

PRAGUE, CZECH REPUBLIC (GRANDIOR HOTEL PRAGUE) · 4–7 OCTOBER 2026

MELPRO 2026

International Conference on Membrane and Electromembrane Processes

Printable technical programme — for the full interactive version with abstracts, search, and speaker details, see the online programme.

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-  **Plenary Lecture (PL)**
 -  **Keynote Lecture (KL)**
 -  **Contributed Talk (CT)**
 -  **Poster**
 -  **DAM4CO2 satellite workshop**

Monday 5 October 2026 · Programme at a Glance

Time	Meeting Room A	Meeting Room B	Meeting Room C	Meeting Room D	Gracie
08:15	Opening Ceremony				
08:30	Plenary Lecture 1 — Prof. Dr. Matthias Thommes				
09:30	Coffee break				
09:50	Mo-A1 · PDO 09:50–11:50 Chairs: M. Turek, A. Ronca	Mo-B1 · NMM 09:50–11:50 Chairs: A. Kumar, Jamali Ashtiani Saeed	Mo-C1 · EMT 10:10–11:50 Chairs: L. Václavík, Ankitkumar Kansara	Mo-D1 · GSC 09:50–11:50 Chairs: S. Akkol, P. Izák	Mo-G1 · BIO 09:50–11:50 Chairs: S. Kolev, L. Giorno
11:50	Lunch				
13:00	Plenary Lecture 2 — Dr. Elena Tocci				
14:00	Coffee break				
14:20	Mo-A2 · PDO 14:20–15:40 Chairs: M. Krajewska, P. Koo	Mo-B2 · NMM 14:20–15:40 Chairs: Ur Rehman, Akbar Asadi Tashvigh	Mo-C2 · EMT 14:20–15:40 Chairs: H. Jaroszek, Rawan Abu Alwan	Mo-D2 · GSC 14:20–15:40 Chairs: G. Sheibel Cassol, M. Pane	Mo-G2 · BIO 14:20–15:40 Chairs: C. Fontas, S. Nevyhoštěný
15:40	Coffee break				
16:00		Mo-B3 · NMM 16:00–17:40 Chairs: F. Passaro, Zhaoliang Cui	Mo-C3 · EMT 16:00–17:40 Chairs: A. Ronen, V. Garcia Vasquez	Mo-D3 · GSC 16:00–17:40 Chairs: C. Brondi, N. F. Himma	Mo-G3 · BIO 16:00–17:20 Chairs: S. Nevyhoštěný, K-V. Peineman
17:40	Coffee break				
18:00	Panel Discussion				
19:30	Poster Session + Coffee Break				

Tuesday 6 October 2026 · Programme at a Glance

Time	Meeting Room A	Meeting Room B	Meeting Room C	Meeting Room D
08:30	Plenary Lecture 3 — Dr. Marek Bobák			
09:30	Coffee break			
09:50	Tu-A1 · PDO 09:50–11:50 Chairs: Y. Manawi, J. Faour	Tu-B1 · NMM 09:50–11:30 Chairs: E. Di Nicoló, J. Jansen	Tu-C1 · EMT 09:50–11:50 Chairs: Z. Slouka, S. Mehta	Tu-D1 · DAM4CO2 09:50–11:50 Chairs: Elena Tocci, Alessio Fuoco, Elisa Esposito, CNR-ITM
11:50	Lunch			
13:00	Plenary Lecture 4 — Prof. Karel Friess			
14:00	Coffee break			
14:20	Tu-A2 · PDO 14:20–15:40 Chairs: Y J. Lim, Phuong Trinh	Tu-B2 · NMM 14:20–15:00 Chair: R. Válek	Tu-C2 · EMT 14:20–15:40 Chairs: Jandaghian Bidgoli, Dorota Babilas-Krzyżowska	Tu-D2 · DAM4CO2 14:20–15:40 Chairs: Elena Tocci, Alessio Fuoco, Elisa Esposito, CNR-ITM
15:40	Coffee break			
16:00	Tu-A3 · GSC 16:00–17:20 Chair: Z. Pientka	Tu-B3 · NMM 16:00–17:20 Chairs: D. Babu, Q. Xue	Tu-C3 · EMT 16:00–17:20 Chair: R. Válek	Tu-D3 · GSC 16:20–17:20 Chairs: P. Stanovský, P. Perri
20:00	Gala Dinner			

Wednesday 7 October 2026 · Programme at a Glance

Time	Meeting Room A	Meeting Room B	Meeting Room C	Meeting Room D
08:30	Free time (after the Gala Dinner)			
09:50	We-A1 · BIO 09:50–11:10 Chairs: J. Čížek, R. Mazzei	We-B1 · NMM 09:50–11:10 Chairs: M. Higa, Z. Vorbová	We-C1 · MPM 09:50–11:10 Chairs: H. Bazargan Harandi, M. Škrhák	We-D1 · GSC 09:50–11:10 Chairs: J. Schneider, P. Stanovský
11:10	Coffee break			
11:30	We-A2 · BIO 11:30–12:30 Chairs: J. Čížek, R. Mazzei	We-B2 · NMM 11:30–12:30 Chairs: M. Higa, Z. Vorbová	We-C2 · MPM 11:30–12:30 Chairs: H. Bazargan Harandi, M. Škrhák	We-D2 · GSC 11:30–12:30 Chairs: J. Schneider, P. Stanovský
12:30	Lunch			
13:30	Plenary Lecture 5 — Prof. Suzana P. Nunes			
14:30	Closing Ceremony			

