

Last up-date: July 3rd, 2026

# POSTERS

## Sessions I & II

Posters selected for the PhD Student Award Competition (Session III, Wednesday, July 1, 2026) are indicated with an asterisk (\*)

| N°    | Session I - H <sub>2</sub> - Monday, June 29, 2026                                                                                                                                                     | Session II - Gas Separation - Tuesday, June 30, 2026                                                                                                                                                                       | N°     |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| *H2-1 | Advances and challenges in reducing surface roughness to improve Pd-based membranes for H <sub>2</sub> purification<br>G. ASCHIERI (Juan Carlos Univ, ES)                                              | Cold Sintering as a Low-Temperature Route to Develop Porous Ceramic Membranes for Gas Permeation<br>S. CANEVER (Federal Univ Santa Catarina, BR)                                                                           | *GS-1  |
| *H2-2 | Pd-based Membranes for Hydrogen Purification in Presence of Ammonia<br>W. DEW (Norwegian Univ of Science and Technology, NO)                                                                           | Mixed-Linker-Directed Seed-Free Growth of CO <sub>2</sub> -Selective MOF-303 Membranes<br>L.T. CHI (National Taiwan Univ, TW)                                                                                              | *GS-2  |
| *H2-3 | Pressurized ammonia decomposition aimed at improving decomposition and hydrogen recovery<br>S. ITO (Utsunomiya Univ, JP)                                                                               | Green Solvent Synthesis and Membrane Engineering of Two-dimensional metal-organic frameworks Zn <sub>2</sub> (bim) <sub>4</sub><br>J. BOSMAN (Forschungszentrum Jülich, DE)                                                | *GS-3  |
| *H2-4 | Upscaling Study of Carbon Molecular Sieve Membranes to Multichannel Configurations<br>R. FERRETTI (Eindhoven Univ of Technology, NL)                                                                   | Effect of Membrane Morphology and Activation Strategy on CO <sub>2</sub> Separation in CAU-23 Membranes,<br>C.H. CHUANG (National Taiwan Univ, TW)                                                                         | *GS-4  |
| *H2-5 | Hydrogen-Selective Silica Membranes: Correlating Gas Transport with Nanoporous Structure<br>T. GREKOU (Centre for Research and Technology Hellas, GR)                                                  | Aluminum Formate-Based Mixed Matrix Membrane for Enhanced Gas Separation Performance<br>N. KHOIROH (Univ Queensland, AU)                                                                                                   | *GS-5  |
| *H2-6 | Hydrogen Permeable CoOx-SiO <sub>2</sub> Membranes for Separation and Reaction: Synthesis and Characterization<br>P. SRIVASTAVA (Univ Houston, US)                                                     | MOF-303 Tubular Membranes via PVA-Assisted Secondary Growth for Efficient CO <sub>2</sub> /N <sub>2</sub> and CO <sub>2</sub> /CH <sub>4</sub> Separation<br>Y.M. CHEN (National Taiwan Univ, TW)                          | *GS-6  |
| *H2-7 | Acceleration of Cyclopentanol Dehydrogenation Using Hydrogen Sieving Properties of CHA-Type Zeolite Membranes,<br>D. KONDO (Utsunomiya Univ, JP)                                                       | Critical Role of Interfacial Mass Transfer in MOF Membrane for Gas Separation<br>L.W. HSIAO (National Taiwan Univ, TW)                                                                                                     | *GS-7  |
| *H2-8 | Direct CO <sub>2</sub> reduction to methane in a pressurized dual-stage protonic steam-electrolysis reactor<br>I. QUINA GARCÍA (Instituto de Tecnología Química UPV-CSIC, ES)                          | Biomimetic material modified polyetherimide membranes on CO <sub>2</sub> /N <sub>2</sub> separation enhancement<br>T.Y. FU (Univ Sydney, AU)                                                                               | *GS-8  |
| H2-9  | Unveiling Hydrogen's Whisper: Catalyst Heart, Membrane Gateway, and Annular Winds of Equilibrium in Packed Bed Membrane Reactors<br>(Tremplin A., FR) - <b>Canceled</b>                                | Investigating Dual-Phase Molten-Hydroxide Membranes for CO <sub>2</sub> Separation: Lowering Operating Temperatures<br>J. GRAY (Newcastle Univ, UK)                                                                        | *GS-9  |
| H2-10 | Ammonia cracking with Integrated Membrane Reactors<br>J. MELENDEZ (Hydrogen Onsite S.L., ES)                                                                                                           | A Sacrificial Seed Layer Strategy for Hierarchical MFI Zeolite Membranes with Enhanced Butane Isomer Separation Performance<br>J. LI (Zhejiang Univ, CN)                                                                   | *GS-10 |
| H2-11 | Advancing ammonia-to-hydrogen conversion: Benchmarking ceramic vs metallic membrane reactors for NH <sub>3</sub> cracking<br>D. KOUTSONIKOLAS (Centre for Research & Technology Hellas, GR)            | Gel-Recycling-Assisted Mild Synthesis of MFI Zeolite Membranes for Efficient Butane Isomer Separation<br>K. YU (Nanjing Tech Univ, CN)                                                                                     | *GS-11 |
| H2-12 | Efficient H <sub>2</sub> production from NH <sub>3</sub> by using Protonic Electrochemical Ceramic Reactors<br>L. ALMAR (Instituto de Tecnología Química UPV-CSIC, ES)                                 | Rapid Synthesis of Ultrathin Zeolite Membranes with Exceptional Separation Performance<br>H. WU (Nanjing Tech Univ, CN)                                                                                                    | *GS-12 |
