

**PROGRAMME**

**INTERNATIONAL  
CONFERENCE ON  
MICROREACTION  
TECHNOLOGY**

**OCTOBER 27 - 30, 2024 // GRAZ, AUSTRIA**



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# WELCOME TO IMRET17

At IMRET 17, we celebrate the connections between brilliant minds and innovative ideas. Over the next few days in Graz, you'll engage with experts, discover cutting-edge research, and forge collaborations that will shape the future of microreaction technology.

We wish you an inspiring and successful event, and look forward to the breakthroughs and connections that will emerge!

## WI-FI ACCESS

SSID: imretgraz  
PW: IMRET17!graz

## ESSENTIAL LINKS



Agenda



Book of Abstracts

# COMMITTEE

## CONFERENCE CHAIRS

**C. Oliver Kappe**

UNIVERSITY OF GRAZ

**Heidrun Gruber-Wölfler**

GRAZ UNIVERSITY OF TECHNOLOGY

## LOCAL ORGANISING COMMITTEE

**Johannes Khinast**

GRAZ UNIVERSITY OF TECHNOLOGY & RCPE

**Torsten Mayr**

GRAZ UNIVERSITY OF TECHNOLOGY

**Dirk Kirschneck**

MICROINNOVA

**Peter Pöchlauer**

THERMO FISHER SCIENTIFIC

# PLENARY SPEAKERS

CONFERENCES ARE ONLY AS GOOD AS THEIR SPEAKERS



North Carolina State  
University

**MILAD  
ABOLHASANI**

Accelerated Materials and  
Molecular Discovery with  
Autonomous Flow Reactors



University of Ljubljana

**POLONA  
ZNIDARSIC-  
PLAZL**

Biocatalytic Process  
Intensification using  
Microreaction Technology



Merck Darmstadt

**SEBASTIAN  
HÄRTNER**

The First Qualified Modular  
Production Conti Plant at  
Merck/Germany – Historical  
Perspectives and Insights



University of Liège

**JEAN-  
CHRISTOPHE  
MONBALIU**

Continuous Flow Technology  
for Challenging Applications  
in Synthetic Organic  
Chemistry

# KEYNOTE SPEAKERS

CONFERENCES ARE ONLY AS GOOD AS THEIR SPEAKERS



MSD Rahway  
**LONGRUI  
CHEN**

Development of Electrochemistry  
Scale-up Capability at MSD



University of Bern  
**FRANCESCA  
PARADISI**

Chemo-Biocatalytic Processes  
Enabled by a Continuous Flow Set Up



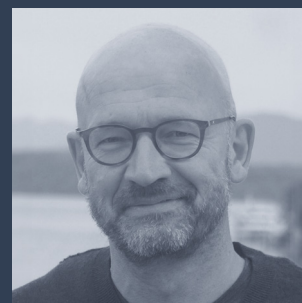
NCL Pune  
**AMOL  
KULKARNI**

Solvent Free Mechanochemical  
Continuous Manufacturing:  
Complexities in Reaction  
Engineering, Design & Scale-up



TU Dortmund  
**NORBERT  
KOCKMANN**

Opportunities for Microfluidic  
Equipment with Additive  
Manufacturing



Karlsruhe Institute of Technology  
**ROLAND  
DITTMAYER**

Micro Process Technology  
for Decentralized Power-to-X  
Applications



Lonza AG  
**DOMINIQUE  
ROBERGE**

Solid and Suspension Handling  
in Continuous Pharmaceutical  
Manufacturing



University of Tokyo  
**SHU  
KOBAYASHI**

Flow Fine Synthesis Toward  
Sustainable Society

# SPONSORS



## COPA-DATA

COPA-DATA's software platform, zenon, streamlines industrial automation and data management for Life Sciences and Pharmaceutical manufacturers. With an engineering environment and application level, it simplifies production control and offers features like HMI, SCADA, reporting, IIoT Services, and alarming.

It ensures efficient processes, FDA and EU GMP compliance, and enables modular production (MTP). zenon reduces validation work, enhances digital data storage, and lowers manufacturing costs. zenon elevates pharmaceutical operations with compliance and efficiency.



## WILEY

Chemistry—Methods is a fully open access chemistry journal focusing on innovative research on methods developments in chemistry. With trial-and-error as an integral part of scientific discovery, we support you with solid chemistry methods research that can be applied and innovated.

Chemistry Europe is an association of 16 chemical societies from 15 European countries. Run by chemists, for chemists—we evaluate, publish, disseminate, and amplify the scientific excellence of chemistry researchers from around the globe.



## CORDENPHARMA

CordenPharma is a CDMO partner supporting biotech and pharma innovators of complex modalities in the advancement of their drug development lifecycle. Harnessing the collective expertise of the teams across its globally integrated facility network, CordenPharma provides bespoke outsourcing services spanning the complete supply chain, from early clinical-phase development to commercialization.

With scientific expertise and partnership at its core, CordenPharma provides customers high-value, end-to-end services with a strategic focus on Peptides, Oligonucleotides, customized Lipid Excipients, Lipid NanoParticles (LNPs), sterile Injectables, and the extensive supply of Small Molecules (both Highly Potent and Regular Potency).



## RCPE

RCPE is a global leader in pharmaceutical process engineering. The center supports its partners in the development and manufacture of innovative medicines.

Our science enables tomorrow's medical discoveries and improves patients' lives worldwide. The experience and expertise of our multidisciplinary team and our unique capabilities in simulation, AI, (nano-)material science, process design & quality control, as well as process monitoring and quality assurance, redefine the boundaries of what is possible and provide cutting-edge, scientific solutions tailored to our partners' needs.

