



SCIENTIFIC PROGRAM

- Hosted by:** Tianjin University
Hebei University of Technology
- Organized by:** National Engineering Research Center of Industrial Crystallization Technology, Tianjin University.
Engineering Research Center of Seawater Utilization Technology (Ministry of Education), Hebei University of Technology
School of Chemical Engineering, Tianjin University
Engineering Research Center of Green Refining Process, Ministry of Education
International Joint Research Center of Crystallization Science and Engineering
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BIWIC 2025

3rd~6th, September, 2025

St. Regis Tianjin

Wednesday, 3rd September, 9:00-22:00
Registration, St. Regis Tianjin (No. 158 Zhang Zizhong Road, Heping District, Tianjin)

Thursday, 4 th September Room: The St. Regis Ballroom (G Floor)		
08:30-08:45	Opening Ceremony	Session Chair: Hongxun Hao
08:45-09:15	Invited 1: Design and Characterization of Static Mixer Crystallizers. Richard Lakerveld, Hong Kong University of Science and Technology	
09:15-09:45	Invited 2: Enantiomeric Separation of Chiral Pharmaceuticals and Process Intensification. Junbo Gong, Tianjin University	
09:45-10:05	Oral 1: Stable Prenucleation Clusters in Nonclassical Crystallization Procedure of Cerium Oxalate. Sébastien Teychené, Toulouse-CNRS University	
10:05-10:20	Group Photo & Coffee Break & Posters	
10:20-10:40	Oral 2: The Ostwald Rule of Stages Explained by A Pseudo Ripening Mechanism Between the Polymorphic Phases. Denis Mangin, Université Lyon 1	Session Chair: Joachim Ulrich, Jianxin Chen
10:40-11:00	Oral 3: Development of Tizanidine Drug-Drug Cocrystal Based on Structure-Activity Relationship Regulation and Its Evaluation. Xin Huang, Tianjin University	
11:00-11:20	Oral 4: Metal Separation in Lithium-ion Battery Recycling through Antisolvent Precipitation. Alexandre Chagnes, Université de Lorraine	
11:20-11:40	Oral 5: Protein Crystals for Drug Delivery. Wenqian Chen, National University of Singapore	
11:40-12:00	Oral 6: Laser-induced Crystal Nucleation Facilitated by Microjets Emerging from Interaction of Thermocavitation Bubble Pairs under Confinement. Hüseyin Burak Eral, Delft University of Technology	
12:00-12:20	Oral 7: New Strategies for Energy and Sensitivity Regulation in Perovskite Energetic Materials. Yuan Gao, Nanjing University of Science and Technology	
12:20-14:00	Lunch & Posters Room: Promenade (1 st Floor)	
14:00-14:30	Invited 3: Papain Encapsulation Within Starch by Antisolvent Precipitation. Lek Wantha, Suranaree University of Technology	Session Chair: Kerstin Forsberg, Yingying Zhao
14:30-15:00	Invited 4: Template-assisted Biocrystallization in vitro and in vivo for Future Manufacturing of Biopharmaceuticals. Huaiyu Yang, Loughborough University	