| H2-13 | In Situ Water Removal to Intensify Low-Temperature RWGS<br>E. VICENTE (Instituto de Tecnología Química UPV-CSIC, ES)                                                                                   | Energy-Efficient Manufacturing of Al <sub>2</sub> O <sub>3</sub> /GO Hybrid Membranes by Cold Sintering for Air/CO <sub>2</sub> Separation via Ideal Selectivity Screening<br>S. CANEVER (Federal Univ Santa Catarina, BR) | GS-13  |
| H2-14 | Study of steam electrodes for the efficient CO <sub>2</sub> and H <sub>2</sub> O Co-Electrolysis in Proton Ceramic Electrochemical Reactor<br>E. BARRIO (Instituto de Tecnología Química UPV-CSIC, ES) | CO <sub>2</sub> Adsorption on Zeolites with Sr <sup>2+</sup> and K <sup>+</sup> Cations toward Membrane Applications<br>C. RIBEIRO (Univ Brasília, BR)                                                                     | GS-14  |
| H2-15 | Composite Proton Conductors with Enhanced Stability in H <sub>2</sub> S-Containing Atmospheres<br>A. MUÑOZ PEREZ (Instituto de Tecnología Química UPV-CSIC, ES)                                        | Dual-Ammonium Synergistic Strategy for Rapid Fabrication of High-Performance SSZ-13 Zeolite Membranes with Minimal Defects<br>H. XIAO (Nanjing Tech Uni, CN)                                                               | GS-15  |
| H2-16 | Exploring Solar Syngas Synthesis with MIEC Membranes: Key Developments from the EU SOMMER Project<br>N. NEUMANN (German Aerospace Center, DE)                                                          | Achieving Breakthrough Gas Separation Performance in Ultrathin Zeolite Membranes by Topotactic Conversion and Induction of Nanosheets<br>N. WANG (Nanjing Tech Univ, CN)                                                   | GS-16  |
| H2-17 | Advancement of Thermally Robust Cermet Membranes for Efficient Hydrogen Permeation in high-temperature environments (>600°C)<br>T.W. KIM (Korea Institute of Energy Research, KR)                      | Rapid fabrication of high-quality SSZ-13 zeolite membranes for gas separation<br>B. WANG (Nanjing Tech Univ, CN)                                                                                                           | GS-17  |
| H2-18 | hyPPER project: Hybrid protonic reactor for flexible energy conversion, storage and transmission by reversible organic electrolysis<br>S. ESCOLÁSTICO (Instituto de Tecnología Química UPV-CSIC, ES)   | Reactivity of Mg-stabilized zirconia with Molten Alkali Carbonate Salts: A candidate for CO <sub>2</sub> separation membrane<br>R.I. MERINO (INMA, ES)                                                                     | GS-18  |
| H2-19 | Nanoparticle Exsolution in Membrane Reactor Materials for Solar-Driven Syngas Production<br>M. BALAGUER RAMÍREZ (Instituto de Tecnología Química UPV-CSIC, ES)                                         | Molecular Dynamics Insights into Filler Aggregation Effects for CO <sub>2</sub> separation in MMMs: A Non-Equilibrium Molecular Dynamics Study<br>H. TAKABA (Kogakuin Univ, JP)                                            | GS-19  |
| H2-20 | Catalytic Membrane Reactors for chemical reactions and product gas purification/separation with Zeolite, Carbon, Pd & PdAg membranes<br>M. JAIN (Fraunhofer IKTS, DE)                                  | Generative Design of MOF-Based Mixed Matrix Membranes for CO <sub>2</sub> Separation<br>T. TORIGOE (Kogakuin Univ, JP)                                                                                                     | GS-20  |
| H2-21 | Molecular Simulations of Organosilica Membranes for Gas Separation<br>J. ZHONG (Changzhou Univ, CN)                                                                                                    | Organosilicon-based Sensors for the Selective detection of BTEX in indoor air<br>S. ROUALDES (IEM, Univ Montpellier, FR)                                                                                                   | GS-21  |
| H2-22 | Engineering of H <sub>2</sub> selective two-dimensional MOFs and zeolite membranes: a dream or a reality in research and application today<br>M.A. PIZZOCCARO-ZILAMY (Forschungszentrum Jülich, DE)    | Advanced ZIF and Alumina Adsorbents for Improved CO <sub>2</sub> Capture Performance<br>S. LAMNINI (Univ Mohammed VI Polytechnic, MA)                                                                                      | GS-22  |
| H2-23 | Fabrication and testing of ceramic membranes to separate hydrogen from biomass syngas<br>F.S. FRANCHI (RSE Spa, IT)                                                                                    | Development of innovative porous materials for noble gases adsorption<br>A. BOURGOIS (Autorité de Sûreté Nucléaire et de Radioprotection, FR)                                                                              | GS-23  |
| H2-24 | Boron nitride-zeolite composite for ammonia removal towards hydrogen purification<br>N. SIENG DUNG (Chulalongkorn Univ, TH)                                                                            | Innovative synthesis of bi-metallic cyano-bridged coordination polymers on alumina for enhanced NH <sub>3</sub> sorption<br>P. PLAZA-JOLY (IEM, Univ Montpellier, FR)                                                      | GS-24  |
| H2-25 | Humidity-Driven Proton Transport Mechanism in MOF Al-CAU-64<br>Z. JIANG (Forschungszentrum Jülich, DE)                                                                                                 |                                                                                                                                                                                                                            |        |
