



IDA 2022 WORLD CONGRESS

SYDNEY, OCTOBER 9 - 13, 2022



CHARTING RESILIENT
WATER SOLUTIONS



FINAL
PROGRAM



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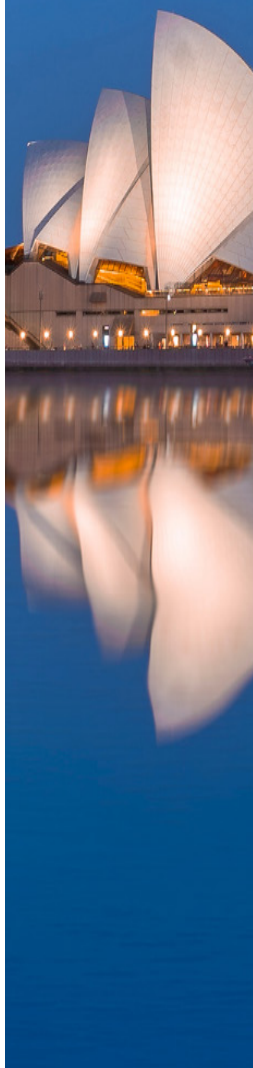
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01 ABOUT IDA

The International Desalination Association (IDA) is the point of connection for the world's desalination and water reuse community. As the world's leading global organization dedicated to the advancement of desalination, desalination technology and water reuse, IDA brings together people, knowledge, and ideas with the goal of ensuring that the world will have access to a sustainable supply of fresh water.

For more than 49 years, IDA has served as the global hub of expertise, news and information, and professional development for the global desalination industry. Its members include the world's leaders in desalination and reuse including end-users, and researchers representing governments, corporations, and academia. A non-profit organization, IDA is associated with the United Nations as part of a growing international network of non-governmental organizations (NGOs). IDA views desalination and reuse as critical aspects of the solution to address the world's water problems and advocates their use to provide a reliable and sustainable source of fresh water in all parts of the globe. To this end, IDA supports the development of technological solutions that enhance in-crease energy efficiency, lower costs and promote environmental stewardship.

IDA Sustainable Water Resources Foundation (SWRF)

“With a continuously growing population, innovative water strategies must rise to meet the increasing demand for clean water.”

IDA's Sustainable Water Resources Foundation (SWRF), a 501(c)(3) organization, promotes creative solutions to the world's most pressing water challenges. With a continuously growing population, innovative water strategies must rise to meet the increasing demand for clean water. SWRF promotes this innovation by advocating clean energy solutions, fostering collaboration among professionals, and supporting educational programs and projects concerning the nexus of water, energy, food, and the environment.

In the face of increasing demands for water, exponential population growth, and a changing climate, our water needs have never been greater. The United Nations, alongside the IDA SWRF, prioritizes clean water and sanitation as one of the essential Sustainable Development Goals. Water touches every aspect of human life. It is the nexus where agriculture needs meet human rights and gender equality meets urban planning. Recognizing the mounting challenges of water needs, the SWRF seeks to build a future in which development and responsibility come hand in hand and water is a ubiquitous human right.

For more information, visit:

<http://www.idaswrf.org/>



IDA Board Members (Elected & Appointed)



Term19 Board Members

Term 19

- Hon. Fatma Awale, Mombasa County, Ministry of Water
- Mr. Borja Blanco, Aqua Advise
- Mr. Carlos Cosin, Almar Water Solutions
- Mr. Jose Diaz Caneja, ACCIONA
- Mr. Jon Freedman, SUEZ WT&S
- Mr. Rachid Ghamraoui, Besix
- Mr. Mounib Hatab, Future Pipe Industries
- Mr. Mohamad Jaroudi, Future Pipe Industries Qatar
- Ms. Jantje Johnson, OrangeBoat
- Mr. Fady Juez, Metito Overseas Ltd.
- Mr. Youqing Li, Harbin ROPV Industrial
- Prof. John H. Lienhard V, Massachusetts Institute of Technology (MIT)
- Mr. Imad Makhzoumi, ENOIA
- Ms. Shannon McCarthy, IDA
- Mr. Silvio Oliva, Fisia Italmimpianti
- Mr. Johnny Obeid, Veolia Water Technologies
- Mr. Juan Miguel Pinto, Energy Recovery
- Ms. Menatalla Sadek, Hassan Allam Utilities
- Mr. Miguel Angel Sanz, Independent Consultant
- Mr. Tim Lam Shing, Water Supplies Department, Hong Kong Government
- Mr. Devesh Sharma, Aquatech International
- Mr. Alejandro Sturniolo, H2O Innovation
- Mr. Victor Verbeek, Toray Membranes
- Dr. Domingo Zarzo Martinez, SACYR