15:00-15:20	Oral 8: Uncovering Cocrystallization Competition Mechanism of Polyhydroxy Natural Products as well as Their Separation Behavior. Jinbo Ouyang, East China University of Technology	
15:20-15:40	Oral 9: SolECOs-I: A Data-Driven Platform for Sustainable Solvent Design in Pharmaceutical Manufacturing. Brahim Benyahia, Loughborough University	
15:40-16:00	Oral 10: Recovery of Lithium Hydroxide via Antisolvent Crystallization. Nitin Pawar, KU Leuven	
16:00-16:20	Oral 11: Computational Fluid Dynamics Simulation of the Hydrodynamic and Particle Suspension Performance of a Novel Channel Impeller. Mingyu Chen, Tianjin University	
16:20-16:30	Coffee Break & Posters	
16:30-16:50	Oral 12: Crystallisation of Therapeutic Peptides Using Templating Strategies. Isha Bade, Imperial College London	Session Chair: Burak Eral, Xiaobin Jiang
16:50-17:10	Oral 13: Extending the Chiral Resolution Toolbox Using Cocrystallization. Fuli Zhou, Fujian Agriculture and Forestry University	
17:10-17:30	Oral 14: Green low-temperature Industrial Purification System and AI Integrated Solution. Shubin Hu, HANERTECH Energy Technology (SuZhou) Co., Ltd	
17:30-17:50	Oral 15: Solid-State Modulation of Pinoxaden Chemical Reactivity. Chunyan Liu, Nankai University	
17:50-18:10	Oral 16: Nucleation and Crystal Growth of Calcium Sulfate Hydrates Modulated via Macromolecular Additives. Laiba Abrar, Tianjin University	
18:30-20:30	Gala Room: The St. Regis Ballroom (G Floor)	

Friday, 5 th September Room: The St. Regis Ballroom (G Floor)		
08:30-09:00	Invited 5: Membrane Regulated Crystallization: Process Control and Intensification. Xiaobin Jiang, Dalian University of Technology	Session Chair: Sébastien Teychené, Xin Huang
09:00-09:30	Invited 6: Low Energy Production of Drug Carried Liposomes by Means of A Spinning Disk Reactor for Medical Applications. Marco Stoller, Sapienza University of Rome	
09:30-09:50	Oral 17: Antisolvent Crystallisation of Ni Sulfate: Recycling Approach for Spent Batteries. Kerstin Forsberg, KTH Royal Institute of Technology	
09:50-10:10	Oral 18: Multi-scale Application of Artificial Intelligence in Crystallization. Jingtao Wang, Tianjin University	
10:10-10:30	Oral 19: Templated-Assisted Crystallisation of Biopharmaceuticals. Vivek Verma, University College Cork	
10:30-10:40	Coffee Break & Posters	
10:40-11:00	Oral 20: Artificial Intelligence Assisted Industrial Crystallization: Monitoring, Decision, and LLM Multi-Agents. Zhenguo Gao, Tianjin University	Session Chair: Lek Wantha, Denis Mangin

11:00-11:20	Oral 21: Peptide Cocrystals: Enhancing Properties and Unlocking New Applications. Yibing Peng, Loughborough University	
11:20-11:40	Oral 22: End-to-end Real-time Data-driven Automation and Intelligentization of Crystallization Processes. Rui Zhang, Mettler Toledo	
11:40-12:00	Oral 23: Multi-class Object Detection of Crystallization Process Based on Online Image. Fangkun Zhang, Qingdao University of Science and Technology	
12:00-12:20	Oral 24: Optimization of the Continuous Crystallization in A Non-Isothermal Couette-Taylor Crystallizer. Qiang Li, East China University of Science and Technology	
12:20-14:00	Lunch & Posters Room: The Diamond Ballroom (18 th Floor)	
14:00-14:30	Invited 7: The Influence of Micro-nano Bubbles on Crystallization Nucleation and Crystal Growth. Jianxin Chen, Hebei University of Technology	Session Chair: Jerry Heng, Huaiyu Yang
14:30-14:50	Oral 25: Online Process Analytical Technology and Artificial Intelligence Applied to Real-time Monitoring and Control of Crystallization and Pharmaceutical Formulation Processes. Xuezhong Wang, Beijing Institute of Petrochemical Technology	
14:50-15:10	Oral 26: Influence of Protecting Groups on the Solubility and Nucleation of Alanine Homopeptides. Jianing Li, Imperial College London	
15:10-15:30	Oral 27: The Good in the 'Bad': Minor Epimer Enhances Reaction Selectivity via Solubility-Controlled Mechanism. Yang Li, Zhejiang NHU Co., Ltd.	
15:30-15:50	Oral 28: Application of Eutectic Freeze Crystallization for Manganese Sulfate Recovery in Hydrometallurgical Recycling of Lithium-Ion Batteries. Mohammadreza Akbarkermani, KTH Royal Institute of Technology	
15:50-16:05	Oral 29: Characterization of Crystal Surface Properties and Crystal Polymorphs with Inline Process Microscopy. Markus Honkanen, Pixact Ltd.	
16:10-18:00	Football Match / Lab Tour	
18:00-21:00	Dinner The Diamond Ballroom (18 th Floor)	