| H2-26 | Hierarchical surface smoothening of stainless-steel meshes enabling high-flux ZIF-8 membranes for robust gas separation<br>F. SCHEFFLER (EPFL, CH)                                                     |                                                                                                                                                                                                                            |        |
| H2-27 | Membrane Technologies for Hydrogen-Helium Separation in the Geological Hydrogen Economy<br>K. DEDECKER (IEM, Univ Montpellier, FR)                                                                     |                                                                                                                                                                                                                            |        |

| POSTERS Session II                                                                                                               |                                                                                                                                                                                                                        |                                                                                                                                                                                                                     |       |
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| N°                                                                                                                               | Session II- Water treatment - Tuesday, June 30, 2026                                                                                                                                                                   | Session II - Complex Liquid Processing - Tuesday, June 30, 2026                                                                                                                                                     | N°    |
| *WT-1                                                                                                                            | Lithium recovery from seawater desalination brines using ion-sieve electrospun nanofibrous membranes: the role of nanofiber design<br>N. NADZRI (Nanyang Technological Univ, SG)                                       | High performance hybrid membranes for solvent-based separations: Towards sustainable chemical production<br>K. ALAM (KU Leuven & VITO, BE)                                                                          | *CL-1 |
| *WT-2                                                                                                                            | Membranes based on new charged 2D nanomaterial<br>E. ROLLAND (CEA Saclay, FR)                                                                                                                                          | Exploring the physicochemical properties of atomic layer deposited alumina layers for solvent-resistant nanofiltration membranes<br>H. SONDHI (Univ Twente, NL)                                                     | *CL-2 |
| *WT-3                                                                                                                            | Thiourea-functionalized graphene oxide ceramic nanofiltration membranes for ion rejection from saline wastewater<br>S. KIM (Ewha Womans Univ Seoul, KR)                                                                | Physics Guided Neural Networks to Predict OSN Ceramic Membrane Performance<br>P.J. PICCARD (Hasselt Univ & VITO, BE)                                                                                                | *CL-3 |
| WT-4                                                                                                                             | Enhancing stability of graphene oxide ceramic membranes: overcoming adhesion and swelling limitations for dye removal<br>Y. KOUZI (Univ Hassan II of Casablanca, MA)                                                   | Solvent-Tolerant and Solvent-Resistant Inorganic-Organic Hybrid Nanofiltration Membranes through Atmospheric-Pressure Molecular Layer Deposition<br>M.W.J. LUITEN-OLIEMAN (Univ Twente, NL)                         | CL-4  |
| *WT-5                                                                                                                            | Engineering PFAS-free hydrophobic ceramic membranes for membrane distillation: phosphonate anchoring<br>F. ALTINBAS (Univ Twente, NL)                                                                                  | Functionalization of geopolymer filters for nuclear organic effluent treatment<br>M. DUCHATEAU (CEA, FR)                                                                                                            | CL-5  |
| *WT-6                                                                                                                            | Ligand-Assisted Cobalt Catalysts for Enhanced Dye Removal under Dark for Membrane Technology Applications<br>J.K. KOH (Univ Sydney, AU)                                                                                | High-Performance Enantioselective Mixed Matrix Ion-Exchange Membranes based on PVDF and EVOH Polymers with Cinchona-Derived Chiral Silica Particles<br>M. DROBEK (IEM, Univ Montpellier, FR)                        | CL-6  |
| *WT-7                                                                                                                            | 3D-Printed ZnO/SiOC Gyroid Monoliths as Photocatalytic Flow-Through Reactors for Water Treatment<br>C. YOUSSEF (IEM, Univ Montpellier, FR)                                                                             | Precipitation-Synthesized Magnesium Silicate for Refining High-Acid Used Cooking Oil: Simultaneous Removal of FFA, Color, Alkali Metals, and Phosphorus<br>S. HAN (Giant Chemical, KR)                              | CL-7  |
