

Desalination for the Environment – Clean Water and Energy

Alfândega Congress Centre, Porto, Portugal

Provisional Programme

Sunday 27 April 2025

8.30–17.30 Registration

9.00–18.00 Exhibition set-up

9.00–13.00 **Workshop on Greener Desalination: Case Studies from Large-Scale SWRO for Sustainable Water Supply to Brine Valorisation for a Circular Economy**
Moderator Daniel Frank, Senior Adviser at DECHEMA

9.00 **Part I. Large-Scale SWRO**

9.00 184 Desalination technology conversion: GCC case study. Part 1: Overview and key drive
Sergio Casimiro, Hassan Almsaeed, Justin Robert

9.20 185 Desalination technology conversion: GCC case study. Part 2: Offshore design and environmental impact reduction
Hugo Costa, Sergio Casimiro, Hassan Almsaeed, Justin Robert

9.40 TBC

10.00 TBC

10.20 **Panel Discussion**

10.50–11.10 **Coffee break**

11.10 **Part II. Brine Valorisation**

11.10 Key challenges and opportunities for sustainable brine valorization in chemical industry
Yuliya Schießer

11.30 254 Advancing industrial brine concentration: pilot demonstration and evaluation of a novel high pressure process with energy recovery
Christine Kleffner, Yuliya Schiesser, Jochen Henkel, Eric Kada, Angel Abajas, Gerd Braun

11.50 42 Maven brine mining plant – 1st commercial OARO project in the world
Francisco Jimenez-Castellanos, Georg Herborg

12.10 51 Innovative testbed for desalination brine valorisation: circular economy and NF-OARO synergies from Desal+ Living Lab
Ángel Rivero Falcón, Yanira López López, Baltasar Peñate Suárez, Noemi Melián Martel

12.30 **Panel Discussion**

13.00–14.00 **Lunch**

14.00–17.00 **Workshop by Dr. Noura Chehab and Dr. Nikolay Voutchkov on Brine Valorization**

14.00 Introduction, *Noura Chehab and Nikolay Voutchkov*, NEOM

14.20 Nanofiltration System – Alternative Configurations and Performance, *Salman Arab, NEOM and Craig Bartels, Hydranautics*

14.40 Bivalent Mineral Processing System, *Christopher East, Neom WIC*

15.00–15.20 **Coffee break**

15.20 Reverse Osmosis and Brine Concentration, *Craig Bartels, Hydranautics, Keith Lampi, FTS*

15.40 Membrane and Thermal Crystallization, *Keith Lampi, FTS, Page Davies, Aquatech*

16.00 Next Steps in Brine Valorization System Testing

16.20 **Questions, Answers and Discussions**

17.00 **Workshop Adjourned**

18:30–20:00 **Welcome reception – Noble Room, Alfândega Congress Centre**

Monday 28 April 2025

8.00–09.00 Registration

9.00–10.20 Official opening of the conference and exhibition

Guests of Honour will be confirmed shortly

10.50–12.30 Panel session “Best Practices of PPP in the Water Sector”. Organised in collaboration with the Saudi Water Partnership Company and the Portuguese Water Partnership

Moderators: *Mr. Sulaiman Rafat Turki*, Chief Strategy & Development Officer of SWPC, and *Professor José Saldanha Matos*, President of Portuguese Water Partnership

Panellists: *Mr. Ramzi S. Azar*, Chief Strategy Officer of Alkhorayef Company; *Ahmad AlAsam*, VP, KSA Water Projects at ACWA Power; *Eng. Adnan Buhuligah*, Deputy CEO of Aljomaih Energy & Water; *Pedro Bastos*, O&M Performance Director at TAWZEA

