹ , I. Hirasawa ¹	Department of Applied Chemistry, Waseda University, Tokyo, Japan	3	Thursday 10.35-10.45
Solid Phase Behavior and Stability Investigation of an Amino Acid Intermediate Compound Produced via Liquid-Assisted Grinding	<u>V. Tenberg</u> ^{1*} and H. Lorenz ¹	Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany	4	Friday 10.10-10.20
On the Role of Mutarotation in Lactose Crystallization-Cedeno	<u>Silvio Trespi</u> ^{1*} , Francesca Breveglieri ¹ and Marco Mazzotti ¹	Institute of Energy and Process Engineering, ETH Zurich, 8092 Zurich, Switzerland	4	Thursday 10.35-10.45
Estimation of concentration of lysozyme at a membrane surface using membrane crystallization method	<u>S. Ueda</u> , I. Hirasawa*, F. Kohori	Waseda university, Tokyo, Japan	2	Thursday 15.10-15.20
Chiral Amplification through the Interplay of Racemization and Crystal Growth	S.W. van Dongen ¹ , I. Alhal ¹ , I. Baglai ^{1,2} , M. Leeman ³ , R.M. Kellog ³ , B. Kaptein ⁴ and W.L. Noorduin ^{1,5*}	1 AMOLF, Amsterdam, The Netherlands; 2 Ardena Amsterdam BV, Amsterdam, The Netherlands; 3 Symeres, Groningen, The Netherlands; 4 InnoSyn BV, Geleen, The Netherlands; 5 Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Amsterdam, The Netherlands	6	Thursday 15.10-15.20
Effective magnesium recovery via seawater brines mining	<u>F. Vassallo</u> ¹ , C. Morgante ¹ , A. Ci-pollina ^{1*} , A. Tamburini ^{1,2} and G. Micale ¹	1 Dipartimento di Ingegneria, Università degli Studi di Palermo - viale delle Scienze Ed.6, 90128 Palermo,	6	Thursday 10.35-10.45

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		Italy; 2 ResourSEAs SrL, viale delle Scienze Ed.16, 90128 Palermo, Italy		
Coating of Drug Tablet by Cooling Crystalliza- tion	C. Phoumixay and <u>L. Wantha*</u>	School of Chemical Engineering, In- stitute of Engineering, Suranaree Uni- versity of Technology, 111 University Avenue, Muang District, Nakhon Ratchasima, 30000, Thailand.	3	Friday 10.10-10.20
Effect of viscosity on batch crystallization of α - D-galactose from an industrial side-stream	Anna Zaykovskaya, Marjatta Louhi-Kultanen	Aalto University, Espoo, Finland	6	Friday 10.20-10.30

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