Saturday, 6th September The St. Regis Ballroom (G Floor)		
08:30-09:00	Invited 8: Crystallising Peptides: Challenges and Opportunities. Jerry Heng, Imperial College London	
09:00-09:20	Oral 30: Application of Crystallization in Enzymatic Reactions for the Preparation of High-end Chemicals. Weiyi Su, Hebei University of Technology	
09:20-09:40	Oral 31: Enhancement of Antibacterial Activity in Biogenic Silver Nanoparticles Synthesized by Antarctic Microorganisms through Industrial Crystallization Methods. Gamze Neşe Özcan, Istanbul Technical University	Session Chair: Gencelie Güner, Wenqian Chen
09:40-10:00	Oral 32: Multi-objective Optimization of Lysozyme Crystallization Using Morphological Population Balance Modeling. Guangzheng Zhou, Beijing Institute of Petrochemical Technology	

10:00-10:20	Oral 33: Unveiling the Facilitating Mechanism of Oxygen-Rich Coformers on Cefmetazole Sodium Crystals. Yaoguang Feng, Tianjin University	
10:20-10:30	Coffee Break & Posters	
10:30-10:50	Oral 34: Polymorph Control of Glycine through Evaporative Crystallization of Sessile Droplets Using Electrowetting. Qi An, Delft University of Technology	Session Chair: Richard Lakerveld, Junbo Gong
10:50-11:10	Oral 35: The Riddle of α -Resorcinol Revisited – New Perspectives on “Pocket-like” Structure. Zhenkai Cen, Tianjin University	
11:10-11:30	Oral 36: Antisolvent Crystallization of DL-methionine Polymorphs. Lamphoun Inthavideth, Suranaree University of Technology	
11:30-11:50	Oral 37: Intensified Acidolysis of Phosphate Rock via High Shear Reactor: Fluid Dynamics and Mechanistic Insights. Guixuan Shan, Tianjin University	
11:50-12:10	Oral 38: A Coupled Thermodynamic-kinetic Model for the Decomposition-crystallization Process of Carnallite. Wenli Zhao, Tianjin University of Science and Technology	
12:10-14:00	Lunch & Posters The Diamond Ballroom (18 th Floor)	
14:00-14:20	Oral 39: A Case Study of Crystallization Process Control and A New Attempt to Establish A Mathematical Model for Simulation of Crystallization Process. Shutian Xuanyuan, Tianjin University	Session Chair: Manfred Stepanski, Weiyi Su
14:20-14:40	Oral 40: Lysozyme – Calcium Oxalate Interactions in Protein Crystallization and Kidney Stone Formation. Ella Owen, Loughborough University	
14:40-15:00	Oral 41: Modifying Physicochemical Properties through Cocrystallization and Coprecipitation. Shanming Kuang, J-Star Research Inc.	
15:00-15:20	Oral 42: Co-Crystallization Strategy for Alpha-Mangostin: A Synergy of Computational and Experimental Techniques. Nurin Syamimi Binti Ahmad Izuren Shah, International Islamic University Malaysia	
15:20-15:40	Oral 43: Static layer melt crystallization: Effects of Impurities on the Growth Behaviors of Crystal Layers. Suping Ding, Research Institute of Petroleum Processing Co., Ltd., SINOPEC	
15:40-16:00	Oral 44: Selective Crystallization of Pyrazinamide Polymorphs in Supramolecular Gels. Xiaojie Zhou, East China University of Science and Technology	
16:00-16:20	Oral 45: Fabrication of Crystalline Materials and The Application in of Saline Wastewater Treatment. Longfei Peng, Hebei University of Technology	
16:20-16:30	Closing Ceremony & Awards Announcement	

List of Poster Presentation

P.01 Combining Sodium Profen Salts with Carbohydrates through Ionic Cocrystallization.