| *WT-8                                                                                                                            | Environmentally Friendly Fabrication of Asymmetric Alumina Membranes for Water Treatment via Phase Inversion Tape Casting<br>I. LAMBERS (Univ Twente, NL)                                                              | Selective Fractionation of Bixin and Phenolic Antioxidants from Annatto (Bixa orellana L.) Seed Extracts Using Ceramic Membrane Filtration<br>K. RODRIGUES DORNELES (Univ Federal de Uberlândia, BR)                | CL-8  |
| *WT-9                                                                                                                            | Evaluation of Spring Turbulence Promoter on Fouling Mitigation during the Microfiltration of Clove Basil Extract<br>K. RODRIGUES DORNELES (Univ Federal de Uberlândia, BR)                                             | Session II - Membrane Reactors - Tuesday, June 30, 2026                                                                                                                                                             | N°    |
| *WT-10                                                                                                                           | From Industrial Waste to Functional Interfaces: Multi-Scale Image Analytics of Porosity-Roughness Interplay in Spent Bleaching Earth Ceramic Membranes<br>A. RAHMA (Institut Teknologi Kalimantan, ID)                 |                                                                                                                                                                                                                     |       |
| WT-11                                                                                                                            | Development and characterization of ceramic membranes for nanofiltration<br>H.J. LEE (Korea Institute of Materials Science, KR)                                                                                        | Exploring the role of the local environment in electrode-membrane assemblies for the electroconversion of CO <sub>2</sub><br>M. PAYA (IEM, Univ Montpellier, FR)                                                    | *MR-1 |
| WT-12                                                                                                                            | Meter-scale graphene-based nanosheet membranes for nanofiltration applications<br>K. CELEBI (Zhejiang Univ, CN)                                                                                                        | Thermo-chemical and -mechanical Stability of Materials in Membrane Reactors for Renewable Syngas Production<br>K. STRECKEL (Forschungszentrum Jülich, DE)                                                           | *MR-2 |
| WT-13                                                                                                                            | Role of CNT length on the transport of Water in CNT membranes<br>S. SHREE (IIT Tirupati, IN)                                                                                                                           | Methane steam reforming intensified by an oxygen-ion conducting membrane reactor<br>P. SINTES (Univ Politècnica de València, ES)                                                                                    | *MR-3 |
| WT-14                                                                                                                            | Modified Graphene-Oxide- Polyamide Thin film nanocomposite membranes for desalination applications<br>K. KHOABANE (MINTEK, ZA)                                                                                         | Carbon membranes for product separation and purification in chemical equilibrium reactions<br>H. RICHTER (Fraunhofer IKTS, DE)                                                                                      | MR-4  |
| WT-15                                                                                                                            | Rational Design of Graphene Oxide-Hyperbranched Polymer Membranes for Desalination<br>H. MUHTAR (Diponegoro Univ, ID)                                                                                                  | Methanation of biomass gasification syngas streams – assessment of the potential with in situ water removal through a membrane reactor<br>L.M. MADEIRA (Univ Porto, PT)                                             | MR-5  |
| WT-16                                                                                                                            | A study on low-cost porous ceramic membranes<br>J.H. HA (Korea Institute of Materials Science, KR)                                                                                                                     | Application of Inorganic Membranes as Distributors in Innovative and Integrated Catalytic Membrane Reactors – I-KaMeRa<br>I. ELSHERBINY (Fraunhofer IKTS, DE)                                                       | MR-6  |
| WT-17                                                                                                                            | Development of Ceramic UF Membrane via Vacuum Extrusion and Sol-Gel Process<br>D. KIM (EMST, KR)                                                                                                                       | Development of a Flow-Membrane Reactor for the Continuous Synthesis of Fragrance Esters in the Liquid Phase<br>N. ITOH (Utsunomiya University, JP)                                                                  | MR-7  |
| WT-18                                                                                                                            | Indigenous Development of Low-Cost Multichannel Tubular Bentonite Ceramic Membranes Using Extrusion<br>V.K. RAJA (National Institute of Technology Andhra Pradesh, IN)                                                 | Collapse of mesoporous silicas induced by radiation damage<br>C. REY (ICSM, Univ Montpellier, FR)                                                                                                                   | MR-8  |