# POSTER AWARD SPONSORS



Explore Organic Process  
Research & Development  
Journal

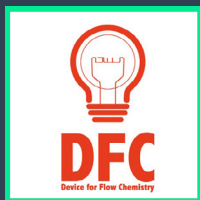


Explore Flow Chemistry  
Society



Explore Reaction Chemistry  
and Engineering Journal

# PROGRAMME SPONSOR



**DFC**

DFC Co., Ltd., based in Kyoto, Japan, is a leader in flow chemistry, offering advanced automated synthesis equipment to improve efficiency and sustainability. Our flagship products include OptimFlow, ideal for drug discovery with small-volume, multi-sample synthesis, and AltaFlow, designed for process development. Used in pharmaceuticals and fine chemicals, these systems enhance productivity and reduce environmental impact. As we expand globally, we seek experienced agents to help deliver these innovative solutions to industries worldwide.

# EXHIBITORS



**AM TECHNOLOGY**

AM Technology are experts in continuous manufacturing solutions for the chemical and pharmaceutical industries. Their specialisation in dynamically-mixed flow reactors, including their patented Coflore systems and Autichem DART systems, allows for versatile production that rivals batch manufacturing. We welcome discussions with clients to assess the feasibility of processes for continuous manufacturing. Our in-house testing facilities enable simple tech-transfer from batch to continuous.



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# EXHIBITORS



## CORNING

Corning Advanced-Flow™ Reactors (AFR) is a leader in flow chemistry, providing not only patented HEART shape design reactors, but also the auxiliary equipment for a complete, turnkey system. With comprehensive training, exceptional customer support and a focus on chemical development, optimization, and small-scale production capabilities, AFR is an innovative force in the chemical industry.

Choose AFR for a holistic solution that enhances efficiency in your chemical processes.



## FLOWID

Flowid is expert in system integration and flow solutions. Starting from process development in the lab, or via converting your existing batch process into flow, we work by selecting the best available technologies specifically tailored to your requirements. Close cooperation with the customer and an excellent network of industry partners specialized in flow equipment are essential to provide the best result for the manufacturing of your lab, pilot or production flow skid.



## FUJI TECHNO

Fuji Techno Industries Corporation has been providing its triplex plunger pumps to industries utilizing the continuous flow technologies. The triplex plunger pumps offer non-pulsating flow at the highest accuracy and repeatability (<math>< \pm 0.1\%</math>).

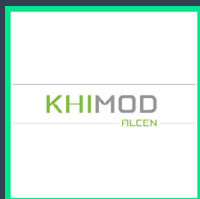
- \*Constant flow rate in spite of discharge pressure fluctuation
- \*Ability to handle wide variety of chemicals including water reactive reagents
- \*Large range of flow rates
- \*Trouble-free maintenance
- \*High temperature and high pressure specifications available



## FLUITEC

Fluitec mixing + reaction solutions AG is a Swiss company which engineers and manufactures static mixers and static mixer/heat exchangers. They are mainly used in the chemical and pharmaceutical industries. The recent developed reactor concept enables a safe scale-up of fast and highly exothermic reactions from laboratory to production scale.

# EXHIBITORS



## KHIMOD

KHIMOD develops innovative reactors for flow chemistry, with outstanding performances at extreme temperature or pressure and with a strong focus on the industrialization at large scale. The high modularity of KHIMOD equipment makes it suitable for a broad range of applications. KHIMOD equipment delivers exceptional performances on hydrogenation, with or without fixed bed catalyst. Initially developed for the nuclear and energy industry, KHIMOD technology is now available for the fine and specialty chemical industries. Besides its heat exchanger reactors, KHIMOD designs and manufactures turnkey systems for the production of e-methane, e-methanol and e-fuels, allowing H<sub>2</sub> transformation and CO<sub>2</sub> reuse and valorization.



## HALEN TECHNOLOGIES

Halen Technologies was established to combine flow expertise and industry experience to supply production-scale flow reactor technologies. With the proprietary LED technology integrated with application-specific flow reactor design, we offer the best-available flameproof photoreactors for your commercial production at a competitive cost of ownership. For those with early-stage feasibility needs, we offer full support through our Photochemical Competence Center. We make chemistry flow!



## MAGRITEK

Founded in 2004, Magritek is the global leader in manufacturing cryogen-free benchtop Nuclear Magnetic Resonance (NMR) spectrometers for the analytical instrument market.

Magritek's revolutionary 90 MHz, 80 MHz, and 60 MHz Spinsolve family of benchtop NMR models offer the highest sensitivity and resolution available in the market. These portable systems are robust and easy to use, allowing modern NMR methods to be performed on the chemistry lab bench or inside the fume hood next to a reactor.



## MICROINNOVA

Based on 20 years of experience in flow chemistry & process intensification and 200+ successfully completed projects, providing process development and realizing plants for efficient, continuous processes, we are the partner of choice for your continuous manufacturing program.

Our passion for innovative efficiency allows our customers to concentrate on what they do best while we do what we do best: develop processes and provide successful pilot plant & manufacturing plant solutions.

# EXHIBITORS

## PRECISION CATALYSTS

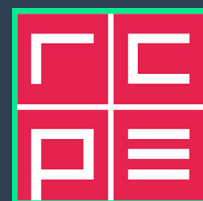
Learn more: [precisioncatalysts.com.au](http://precisioncatalysts.com.au)



## QFLUIDICS

Qfluidics is serving fine chemical and pharmaceutical market with unique production equipments to bring sustainability and reduce cost of production to European manufacturers. Our tools will allow pharmaceutical industrial to match with the European Commission policy to relocate drug production in Europe and with the 2050 carbon-neutral goal.

Thanks to our unique patented technology of liquid-tube, we reduced drastically the use of solvents (up to 100% reduction) leading up to 50% reduction of the carbon footprint of active pharmaceutical ingredients manufacturing and OPEX reduction between 20 and 40% for manufacturers.



## RCPE

RCPE is a global leader in pharmaceutical process engineering. The center supports its partners in the development and manufacture of innovative medicines.