Term 20

- Eng. Abdullah Alzowaid, Saline Water Conversion Corporation (SWCC)
- Mr. Carlos Cosin, Almar Water Solutions
- Ms. Shannon McCarthy, IDA
- Dr. Gonzalo Delacámara, IE University
- Mr. José Díaz-Caneja, ACCIONA
- Mr. Jon Freedman, SUEZ WT&S
- Mr. Mounib Hatab, Future Pipe Industries
- Dr. Hoon Hyung, LG Water Solutions
- Mr. Mohamad Jaroudi, Future Pipe Industries Qatar
- Dr. Jantje Johnson, OrangeBoat
- Mr. Fady Juez, Metito Overseas Ltd.
- Mr. Youqing Li, Harbin ROPV Industrial
- Prof. John H. Lienhard V, Massachusetts Institute of Technology (MIT)
- Mr. Imad Makhzoumi, ENOIA
- Mr. Johnny Obeid, Veolia Water Technologies
- Mr. Silvio Oliva, Fisia Italmimpianti S.p.A.
- Mr. Miguel Angel Sanz, Independent Consultant
- Mr. Devesh Sharma, Aquatech International
- Mr. Alejandro Sturniolo, H2O Innovation
- Mr. Gavin Van Tonder, NEOM Water
- Mr. Victor Verbeek, Toray Membranes
- Mrs. Marta Verde, GS Inima

IDA Special Advisory Committees

Public-Private Utilities

Chairman:

H.E. Eng. Khaled Al Qureshi, CEO of Saudi Water Partnership Company

Co-Chairs:

Mr. Fermin Lopez, Acuamed

Mr. Alejandro Sturniolo, H2O Innovation, IDA Board Member

Industrial Water

Chairman:

Mr. Devesh Sharma, Aquatech International / IDA Board Member

Co-Chair:

Mr. Robert Owens, Bechtel

Financial Institutions

Co-Chairs:

Mrs. Julie Carles, IFC

Mr. Rami Ghandour, Metito

Mr. Bastien Simeon, Amane Advisors

Legal Firms

Co-Chairs:

Mr. Fernando Bernard, Cuatrecasas

Mr. Miguel Riano, Herbert Smith Freehills

Mr. Eduardo Orteu Berrocal, Gómez- Acebo & Pombo

IDA Affiliates

The International Desalination Association (IDA) has a network of regional and association affiliate members from around the world. We are pleased to be associated with the following organizations and their representatives who are on our Board of Directors.

Regional Affiliate Board Members



Mr. Antonio Casañas



Mr. Greg Wetterau



Dr. Mike Dixon



Dr. Giancarlo Barassi



Mrs. Olga Sallangos



Mr. Tsuzuki Koichi



Mr. Ziad Salibi



Dr. Guoling Ruan

Association Affiliate Board Members



Dr. Kurihara Masura



Mr. Lionel Quezada



Dr. S.P. Chaurasia



Mr. Han Seong-Yong



Mr. Fayyaz Muddassir Mubeen



Mr. Chew Men Leong



Mr. Ali Redha

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About the Congress



Message from the President of IDA



Dear colleagues,

It has been my honor to serve as IDA President; a term noted to be probably the most extended term in IDA history due to the complex situation we have faced caused by the COVID pandemic.

But it is precisely for this reason I am extremely happy to see the great support from all the members, partners, and affiliates for the organization in our World Congress in Sydney in the coming October 22. This congress will be a record in the number of sponsors, which shows the significant interest in the sector, and I hope it will also be reflected in the number of attendees.

We have many reasons to be proud of the progress the market has developed; the growth rates in Installed capacity of Non-conventional water resources (Reuse and Desalination) have reached a new record during 2021 not only by the number of plants but also in size and capacity. On top of this, the UN has recognized

in its latest report an important statement about Desalination and Water reuse as key tools to generate new water resources to fight against climate change and try to keep Natural water resources from rivers, lakes, aquifers as a big reservoir for the natural water balance and reservoir for future generations.

With this trend in mind in the sector from IDA, we have prepared with illusion and hard work and a special congress with many new disruptive ideas to be discussed, complementing the big effort to have a wide list of technical sessions and papers showing the most advanced technologies but also as new topics how a new driver “the green hydrogen production from water “ could change the sector in the future or new interesting subjects bringing on board for our the Advisory Committee with new legal, financial, governance or utilities angles and visions.

As IDA President, I want to invite all of you to participate with us in this particular moment in the sector and share with us your ideas and projects and enrich the debates we are preparing with care.

I look forward to welcoming you to the IDA World Congress in Sydney!