| WT-19                                                                                                                            | Toolpath-Controlled Direct Ink Writing of Asymmetric Geopolymer Membranes<br>A.SILVA (Federal Univ Santa Catarina, BR)                                                                                                 | Accelerated method for zeolite membrane aging evaluation, under hydrothermal conditions, at high temperature<br>A. HERTZ (CEA, FR)                                                                                  | MR-9  |
| WT-20                                                                                                                            | Surface Engineering of Sintered 316L Stainless Steel Supports: From Characterization to Hydrophilic Membrane Fabrication<br>R. TINIVELLA (Univ Pavia, IT)                                                              | Engineering the Si/Al ratio of CHA zeolite membranes for acid-resistant and high-performance vapor permeation dehydration<br>J. WU (Nanjing Tech Univ, CN)                                                          | MR-10 |
| WT-21                                                                                                                            | Ceramic Membrane Technologies for Robust and Efficient Industrial Wastewater Treatment Applications<br>N. SIGALAS (Oseido, FR)                                                                                         | Exploring Mixed La <sub>0.6</sub> Sr <sub>0.4</sub> MnO <sub>3</sub> -CeO <sub>2</sub> Coatings for CO <sub>2</sub> Splitting: Surface Property-Reactivity Relationships<br>L. BEN NEON (IEM, Univ Montpellier, FR) | MR-11 |
| WT-22                                                                                                                            | Validation of sono-microfiltration using a pilot-scale with multichannel ceramic membranes: fouling behavior and hydraulic resistance as a function of feed viscosity<br>N. HENGL (Univ Grenoble Alpes, FR)            |                                                                                                                                                                                                                     |       |
| WT-23                                                                                                                            | An integrated pre-treatment strategy for THI regeneration: carbonate precipitation and ceramic membrane microfiltration<br>M.C.P. DE LUCA (Federal Univ Santa Catarina, BR)                                            |                                                                                                                                                                                                                     |       |
| WT-24                                                                                                                            | Integrated Precipitation-Microfiltration for Divalent Ion Removal from gas-field produced water: A Pilot Study<br>M.C.P. DE LUCA (Federal Univ Santa Catarina, BR)                                                     |                                                                                                                                                                                                                     |       |
| WT-25                                                                                                                            | Development of composite porous materials based on perovskites and TiO <sub>x</sub> for removal of micropollutants by reactive filtration<br>C. DELPIERRE (Univ Gustave Eiffel, FR)                                    |                                                                                                                                                                                                                     |       |
| WT-26                                                                                                                            | Study of the Efficacy of Porous Sub-Stoichiometric Titanium Oxide Used as a Reactive Electrochemical Membrane for the Advanced Oxidation Treatment of Landfill Leachates<br>B. VILLANUEVA MARTINEZ (Univ Toulouse, FR) |                                                                                                                                                                                                                     |       |
| WT-27                                                                                                                            | Photocatalytic Geopolymer Membranes for Enhanced Removal of Synthetic Textile Dyes<br>H. FANSURI (Institut Teknologi Sepuluh Nopember, ID)                                                                             |                                                                                                                                                                                                                     |       |
| WT-28                                                                                                                            | Machine Learning-Guided Design of Cobalt-Based Bimetallic Catalysts for Tetracycline Hydrochloride Degradation and Membrane-Based Validation<br>J.K. KOH (Univ Sydney, AU)                                             |                                                                                                                                                                                                                     |       |