Meeting Room A

08:15	Opening Ceremony (Chairs: Elena Tocci, Pavel Izák)
08:30	Plenary Lecture 1 — Insights into the Adsorption- and Phase Behaviour of Fluids in Nanoporous Materials: Towards an Advanced Textural and Surface Characterization , Prof. Dr. Matthias Thommes (Chair: Elena Tocci)
09:30	Coffee break
Mo-A109:50–11:50	
T1 · PDO · Pressure-driven and osmotic membrane processes (MF, UF, NF, RO, FO, PRO) Chairs: M. Turek, A. Ronca	
09:50	KEYNOTE Operational performance of a minimal liquid discharge system for dairy wastewater reclamation — D. Horňák et al., Czechia
10:30	Nanofiltration for the treatment of bleaching effluents from the pulp and paper industry: a case study — A. Ronca et al., Portugal
10:50	Nanofiltration as an energy-efficient alternative to brackish water reverse osmosis for irrigation-grade water production in Qatar — F. Alafifi et al., Qatar
11:10	Nanofiltration-assisted crystallization — M. Turek, Poland
11:30	Separation of xylan from the lyocell spin bath solution using ultrafiltration membranes: membrane screening, stability, and xylan precipitation — U. Khan et al., Finland
11:50	Lunch
13:00	Plenary Lecture 2 — Seeing the Invisible: Molecular Simulations Redefining Membrane Operations , Dr. Elena Tocci (Chair: K. Friess)
14:00	Coffee break
Mo-A214:20–15:40	
T1 · PDO · Pressure-driven and osmotic membrane processes (MF, UF, NF, RO, FO, PRO) Chairs: M. Krajewska, P. Koo	
14:20	Removal of herbicide glyphosate and aminomethylphosphonic acid (AMPA) by membrane technologies — P. B. Trinh et al., Germany
14:40	Removal of organophosphorus herbicides from water by magnetic ion exchange resin (MIEX) — M. Krajewska et al., Germany
15:00	Selective bromide mitigation and membrane-based brine upgrading for downstream electrochemical utilisation in SWRO systems — Pooi Ling Koo et al., Singapore
15:20	Comparative evaluation of commercial nanofiltration membranes for ion separation from SWRO brine — H. Son et al., South Korea
15:40	Coffee break
17:40	Coffee break
18:00	Panel Discussion
19:30	Poster Session + Coffee Break

Meeting Room B

08:15	Opening Ceremony (Chairs: Elena Tocci, Pavel Izák)
08:30	Plenary Lecture 1 — Insights into the Adsorption- and Phase Behaviour of Fluids in Nanoporous Materials: Towards an Advanced Textural and Surface Characterization , Prof. Dr. Matthias Thommes (Chair: Elena Tocci)
09:30	Coffee break
Mo-B109:50–11:50	
T6 · NMM · Novel membrane materials Chairs: A. Kumar, Jamali Ashtiani Saeed	
09:50	In-situ growth of PVP-modified hydrogel-stabilized ZIF-L on micellar-enhanced PAN ultrafiltration membranes for ionic contaminant removal — A. Kumar et al., Israel
10:10	In situ grown covalent organic framework membranes stabilized by methacrylate hydrogels for efficient dye–salt separation — S Mishra et al., Israel
10:30	KEYNOTE Synergistic magnetic alignment and polymer-brush functionalization in 3D COF mixed-matrix membranes for efficient CO ₂ /H ₂ and CO ₂ /CH ₄ separation — Saeed Ashtiani et al., Czechia
11:10	Tuning nanofiltration membranes for optimal OMP removal and salt passage — N.M. Zwart et al., Netherlands
11:30	Anti-scaling piezoelectric thin film composite (TFC) reverse osmosis (RO) membrane fabrication via novel ultrasound approach — Siyoung Byun et al., Singapore
11:50	Lunch
13:00	Plenary Lecture 2 — Seeing the Invisible: Molecular Simulations Redefining Membrane Operations , Dr. Elena Tocci (Chair: K. Friess)
14:00	Coffee break
Mo-B214:20–15:40	
T6 · NMM · Novel membrane materials Chairs: Ur Rehman, Akbar Asadi Tashvigh	
14:20	Photocatalytic nanofiltration membranes for simultaneous removal and degradation of contaminants of emerging concern — P. Iaconis et al., Denmark
14:40	Rational design of deep eutectic solvent-mediated MOF-based membranes for the recovery of Pb (II) and Cr (III) ions toward a circular economy — Saif-ur-Rehman et al., Belgium
15:00	Toward affordable solvent-resistant OSN membranes: in situ crosslinking of sPPSU — I. Tontul et al., Netherlands
15:20	Design of functionalized covalent organic frameworks (COFs) for urea adsorption and mechanism study — C. Sun et al., South Korea
15:40	Coffee break
Mo-B316:00–17:40	
T6 · NMM · Novel membrane materials Chairs: F. Passaro, Zhaoliang Cui	
16:00	Modulating pore size of polysulfone ultrafiltration membranes through surfactant-assisted nonsolvent-induced phase separation — F. Passaro et al., Italy
16:20	Electric-field-assisted preparation of photocatalytic PVDF fibrous membranes — Z. Vilamová et al., Czechia
16:40	KEYNOTE Research and industrialization of advanced membranes for gas-liquid separation — Z. L. Cui, China
17:20	Sustainable PES - PVDF membrane preparation using kjcbpa-100 a novel sustainable solvent via vapor assisted non-solvent induced phase separation: thermodynamic study-dye removal application — M.Mekki et al., Italy
17:40	Coffee break
18:00	Panel Discussion
19:30	Poster Session + Coffee Break