Mr. Carlos Cosin, President of IDA

Welcome from IDA Secretary General



Dear colleagues,

Welcome!

Here we are, finally in spectacular Sydney, for the International Desalination Association's flagship event, widely recognized as the premier event on advanced water treatment solutions through desalination and water reuse. It's terrific to return to Australia a decade after Perth's 2011 IDA World Congress.

IDA World Congress 2022 will consist of dynamic panel discussions, an excellent technical program, keynote presentations, an industry-driven exhibition, unparalleled networking opportunities, and specialized workshops. Global attendance from public and private sector leaders, researchers, and academics in desalination, water reuse, energy, environment, and project finance will provide knowledge-sharing and discussion opportunities for participants on many technical and business topics that explore what is needed to ensure

a secure water future. We will also welcome the new board of directors for Term 20 and announce our host for the IDA World Congress 2024.

First held in 1987, the IDA World Congress has been a global meeting point for promoting the appropriate use of desalination and water reuse technologies as a critical part of addressing the world's freshwater shortages. The theme of the 2022 World Congress is Charting Resilient Water Solutions to secure a sustainable future that efficiently meets the growing water demand causing threats to water security and the increasing frequency and severity of droughts resulting from climate change.

Thanks to the IDA Team and the IDA World Congress Technical Program Committee for their hard work and dedication. A special thank you to our members, sponsors, partners, and each delegate for your support of the IDA as we begin the celebrations in anticipation of her fiftieth anniversary in 2023!

Yours sincerely,

A handwritten signature in black ink, appearing to be 'S. McCarthy', with a long horizontal line extending to the right.

Ms. Shannon McCarthy, IDA Secretary General

Congress Sponsors

TITANIUM SPONSOR

المؤسسة العامة لتحلية المياه المالحة
Saline Water Conversion Corporation (SWCC)



PLATINUM SPONSOR

الشركة السعودية لشراكات المياه
Saudi Water Partnership Company



PREMIUM GOLD SPONSOR

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BRONZE SPONSORS



YLP SPONSORS



TECHNICAL SESSION SPONSOR



INNOVATION FORUM SPONSORS



EVENT SPONSOR



PLANT TOUR SPONSOR



Institutional Partners, Regional Affiliates & Media Partners

INSTITUTIONAL PARTNERS



ENDORSED BY



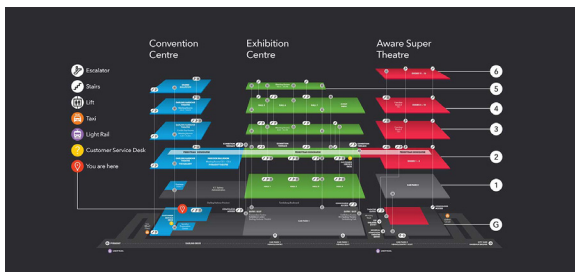
MEDIA PARTNERS



SUPPORTING PARTNERS



Venue Information



[DOWNLOAD THE MAP](#)

CONVENTION CENTRE

The main entrance to the Convention Centre can be found at the northern end of ICC Sydney, closest to Cockle Bay (Darling Harbour) and Harbourside Shopping Centre. The closest drop off and taxi zone address is Iron Wharf Place. The closest light rail stop is Convention stop, and the closest train station is Town Hall.

EXHIBITION CENTRE

Exhibition Centre is located between Convention Centre and Aware Super Theatre (formerly First State Super Theatre). There are two entrances to the Exhibition Centre. The main entrance is located closest to the Convention Centre followed by a second entrance is via escalators or lifts closest to Aware Super Theatre and Moriarty Walk. Exhibition Centre is walking distance from both Town Hall and Central Station. The closest light rail stops are Exhibition stop and Convention stop.

Master Schedule



04 MASTER SCHEDULE

Pre-Congress

Sunday, 9 October 2022

- | | |
|--------------------|---|
| 07:00-17:00 | Construction of Exhibition Floor
<i>Exhibition Hall 5-6</i> |
| 10:00-17:00 | Delegate Registration Open
<i>Exhibition Hall 5-6</i> |
| 13:00-14:00 | Technical Program Meeting
<i>Room E3.1 & E3.2, Exhibition Hall 5-6</i> |
| 15:00-16:00 | Term 19 Outgoing Board Meeting
<i>Meeting Room E3.1 & E3.2, Exhibition Hall 5-6</i> |
| 16:00-17:00 | Term 20 Incoming Board Meeting
<i>Meeting Room E3.1 & E3.2, Exhibition Hall 5-6</i> |
| 18:00-20:30 | Welcome Reception on the Jackson Sydney Harbour (<i>Fully Registered Delegates Only</i>). Boarding at Pyrmont Bridge near ICC Sydney, 17:45 sharp, vessel leaves at 18:30 |