Wen Ting, Université catholique de Louvain

P.02 Continuous Melt Crystallization Process: Design, Scale-up and Optimization.

Wenlong Xiao, Hunan University of Technology

P.03 Non-Photochemical Laser-Induced Nucleation as a Tool to Accelerate Lithium Crystallisation in Recovery Processes. **Pepijn van Tooren**, Delft University of Technology

P.04 Improving Accuracy in Polythermal Solubility Measurements: Challenges, Error Sources, and Practical Remedies **Zhaopeng Wang**, Delft University of Technology

P.05 Development and Evaluation of novel Crystal Forms of Hydrochloride Icotinib.

Huik Gu, Chengdu Easton Bio Pharmaceuticals Co., Ltd.

P.06 The Anisotropic Growth and Ordered Agglomeration Behaviors of Cephalosporins.

Xiaowei Cheng, Hebei University of Science and Technology

P.07 Crystalline Salt Form of Vonoprazan. **Jiao Zhang**, Sichuan Kelun Pharmaceutical Co., Ltd.

P.08 Precipitation of Cobalt and Nickel Oxalates in Microfluidic Devices. **Andressa**

Mazur, KTH Royal Institute of Technology

P.09 Heavy Metal Removal from Wastewater Using Extracellular Polymeric Substances

Produced by Antarctic Bacteria. **Sena Altun**, Istanbul Technical University

P.10 Semi-Autonomous Solubility Measurements of peptides: Comparing High-Throughput Platforms and Lab-Scale Automation. **Isha Bade**, Imperial College London

P.11 High-Protein-Loading Mesoporous Silica for Heterogenous Protein Crystallization.

Wenqian Chen, National University of Singapore

P.12 Population Balance Model and Its Solution In Industrial Crystallization Process.

Fangkun Zhang, Qingdao University of Science and Technology

P.13 Sulfathiazole-Trimethoprim Cocrystal: Study on Solubility, Antibacterial Activity and Antibacterial Mechanisms. **Kun Qian**, Jiangxi University of Traditional Chinese Medicine

P.14 Study on the Crystallization Process of C8 Aromatic Hydrocarbons under Multi scale Characterization of Ultrasound. **Linge Li**, Sinopec Luoyang Engineering Group Research Center

P.15 Study of Experimental and Thermodynamic Modeling for Precipitation of Cerium

Oxalate with Oxalic Acid Media. **Han Liu**, Toulouse-CNRS University

P.16 Near Zero Waste Discharge from Concentrated Industrial Fermentation Waste Stream. **Fatma Elif Genceli Güner**, Istanbul Technical University

P.17 Computational Evaluation of Pharmaceutical Co-Crystal Formation Using COSMO-RS: A Study Across Selected Active Pharmaceutical Ingredients. **Rushdi**, IKOP Pharma (IKOP Sdn. Bhd.)

P.18 Integrated Experimental and Computational Strategy for High-Purity L-Lactic Acid Enantioseparation via Diastereomeric Crystallization. **Yuanyuan Shen**, Zhejiang University

P.19 Selective Recovery of Critical Metals from Permanent Magnet Waste through Deep Eutectic Solvent Leaching and Antisolvent Crystallization. **Ren Tao**, KTH Royal Institute of Technology

P.20 Precipitating Solvent Design for Carbon Capture. **Noureddine Lebaz**, Université Claude Bernard Lyon 1

P.21 Research on the Recrystallization Inhibition of Inorganic Salts in High-Salinity Oil Reservoirs. **Yitong Li**, China University of Petroleum (East China)

P.22 Protein Crystallization Enhancement via Bidirectional Solvent Diffusion. **Meixuan Li**, China University of Petroleum (East China)

P.23 Characterization of Crystal Surface Properties and Crystal Polymorphs with Inline Process Microscopy. **Markus Honkanen**, Pixact Ltd.