Meeting Room C

08:15	Opening Ceremony (Chairs: Elena Tocci, Pavel Izák)
08:30	Plenary Lecture 1 — Insights into the Adsorption- and Phase Behaviour of Fluids in Nanoporous Materials: Towards an Advanced Textural and Surface Characterization , Prof. Dr. Matthias Thommes (Chair: Elena Tocci)
09:30	Coffee break
Mo-C110:10–11:50	
T2 · EMT · Electro-membrane technologies for energy and sustainability Chairs: L. Václavík, Ankitkumar Kansara	
10:10	Closing the loop: acid and base recovery from tungsten mining wastewater using a two-stage electrodialysis process — L. Weisz et al., Austria
10:30	Two-stage electrodialysis for desalination and concentration of pulp mill wastewater — L. Václavík et al., Czechia
10:50	Electrodialysis for the recovery of critical metals from batteries: a path toward the circular economy — E.L. Fouquet et al., Spain
11:10	KEYNOTE Emerging industrial applications of electromembrane processes — T. Dorník, Czechia
11:50	Lunch
13:00	Plenary Lecture 2 — Seeing the Invisible: Molecular Simulations Redefining Membrane Operations , Dr. Elena Tocci (Chair: K. Friess)
14:00	Coffee break
Mo-C214:20–15:40	
T2 · EMT · Electro-membrane technologies for energy and sustainability Chairs: H. Jaroszek, Rawan Abu Alwan	
14:20	Recovery of lithium and boron from lithium tetraborate solution with bipolar membrane electrodialysis: effect of membrane triplet number — E. Altıok et al., Türkiye
14:40	From process understanding to immersive training: a virtual reality framework for electrodialysis system — H. Jaroszek et al., Poland
15:00	Prediction of ion selectivity in electro dialysis system in multivalent, multi- component ion systems — S. Morinaga et al., Japan
15:20	Controlling functional groups in UiO-66 frameworks within mixed matrix membranes for advanced hydroxide ion conduction — H. L. Tak et al., South Korea
15:40	Coffee break
Mo-C316:00–17:40	
T2 · EMT · Electro-membrane technologies for energy and sustainability Chairs: A. Ronen, V. Garcia Vasquez	
16:00	KEYNOTE Electrically conducting membranes for ammonia recovery and fouling control in wastewater treatment — A. Ronen et al., Israel
16:40	Design of green cation exchange membranes for sustainable electrochemical desalination — R. Abu Alwan et al., United States
17:00	Method for reliable ion-exchange membrane resistance measurement in industrially relevant conditions — H. Oakuche et al., France
17:20	Enhanced alkaline water electrolysis performance of KOH-doped polybenzimidazole membranes through sulfonation and phosphoric acid pretreatment — L. C. Jheng et al., Taiwan
17:40	Coffee break
18:00	Panel Discussion
19:30	Poster Session + Coffee Break

Meeting Room D

08:15	Opening Ceremony (Chairs: Elena Tocci, Pavel Izák)
08:30	Plenary Lecture 1 — Insights into the Adsorption- and Phase Behaviour of Fluids in Nanoporous Materials: Towards an Advanced Textural and Surface Characterization , Prof. Dr. Matthias Thommes (Chair: Elena Tocci)
09:30	Coffee break
Mo-D109:50–11:50	
T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation Chairs: S. Akkol, P. Izák	
09:50	Nonporous polymer membranes for downstream separation processes: potential and applications — P. Stanovský et al., Czechia
10:10	Direct contact membrane distillation for wastewater reuse in electrolyser water supply using low-grade waste heat — J. Paetzold et al., Austria
10:30	Hot separation of hydrogen and benzyltoluene — N. Bachhuber et al., Germany
10:50	Advancing sustainable POME treatment through multifunctional dual-layer hollow fiber membranes — Mustapha Salisu Muhammad et al., Malaysia
11:10	Membrane-based concentration of recovered NaOH for resource recycling in secondary battery wastewater — J. Lim et al., South Korea
11:30	Pervaporation-supported valorization of fusel oil — S. Akkol et al., Poland
11:50	Lunch
13:00	Plenary Lecture 2 — Seeing the Invisible: Molecular Simulations Redefining Membrane Operations , Dr. Elena Tocci (Chair: K. Friess)
14:00	Coffee break
Mo-D214:20–15:40	
T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation Chairs: G. Sheibel Cassol, M. Pane	
14:20	KEYNOTE Membrane distillation beyond desalination: where can the technology deliver real value? — G. Viano et al., Denmark
15:00	Thermally symbiotic integration of osmotic membrane distillation and electrolysis for direct seawater hydrogen production — G. S. Cassol et al., Hong Kong
15:20	Can flux intensification reduce energy consumption? insights from oscillatory membrane distillation for industrial water reuse — M. F. Pane et al., Austria
15:40	Coffee break
Mo-D316:00–17:40	
T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation Chairs: C. Brondi, N. F. Himma	
16:00	Membrane distillation applied to organic-rich surface water and biologically treated wastewater: revealing fouling behavior — N. F. Himma et al., Germany
16:20	Mixed matrix membranes based on 6FDA-BisP polyimide for CO₂/CH₄ separation — Iablochkin K. et al., Czechia
16:40	Compatibilizing interlayers in multilayer thin-film composite hollow fiber membranes for humid CO₂/N₂ separation — S. Xu et al., Singapore
17:00	Mixed matrix membranes for CO₂ separation based on organic cages — R. Ben Abed et al., Italy
17:20	Prediction of penetrant-induced swelling in high free-volume polybenzoxazoles membranes by non-equilibrium PC-SAFT — C. Brondi et al., Italy
17:40	Coffee break
18:00	Panel Discussion
19:30	Poster Session + Coffee Break