Congress - Day 1

Monday, 10 October 2022

- | | |
|--------------------|---|
| 07:00-17:00 | Delegate Registration Opens
<i>Exhibition Hall 5-6</i> |
| 07:30-08:15 | Co-Chairs & Presenters of the Day (Only)
Breakfast Meeting <i>Lunchroom Hall 5-6</i> |
| 07:30-08:15 | VIP Breakfast Meeting – Opening Plenary Speakers (Only) <i>Grand Ballroom, Convention Center Building</i> |
| 08:30 | Opening Ceremony <i>Grand Ballroom, Convention Center Building</i> |

-
- 08:30-09:30** Welcome Remarks and Keynote Presenters
- ▶ *Ms. Shannon McCarthy, IDA Secretary General*
 - ▶ *Mr. Gumaroy Newman, Australian Welcome to Country*
 - ▶ *Hon. Minister Tanya Plibersek MP, Minister for the Environment and Water, Australia (special remarks)*
 - ▶ *Hon. Secretary John F. Kerry, Special Presidential Envoy for Climate Change, USA (special remarks)*
 - ▶ *Hon. Sebastián Piñera Echeñique, Former President of Chile (special remarks)*
 - ▶ *Mr. Carlos Cosin, IDA President, CEO, Almar Water Solutions*
 - ▶ *H.E. Abdullah Ibrahim Al-Abdulkarim, Governor of Saudi Water Conversion Corporation*
 - ▶ *Mrs. Louise Dudley, AWA President*
 - ▶ *Mr. Fady Juez, IDA World Congress Site Selection Committee Chairman, Managing Director, Metito*
 - ▶ *H.E. Eng. Ahmed Mohammed Belajar Al Rumaithi, Undersecretary, Department of Energy, Abu Dhabi*

-
- 09:30-10:00** Passing of the WC Flag

-
- 10:00-11:00** Australian Story
An Interactive Session on Australian Advanced Water Treatment, both Sea Water Desalination and Reuse
- Moderators:
- ▶ *Mr. Neil Palmer, Chief Technical Officer, Osmoflo*
 - ▶ *Ms. Corinne Cheeseman, CEO, Australian Water Association*
 - ▶ *Mr. Gary Crisp, Principal Integrated Water Cycle Planning, Water Corporation*
- Panelists:
- ▶ *Mr. Julien Tavvry, Operations Manager, Water Sure Plant Director, Victorian Desalination Plant Project*
 - ▶ *Mr. Scott Murphy, Manager Operational Excellence, Veolia Australia and New Zealand*
 - ▶ *Dr. Veronique Bonnelye, Process Coordinator, SUEZ Treatment Infrastructures*
 - ▶ *Mr. Evan Hambleton, Assets Planning & Delivery Manager, Water Corporation*
 - ▶ *Mrs. Eva Jalon, CEO, Sacyr Water*
 - ▶ *Mr. Javier Artal, Plant Manager, Adelaide Desalination Plant*
 - ▶ *Mr. Scott Chalmers, Eastern Regional Manager, Osmoflo*

11:05-11:10	IDA Moonshot: Desalination by Atomic Power <i>Professor John H. Lienhard V., Massachusetts Institute of Technology</i>
11:10-11:15	IDA Moonshot: Being Water Positive ▶ <i>Mr. Alejandro Sturniolo, Global Head of Water Reuse & Strategic Partnerships, H2O Innovation</i>
11:15-11:20	IDA Moonshot: The Future of Water ▶ <i>Gavin Van Tonder, Water Sector Head, NEOM</i>
11:20-11:25	Congress Overview ▶ <i>Dr. Mike Dixon, Technical Committee Chairman, CEO, Synauta</i>
11:45	Ribbon Cutting Ceremony and Exhibition Opening/VIP Walkthrough <i>Exhibition Hall 5-6</i>
11:50-14:00	Lunch Break <i>Lunchroom Exhibition Hall 5-6</i>
14:00-17:30	Outback Discussion Program <i>Outback Theater Exhibition Hall 5-6</i>
14:00-18:20	Technical Program - 4 Parallel Sessions <i>Exhibition Hall Theaters 1-4</i>
15:30-16:00	PM Refreshment Break <i>Exhibition Hall 5-6</i>
18:30-19:45	Cocktail Reception <i>Grand Ballroom Convention Center Building</i>
19:45-22:00	Gala Dinner and Awards Ceremony <i>Grand Ballroom Convention Center Building</i>