12.30–13.30 Lunch

13.30–17.30 Technical sessions

17.30–19.00 Poster session with drinks in the Exhibition Area

Monday afternoon 28 April 2025

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13.30	197 Performance of a containerized multistage variable power electro dialysis desalination system Jonathan Bessette, Shane Pratt, Benjamin Judge, Amos Winter	121 Cutting-edge technology for the selective separation of monovalent salts from seawater brine Noura Chehab, Nikolay Voutchkov, Mohammed AlSindi	19 PROTON®: A tool for modeling and simulation of membrane technology performance Gabriele Brummer	134 NADES as green cleaning agent for control of biofouling in RO membrane systems Andreia Farinha, Kees Theo Huisman, Lamya Al Fuhaid, Caroline Crisel, Geert-jan Witkamp, Johannes Vrouwenvelder, Bastiaan Blankert	160 Resilient marine works: survey and marine modeling strategies for successful coastal desalination Mario Valente, Filipe Vieira	131 Wastewater treatment membranes: main issues and failures Nuria Peña Garcia, Javier Rodriguez, Mike Sinfield, Fernando Del Vigo Pisano, Daniela Vidal
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15.10–15.30 Coffee break						

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17.10 Poster session with drinks in the Exhibition area

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- 4 Detect the falsification of black cumin oil using FTIR-Chemometrics modeling
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- 5 Optimizing desalination techniques for water scarcity in Nigeria: a review of efficiency, sustainability, and cost-effectiveness
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- 6 Valorization of research: Perspectives and case studies on membrane application
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- 10 Techno-economic analysis and optimization of hybrid renewable energy systems for electricity generation and desalination
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- 11 A techno-economic study of renewable powered desalination to meet the annual freshwater needs of a hundred homes
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- 12 Membrane-based recovery and utilization of HF/HNO rinse water in photovoltaic cell manufacturing for circular economy and green hydrogen
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- 24 Determining the origin of Faradaic yield values greater than unity during treatment industrial wastewater by electrocoagulation
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10.10–10.30 Coffee break

10.30–11.50 Panel session “Water Value Chain for Green Hydrogen Production”
Moderator: Abraham Negaresh CPEng, Associate Director – Desalination and Reuse Lead WRc
Presenters: Heike Glade, Senior Researcher, University of Bremen; Daniel Frank. Project Advisor, DECHEMA; TBC

	Session 19 Membrane Distillation II	Session 20 Brine Valorisation IV	Session 21 Brackish Water Reverse Osmosis	Session 22 Enhancing Desalination Performance	Session 23 Solar Desalination	Session 24 Salinity Gradient Energy