Gracie

08:15	Opening Ceremony (Chairs: Elena Tocci, Pavel Izák)
08:30	Plenary Lecture 1 — Insights into the Adsorption- and Phase Behaviour of Fluids in Nanoporous Materials: Towards an Advanced Textural and Surface Characterization , Prof. Dr. Matthias Thommes (Chair: Elena Tocci)
09:30	Coffee break
Mo-G1	09:50–11:50
T5 · BIO · Membrane processes for bio-applications, medicine, industry and environmental applications Chairs: S. Kolev, L. Giorno	
09:50	Membrane-based purification of nisin: ultrafiltration optimization from laboratory to pilot scale — M. Scrive et al., France
10:10	Biocatalytic membrane reactors for highly selective and sustainable production systems — L. Giorno, Italy
10:30	Conductive carbon-based dual-layer fibre for enhanced anaerobic digestion of palm oil mill effluent — Mohd Hafiz Puteh et al., Malaysia
10:50	Reusable graphene-based membranes for fast removal of pesticides from real water matrixes — E. Pagalday et al., Spain
11:10	Surface-floating PVDF bead photocatalysts with V₂O₅/g-C₃N₄ for enhanced ciprofloxacin degradation from water — J. Jaafar et al., Malaysia
11:30	Potential of an Arsenazo III-based polymer inclusion membranes for the spectrophotometric determination of lanthanum(III) — C. F. Croft et al., Australia
11:50	Lunch
13:00	Plenary Lecture 2 — Seeing the Invisible: Molecular Simulations Redefining Membrane Operations , Dr. Elena Tocci (Chair: K. Friess)
14:00	Coffee break
Mo-G2	14:20–15:40
T5 · BIO · Membrane processes for bio-applications, medicine, industry and environmental applications Chairs: C. Fontas, S. Nevyhoštěný	
14:20	Exploring chemically driven functionalized membranes for boron recovery from desalination streams — C. Fontàs et al., Spain
14:40	SmartTCE filter: functionalized porous membranes for palladium recovery — M. Cifuentes-Cabezas et al., Spain
15:00	KEYNOTE Investigation of layer-by-layer coated nanofiltration membranes for oligosaccharide concentration from fermentation broth — C. Sander et al., Germany
15:40	Coffee break
Mo-G3	16:00–17:20
T5 · BIO · Membrane processes for bio-applications, medicine, industry and environmental applications Chairs: S. Nevyhoštěný, K-V. Peineman	
16:00	Stabilization of nanofibrous multilayer heterogenous ion exchange membranes — S. Nevyhoštěný et al., Czechia
16:20	Functional liquid membrane for microplastic capture and microbial inhibition — S. Khuntia et al., India
16:40	Polymer membranes for diaper soiling detectors — Z. Pientka et al., Czechia
17:00	GMT's composite membranes for sustainable industrial separation — K.-V. Peinemann et al., Germany
17:40	Coffee break
18:00	Panel Discussion
19:30	Poster Session + Coffee Break

Meeting Room A

08:30 Plenary Lecture 3 — Scalable and Integrated Membrane Processes for Industrial Resource Recovery, Dr. Marek Bobák (Chair: P. Izák)

09:30 Coffee break

Tu-A109:50–11:50

T1 · PDO · Pressure-driven and osmotic membrane processes (MF, UF, NF, RO, FO, PRO)
Chairs: Y. Manawi, J. Faour

09:50

Shear-induced changes in casein properties and functionality during membrane concentration — J. Faour et al., Denmark

10:10

Ferrate(VI)-based pretreatment for enhanced reverse osmosis performance in seawater desalination — E. Saebnoori et al., Netherlands

10:30

Evaluation and process simulation for desalination brine concentration using LSRRO membranes prepared by chemical modification — D.Y. Lee et al., South Korea

10:50

Fabrication and evaluation of thin-film composite polyamide membranes for pharmaceutical contaminant removal from treated wastewater — Y. Manawi et al., Qatar

11:10

Biomimetic reverse osmosis for water reuse and resource recovery from steel industry wastewater — X.F. Yang et al., Spain

11:30

Module-scale repurposing of end-of-life RO membranes through in-situ BIO-inspired surface engineering — A. Alkhouzaam et al., Qatar

11:50 Lunch

13:00 Plenary Lecture 4 — Demonstrating the Potential of Molecular-level Engineering for the Preparation of Highly Efficient Composite Materials for Targeted Gas Separations, Prof. Karel Friess (Chair: E. Tocci)

14:00 Coffee break

Tu-A214:20–15:40

T1 · PDO · Pressure-driven and osmotic membrane processes (MF, UF, NF, RO, FO, PRO)
Chairs: Y J. Lim, Phuong Trinh

14:20

Use of biomimetic membranes in reverse osmosis and forward osmosis as concentration technologies for lignin recovery — L. Lema et al., Spain

14:40

Continuous brine concentration in a three-stage low-salt-rejection reverse osmosis (LSRRO) cascade with flexible RO (FLERO) stages: from NaCl brines to monovalent-selective electrodialysis concentrates — G.Gidey-Berhe et al., Israel

15:00

KEYNOTE Engineering compaction-resistant reverse osmosis membranes for hypersaline brine desalination: from fundamental compaction mechanisms to high-pressure RO applications — Y.J. Lim et al., Singapore

15:40 Coffee break

Tu-A316:00–17:20

T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation
Chair: Z. Pientka

16:00

KEYNOTE Beyond passive barriers: tuning water vapor transport through membrane morphology for selective ammonia recovery — E. Guillen-Burrieza et al., Spain

16:40

Lignin-based membranes for sustainable separation applications — F. H. B. Sosa et al., Portugal

17:00

Hybrid reverse osmosis–freeze concentration for integrated treatment of RO brine from brackish groundwater — B. O. Vasylyv et al., Ukraine

20:00 Gala Dinner

Meeting Room B

08:30 Plenary Lecture 3 — Scalable and Integrated Membrane Processes for Industrial Resource Recovery, Dr. Marek Bobák (Chair: P. Izák)

09:30 Coffee break

Tu-B1

09:50–11:30

T6 · NMM · Novel membrane materials

Chairs: E. Di Nicolò, J. Jansen

09:50

Poly(ether ether ketone) hollow fibers for harsh industrial environments — E. Di Nicolò et al., Italy

10:10

Recycled nanofiltration membranes as an accessible strategy for PFAS removal and water safety — M. M. Miranda et al., Brazil

10:30

Self-healing hydrogels to enhance performance in proton exchange membrane — A. S. Ahmad Zabidi et al., Malaysia