Congress - Day 2

Tuesday, 11 October 2022

07:30-15:00 Delegate Registration / Information Desk Open *Exhibition Hall 5-6*

07:30-08:15 Co-Chairs & Presenters of the Day (Only) Breakfast Meeting
Lunchroom Hall 5-6

07:30-08:15 Leaders Summit Speakers Meeting
*Meeting Room, Foyer outside of E5.2 &.3,
Exhibition Hall level 5*

08:30- 17:30 Outback Discussion Program
Outback Theater Exhibition Hall 5-6

08:30-18:00 Exhibition Hall 5-6 Open

08:30-17:30 Technical Program - 4 Parallel
Sessions *Exhibition Hall Theaters 1-4*

09:00-17:30 Leaders Summit
E5.2 &.3, Exhibition Hall level 5

10:30-11:00 Refreshment Break *Exhibition Hall 5-6*

13:00-14:00 Lunch Break
Lunchroom Hall 5-6

14:00-17:30 Outback Discussion Program
Outback Theater Exhibition Hall 5-6

15:30-16:00 Refreshment Break *Exhibition Hall 5-6*

18:30-20:30 Leaders Summit Reception
(invitation only)

Congress - Day 3

Wednesday, 12 October 2022

07:30-08:15 Co-Chairs & Presenters of the Day
(Only) Breakfast Meeting,
Lunchroom Hall 5-6

08:00-15:00 Information Desk Open
Exhibition Hall 5-6

08:30-17:30 Outback Discussion Program
Outback Theater Exhibition Hall 5-6

08:30-17:30 Technical Program - 4 Parallel Sessions *Exhibition Hall Theaters 1-4*

09:00-18:00 Exhibition Hall 5-6 Open

10:30-11:00 Refreshment Break *Exhibition Hall 5-6*

13:00-14:00 Lunch Break *Lunchroom Hall 5-6*

15:30-16:00 Refreshment Break *Exhibition Hall 5-6*

16:00-17:00 YLP Round Table Session
Lunchroom Exhibition Hall 5-6

17:30-18:30 IDA Membership Meeting
Outback Theater Exhibition Hall 5-6

18:30-19:30 Term 20 Board Meeting
Room E3.1 & 2

Congress - Day 4

Thursday, 13 October 2022

07:30-08:15 Co-Chairs & Presenters of the Day (Only) Breakfast Meeting
Lunchroom Hall 5-6

08:30-15:00 Exhibition Hall 5-6 Open

09:00-12:00 Information Desk Open
Exhibition Hall 5-6

08:30-17:30 Outback Discussion Program
Outback Theater Exhibition Hall 5-6

09:00-12:30 Technical Program - 4 Parallel Sessions *Exhibition Hall Theaters 1-4*

10:30-11:00 Refreshment Break *Exhibition Hall 5-6*

13:00-15:00 Closing Luncheon and Technical Program Awards
Lunchroom Exhibition Hall 5-6

15:30 Exhibition Hall 5-6 Breakdown

Congress - Day 5

Friday, 14 October 2022

08:30-12:30 Sydney Desalination Plant Tour



10:00-11:30 UNESCO Centre for Membrane Science and Technology at UNSW Tour



Technical Program & Schedule



05 TECHNICAL PROGRAM

Message on behalf of the WC Technical Program Chairmen

At long last, after several delays due to Covid, it is with great excitement I now welcome you to Sydney! We have some excellent technical content in store for you with over 200 oral presentations in the technical theaters and a handful of carefully tailored panel sessions to help you refresh your knowledge, learn new skills and keep up to date with the latest and greatest advancements in desalination and water reuse.

The technical program encompasses a carefully reviewed and vetted collection of papers, addressing a wide range of important issues facing the industry. As a Technical Program Committee we assembled a team of the very best in our industry who chose a selection of the most relevant topics to keep us all fully engaged during the program.

I would like to highlight two exciting areas within the technical program. First is an in depth look at brine mining technologies, an important new interest area for our industry. How we can valorize our salty waste stream through minerals and metals extraction is an impactful new development over the last few years that has only been possible through the advancement of new technologies. Second is on digital desalination, including Artificial

05 TECHNICAL PROGRAM & SCHEDULE

Intelligence, where we have seen equally impressive developments in our industry. We will hear from several authors presenting real world case studies where digital solutions have been proven via the successful deployment of this technology.

Inspired, influenced, and empowered by the spirit and vision of IDA's leadership, I am proud to lead this program with my co-chairs of the 2022 Technical Program Committee, Mr. Fady Juez, Professor John Lienhard, Mr. Victor Verbeek and, Mr. Greg Wetterau. I also thank the multi-cultural, gender, and age-balanced WC 2022 Technical Program Committee, highly focused on human capital empowerment, efficiency, and excellence. All have worked tirelessly to make the 2022 World Congress Technical Program inspiring for all our delegates.