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12.10	91 Enhancing productivity and energy efficiency in vacuum assisted air gap multistage membrane desalination <i>Ahmed Omera, Mohammed Antar</i>	123 Concentrating high-salinity brines using low salt rejection reverse osmosis membranes <i>Guillem Gilabert Oriol, David Arias, Claudia Niewersch, Tirtha Chatterjee, Brittany Fisher, Caleb Funk, Harith Alomar</i>	109 Advanced integrated water treatment system for ultra-pure water production in refineries <i>Irina Zaslavski, Amit Rainer</i>	71 Using satellite data to improve seawater characterization and optimize plant designs <i>Rémy Caball, Olivier Raillard, Sébastien Smet, Delia Pastorelli</i>	161 Performance evaluation of standalone off-grid reverse osmosis membrane powered by hybrid renewable energy in treating brackish groundwater in arid climate <i>Johannes Sirunda, Godfrey Pazvakawambwa, James Heita, Angela Nakale</i>	163 Blue energy: renewable energy production from desalination brine <i>Patricia Terrero Rodriguez</i>
12.30	132 Operation and assessment of a full-scale membrane distillation unit for treating brines in the context of greenhouse production <i>Juan Antonio Andrés-Mañas, Juan Diego Gil-Vergel, Manuel Berenguel, Guillermo Zaragoza</i>	202 Brine valorization system with internal reuse of brine minerals <i>Christopher East, Noura Chehab, Ahmed Al-Amoudi, Nikolay Voutchkov</i>	135 Enhancing arsenic removal: a study on Na ₂ S in BWRO <i>Tim van Dijk</i>	84 Optimization of forward osmosis (FO) modules arrangement for high-efficiency feed concentration in single-pass operation <i>Rajashree Yalamanchili, Pere Olives Cegarra, Albert Galizia, Gaëtan Blandin</i>	216 Dynamic control of the back-pressure in a photovoltaic-powered desalination system for enhanced system performance <i>Emmanuel Ogunniyi, Bryce S. Richards</i>	178 Assessment of the performance of a pilot scale reverse electrodialysis stack equipped with segmented electrodes <i>Francesco Volpe, Emanuela Mangiaracina, Giuseppe Battaglia, Andrea Cipollina, Giorgio Micale, Alessandro Tamburini</i>
12.50	271 VMEMD and related separation processes from lab-scale to industrial size by module technology of EvCon <i>Markus Wenzel</i>	259 Exploring the circularity of brine valorisation through neural network modelling of an electrodialysis with bipolar membranes pilot <i>Giovanni Virruso, Andrea Cipollina, Alessandro Tamburini, Giorgio Micale</i>	196 Lowering OPEX and feed pressure requirements for municipal water production and reuse using Aquaporin Inside BWRO <i>Jan Benecke, Xuan Tung Nguyen, Xin Hui Lim, Wanting Wang, Weng Hong Ho, Guofei Sun, Khung Hanh Le, Joerg Vogel, Liyun Tai, Na Peng, Victor Monsalvo Garcia, Juan Arévalo Vilches</i>	37 The influence of water permeability, solute resistance and mass transfer coefficient on water flux behavior in forward osmosis <i>Abdulrahman Alalawi, Ibrahim Al-Mutaz, Nawaf Bin Darwish</i>	275 Evaluating the performance of a flat sheet reverse osmosis membrane under variable and intermittent operation of a PV driven desalination system: A comprehensive experimental study <i>Evangelos Dimitriou, Dimitrios Loukatos, Konstantinos G. Arvanitis, George Papadakis</i>	274 Novel thin-film nanocomposite (TFN) membranes by incorporation of halloysite nanoclay for pressure retarded osmosis applications <i>Akif Nihal, Syed Javaid Zaidi</i>
13.10–14.10 Lunch						

