

The conference on industrial applications of membrane technology

Conference program

Tuesday, December 3rd, 6 p.m.: Welcome reception at NGP²

Wednesday, December 4th, 2024

Opening Session - Brüsselsaal - Chair: Matthias Wessling, RWTH Aachen University		
08:30	Opening - <u>Matthias Wessling</u> , AVT.CVT, RWTH Aachen University & DWI - Leibniz Institute for Interactive Materials	08:30
08:45	Keynote I - MTR's Experience Bringing Carbon Capture Membranes to Commercial-Scale <u>Tim Merkel</u> , Membrane Technology and Research, Inc.	08:45
09:30	Industry Pitches	09:30
10:00	Coffee break	
Energy applications - Brüsselsaal - Chair: Tobias Harhues, RWTH Aachen University		Water treatment I - K1 - Chair: Hannah Roth, University of Twente
10:15	Poster Pitches: Electrodialysis, Energy applications, Process engineering, Gas and vapor separation	Poster Pitches: Water treatment, Membranes, Health, Biotechnology
11:00	Systematic material design and development for polymer electrolyte fuel cells and anion exchange membrane water electrolysis <u>Takeo Yamaguchi</u> , Tokyo Institute of Technology	New rules and challenges in the water sector - what's in for membranes? <u>Thomas Wintgens</u> ISA, RWTH Aachen University
11:30	Polymer-composite membranes as porous thin-film electrodes for electrochemical applications <u>Lukas Fischer</u> Technical Chemistry, Universität Duisburg Essen	Polymer membrane modification using electron beam irradiation for the removal of endocrine disruptors from water <u>Zarah Niavarani</u> , IOM Leipzig
12:00	Prediction of Conductivity vs. Selectivity Trends for Membranes Using Non-Equilibrium Ab Initio Molecular Dynamics <u>Abhishek Khetan</u> , MODES, RWTH Aachen University	Introducing powdered activated carbon counter flow to an inline dosing membrane hybrid process – impacts on membrane performance <u>Max Zimmermann</u> , ISA, RWTH Aachen University
12:30	Lunch	
Water treatment II - Brüsselsaal - Chair: Stefan Herrmann, University of Twente		Process engineering - K1 - Chair: Matthias Heßelmann, RWTH Aachen University
13:30	Polyelectrolyte based Nanofiltration Membranes, Made to Order <u>Wiebe de Vos</u> Membrane Science and Technology, University of Twente	From colour removal to efficient total solutions <u>Henk Koops</u> NX filtration
14:00	Composite hollow fiber nanofiltration membranes via chemistry in a spinneret <u>Hannah Roth</u> Membrane Science and Technology, University of Twente	Microsieve bulk filtration (an update) <u>Franz Liebermann</u> Microsieve Technologies
14:30	Early scaling detection in conventional plug flow and upcoming closed-circuit reverse osmosis for antiscalant-free operation <u>Martin Futterlieb</u> , Mechanical Process Engineering, Universität Duisburg Essen	Recent and potential use of membrane contactors for the hydrogen industry <u>Norbert Selzer</u> Solventum
15:00	Coffee break and Poster session sponsored by  PENTAIR	
Desalination I - Brüsselsaal - Chair: Kerstin Brökelmann, RWTH Aachen University		Health - K1 - Chair: Lukas Hirschwald, RWTH Aachen University
16:30	Electromembrane technologies for sustainable chemical industry: technology ranking and industrial perspectives <u>Michele Tedesco</u> , TNO	Blood purification beyond Low- and High Flux membranes for ESRD patients <u>Bernd Krause</u> Baxter
17:00	Project RIKovery – Recycling of Industrial Saline Waters through Ion Separation, Concentration and Intelligent Monitoring <u>Yuliya Schiesser</u> , Covestro	Polymer Membrane Surface Functionalization with Proteins and Enzymes by Electron Beam Irradiation <u>Martin Schmidt</u> IOM Leipzig
17:30	Partial Desalination with the Membrane Capacitive Deionisation for Monovalent Ions <u>Hanna Rosentreter</u> TU Dresden	Hexagonal Membrane Bundle Design: A Novel Approach to Combined Lung and Kidney Support for Preterm Neonates <u>Danny van Galen</u> , University of Twente
19:00	Conference Dinner	