And finally, I thank all delegates and authors for their innovative ideas, suggestions, and challenges they bring to Sydney this year.

Sincerely,

Dr. Mike Dixon, World Congress 2022 Technical Program Co-Chair

Meet the Chairmen

The World Congress will feature a four day technical, four track technical program. As well as a high-level plenary sessions, business roundtable discussions, Leaders Summit, Innovation Forum, and plant tours.

The Congress Technical Program Committee is led by five distinguished members of the IDA Board of Directors, serving as the Technical Program Committee Co-Chairs. They have formed a dynamic technical committee of 30 members from around the globe.



**Prof. John H.
Lienhard V**
MIT



Dr. Mike Dixon
Synnauta



Mr. Fady Juez
Metito



Mr. Greg Wetterau
CDM Smith



**Mr. Victor
Verbeek**
Toray

Technical Program Committee Members

- ▶ *Mrs. Olga Sallangos, Caramondani Desalination Plants*
- ▶ *Mr. Tim Lam Shing, WSD*
- ▶ *Ms. Naomi Jones, McCarthy Building Companies, Inc.*
- ▶ *Mr. Kevin Price, AWTT, LLC*
- ▶ *Dr. Antonella DeLuca, OMYA*
- ▶ *Dr. Giancarlo Barassi, Aquatech International*
- ▶ *Mr. Guillaume Clairet, H2O Innovation*
- ▶ *Mr. Alistair Munro, Gaia Wind*
- ▶ *Dr. Victor Monsalvo, FCC Aqualia*
- ▶ *Mr. Patrick Buchta, DuPont-Inge*
- ▶ *Dr. Domingo Zarzo, SACYR*
- ▶ *Mr. Rodrigo Segovia, Almar Water Solutions*
- ▶ *Dr. Jaichander Swaminathan, IIT Gandhinagar*
- ▶ *Dr. Emily Tow, Olin College*
- ▶ *Prof. Shadi Hassan, Khalifa University*
- ▶ *Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*
- ▶ *Prof. HK Shon, University of Technology Sydney*
- ▶ *Mr. Miguel Angel Sanz, Independent Consultant*
- ▶ *Mr. Antonio Casañas, DuPont*
- ▶ *Mr. Rama Jagwani, PROJECX*
- ▶ *Mr. Ravid Levy, RLV Consulting*
- ▶ *Dr. Tariq Nada, ACWA Power*
- ▶ *Prof. Duc Long Ngheim, University of Technology Sydney*
- ▶ *Prof. Tony G Fane Ph. D, University of New South Wales*
- ▶ *Mr. Neil Palmer, Osmoflo*

Topic Chairs

- ▶ *Mr. Thomas Altmann, ACWA Power*
- ▶ *Mr. Borja Blanco, Aqua Advise*
- ▶ *Dr. Veronique Bonnelye, SUEZ*
- ▶ *Mrs. Lindsey Brown, GHD*
- ▶ *Dr. Emilio Gabbrielli, Independent*
- ▶ *Mr. Rami Abuamireh, DuPont*
- ▶ *Prof. Tony G Fane Ph. D, University of New South Wales*
- ▶ *Prof. Stephen Gray, Institute for Sustainable Industries and Liveable Cities*
- ▶ *Ms. Naomi Jones, McCarthy Building Companies, Inc.*
- ▶ *Prof. John H. Lienhard V, Massachusetts Institute of Technology (MIT)*
- ▶ *Mr. Jim Lozier, Jacobs*
- ▶ *Mr. Neil Palmer, Osmoflo*
- ▶ *Mr. Kevin Price, AWTT, LLC*
- ▶ *Mr. Miguel Angel Sanz, Independent Consultant*
- ▶ *Mr. Rodrigo Segovia, Almar Water Solutions*
- ▶ *Prof. HK Shon, University of Technology Sydney*
- ▶ *Dr. Rick Stover, Gradiant*
- ▶ *Mr. Felix Wang, Gradiant*
- ▶ *Prof. David Warsinger, Purdue University*
- ▶ *Dr. Domingo Zarzo, SACYR*