P.24 Introducing Inline Microscopy to An Industrial Crystallization Process with Challenging Conditions. **Hannu Eloranta**, Pixact Ltd.

P.25 Decoding Intermolecular Forces in Drug Co-Crystallization: A Temozolomide-p-Coumaric Acid System with Enhanced Stability and Tunable Dissolution Profiles. **Wensu Chen**, Nanjing Tech University

P.26 Crystallization for Protein Purification. **Wenqian Chen**, National University of Singapore

P.27 Screening, Preparation and Performance Study on Co-amorphous of Afatinib. **Yunxia Li**, South China University of Technology

P.29 Mechanistic Study on the Structure–Property Relationship of Flexible Organic Crystals. **Hongtu Zhao**, Tianjin University

P.30 Bifunctional Chiral Agent Enables One-pot Spontaneous Deracemization of Racemic Compounds. **Xin Su**, Tianjin University

P.31 A Transparent and Flexible Microfluidic Platform for Non-Photochemical Laser-Induced Nucleation. **Zhaopeng Wang**, Delft University of Technology

P.32 Enhancing Co, Mo and Al Leaching from Spent HDS Catalysts During Scale-up Process Based on Fluid Dynamic and Leaching Mechanism. **Jingwei Cai**, Tianjin University

P.33 Crystal Engineering of Sustained-Release Pregabalin Cocrystals: Development, Physicochemical Profiling, and Structure-Release Relationship Analysis. **Jiaxuan Ren**, Tianjin University

P.34 A Novel Multi-Objective Framework for Determining Crystallization Kinetics Assisted by Deep Learning Image Analysis. **Tuo Yao**, Tianjin University

P.35 A Reactive Crystallization Process for the Preparation of Adipic Acid from Potassium Adipate Waste Using Phosphoric Acid. **Xingyu Zhou**, Tianjin University

P.36 Dynamic Organic Crystal as Exceptionally Efficient Artificial Natural Light-harvesting Actuator. **Jiaxuan Zhu**, Tianjin University

P.37 The Solid-liquid Equilibrium Behavior of ϵ -CL-20 in 10 Pure Solvents and Its Molecular Mechanism. **Hui Wang**, Tianjin University

P.38 Cocrystallization Strategy Enabling Azobenzene Derivatives with Excellent Elasticity and Multistimulus-Responses: A Case Study. **Shanshan Zhu**, Tianjin University

P.39 Photoactuators Based on Plastically Flexible α -Cyanostilbene Molecular Crystals Driven by the Solid-State [2+2] Cycloaddition Reaction. **Yiwei Wei**, Tianjin University

P.40 Enhancing Hardness and Transmittance of High-aluminum Glass-ceramics through Nucleating Agent Content Regulation. **Yaxin Liu**, Tianjin University

P.41 Advancing the Integration of Deep-sea Lighting Equipment: High-aluminum Glass Ceramic with Both Red Light Emission and High Hardness. **Jiani Yu**, Tianjin University

P.42 Crystallization Process and Crystal Morphology Control of Ampicillin Sodium. **Man Zhang**, Tianjin University

P.43 Enhanced the Production of FDCA by Co-solvency: From Molecular Mechanisms to Process Simulation of Two Separation Routes. **Shilei Zhou**, Tianjin University

P.44 Cocrystal Engineering for Sustained Release of Dicamba: Mitigating Secondary Drift and Reducing Leaching. **Chuanhua Wu**, Tianjin University

P.45 Resource Recovery of Waste Salt via Crystallization in Chemical Recycling. **Sanli Yin**, Tianjin University

P.46 Revealing and Visualizing the Microscopic Solution Chemical Molecular Mechanism of β -HMX Solubility in Binary Mixed Solvents. **Shifan Xu**, Tianjin University