10:50

KEYNOTE

Photochromic probes for modulating gas permeability in polymeric membranes — J.C. Jansen et al., Italy

11:50 Lunch

13:00 Plenary Lecture 4 — Demonstrating the Potential of Molecular-level Engineering for the Preparation of Highly Efficient Composite Materials for Targeted Gas Separations, Prof. Karel Friess (Chair: E. Tocci)

14:00 Coffee break

Tu-B2

14:20–15:00

T6 · NMM · Novel membrane materials

Chair: R. Válek

14:20

A deep investion on polymerizable ionic liquid as building block of ion-conductive membranes — S. Palermo et al., Italy

14:40

Rational design and synthesis of core-shell structured fillers for enhanced CO₂ separation in mixed-matrix membranes — H. L. Choi et al., South Korea

15:40 Coffee break

Tu-B3

16:00–17:20

T6 · NMM · Novel membrane materials

Chairs: D. Babu, Q. Xue

16:00

Nanoporous graphdiyne membranes for energy-efficient gas separation — A. Yadav et al., India

16:20

The effect of the alkyl substituents' length of imidazole-based linkers on the transport properties of ZIF-67 based membranes — S. Kočí et al., Czechia

16:40

Polyelectrolyte-assisted interfacial polymerization for high-performance pH resistant hollow fiber polyurea membranes — Q. Xue et al., Singapore

17:00

Biomimetic MXene membranes via channel-entrance engineering for high-efficiency mono-/divalent cation separation — H. Yu et al., China

20:00 Gala Dinner

Meeting Room C

08:30 Plenary Lecture 3 — Scalable and Integrated Membrane Processes for Industrial Resource Recovery, Dr. Marek Bobák (Chair: P. Izák)

09:30 Coffee break

Tu-C109:50–11:50

T2 · EMT · Electro-membrane technologies for energy and sustainability
Chairs: Z. Slouka, S. Mehta

09:50

Tuning membranes properties for electro-osmotic feed dewatering — S. Mehta et al., Netherlands

10:10

Deep eutectic solvent (DES) flow electrodes for high-voltage desalination — E Gabirondo et al., Portugal

10:30

KEYNOTE Pilot-scale closed-loop dialysis and electrodialysis process for biosurfactant recovery — X. Vecino et al., Spain

11:10

Ionic transport in spacer-free diluate and concentrate electrodialysis channels — Z. Slouka et al., Czechia

11:30

Decentralized water treatment with renewable energy powered nanofiltration or electrodialysis: technological opportunities and limitations — A. I. Schäfer, Germany

11:50 Lunch

13:00 Plenary Lecture 4 — Demonstrating the Potential of Molecular-level Engineering for the Preparation of Highly Efficient Composite Materials for Targeted Gas Separations, Prof. Karel Friess (Chair: E. Tocci)

14:00 Coffee break

Tu-C214:20–15:40

T2 · EMT · Electro-membrane technologies for energy and sustainability
Chairs: Jandaghian Bidgoli, Dorota Babilas-Krzyżowska

14:20

Redox-active iCOFs enable ultra-selective cobalt recovery from battery waste — A.Siekierka et al., Poland

14:40

Linking structure, stability and performance of commercial anion exchange membranes for water electrolysis — A. M. Kansara et al., Germany

15:00

Graphene oxide-modified boron nitride membranes for enhanced acetone transport: a density functional theory study — M. Khajavian et al., South Korea [online](#)

15:20

Dynamic electrophoretic assembly coupled with water-splitting enables ultra-precision ion sieving membranes — M. H. Jandaghian et al., Belgium

15:40 Coffee break

Tu-C316:00–17:20

T2 · EMT · Electro-membrane technologies for energy and sustainability
Chair: R. Válek

16:00

KEYNOTE H₂ production by means of miniaturized PEM electrolyzers for space applications — E. Esposito et al., Italy

16:40

Novel cellulose ionogel membranes for bioelectrochemical applications: synthesis, characterization and performance — L. Koók et al., Hungary

17:00

20:00 Gala Dinner

Meeting Room D

08:30 Plenary Lecture 3 — Scalable and Integrated Membrane Processes for Industrial Resource Recovery, Dr. Marek Bobák (Chair: P. Izák)

09:30 Coffee break

Tu-D109:50–11:50

DAM4CO2 Satellite Workshop
Chairs: Elena Tocci, Alessio Fuoco, Elisa Esposito, CNR-ITM

09:50

KEYNOTE Double active membranes for a sustainable CO₂ cycle: the DAM4CO2 project — A. Fuoco et al., Italy

10:30

Solid-state NMR as a tool to study CO₂ adsorption mechanisms in membranes — L. Calucci et al., Italy

10:50

Catalytic mixed-matrix membranes embedding FeZnCuK oxides for mild CO₂-to-hydrocarbons conversion — F. Panagini et al., Italy

11:10

Prospects for dual-activity membranes: flue gas separation and photothermal conversion of CO₂ — H. G. Baldoví et al., Spain

11:30

Techno-economic assessment of a dual-active membrane reactor for integrated CO₂ capture and conversion to light hydrocarbons — K. Ghasemzadeh et al., United Kingdom

11:50 Lunch

13:00 Plenary Lecture 4 — Demonstrating the Potential of Molecular-level Engineering for the Preparation of Highly Efficient Composite Materials for Targeted Gas Separations, Prof. Karel Friess (Chair: E. Tocci)

14:00 Coffee break

Tu-D214:20–15:40

DAM4CO2 Satellite Workshop
Chairs: Elena Tocci, Alessio Fuoco, Elisa Esposito, CNR-ITM

14:20

KEYNOTE Mixed matrix membranes with tailored porous fillers for enhanced gas separation and CO₂ — M. Carta et al., United Kingdom

15:00

Quaternized highly crosslinked porous polymers as fillers for gas separation membranes — E. Esposito et al., Italy

15:20

Explainable AI for applicability domain constrained optimization of polymer chemistry for gas separation — V. Vigna et al., Italy