Session Chairs

- ▶ *Dr. Ahmad Al Amoudi, SWCC*
- ▶ *Mrs. Ursula Annunziata, EDS,*
- ▶ *Dr. Giancarlo Barassi, Aquatech International*
- ▶ *Dr. Monica Boodhan, University of Trinidad and Tobago*
- ▶ *Mr. Patrick Buchta, DuPont*
- ▶ *Mr. Guillaume Clairet, H2O Innovation*
- ▶ *Mr. Antonio Casañas, DuPont*
- ▶ *Dr. Antonella DeLuca, OMYA International AG*
- ▶ *Dr. Mike Dixon, Synauta*
- ▶ *Dr. Heike Glade, University of Bremen*
- ▶ *Dr. Belén Gutierrez, GS Inima*
- ▶ *Prof. Seungkwan Hong, Korea University*
- ▶ *Mr. Hoon Hyung, LG NanoH2O*
- ▶ *Mr. Rama Jagwani, PROJECX*
- ▶ *Ms. Naomi Jones, McCarthy Building Companies*
- ▶ *Mr. Fady Juez, Metito*
- ▶ *Dr. Christine Kleffner, TH Köln*
- ▶ *Mr. Steven Lam, Gradient*
- ▶ *Dr. Jorge Malfeito, ACCIONA*
- ▶ *Mr. Roberto Mangano, ILF Engineers Consulting*
- ▶ *Dr. Victor Monsalvo, Aqualia*
- ▶ *Dr. Tariq Nada, ACWA Power*
- ▶ *Mr. Scott Murphy, Veolia*
- ▶ *Prof. Long Ngheim, University of Technology Sydney*
- ▶ *Mr. Juan Miguel Pinto, Energy Recovery, Inc*
- ▶ *Mrs. Olga Sallangos, Caramondani Desalination Plants*
- ▶ *Mr. Devesh Sharma, Aquatech International*
- ▶ *Mr. Daniele Strongone, American Water Chemicals, Inc*
- ▶ *Mr. Alejandro Sturniolo, H2O Innovation*
- ▶ *Dr. Jaichander Swaminathan, Massachusetts Institute of Technology (MIT)*
- ▶ *Mr. Ties Venema, Piedmont*
- ▶ *Mr. Victor Verbeek, Toray Membrane*
- ▶ *Eng. Nikolay Voutchkov, Water Globe Consultants, LLC*
- ▶ *Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*
- ▶ *Mr. Greg Wetterau, CDM Smith, Inc.*

Session Categories and Topics

The Call for Papers resulted in over 300 abstracts from countries across the globe. Selected for oral presentation technical papers will be presented in 38 sessions in the following categories and topics:

01 Seawater and Brackish Water Desalination	02 Water Reuse, Potable and Non-Potable including Public Outreach
03 Industrial Water and Wastewater Treatment	04 Coupling Desalination and Renewable Energy
05 Emerging Technologies, Emerging Issues and Emerging Contaminants	06 Membrane Science
07 Environment and Sustainability	08 Governance, Finance, and Project Delivery
09 Thermal Desalination	10 Pre-Treatment and Post Treatment
11 Plant Operations and Digitization	12 Brine Management and Resource Recovery

Day 1

Monday

10 October 2022

14:00 - 18:20

THEATER 1

5.3 Emerging Contaminants in Desalination and Water Reuse

THEATER 2

1.1 Seawater Plant Case Studies and Process Improvements

THEATER 3

1.3 Novel Approaches to Design and Operation

3.4 Semiconductor

THEATER 4

3.5 Oil & Gas

2.2 Non-Potable Water Reuse Studies and Projects

THEATER 1

5.3 Emerging Contaminants in Desalination and Water Reuse

Topic Chair:

- ▶ *Mr. Rodrigo Segovia, Chief Technical Officer, Almar Water Solutions*

Session Chairs:

- ▶ *Mr. Rama Jagwani, General Manager, PROJECX*
- ▶ *Dr. Mike Dixon, CEO, Synauta*

14:00 - 14:20

Using RO for Removal of PFAS and Other CECS from a Wastewater Impacted Surface Water

- ▶ *Presenter: Mr. Greg Wetterau, Vice President, CDM Smith*

14:25 - 14:45

Continuous Online Monitoring for Potable Water Network

- ▶ *Presenter: Dr. Sai Sudhakaran, Sr. Staff Scientist, NALCO Water*

14:50 - 15:10

Abundance of Microplastics from Human Activities to Water Environment

- ▶ *Presenter: Dr. Jieun Lee, Research Professor, Pusan National University*

15:15 - 15:35

Design and Integration of Ozonation in Treatment Train for Micropollutant Removal and Urban Wastewater Reuse

- ▶ *Presenter: Mrs. Sylvie Baig, Head of Scientific Innovation, SUEZ International, France*

15:40 - 16:00 PM Break

16:00 - 16:20

Hybrid RO, Softening & Chromium Cr(VI) Remediation

- ▶ *Presenter: Dr. Mohammad Alizadehfard, CEO, OSMOTEC*

16:30 - 16:50

Multiple Point Ozonation for Micropollutants Removal from Wastewater: A Full-Scale Demonstration from Denmark