P.47 Color-tunable Circularly Polarized Luminescence With Near-unity

Photoluminescence Quantum Yield in Chiral Copper(I)-Iodide Hybrid Clusters. **Jiahui Li**, Tianjin University

P.48 Exploring the Influence of Crystal Packing on the Optical-physical Property of Quercetin-based Binary and Ternary Solid Forms. **Jianmin Zhou**, Tianjin University

P.49 Atomic-Scale Insights into $\text{FePO}_4 \cdot 2\text{H}_2\text{O}$ Spheroid Formation: Hydrogen Phosphate Coordination and Phase Transition Kinetics. **Huiqi Wang**, Tianjin University

P.50 $\text{HZrO}_2 @ \text{PPy}$ Nanocomposite for Effective Fluoride Removal from Environmental Water. **Yan Li**, Tianjin University

P.51 Stabilizing Nickel-Rich Layered Oxides via Heterogeneous Epitaxial Crystallization for High-Voltage Lithium-Ion Batteries. **Shanshan Feng**, Tianjin University

P.52 Single-Crystalline COF-Based Mixed-Matrix Membranes for Advanced Carbon Capture. **Shilin Guo**, Tianjin University

P.53 Synergistic Photothermal Therapy and Chemoimmunotherapy using Novel Tumor-Resident Intracellular Bacteria Scavenger for Treatment of Bacteria-Colonized Colorectal Cancer. **Maolin Li**, Tianjin University

P.54 Metal-free 3D CS Fluorine Adsorbent Achieves over 100 Cycles of Regeneration. **Fengzhen Liu**, Tianjin University

P.55 Performance and Modeling of Freezing Crystallization in Desalination: Heat Transfer and Impurities Flow. **Shengzhe Jia**, Tianjin University

P.56 Optimizing Particle Size Distribution in Continuous Cooling Crystallization: A Multiscale CFD-PBE Simulation Approach. **Mingpu Yuan**, Tianjin University

P.57 Numerical Investigation of Stirring Performance in a Precipitation Reactor for Spent Fuel Reprocessing Using a Mechanistic CFD Approach. **Siwen Yuan**, Tianjin University

P.58 Development of Key Crystallization Technologies for Phosphoramidate Nucleic Acid drugs. **Fan Wang**, Tianjin University

P.59 COF@COF: Constructing Core-Shell Structured Covalent-Organic Frameworks from Interpenetration Isomers. **Jiaxuan Tang**, Tianjin University

P.60 Sustainable Recycling of Spent Lithium-ion Batteries: DL-carnitine Hydrochloride-based DES Approach with High Leaching and Co-precipitation Efficiency and Enhanced Atom Economy. **Liuyang Yu**, Tianjin University

P.61 Trimodal Operation of a Robust Smart Organic Crystal. **Wenbo Wu**, Tianjin University

P.62 Exploring Nucleation Kinetics of Vanillyl Alcohol: Insights from Experimental and

Modeling Approaches. **Abraha Gebremeskel Bairu**, Tianjin University

P.63 Photomechanical macroscopic movements driven by photoinduced topochemical [2+2] cycloaddition reaction in tridentate cyanostilbene. **Hui Yu**, Tianjin University

P.64 Spherical Cocrystal as A Fertilizer Slow-release Platform for Improved Nitrogen Cycle Management. **Yuechao Cao**, Tianjin University

P.65 Spongy and Anti-pollution MXene/Ag₂S/Cellulose Acetate Membrane for Sustainable Solar-driven Interfacial Evaporation and Water Purification. **Xue Bai**, Tianjin University

P.66 Metal-organic Nanocages Enhance Fluoride Adsorption through the Synergy of Ternary Amino Cryptands and Metal Sites. **Shiyu Sun**, Tianjin University

P.67 The Development and Validation of A Raman Spectroscopy Concentration Calibration Model to Enhance Crystallization Kinetic Model-based Control: A Case Study of DL-methionine. **Kai Shi**, Tianjin University