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	Session 25 Membrane Distillation III	Session 26 Membranes for Water Treatment I	Session 27 Fouling Control	Session 28 Novel Processes and Applications	Session 29 Renewable Energy Powered Desalination	Session 30 XPRIZE session
14.10	207 A novel design of an air bubbling tubular membrane distillation module for water desalination <i>Adnan Alhathal Alanezi</i>	245 Functionalized Li ⁺ /H ⁺ separation membranes for pH sensing João Teixeira, Ricardo Campos, Magda Barros, Ana Moreira, Daniela Campanhã, José Gonçalves	115 Desalination without chemicals: Bonaire's modular plant and the application of direct osmosis cleaning Iris Sutzkover Gutman, Irina Zaslavski	233 "Mar Menor"— a combined technical solution proposal based on desal techniques and other water treatment methods Rafael Buendía Candel, Domingo Zarzo, Alberto Morales, Elena Campos	58 Wave to energy and water Michael Henriksen, Emiel Schut	XPRIZE water scarcity: a call for revolutionizing desalination <i>Hossein Atoufi</i>
14.30	117 Novel membrane distillation system coupled with a crystallizer for zero liquid discharge of desalination brine <i>Binash Imteyaz, Suhaib M. Alawad, Osman Shamet, Dahiru Lawal, Jamilu Usman, Sani I. Abba, Syed Muzzamil Hussain Shah</i>	234 Going forward with RO for PFAS removal: experience with TFN RO membranes from lab to pilot and to a full-scale plant Eugene Rozenbaum, Young Ju Lee, Wansuk Choi, Jung Soo Kim, Roy Daly	203 Identifying membrane foulants and the role diagnosis plays in optimized performance to reduce chemicals and maximize membrane life Doug Eisberg, Ken Robinson, Stuart Leak	81 Eutectic solvent (ES)-based flow electrodes for water desalination <i>Elena Gabirondo, Hafiz Saif, Vitor Alves, João Crespo, Liliana Tomé, Sylwin Pawlowski</i>	9 String-driven rectifier for power take-off systems for harvesting energy from oscillatory forces Mahmood Khaja Muhieitheen, Mohammed Khair Al-Solihat	
14.50	55 Sustainable solutions to concentrate management: a novel solar-driven membrane crystallizer for zero-liquid discharge Kerri Hickenbottom, Jeb Shingler, Minna Allouzi, Varinia Felix, Shelbi Jenkins, Wei Pan, Robert Norwood	144 Membrane cascades for enhanced rejection of organic pollutants in RO of brackish and sea water Fatima Zohra Charik, Saad Alami Younssi, Murielle Rabiller-Baudry	179 A novel numerical modelling tool for the study of colloidal fouling in electrodialysis units Francesco Volpe, Giuseppe Battaglia, Andrea Cipollina, Giorgio Domenico Maria Micale, Alessandro Tamburini	256 Innovative marine work on the first desalination plant in Portugal <i>Ana Fernandez, Jose Maria Colubi</i>	114 Development of reverse osmosis technology and opportunities for renewable energy integration in the Greek islands Eftihia Tzen, E. Rikos, I. Karga, P. Papadopoulos, N. Stefanatos, D. Theofilyiannakos	
15.10	172 Sustainable membrane distillation desalination for hydrogen production <i>Alba Ruiz-Aguirre, Alejandro Bueso, Antonio Atienza-Márquez, Guillermo Zaragoza</i>	27 Valorizing EC-sludge for MF kaolinite membrane fabrication: a sustainable approach for seawater pretreatment for RO desalination Abdessamad Belgada, Raowia Lamhar, Fatima Zohra Charik, Ibrahim Ounouss, Adil Dani, Saad Alami Younssi	16 The selection of nanofiltration membrane characteristics to purify landfill leachate and reduce concentrate Alexei Pervov, Viacheslav Dzyubenko	272 Feasibility study of innovative, low-energy integrated system for desalination and cooling Hassan Abdulrahim, Mansour Ahmed	78 Desalination plant fed with 100% renewable energy and process optimization for compactness: case study of Amaala <i>Ruth Mota, Rémy Caball</i>	
15.30	45 Exploring the effects of feed and permeate temperatures on fouling and wetting of PTFE membranes within membrane distillation Atefeh Tizchang, Itzel Alcaraz Bernades, Wolfgang Gernjak, Morgan Abily	38 Unidirectional porous membrane prepared by combined crystallization and diffusion method for desalination M. Asipi Qostolani, Mohammed Abdul Azeem, Turki Nabieh Baroud	210 Optimizing coagulation dose, pH and rapid mixing with MFI-UF to reduce particulate/colloidal fouling in RO/NF Yiman Liu, Abrar Adema, Afrasiab Yameen, Nirajan Dhakal, Peter Vollaard, Rinnert Schurer, Begüm Tanis, Jan Schippers, Maria Kennedy	255 Innovative monitoring solutions for reverse osmosis plants by Pyxis Lab® Diana Cruz, Dario Alonso	145 Optimization of time-variant, solar-powered electrodialysis desalination architectures Melissa Brei, Jimmy Tran, Amos Winter	
15.50	136 Thermal driven ultrapure water production for water electrolysis with membrane distillation Rebecca Schwantes, Yair Morales, Eric Pomp, Jan Singer, Kirtiraj Chavan, Florencia Saravia		14 Fouling mitigation in membrane distillation by applied alternating potential over CNTs coated membrane Javier Gándara, Avner Ronen, Edo Bar-Zeev	283 Eco-friendly deep-sea desalination combining reverse osmosis and oil and gas solutions <i>Antoine Vuillermet</i>	7 Techno-economic analysis of solar and wind powered desalination to meet the water needs of hundred homes in Karachi, Pakistan Qamar Abbas, Hafiz Muhammad Ali	