15:40 Coffee break

Tu-D316:20–17:20

T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation
Chairs: P. Stanovský, P. Perri

16:20

Rubidium chloride recovery by vacuum membrane crystallization: molecular-level insights into a dual-configuration system — P. Perri et al., Italy

16:40

KEYNOTE Are huge salinity-gradient power densities reported for tiny-area membranes (< 0.03 mm²) up-scalable to much larger membrane areas? — A.Yaroshchuk et al., Spain

20:00 Gala Dinner

Meeting Room A

08:30	Free time (after the Gala Dinner)
We-A109:50–11:10	
T5 · BIO · Membrane processes for bio-applications, medicine, industry and environmental applications	
Chairs: J. Čížek, R. Mazzei	
09:50	Tailoring ceramic-based polyelectrolyte multilayer membranes for NOM removal in drinking water treatment — J. Bennert et al., Germany
10:10	Recovery of imidazolium based ionic liquids from wastewaters by electrodialysis method — D. Babilas-Krzyżowska et al., Poland
10:30	KEYNOTE Nature-inspired biocatalytic membranes: a scalable system for sustainable process intensification — Rosalinda Mazzei et al., Italy
11:10	Coffee break
We-A211:30–12:30	
T5 · BIO · Membrane processes for bio-applications, medicine, industry and environmental applications	
Chairs: J. Čížek, R. Mazzei	
11:30	Influence of ionic strength on picric acid retention by PSS–PDADMAC polyelectrolyte membranes — A. Sikach et al., Ukraine
11:50	Improving the performance of membrane distillation unit using MOF supported hydrophobic composite membrane — A.H. El-Shazly R.I. Saman A.A. Shahin, Egypt
12:10	Chiral mixed matrix ion exchange membranes as a modular membrane platform for separation of enantiomers — J. Cizek et al., Czechia
12:30	Lunch
13:30	Plenary Lecture 5 — Interfacial Polymerization: New Chemistries, Synthesis and Advanced Characterization, Prof. Suzana P. Nunes (Chair: P. Izák)
14:30	Closing Ceremony (Chairs: Elena Tocci, Pavel Izák)

Meeting Room B

08:30	Free time (after the Gala Dinner)
We-B109:50–10:50	
T6 · NMM · Novel membrane materials	
Chairs: M. Higa, Z. Vorbová	
09:50	Water matters: the hidden third component in organic-organic pervaporation — K. Knozowska et al., Poland
10:10	PVDF-based membrane for enantioselective separation chiral acids: influence of solvent composition and mobile phase modifiers — Zdena Vorbova et al., Czechia
10:30	Development of low-cost clayey ceramic microfiltration membranes using olive pomace and sunflower seed shells as bioadditives for water treatment — Z. EL BOUHALI et al., Morocco
11:10 Coffee break	
We-B211:30–12:30	
T6 · NMM · Novel membrane materials	
Chairs: M. Higa, Z. Vorbová	
11:30	KEYNOTE Piezo dialysis using charged mosaic membranes toward next-generation desalination technology — M. Higa et al., Japan
12:10	Nanofluidic transport governing adsorption and reaction in membrane nanopores — M. N. Nguyen et al., Germany
12:30 Lunch	
13:30 Plenary Lecture 5 — Interfacial Polymerization: New Chemistries, Synthesis and Advanced Characterization, Prof. Suzana P. Nunes (Chair: P. Izák)	
14:30 Closing Ceremony (Chairs: Elena Tocci, Pavel Izák)	

Meeting Room C

08:30	Free time (after the Gala Dinner)	
We-C1		09:50–11:10
T4 · MPM · Membrane process modelling Chairs: H. Bazargan Harandi, M. Škrhák		
09:50	KEYNOTE Machine learning-based fouling prediction in electrodialysis under dynamic current density profiles — F. Volpe et al., Italy	
10:30	Machine learning vs. response surface methodology for modeling multi-ion transport coefficients in high-pressure nanofiltration — S.Y. Lee et al., South Korea	
10:50	2D CFD simulation of boron/water splitting and pH-dependent boron reactive transport in bipolar membrane electrodialysis for boric acid production — H. Bazargan Harandi et al., Spain	
11:10	Coffee break	
We-C2		11:30–12:30
T4 · MPM · Membrane process modelling Chairs: H. Bazargan Harandi, M. Škrhák		
11:30	Solute-induced gravitational convection for same-valence ion separation in electrodialysis — M. Škrhák et al., Czechia	
11:50	Early-stage life cycle assessment of novel nanofiltration membrane manufacturing methods for sustainable scale-up — P. Almendras Flores et al., Netherlands	
12:10	Comparative transport characterisation of nanofiltration membranes in test cells with tangential flow and uniformly accessible surface — F. Gaioto et al., Norway	
12:30	Lunch	
13:30	Plenary Lecture 5 — Interfacial Polymerization: New Chemistries, Synthesis and Advanced Characterization, Prof. Suzana P. Nunes (Chair: P. Izák)	
14:30	Closing Ceremony (Chairs: Elena Tocci, Pavel Izák)	