Our science enables tomorrow's medical discoveries and improves patients' lives worldwide. The experience and expertise of our multidisciplinary team and our unique capabilities in simulation, AI, (nano-)material science, process design & quality control, as well as process monitoring and quality assurance, redefine the boundaries of what is possible and provide cutting-edge, scientific solutions tailored to our partners' needs.



## REDEEM

Redeem Solar Technologies GmbH specializes in providing advanced flow chemical reactors and highly efficient photocatalysts tailored for R&D in the chemical and pharmaceutical industries. Our innovative solutions enhance reaction efficiency, reduce waste, and accelerate research timelines, enabling breakthroughs in sustainable processes and green chemistry. We empower researchers with the tools to drive innovation and achieve cleaner, more efficient chemical synthesis.

# EXHIBITORS



## THALESNANO

ThalesNano, founded in 2002 in Budapest, Hungary, has emerged as a global leader in the field of flow chemistry. With our dedication to innovation and scientific excellence, we have established ourselves as pioneers in two key areas: on-demand hydrogen generation based on patented technology and flow chemistry for laboratory-scale synthesis. This unique expertise has been at the core of our company since its foundation, setting us apart and driving our success. Today, with more than 20 years of knowledge and expertise, our visionary management and dedicated team of chemists lead the way in providing solutions to the scientific community.



## ZAIPUT

Zaiput Flow Technologies is dedicated to bringing innovative equipment for continuous and batch separations and extraction processes to the market. We specialize in modular, scalable membrane-based liquid-liquid/gas-liquid separators with many advantages including quick separation of emulsions, small footprint, and negligible holdup volume. The product range is completed by counter-current extraction platforms and back-pressure regulators, specifically designed for the needs of flow chemists.

# EXHIBITORS



## EHRFELD // HITEC ZANG

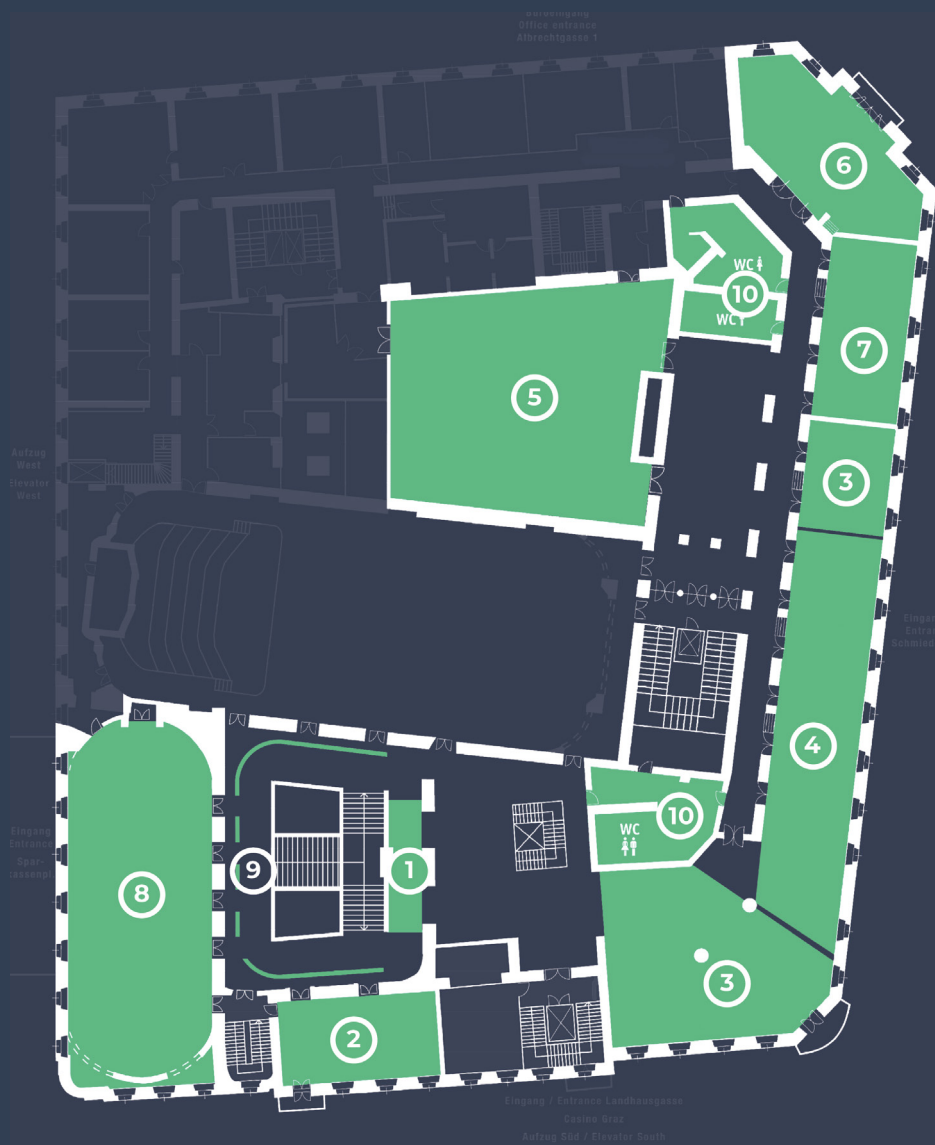
Ehrfeld Mikrotechnik sets standards worldwide in terms of microreaction technology in flow chemistry. The portfolio is aligned to established equipment concepts in process technologies, where we focus on achieving value from lab to production scale. Together with the automation solution from HiTec Zang, you can control and monitor all the parameters of your microreactors. This enables unattended operation and therefore continuous production over longer periods of time as well as an automated sequence of experiments.