16.10–16.30 Coffee break

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16.50	41 Biomass-derived carbon and carbon nanofibers integrated electrospun Janus membranes: a new frontier in membrane distillation <i>Md. Emdad Hossain, Turki N. Baroud, Md. Abdul Aziz</i>	56 A pilot plant scale circular approach for the CO ₂ extraction from RO brines <i>Giuseppe Lo Burgio, Antonino Campione, Fabrizio Vicari, Alessandro Tamburini, Lorenzo Ventimiglia, Fabrizio Vassallo, Giuseppe Battaglia, Andrea Cipollina, Giorgio Micale</i>	72 Enhancing water production capacity: the role of filtration velocity in multi-media filters for desalination <i>Ofir Yamin</i>	261 Reducing SEC and fouling potential using TFN technology in the South of Portugal <i>Alvaro Lagartos, Beatriz Calderon, Silvia Gallego</i>	92 The distribution and prediction of liquid column velocity between horizontal tubes <i>Yiming Zhao, Xingsen Mu, Shun Hu, Caixue Yang, Wenxu Qu, Shengqiang Shen, Zhe Tang</i>	127 Antiscalants in seawater desalination: impacts on microbial growth and environmental fate <i>Graciela Gonzalez Gil, Marian Castrillon Tobon, Camila Albarracin Ruiz, Johannes Vrouwenvelder</i>
17.10	173 Hydrophobic PVDF flat sheet membrane modified using hybrid structure nanomaterial of (TiO ₂ /GO) for air gap membrane distillation <i>Hamad Alromaih, Patricia Gorgojo, Krishnaprasad Manoj, Maria Perez-Page</i>	237 Magnesium remineralization: Impact on microbial water quality of reverse osmosis produced drinking water during distribution <i>Nadia Farhat, Ratna Putri, Alejandra Ibarra Felix, Johannes Vrouwenvelder</i>	143 Optimizing pretreatment for reverse osmosis desalination through simultaneous media filter monitoring <i>Yasmeen Nadreen, Graciela Gonzalez-Gil, Johannes Vrouwenvelder, Ratul Das, Thomas Altmann</i>	222 Analysis and optimisation of the specific energy consumption of SWRO plants <i>Mathieu Balian, Raphael Pouzet, Fabien Vergnolle</i>	129 Electrothermal-based hanging type evaporator for effective seawater desalination <i>Younghoon Suh, Sangjoon Lee</i>	217 Desalination brine matters: Impacts of antiscalants on sea-grass and its corresponding bacterial epiphytes <i>Ryan Sirota, Gidon Winters, Gilad Antler, Eyal Rahav, Edo Bar-Zeev</i>
17.30	175 Advancing circular desalination: photothermal membranes to overcome membrane distillation limits for brine valorization <i>Sergio Santoro, Roviell Berhane Zegeye, Tsothe Dadiani, Efrem Curcio, Marco Aquino, Antonio Politano</i>	266 Engineered carbonates for enhanced remineralization processes <i>Vega Bierwolf, Heidrun Vedder, Victor Wasmuth, Assiyeh Tabatabai, Christopher Pust</i>	226 Optimization of membrane filtration processes using the design of experiments in different whey solutions <i>Hadid Sukmana, József Csanádi, Cecilia Hodúr, Zsuzsanna László, Gábor Veréb, Sándor Beszédes, Imre Ábrahám, Nóra Garabné Ábrahám, Andrea Süveges-Gruber, Szabolcs Kertész</i>	46 Maximize energy efficiency: parallel axial piston pumps and active energy recovery devices <i>Francisco Jimenez-Castellanos</i>	107 Analysis of crystallization fouling growth and heat transfer on horizontal tube surfaces under constant heat flux <i>Boyu Wang, Shengqiang Shen, Xingsen Mu</i>	238 Case study: Environmental impacts of desalination in the Persian Gulf <i>Iman Eshghisani, Ehsan Ansari, Omid Tayari, Nosrat Khosh Niaz Pirkuhi, Omid Roshani, Reza Shahifar</i>
17.50		21 Dual benefits of immobilized carbonic anhydrase: Enhancing water quality and reducing carbon footprint in desalination processes <i>Veerle Vandeginste, Philippe Tob, Jacob Rubel, Dharmjeet Madhav</i>	278 Current situation of physical pretreatment systems used in seawater reverse osmosis desalination plants in the Canary Islands <i>Sigrid Arenas Urra, Baltasar Peñate Suarez, Noemi Melián Martel</i>		156 Investigation of a humidification dehumidification cycle powered by integrated carbon capture and ammonia synthesis cycles <i>Binash Imteyaz, Asim Maqbool, Furqan Tahir, Dahiru Lawal, Kashif Irshad</i>	193 Carbon footprint of desalination and mitigation strategies <i>Salman Arab, Nikolay Voutchkov, Noura Chehab</i>