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Thursday, December 5th, 2024

09:15	Plenary Session - Brüsselsaal - Chair: Matthias Wessling, RWTH Aachen University		09:15
	Keynote II - Membrane reactors for chemical production Fausto Gallucci, Eindhoven University of Technology		
10:00	Keynote III - How Charged Membranes Recover Lithium: Separation of Ionic Mixtures Kerstin Brökelmann - AVT.CVT - RWTH Aachen University		10:00
10:45	Coffee break		10:45
11:00	Gas and vapor separation - Brüsselsaal - Chair: Jens Potreck, Pentair	Membranes I - K1 - Chair: Rhea Verbeke, KU Leuven	11:00
	Design of high-performance gas separation membranes: From research to translation and commercialization Ingo Pinnau King Abdullah University of Science and Technology	Reactive coating of desalination membranes in spiral-wound modules: Increasing antifouling properties and potentially enabling "second life" applications Mathias Ulbricht, Universität Duisburg-Essen	
11:30	Industrial adaptation of polymeric membranes in humid high H₂S natural gas feed streams Thijs Peters Sintef	Development of Surface-Patterned RO Membranes with Pronounced Regular Microstructures and Their Anti-Scaling Performance in Feed Spacer-filled channels Maharshi Patel, Universität Duisburg-Essen	11:30
12:00	High throughput Simulation (HTS) of gas separation processes and the application of AI Peter Kreis Evonik	Scale-Up of Carbon Molecular Sieve Membranes Based on Polymers of Intrinsic Microporosity Precursors Wojciech Ogieglo King Abdullah University for Science and Technology	12:00
12:30	Lunch		12:30
13:30	EU Projects I - Brüsselsaal - Chair: Felix Stockmeier, Evonik	Membranes II - K1 - Chair: Maria Restrepo, RWTH Aachen University	13:30
	Development of a ceramic membrane-based process to re-refine used lubricant oil Anita Buekenhoudt vito	Epoxide-based membranes: an emerging platform for liquid and gas separations Rhea Verbeke KU Leuven	
14:00	Development of membranes and membrane processes for H₂ and CO₂ separation from coke oven gas of steel industry Hannes Richter, Fraunhofer IKTS	Tips for developing thin film composite hollow fiber membranes by dip coating Oguz Karvan EMI Twente	14:00
14:30	Preparation and testing of sustainable membranes for MD applications Mirko Frappa University of Calabria	Visible-Light Active and Stable Bi₂WO₆ Composite Polymer Membranes for Photocatalytic Micropollutant Removal Zahra Niavarani, IOM Leipzig	14:30
15:00	Coffee break		15:00
15:15	EU Projects II - Brüsselsaal - Chair: Anita Buekenhoudt, vito	Desalination II - K1 - Chair: Michele Tedesco, TNO	15:15
	From membranes to processes lifetime: an overview of the modelling activities within MEASURED project Zançat Sahin Eindhoven University of Technology	Versatile fit-for-purpose membranes and processes Jens Potreck Pentair	
15:45	Multi-scale modelling of membrane distillation demonstrators for wastewater treatment and desalination in MELODIZER project Matteo Morciano, Politecnico di Torino	Experimental investigation of transport properties of ion-exchange membranes equilibrated with highly concentrated multi-ionic solutions Giorgio Purpura, Università degli Studi di Palermo	15:45
16:15	Development & scale-up of advanced membranes for membrane distillation, gas separation and pervaporation Yvonne van Delft, TNO	Advances in two-compartment electrodialysis configurations with bipolar membranes for chemicals production Antonia Filingerì, Università degli Studi di Palermo	16:15
16:45	Closing session & Poster prize - Brüsselsaal - Chair: Robert Keller, RWTH Aachen University		16:45
	Keynote IV - Physics of filtration Matthias Wessling, RWTH Aachen University & DWI - Leibniz Institute for Interactive Materials		
17:15	Closure		17:15



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