## HNP // SONNEK

HNPM produces pumps for small amounts of liquids (flow rate from 1  $\mu$ l/h to 1152 ml/min, pressure up to 150 bar). Further, HNPM develops Modular Dosing Systems (MoDoS®) for continuous production plants and laboratories. Components are micro annular gear pumps, filters, sensors and controllers. One system with many application possibilities. In Austria, pumps and systems of HNPM are distributed by Sonnek Engineering GmbH. Sonnek focuses on engineering, design and manufacturing of turnkey solutions.

# FLOOR PLAN



- 1. REGISTRATION
- 2. STORAGE ROOM
- 3. COFFEE & LUNCH
- 4. EXHIBITION HALL
- 5. PLENARY ROOM
- 6. CONFERENCE ROOM 1
- 7. CONFERENCE ROOM 2
- 8. GALA DINNER ROOM
- 9. POSTERS
- 10. TOILETS

# EXHIBITION HALL



Eingang /  
Entrance  
Schmieggasse

- 1. EHRELD // HITEC ZANG
- 2. AM TECHNOLOGY
- 3. KHIMOD
- 4. COPA-DATA
- 5. PRECISION CATALYSTS
- 6. QFLUIDICS
- 7. FUJI TECHNOLOGY
- 8. CORNING
- 9. THALESNANO
- 10. ZAIPUT
- 11. MAGRITEK
- 12. FLOWID
- 13. MICROINNOVA
- 14. HALEN TECHNOLOGIES
- 15. RCPE
- 16. REDEEM
- 17. HNP // SONNEK
- 18. FLUITEC

# AGENDA

EVERY MOMENT COUNTS



# SUNDAY, OCT 27

## DAY 1

17:00 - 18:00	Registration
18:00 - 18:15	Welcome Address
18:15 - 19:15	Chair: C. Oliver Kappe Plenary Lecture: Sebastian Härtner
19:15 - 20:30	Welcome Reception

# MONDAY, OCT 28

## DAY 2

8:00 - 9:00	Registration
9:00 - 10:00	Chair: Shu Kobayashi Plenary Lecture: Jean Christophe Monbaliu
10:00 - 10:30	Coffee Break

	PLENARY ROOM	CONFERENCE ROOM 1	CONFERENCE ROOM 2
	Chair: S. B. Ötvös <b>FLASH CHEMISTRY</b>	Chair: P. Znidarsic Plazl <b>BIOTRANSFORMATIONS</b>	Chair: D. Kirschneck <b>MODULAR PLANTS</b>
10:30 - 10:55	K. Okamoto <b>OP 1</b>	Keynote Lecture: Francesca Paradisi	D. Boskovic <b>OP 44</b>
10:55 - 11:20	Y. Tanaka <b>OP 2</b>		R. Lebl <b>OP 45</b>
11:20 - 11:45	H. Kitamura <b>OP 3</b>	L. Malihan-Yap <b>OP 25</b>	M. Winter <b>OP 46</b>
11:45 - 12:10	Y. Ashikari <b>OP 4</b>	K. Ikebata <b>OP 26</b>	R. Kuwertz <b>OP 47</b>
12:10 - 12:35	A. Kulkarni <b>OP 65</b>		K. van Eeten <b>OP 48</b>

12:35 - 14:00	Lunch - Exhibition
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	Chair: G. Laudadio <b>ELECTROCHEMISTRY</b>	Chair: G. Luo <b>MULTIPHASE REACTIONS</b>	Chair: D. Roberge <b>MODULAR PLANTS</b>
14:00 - 14:25	Keynote Lecture: Longrui Chen	C. Zhang <b>OP 27</b>	C. Horn <b>OP 49</b>
14:25 - 14:50		J. Zhang <b>OP 28</b>	R. Seongho Oh <b>OP 50</b>
14:50 - 15:15	N. Petrović <b>OP 5</b>	Y. Fan <b>OP 29</b>	D. Kirschneck <b>OP 51</b>
15:15 - 15:40	E. Cermjani <b>OP 6</b>	S. Saubern <b>OP 30</b>	B. Korten <b>OP 52</b>

15:40 - 16:10	Coffee Break
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	Chair: G. Laudadio <b>PHOTOCHEMISTRY</b>	Chair: K. Sotawa <b>MULTIPHASE REACTIONS</b>	Chair: H. Gruber-Wölfler <b>ADDITIVE MANUFACTURING</b>
16:10 - 16:35	A. Pulcinella <b>OP 7</b>	L. Zhang <b>OP 31</b>	Keynote Lecture: Nobert Kockmann
16:35 - 17:00	K. Loubiere <b>OP 9</b>	T. Wang <b>OP 32</b>	
17:00 - 17:25	A. Desriac <b>OP 8</b>	T. Mayr <b>OP 33</b>	T. Peters <b>OP 53</b>
17:25 - 17:50	M. Ibrahim <b>OP 10</b>	H. Todt <b>OP 34</b>	B. Oldach <b>OP 54</b>

17:50 - 18:00	Session End
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18:00 - 19:30	Poster Party
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# TUESDAY, OCT 29