19.30 Gala Evening at the CASA FERREIRINHA, Porto. Pick up outside Alfândega Congress Hall at 19.00

	Session 37 Drinking Water/Mine Water Treatment/Operational Efficiency	Session 38 Innovations in Reverse Osmosis	Session 39 Modelling, Prediction and Optimisation	Session 40 Energy Recovery Systems
8.30	138 Mg ²⁺ and Ca ²⁺ enrichment to drinking water originated from the water source (seawater, ground water) without extra chemicals <i>Elad Barak</i>	60 Enhanced energy efficiency strategies in desalination technologies <i>Guillem Gilibert Oriol, Harith Alomar, Maria Perez Macia, Santhosh Ramalingan, Mahesh Kulkarni</i>	106 Three-dimensional model of ion transport in composite membranes: effect of the internal structure and equivalent thickness <i>Fernan David Martinez Jimenez, Bastiaan Blankert, Cristian Picioreanu</i>	223 Europe leading the way to reduce energy use in water reuse and brackish desalination projects: a tale of two plants <i>Rolando Bosleman, Erik Desormeaux</i>
8.50	82 Dolomite for magnesium supplementation of desalinated drinking water in Saudi Arabia <i>Christopher Fellows, Ali Alhamzha</i>	111 A new approach to reverse osmosis pressure vessel design <i>Mike Sinfield, David Jiménez, Amit Sankhe, Daniela Vidal, Paul Choules</i>	30 Modeling of mass transfer dynamics in spacer-filled channels in membrane processes using direct numerical simulations <i>Santiago Cespedes, Bastiaan Blankert, Cristian Picioreanu</i>	79 Optimization and design of energy recovery systems <i>Hussain Basamh, Muhammad Ridwan, Thomas Altmann, Ratul Das</i>
9.10	32 Mine water remediation: inorganic chemistry at work <i>Marco Tagliabue, Sara Perucchini, Alessandro Conte, Camilla Lanari</i>	151 Membrane deformation in reverse osmosis: In-situ quantification and impacts on pressure drop in permeate channel <i>Luigi Ranieri, Luca Fortunato, Johannes Vrouwenvelder, Cristian Picioreanu, Bastiaan Blankert</i>	167 Multiscale modeling of ion transport in IEMs and polyamides: bridging microscale and macroscale insights <i>Nasser Al-Hamdani, Giorgio Purpura, Giorgio De Luca, Giuseppe Costanzo, Javier Luque Di Salvo, Andrea Cipollina, Giorgio Micale</i>	35 On-site demonstration of a robust rotary energy recovery device <i>Francesco Giuseppe Ladisa, Victor Ruiz, Juan De Salas</i>
9.40	63 Evaluation of the operational efficiency and performance of a combined desalination and salt (NaCl) production plant in Indonesia <i>Ersan Ozdemir, Pablo Canada Garcia</i>	206 OPEX optimization in RO systems for challenging water: a new revolutionary 36 mil membrane feed spacer design <i>Alvaro Lagartos</i>	149 Numerical assessment of membrane intrusion in permeate channels of reverse osmosis units <i>Giuseppe Battaglia, Andrea Sireci, Luigi Ranieri, Bastiaan Blankert, Giorgio Micale, Cristian Picioreanu</i>	273 Maximizing water production with minimal footprint for containerized systems <i>Eli Oklejas</i>
10.00	249 Reducing non-revenue water: the first step toward addressing water scarcity and enhancing efficiency <i>Flávio Oliveira, Sara Cunha</i>	157 Waterfountain: Sub-sea desalination with easy maintenance <i>Paul Buijs, Kyle Hopkins, Rolf Bendiksen, Per Olsen</i>	103 Accurate bench scale measurement of mass transfer in RO <i>Bastiaan Blankert, Santiago Cespedes, Ratul Das, Thomas Altmann, Johannes Vrouwenvelder, Cristian Picioreanu</i>	225 PX Q400 impact in demonstration plant achieving less than 2 kWh/m ³ in energy consumption <i>Rolando Bosleman, Juan Cifuentes</i>