Meeting Room D

08:30	Free time (after the Gala Dinner)
We-D109:50–11:10	
T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation	
Chairs: J. Schneider, P. Stanovský	
09:50	Flue gas sorption and permeation in PEEK-ionenes and polymers of intrinsic microporosity — P. Stanovský et al., Czechia
10:10	ZIF-11@PEI-PSF mixed matrix membranes: a novel strategy for high-performance CO ₂ separation — M. K. Sinha et al., India
10:30	Engineering ultrathin oriented Zn ₂ (bim) ₄ metal-organic framework membranes for high-temperature H ₂ /CO ₂ separation — S. Song et al., Switzerland
10:50	Synergistic carbon-based supports and ionic liquids in CTA membranes for enhanced CO ₂ /N ₂ separation — J. Schneider et al., Czechia
11:10 Coffee break	
We-D211:30–12:30	
T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO2 capture and utilisation	
Chairs: J. Schneider, P. Stanovský	
11:30	Ammonia percolation limit in PEMs: experimental and md simulations — Victor Skiffard Klitgaard et al., Denmark
11:50	STEROPE project: membrane contactors for CO ₂ capture using aqueous piperazine solutions — M. Pagliero et al., Italy
12:10	Molecular insights into LiCl adsorption at polymer interfaces: a comparative study of PVDF and PP membranes — G. Prenesti et al., Italy
12:30 Lunch	
13:30 Plenary Lecture 5 — Interfacial Polymerization: New Chemistries, Synthesis and Advanced Characterization, Prof. Suzana P. Nunes (Chair: P. Izák)	
14:30 Closing Ceremony (Chairs: Elena Tocci, Pavel Izák)	

Poster Session · Monday 5 October, 19:30

T1 · PDO · Pressure-driven and osmotic membrane processes (MF, UF, NF, RO, FO, PRO)

P1 Thermoresponsive hydrogel-assisted forward osmosis using thin-film composite membranes — A. Das et al., Germany

P2 Rhodiasolv® PolarClean as a safer alternative to DMF for polysulfone RO membrane casting — L. Germano et al., Italy

P3 Efficacy of monochloramine for biofouling control in a pilot-scale osmotically driven membrane process — D. JANG et al., South Korea

P4 Role of biofouling layer in the transport of emerging contaminants in the FO membrane process: hinderer or promoter? — D. JANG et al., South Korea

P5 Synthesis of advanced polyurea membranes for critical resource recovery from acidic mine drainage — M. N. Khan et al., Finland

P6 Stability and performance of resveratrol-coated ultrafiltration membranes — E. Raiskio et al., Finland

P7 Controlled chlorination for LSRRO membrane preparation: effects on overall water recovery and monovalent/divalent selectivity for brine valorisation — G. Razi Parchikolaie et al., Spain

P8 The dual and synergistic roles of phenolics in membrane fouling and fouling prevention — E. Raiskio et al., Finland

P9 Sustainable fabrication of mixed matrix membranes incorporating tea/coffee waste using green solvents for removal of cadmium ions from wastewater — Saif-ur-Rehman et al., Belgium

P10 Chemically robust hollow fiber thin-film composite membranes based on polyurea selective layers for nanofiltration under extreme pH conditions — Q. Xue et al., Singapore

P11 Anthropogenic changes in surface water quality: implications for water treatment technologies — E. Łobos-Moysa et al., Poland

T2 · EMT · Electro-membrane technologies for energy and sustainability

P12 Testing custom-designed 3D printed panel reactors to increase the efficiency of bioelectrochemical systems applying a commercial cation exchange membrane — A.B. Kizil et al., Hungary

P13 Membrane selection and cathode catalyst engineering for enhanced biohydrogen production in microbial electrolysis cells — Tasnim Elsa et al., South Korea

P14 Seawater recirculation in reversal electrodialysis for resource-efficient effluent reclamation — R. Ibáñez et al., Spain

P15 Molecular dynamics insights into CO₂ capture in prussian blue analogue-modified mixed matrix membranes — Mohammad Khajavian et al., South Korea

P16 Advancements in sustainable proton exchange membranes for water electrolyzers — F. Komers et al., Czechia

P17 N₂-assisted membrane-separated electrochlorination for high-strength sodium hypochlorite production — Pooi Ling Koo et al., Singapore

P18 Optimization of parameters of EDBM process — T. Kubičková et al., Czechia

P19 Evaluation of monovalent ion selectivity in membranes prepared by ion-track graft polymerization — K. Murasaki et al., Japan

P20 Assessing the potential impact of leakage from supported ionic liquid membranes on bioelectrochemical performance — K. B. Nagy et al., Hungary

P21 Performance evaluation of reverse electrodialysis using conductive spacers — A. Nakamoto et al., Japan

P22 Evaluation of power generation performance of reverse electrodialysis using profiled membranes under natural salt water — T. Ozuru et al., Japan

P23 Flow electrode capacitive deionisation (FCDI): from brackish water desalination to selective lithium recovery — Hafiz Saif et al., Portugal

P24 Can we do better than Michelangelo? 3D printed gaskets versus CNC milled graphite plates — H. Saif et al., Portugal

P25 3D-printed ion-exchange membranes: achieving commercial performance with a near-zero-waste approach — M. Venu et al., Portugal

P26 Volatile carboxylic acid separation from real fermentation effluent by electrodialysis — T. Rózsenszki et al., Hungary

P27 Effect of solution ionic composition on the power generation performance of reverse electrodialysis systems using profiled membranes — Y. Shimizu et al., Japan

P28 Predictive modeling of multi-component electrodialysis based on experimental parameters — Y. Suetsugu et al., Japan

P29 Effect of halides on the behavior of a heterogeneous anion-exchange membrane — L. Vobecká et al., Czechia

P30 Charge-regulated polyelectrolyte complex membranes via salinity-induced aqueous phase separation for electrodialytic Li⁺/Mg²⁺ separation — Q. Xu et al., Belgium

P31 Tailored nanoporous membrane enables one-step and highly efficient electrodialytic dye/salt fractionation — Zijian Yu et al., Belgium

P33 Area resistance characterization of homogeneous and heterogeneous ion-exchange membranes using differential alternating current measurements — A. Grabowski, Germany

T3 · GSC · Gas separation, pervaporation, membrane distillation and crystallization, CO₂ capture and utilisation

P34 Operating boundaries in submerged hollow fiber membrane distillation crystallization of real SWRO brine — M. Hossein Panah et al., Spain

P37 Pebax®/ionic liquid composite membranes for greenhouse gases separation — Beatriz F. Esteves et al., Portugal