## DAY 3

8:30 - 9:00	<b>Registration</b>		
9:00 - 10:00	Chair: Jean Christophe Monbaliu <b>Plenary Lecture: Milad Abolhasani</b>		
10:00 - 10:30	<b>Coffee Break</b>		
	<b>PLENARY ROOM</b>	<b>CONFERENCE ROOM 1</b>	<b>CONFERENCE ROOM 2</b>
	Chair: C. Hone <b>AUTOMATION</b>	Chair: P. Neugebauer <b>PARTICLES, SUSPENSIONS, SOLIDS</b>	Chair: S. Löbbecke <b>MICROREACTORS</b>
10:30 - 10:55	B. Deadman <b>OP 11</b>	Keynote Lecture: Dominique Roberge	L. Sheng <b>OP 55</b>
10:55 - 11:20	A. Senthil Vel <b>OP 12</b>		M. dos Santos <b>OP 56</b>
11:20 - 11:45	Z. Wen <b>OP 13</b>	T. Huang <b>OP 35</b>	J. Zhang <b>OP 57</b>
11:45 - 12:10	F. Wagner <b>OP 14</b>	T. Watanabe <b>OP 36</b>	S. Liu <b>OP 58</b>
12:10 - 12:35	E. Rial <b>OP 15</b>	I. Burke <b>OP 37</b>	F. Aselmeyer <b>OP 59</b>
12:35 - 14:00	<b>Lunch - Exhibition</b>		
	Chair: C. Hone <b>AUTOMATION</b>	Chair: P. Pöchlauer <b>PARTICLES, SUSPENSIONS, SOLIDS</b>	Chair: R. Dittmeyer <b>FUEL CELLS/PLASMA</b>
14:00 - 14:25	K. Sotowa <b>OP 16</b>	Keynote Lecture: Amol Kulkarni	G. Kolb <b>OP 60</b>
14:25 - 14:50	H. Rosier <b>OP 17</b>		K. Wang <b>OP 61</b>
14:50 - 15:15	D. P. Kim <b>OP 18</b>	P. Neugebauer <b>OP 38</b>	P. Dedieu <b>OP 62</b>
15:15 - 15:40	S. Zondag <b>OP 19</b>	K.-L. Diep <b>OP 39</b>	I. Plazl <b>OP 63</b>
15:40 - 16:10	<b>Coffee Break</b>		

	Chair: D. Dallinger <b>GENERAL ORGANIC</b>	Chair: N. Kockmann <b>MODELING AND SIMULATION</b>	Chair: G. Kolb <b>ENERGY</b>
16:10 - 16:35	Keynote Lecture: Shu Kobayashi	M. Wörner <b>OP 40</b>	Keynote Lecture: Roland Dittmeyer
16:35 - 17:00		V. Dalvi <b>OP 41</b>	
17:00 - 17:25	S. B. Ötvös <b>OP 20</b>	F. Bolaños García <b>OP 42</b>	M. Bodner <b>OP 64</b>
17:25 - 17:50	T. Biemann <b>OP 21</b>	H. Wang <b>OP 43</b>	
17:50 - 18:00	<b>Session End</b>		
18:30 - 22:00	<b>Conference Dinner</b> [ticket required]		

# WEDNESDAY, OCT 30

## DAY 4

9:00 - 9:30	<b>Registration</b>		
9:30 - 10:30	Chair: Heidrun Gruber-Wölfler <b>Plenary Lecture: Polona Znidarsic Plazl</b>		
10:30 - 11:00	<b>Coffee Break</b>		
	<b>PLENARY ROOM</b>		
	Chair: S. B. Ötvös <b>GENERAL ORGANIC</b>		
11:00 - 11:25	D. Moser <b>OP 22</b>		
11:25 - 11:50	F. Akwi <b>OP 23</b>		
11:50 - 12:15	H. Hellwig <b>OP 24</b>		
12:15 - 12:25	<b>Session End</b>		
12:25 - 13:00	<b>Poster Awards and Closing Remarks</b>		
14:00	<b>Departure of bus for Microinnova Excursion</b>		



# LECTURE PROGRAMME

OP 01	<b>Investigation of the Reactivity and Stability in Lithium Dihalocarbenoids via Flash Chemistry</b> KAZUHIRO OKAMOTO, HOKKAIDO UNIVERSITY
OP 02	<b>Micro-Flow Synthesis of Unsymmetrical H-Phosphonates and Consideration of a Mechanism for Reduced Overreaction</b> YUMA TANAKA, NAGOYA UNIVERSITY
OP 03	<b>Switchable Acylation of H-Phosphonate by Acyl Ammonium/Pyridinium Ion in a Micro-Flow Reactor</b> HIROSHI KITAMURA, NAGOYA UNIVERSITY
OP 04	<b>Flowmicro anionic polymerization driven by Flash Monitoring Approach, an in-line analysis method</b> YOSUKE ASHIKARI, HOKKAIDO UNIVERSITY
OP 05	<b>Scaling-up Electroorganic Synthesis Using a Spinning Electrode Electrochemical Reactor in Batch and Flow Mode</b> NIKOLA PETROVIC, RCPE
OP 06	<b>Continuous Flow Synthesis of chiral fluoro alcohols by biocatalysis and electrochemical co-factor regeneration</b> EGZON CERMJANI, FRAUNHOFER IMM
OP 07	<b>Photocatalytic C(sp<sup>3</sup>)-H Acylation and Arylation of Liquid and Gaseous Alkanes in Flow</b> ANTONIO PULCINELLA, UNIVERSITY OF AMSTERDAM
OP 08	<b>Intensification of photooxygenation reactions by combining recyclable photoactive polymer colloids with LED-driven flow chemistry and membrane-based separation</b> AXELLE DESRIAC, UNIVERSITÉ DE TOULOUSE
OP 09	<b>Flow Photochemistry in the harsh UV-C domain: Investigating the photochemical reaction of an oxazolone derivative</b> KARINE LOUBIERE, UNIVERSITÉ DE TOULOUSE
OP 10	<b>Photocatalytic Lactonization of 2-arylbenzoic acids in a Biphasic Photo Flow Reactor with an Organic Photocatalyst</b> MALEK IBRAHIM, REDEEM SOLAR TECHNOLOGIES GMBH
OP 11	<b>Making flow chemistry machine readable with the Open Reaction Database</b> BENJAMIN DEADMAN, OPEN REACTION DATABASE