10.20–10.40 Coffee break

10.40–11.40 Miriam Balaban Innovation Award Session

Moderator: *Corrado Sommariva*

Award finalists presentations

	Session 41 Ultrafiltration	Session 42 Renewable Energy Desalination	Session 43 Regional/Case Studies	Session 44 Novel Technologies	Session 45 Zero Liquid Discharge
11.40	124 Robust ultrafiltration-based pretreatment to secure long term sustainable operation <i>Guillem Gilabert Oriol, Blanca Salgado, Gerard Massons, Harith Alomar, Oliver Neumann, Jan Radel</i>	277 Desalination using renewable energy integrating solar energy into SWPC's projects <i>Faisal Alhelal</i>	67 Desalination in Algeria: a lifeline against water scarcity <i>Nadjib Drouiche, Ahmed Kettab</i>	270 Natural adsorbents for sustainable recovery of key components from mining wastewater and seawater: preliminary experimental result <i>Hugo Sánchez-Moreno, Lourdes García-Rodríguez, Celso Recalde-Moreno, Abel Ríaza-Frutos</i>	73 Evaluating the impact of closed-loop RO systems on ZLD in textile industry: case study from Tirupur, India <i>Vinay Narayan Hegde, Joachim Went, Joachim Koschikowski, Harald Schönberger, Werner Platzer</i>
12.00	34 Influence of carbon micro- and nano-fillers on the performance of ultrafiltration membranes <i>Nawaf Bin Darwish, Basheer Alshammari, Abdulrahman Alalawi, Sami Aldress</i>	208 Dakhla desalination plant using renewable energy <i>Lahcen Hasnaoui, Mohamed Ouhssain</i>	279 Seawater desalination plant in the Algarve: enhancing water resilience and security <i>Adriana Espanha, Claudia Dimas, Marisa Viriato, Pedro Ramos, Ricardo Estigarribia, Rui Sancho</i>	282 Semi-closed reverse osmosis (SCRO) for low-energy, high-resilience desalination <i>Qianhong She</i>	241 Near zero liquid discharge with seeded membrane distillation crystallization <i>Stefanie Flatscher, Mark Hlawitschka</i>
12.20	118 Assessment of an ultrafiltration module with an integrated pre-filter as seawater desalination pre-treatment <i>Daniel García-Huertas, Michael Hoffmann, Christian Staaks, Jan Rädell, Harith Alomar, Guillem Gilabert-Oriol, Martin Heijnen, Olga Ferrer Mallén, Jorge J. Malfeito</i>	189 The 100% RES Islands Initiative - the Energy Water nexus <i>Gianni Chianetta</i>	39 Desalination for decarbonized fertilizer production: a comparative analysis of seawaters in the MENA region using MLD strategies <i>Nikhil Dilip Pawar, Thomas Pregar, Patrick Jochem</i>	276 Towards net zero through the PPP route <i>Nabil Aljohani</i>	66 Development of a membrane-based zero liquid discharge treatment train for a bio-chemical industry <i>Sara Salvador Cob</i>
12.40	218 Synergistic effects of 3D-printed spacers and modular vibration towards membrane fouling mitigation <i>Aws Al-Tayawi, Imre Vajk Fazekas, Szabolcs Kertész</i>				180 Optimised preliminary design of seawater desalination with zero liquid discharge driven by solar micro-gas turbines <i>Rafael González-Almenara, Agustín Delgado-Torres, Jesús Montes-Sánchez, Néstor Santana-Hernández, David Sánchez, Lourdes García-Rodríguez</i>

13.00–14.00 Lunch

14.00 Closing

Miriam Balaban Innovation and the Sydney Loeb Awards will be announced.

14.00–18.00 Sol2H2O Water-Energy Transition Symposium: Portuguese National Day. In Portuguese only.