P38 Mixed matrix membranes based on polyimides and thiacalixarenes — J. Heřmánek et al., Czechia

P39 COSMO-RS screening of 19 million ionic liquids for separation-enhanced CO₂ hydrogenation to methanol — J. Fabian et al., Portugal

P40 Resource recovery from semiconductor wastewater containing high-concentration ammonia and fluoride — S. B. Jang et al., South Korea

P41 Dehydration by pervaporation of a ternary mixture of pharmaceutical solvents — A. Martín-Quijano et al., Spain

P42 High pressure CO₂/CH₄ separation using MOF-enhanced PVAM/PVA facilitated transport membranes — S. Sharma et al., Norway

P43 Quantification of wetting progression in membrane distillation based on optical coherence tomography — N. F. Himma et al., Germany

T4 · MPM · Membrane process modelling

P44 CFD investigation of Mg(OH)₂ precipitation and water-splitting phenomena in selective electrodialysis for Li brine processing — A. Asadi et al., Spain

P45 Experimental and numerical analysis of hollow fiber membrane contactor for air dehumidification — G. Viano et al., Denmark

T5 · BIO · Membrane processes for bio-applications, medicine, industry and environmental applications

P47 Ratiometric luminescent oxygen-sensitive polyamide membrane for in situ monitoring of early biofouling — H. Ayele et al., Portugal

P48 Integrated electrodialysis – precipitation technology for phosphorus recovery and valorisation of saline glycol wastewater — R. Barannikov et al., Czechia

P49 Optimization of non-dispersive solvent extraction by spiral hollow fiber contactor — S. Bey et al., Algeria

P50 Mechanistic origin of chiral recognition: intrinsic and template affinity in ALD-modified polycarbonate membranes — L. Brožová et al., Czechia

P51 Production of organic acids from their salts using electrodialysis with bipolar membranes — H. Fárová et al., Czechia

P52 From conventional to green solvents: tailoring cellulose acetate membranes through solvent selection — B.Hermanová et al., Czechia

P54 Surface modification of 3D printed polymeric membranes with crosslinked PVA for wastewater treatment — E. Kokkinos et al., Greece

P55 Oxidative damage in phosphatidylserine bilayers modulated by high cholesterol content: a scanning electron microscopy study — K. Kuliš et al., Croatia

P56 Partitioning of counterions at low concentrations between polyelectrolyte hydrogel phase and water phase — M. Lang et al., Czechia

P57 From nanofiber design to pilot-scale modules: needleless-electrospun mesoporous ion-sieve membranes for selective lithium recovery from desalination brines — N. Nadzri et al., Singapore

P58 Valorization of vinasse by integrated UF-NF for water reuse and nutrient recovery — P. M. de Oliveira et al., Brazil

P59 Treatment of PFAS-enriched NF membrane retentates by anodic oxidation — M. M. Miranda et al., Brazil

P60 Treatment of turbine condensate by electrodeionization — Q. T. Nguyenová et al., Czechia

P61 Interfacial engineering and interaction control in advanced membrane bioprocesses and biocatalytic systems — Z. Su et al., Denmark

P62 Development of an electroformation method for giant unilamellar vesicle formation using various damp lipid films — M. Raguz et al., Croatia

P63 Effect of ceramic membrane MWCO on the efficiency of rubber industry wastewater treatment — M. Rajca et al., Poland

P64 Mineral functionalization of 3D-printed membranes for wastewater treatment — K. Simeonidis et al., Greece

P65 Treatment of textile rinsing water – the use of electrochemical processes — M. Tykva et al., Czechia

P66 Effect of MXene localization on the PFAS removal performance of PAN-derived carbon nanofiber membranes — K. Ulucan-Altuntas et al., Türkiye

P67 Valorization of olive mill wastewater through reverse osmosis: membrane performance, fouling characterization, and retentate upcycling into slow-release fertilizers — A.L.Q. Candido et al., Brazil

T6 · NMM · Novel membrane materials

P69 Comparison of deposition methods on composite membrane substrates — K. Havelková et al., Czechia

P70 Preparation of an NH_4^+ -selective separation membrane and evaluation of its NH_4^+ concentration performance — M. Hozaki et al., Japan

P71 Asymmetric bipolar membranes with MXene-based water-splitting catalysts — E.-G Jang et al., South Korea

P72 Solvothermal synthesis and surface functionalization of ZIF-8 nanoparticles with APTMS for future membrane applications — A. Janković et al., Croatia

P73 Removal of pharmaceutical compounds by enhanced mixed matrix membranes using functionalised adsorbents — D. Ramírez Espinosa et al., Spain

P74 Polymer blending strategy for highly durable PPO-based ion-exchange membranes — J.-H Lee et al., South Korea

P75 Relationship between monovalent anion selectivity of anion exchange membranes and quaternization conditions — M.Katsura et al., Japan

P77 Effect of glass fibers on the mechanical and transport properties of polymer inclusion membranes composed of Aliquat 336 and PVDF-HFP — L. Kukoc et al., Croatia

P78 Preparation and evaluation of K^+ selective cation exchange membranes — M. Okada et al., Japan

P79 Synthesis of chiral selective membranes for the separation of racemic mixtures — M. Otmar et al., Czechia

P80 Fabrication of charged mosaic membranes using aromatic polymers and evaluation of electrolyte permselectivity — H. Tsuru et al., Japan

P81 Morphology optimization of chiral thin-film membranes — V. John et al., Czechia

P82 Multifunctional B-cyclodextrin-magnetite electrospun membranes for pesticide removal from water — N. Calderón-Armijo et al., Chile

P84 Polymer inclusion membranes based on polylactic acid — P. Bikić et al., Croatia

P85 Preparation of homogeneous ion-exchange membranes for electrodialysis based on functionalized sulfone polymers — R. Válek et al., Czechia

P86 Residual solvent-induced structural evolution and ion-mediated stabilization in PES membranes — M. T. Khalid et al., South Korea