OP 12	<b>Assessment of Multi-Objective Optimization Solvers for Self-Optimizing Chemical Reactors</b> ARAVIND SENTHIL VEL, NANTES UNIVERSITY
OP 13	<b>Automated, scalable, and sustainable decatungstate-mediated HAT photochemistry in flow</b> ZHENGHUI WEN, YONGJIANG LABORATORY
OP 14	<b>Flexible Reaction Optimization Utilizing an Automated Slug Flow Reactor Platform with Multiple Process Analytics</b> FLORIAN WAGNER, RCPE
OP 15	<b>An Automated Electrochemical Flow Platform to Accelerate Library Synthesis and Reaction Optimization</b> EDUARDO RIAL, RCPE
OP 16	<b>Development of an IoT based modular automated experiment system</b> KEN-ICHIRO SOTOWA, KYOTO UNIVERSITY
OP 17	<b>Self-Optimizing Process Control for the synthesis of fluorescent carbon quantum dots</b> HENRY ROSIER, HITEC ZANG GMBH
OP 18	<b>AI-assisted autonomous manufacturing of tunable drug-loaded nanoparticles by multi-step continuous-flow platform</b> DONGPYO KIM, POHANG UNIVERSITY POSTECH
OP 19	<b>Photon flux and effective optical path length determination for continuous-flow photoreactor design through radiometry, chemical actinometry and ray-tracing simulations</b> STEFAN D.A. ZONDAG, UNIVERSITY OF AMSTERDAM
OP 20	<b>Flow chemistry enables scalable and fast reactions in water as sustainable reaction medium</b> SANDOR B. ÖTVÓS, RCPE
OP 21	<b>Liquid-walled non-clogging continuous flow reactor</b> THOMAS BIELMANN, QFLUIDICS
OP 22	<b>A Continuous Manufacturing Line Generating Organozinc Species in Flow: Enhancing the Simmons-Smith Reaction with Work-Up</b> DANIEL MOSER, RCPE
OP 23	<b>Continuous flow synthesis of teriflunomide</b> FAITH M AKWI, NELSON MANDELA UNIVERSITY
OP 24	<b>Automated Continuous-Flow Platform for the Nitration of Furfural</b> HUBERT HELLWIG, UNIVERSITY OF LIÈGE
OP 25	<b>Light-driven Photobiocatalytic Oxyfunctionalization in a Continuous Reactor System without External Oxygen Supply</b> LENNY MALIHAN-YAP, GRAZ UNIVERSITY OF TECHNOLOGY

OP 26	<b>Carbon balance measurement in cultivation of Escherichia coli using a gas-liquid slug flow</b> KATSUYA IKEBATA, KYOTO UNIVERSITY
OP 27	<b>Continuous Aerobic Alcohol Oxidation in a Micro-packed Bed Reactor with nitroxyl-radical catalysts: From Homogeneous to Heterogeneous</b> CHENGHAO ZHANG, TSINGHUA UNIVERSITY
OP 28	<b>Continuous reductive amination to synthesize primary/secondary amines with high selectivity in flow</b> JIAHAO ZHANG, TSINGHUA UNIVERSITY
OP 29	<b>Continuous hydrogenation and dehydrogenation of NEC/12H-NEC in a micro-packed bed reactor for hydrogen storage</b> YIWEI FAN, TSINGHUA UNIVERSITY
OP 30	<b>Catalytic Static Mixers for Hydrogen Reforming</b> SIMON SAUBERN, CSIRO
OP 31	<b>Hydrodynamic and mass transfer study of gas-liquid two-phase flow in packed bed microreactors</b> LU ZHANG, UNIVERSITY OF GRONINGEN
OP 32	<b>Liquid-Liquid Mass Transfer with the presence of Pickering Particles in Slug Flow Capillary Microreactors</b> TINGTING WANG, UNIVERSITY OF GRONINGEN
OP 33	<b>Optical Hydrogen Peroxide Sensor for at-line Monitoring</b> TORSTEN MAYR, GRAZ UNIVERSITY OF TECHNOLOGY
OP 34	<b>Coupling of a benchtop NMR spectrometer to a flow reactor for a fast optimization of hydrogenation reactions</b> HARALD TODT, MAGRITEK
OP 35	<b>Controllable Design of Alumina Microspheres under Microfluidic System and its Influence on Hydrogenation</b> TIANYI HUANG, TSINGHUA UNIVERSITY
OP 36	<b>Preparation of Open-Porous Particles via Microfluidics Using Bijel Droplets as the Structural Templates</b> TAKAICHI WATANABE, OKAYAMA UNIVERSITY
OP 37	<b>AI-based performance investigation of a dynamic micro mixer for thermalcontrolled emulsification processes</b> INGA BURKE, TU DORTMUND
OP 38	<b>Crystal Engineering in Continuous Flow - Tuning Properties of Crystalline Particles and Powders</b> PETER NEUGEBAUER, RCPE
OP 39	<b>A scalable dynamic flow reactor for challenging continuous processes</b> KIM-LONG DIEP, HEIA FRIBOURG

OP 40	<b>Analytical modeling of solute dispersion in laminar flow – bridging the gap between pure convection and axial dispersion regimes</b> MARTIN WÖRNER, KARLSRUHE INSTITUTE OF TECHNOLOGY
OP 41	<b>Universal Residence Time Distribution Model and Its Application to Flow Engineering</b> VISHWANATH DALVI, INSTITUTE OF CHEMICAL TECHNOLOGY
OP 42	<b>Effects of transient behaviour in slug flow chemistry platforms</b> FRANCISCO EDUARDO BOLAÑOS GARCÍA, UNIVERSITÉ DE LORRAINE
OP 43	<b>Dynamic splitting of Janus droplet in microchannel</b> HAO WANG, TSINGHUA UNIVERSITY
OP 44	<b>Modular process concept for the utilization of reactive intermediates in flow</b> DUSAN BOSKOVIC, FRAUNHOFER INSTITUTE
OP 45	<b>Development and Scale-up of a Continuous Flow Process for the Synthesis of a highly functionalized Quinazoline Intermediate</b> RENÉ LEBL, HOFFMANN-LA ROCHE LTD.
OP 46	<b>How to speed up API development using flow chemistry? The example of Ibuprofen.</b> MARK WINTER, CORNING SAS
OP 47	<b>Combining Flow chemistry and Miprowa – The right tool to master your challenges in production</b> RAFAEL KUWERTZ, EHRFELD MIKROTECHNIK GMBH
OP 48	<b>Flow Solutions – A Roadmap for Ideas to Sustainable Plants</b> KEVIN VAN EETEN, FLOWID B.V.
OP 49	<b>Flow chemistry in a CDMO environment</b> CLEMENS HORN, CORDENPHARMA
OP 50	<b>Recent process of new catalyst based fixed bed reactor system development in the pharmaceutical business</b> RYAN SEONGHO OH, SK PHARMTECO
OP 51	<b>Learnings and Key Conclusions of the Last 20 Years and Forecast Into the Next 10 Years of Flow Chemistry and Modular Manufacturing</b> DIRK KIRSCHNECK, MICROINNOVA ENGINEERING GMBH
OP 52	<b>The path towards modular process automation with MTP</b> BERNHARD KORTEN, COPA DATA
OP 53	<b>Integration of H<sub>2</sub>O<sub>2</sub> direct synthesis, additively manufactured static mixers and catalytic microreactors.</b> TILL PETERS, KARLSRUHE INSTITUTE OF TECHNOLOGY

OP 54	<b>3D-Printed Walls for Packed Catalyst Beds to Increase Catalyst Utilization and Reaction Performance</b> BASTIAN OLDACH, TU DORTMUND
OP 55	<b>A fabrication strategy of microdevice based on kinetic energy regulation: Gas-liquid mass transfer intensification</b> LIN SHENG, TSINGHUA UNIVERSITY
OP 56	<b>Evaluation of commercially available intensified continuous reactors for the extrapolation and intensification of a demanding polyphasic reaction: the aerobic oxidation of 2-ethylhexanal</b> MARCO DOS SANTOS, UNIVERSITY OF LYON
OP 57	<b>Flow dynamics and mass transfer in micro-packed bed reactors</b> JISONG ZHANG, TSINGHUA UNIVERSITY
OP 58	<b>Opportunities and potential of glass additive manufacturing technology in flow chemistry</b> SIJIA LIN, KARLSRUHE INSTITUTE OF TECHNOLOGY
OP 59	<b>Scalability of cleaning protein-based soils in micro structured equipment</b> FELICITAS ASELMAYER, TU BRAUNSCHWEIG
OP 60	<b>Methanol reformer for hydrogen supply of 75 kW PEM Fuel Cells</b> GUNTHER KOLB, FRAUNHOFER IMM
OP 61	<b>Low Cell Voltage Electrosynthesis of Hydrogen Peroxide</b> KAI WANG, TSINGHUA UNIVERSITY
OP 62	<b>Microreactor designed for efficient plasma-liquid segmented flows and its application to amine acetylation</b> PIERRE DEDIEU, INSTITUT DE RECHERCHE DE CHIMIE PARIS
OP 63	<b>Model-based Design and Linear Scale-up/Numbering up of Parallel-Plate Micro(bio)Reactors</b> IGOR PLAZL, UNIVERSITY OF LUBLJANA
OP 64	<b>Insights into Humidity-Driven Degradation Mechanisms for Polymer Electrolyte Fuel Cells</b> MERIT BODNER, GRAZ UNIVERSITY OF TECHNOLOGY
OP 65	<b>Development of a cascade of CSTRs for efficient continuous flow synthesis of pharmaceutical Intermediates involving Grignard reaction</b> AMOL KULKARNI, NCL PUNE

# POSTER PROGRAMME

PP 01	<b>Flexible Control of Slug Flow Using Fluid Control Device: Application to High-Speed Solvent Extraction and Separation</b> TAKASHI FUKUDA, AIST
PP 02	<b>Electrochemical Fluorination of Organic Compounds using an Hexafluorosilicate Salt as an Inexpensive and Widely Available Fluorine Source</b> DAVID KÖPFLER, RCPE
PP 03	<b>Scaling-up Electroorganic Synthesis Using a Spinning Electrode Electrochemical Reactor in Batch and Flow Mode</b> NIKOLA PETROVIC, RCPE
PP 04	<b>Anodic TEMPO mediated alcohol oxidation followed by aldol condensation reaction cascade in an electrochemical microreactor</b> JAKOB SEITZ, KU LEVEN
PP 05	<b>Microfluidic Devices as Tools for Scaling-Up Organic Electrosynthesis</b> ANDREAS KÖLBL, KIT
PP 06	<b>Scalable and Selective Electrochemical Synthesis of Pantoprazole</b> KEVIN SIMON, RCPE
PP 07	<b>Application of Automated Experimental Systems to Electrochemical Flow Reactions</b> KAZUKI YOSHIOKA, KYOTO UNIVERSITY
PP 08	<b>Design of low cost photoreactors with high radiation transport efficiency for solar hydrogen production</b> ANSELM DREHER, KIT
PP 09	<b>A microfluidic chip structure with ultra-high micro-dispersion and mass transfer performance</b> JING SONG, TSINGHUA UNIVERSITY
PP 10	<b>Continuous countercurrent microreaction technology of toluene nitration</b> JING SONG, TSINGHUA UNIVERSITY

PP 11	<b>Design of microfluidic devices based on topology optimization method</b> OSAMU TONOMURA, KYOTO UNIVERSITY
PP 12	<b>Coupling of continuous <math>\mu</math>Reactors and chipHPLC/MS detection for the investigation of heterogeneously organocatalyzed reactions</b> HANNES WESTPHAL, LEIPZIG UNIVERSITY
PP 13	<b>Manufacturing of Micro Process Devices and CVD-Tantalum Coating for superior Corrosion Resistance</b> THOMAS GIETZELT, KIT
PP 14	<b>Effect of Periodic Angular Movements on Helical Distillation Columns for Offshore Applications</b> VIGNESH JAYAVELU, KIT
PP 15	<b>Numerical Study of Mixing-induced Dynamic Interfacial Tension in Microdroplets</b> SHITENG WANG, TSINGHUA UNIVERSITY
PP 16	<b>Modeling and Simulation of Droplet Formation Dynamics in Microchannels Using the Lattice Boltzmann Method for Viscous and Non-Newtonian Power-Law Fluids</b> SHITENG WANG, TSINGHUA UNIVERSITY
PP 17	<b>Modelling of Microchannel Reactors for Fischer-Tropsch Synthesis</b> XIAOJIN TANG, SINOPEC
PP 18	<b>Prediction of droplet size in cross-flow micro-channels based on machine learning</b> XIAOTIAN REN, SINOPEC
PP 19	<b>Reaction kinetics measurement of imine-linked Covalent Organic Frameworks (COF) formation via in situ Raman spectroscopy</b> MICHAEL KÖNIG, TU GRAZ
PP 20	<b>Continuous Hydrogenation of CBD and THC Using Catalytic Static Mixers</b> FELIPE DA SILVA, RCPE
PP 21	<b>Process Intensification of Dehydrochlorination of <math>\alpha</math>-chlorohydrin in Continuous Microflow System Using Phase Transition Catalyst</b> GRACE LEE DAI ZHEN, TSINGHUA UNIVERSITY
PP 22	<b>Continuous Synthesis of Glycidyl Methacrylate in Microreactor System</b> GRACE LEE DAI ZHEN, TSINGHUA UNIVERSITY
PP 23	<b>The Concept of Chemical Generators</b> DORIS DALLINGER, RCPE

PP 24	<b>Regioselective aqueous phase nitration of phenols in flow without use of mixed acid</b> CHANDRAKANTH GADIPELLY, AMAR TECHNOLOGIES
PP 25	<b>A mini-Taylor Couette reactor for continuous flow enzymatic reactions</b> GEORGIOS GKOGKOS, UNIVERSITY COLLEGE LONDON
PP 26	<b>Oxidation of 5-hydroxymethylfurfural to 5-formyl-2-furancarboxylic acid catalyzed by laccase in a multiphase gas-liquid microreactor</b> NADIA GUAJARDO RAMÍREZ, PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
PP 27	<b>Direct synthesis of hydrogen peroxide solutions in a non-equilibrium plasma torch</b> MERY HERNANDEZ, KIT
PP 28	<b>Sulfur Tetrafluoride (SF<sub>4</sub>) as a Deoxyfluorination Reagent for Organic Synthesis in Continuous Flow Mode</b> CHRISTOPHER A HONE, RCPE
PP 29	<b>Development of a Continuous Flow Benzyne Formation Process via 1,3-Aza-Brook Rearrangement</b> YE JIN KONG, EWHA WOMANS UNIVERSITY
PP 30	<b>An automated platform for monitoring and optimization</b> SANJAY LAMA, LEIPZIG UNIVERSITY
PP 31	<b>Advancements in Site-Selective Functionalization of Polyhalo-Substituted (Hetero)Aryl Tosylates Using Continuous Flow Chemistry: Application in SuFEx Chemistry</b> MIN JUNG LEE, EWHA WOMANS UNIVERSITY
PP 32	<b>Copper-Catalyzed Synthesis of N-Sulfonyl-1,2,3-Triazoles: Advances in SuFEx Chemistry Using Continuous Flow Technology</b> EUN HYE LIM, EWHA WOMANS UNIVERSITY
PP 33	<b>Nanofluidic reactors for the SI-ATRP synthesis of polymer brush films</b> N SCOTT LYNN, CZECH ACADEMY OF SCIENCES
PP 34	<b>Can a Simple Surrogate Model System be Used to Develop a Flow Packed Bed Hydrogenation for a Complex Molecule?</b> STEFANO MARTINUZZI, RCPE
PP 35	<b>Using microreaction technology for a highly exothermic two step synthesis</b> ALEXANDER MENDEL, FRAUNHOFER IMM

PP 36	<b>Flow synthesis of capsaicin and its analogues</b> JÁNOS MÁTÉ OROSZ, BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
PP 37	<b>Enantioselective flow synthesis of chiral active pharmaceutical ingredients and related intermediates</b> SANDOR B. ÖTVÖS, RCPE
PP 38	<b>Development of a catalytic continuous process that overcomes the fatal weaknesses of batch process in the pharmaceutical industry</b> HUNSOO PARK, SK PHARMTECO
PP 39	<b>Electron-mediated Biocatalyzed Synthesis of Chiral Fine Chemicals in Microstructured Flow Reactors</b> JOHANNES ROCKER, FRAUNHOFER IMM
PP 40	<b>Generation of crosslinked horseradish peroxidase nanoaggregates and their immobilization in a two-plate membrane microreactor</b> MARKO BOŽINOVIĆ, UNIVERSITY OF LJUBLJANA
PP 41	<b>Make your reactions FAIR with the Open Reaction Database</b> BENJAMIN DEADMAN, OPEN REACTION DATABASE

# EXCURSION MICROINNOVA

WEDNESDAY, OCT 30

2:00 PM	Transfer from Graz to Microinnova Site
2:45 PM	Welcome Drink
3:00 PM	MIC Overview Presentation
3:20 PM	Process Development Presentation
3:40 PM	Engineering & Plants Presentation
4:00 PM	Process Development & Laboratory Tour
4:30 PM	Plant Construction Tour
5:00 PM	Cake Buffet
6:00 PM	Transfer to Graz