- ▶ *Presenter: Dr. Ronan Guillosoou, Process Design Engineer, SUEZ*

17:00 - 17:20

PFAS Removal with Thin Film Nanocomposite Reverse Osmosis Membranes

- ▶ *Presenter: Mr. Eugene Rozenbaoum, Director of Engineering - Americas and Europe, LG NanoH2O*

17:25 - 17:45

Remove Oil Contamination of Seawater by Aerogels

- ▶ *Presenter: Dr. Mohammad Alizadehfard, CEO, OSMOTEC*

17:55 - 18:15

A Critical Control Point Approach to Management of Water Quality Chemical Risks

- ▶ *Presenter: Dr. Kathy Northcott, R&D Manager, Veolia Australia New Zealand*

THEATER 2

1.1 Seawater Plant Case Studies and Process Improvements

Topic Chair:

- ▶ *Prof. Stephen Gray, Executive Director, Institute for Sustainable Industries and Liveable Cities*

Session Chairs:

- ▶ *Dr. Jorge Malfeito, R&D Director Water, ACCIONA*
- ▶ *Mrs. Olga Sallangos, Plant Manager, Caramondani Desalination Plants LTD*

14:00 - 14:20

Improving the Performance of A Severely Biofouled Seawater Reverse Osmosis Facility Using the Latest in Chemical Technology - A Case Study

- ▶ *Presenter: Mr. Kunihiro Hayakawa, Manager, Kurita Water Industries, LTD*

14:25-14:45

Water for Fodder Initiative: Use of Desalination to Provide Drought Relief in Australia

- ▶ *Presenter: Mr. Javier Artal Gonzalez, Plant Manager, ACCIONA*

14:50 - 15:10

O&M Start Up: Maintenance Challenges

- ▶ *Presenter: Mr. Javier Artal, Plant Manager, Acciona Agua, Spain*

15:15 - 15:35

Evolution of First Pass Membrane Configuration at A Large Scale Desalination Plant

- ▶ *Presenter: Mr. Thomas Ransome, Operations Manager, Sacyr Water*

15:40 - 16:00

Resilience Through Disasters - The Reinstatement and Subsequent Restart of the Sydney Desalination Plant

- ▶ *Presenter: Mr. Reece Karamihas, Senior Engineer, Sydney Desalination Plant Pty Ltd*

16:05 - 16:25

Technology and Innovation Hand to Hand With Sustainability. Best Practices in Atacama

- ▶ *Presenter: Dr. Belén Gutiérrez, Head of Desalination Area, R&D Department, GS INIMA ENVIRONMENT*

16:30 - 17:00 PM Break

17:00 - 17:20

Nanostone Water Innovative Ceramic Membrane technology in Water Treatment Applications

- ▶ *Presenter: Mr. Aatman Shah, Business Development Director (MENA), Nanostone Water*

17:25 - 17:45

Tuas Desalination Plant

- ▶ *Presenter: Mrs. Constanze Simmermacher, Project Manager / Design Manager, Jacobs*

17:50 - 18:10

Performance Study of Sulfuric Acid Shocks in Reverse Osmosis Membranes

- ▶ *Presenter: Mr. Javier Artal Gonzalez, Plant Manager, ACCIONA*

THEATER 3

1.3 Novel Approaches to Design and Operation

Topic Chair:

- ▶ *Mr. Rami S. Abu Amirah, Global Manager - Ultrafiltration Technology, DuPont*

Session Chairs:

- ▶ *Mr. Fady Juez, Managing Director, Metito Overseas*
- ▶ *Dr. Belén Gutiérrez, Head of Desalination Area, R&D Department, GS INIMA ENVIRONMENT*

14:00 - 14:20

Enhanced Biofouling Resistance, Energy Savings and Higher Flux Operation Through New FilmTec™ NF270-440 Membrane

- ▶ *Presenter: Mr. Gerin James, Global MBR Marketing Manager, Regional SEA/ANZ Marketing Manager, DuPont*

14:25 - 14:45

Design Strategies for Reducing Energy and Total Costs for Large Scale Seawater Reverse Osmosis Plants

- ▶ *Presenter: Mr. Kenneth Chao, Applications Engineer, LG Chem*

14:50 - 15:10

Energy Recovery Devices in Advanced and Emerging Reverse Osmosis Applications

- ▶ *Presenter: Dr. Richard Stover, VP of Technology, Gradient*

15:15 - 15:35

Four Simple Innovations to Reduce CO₂ Emissions on Large SWRO Plants

- ▶ *Presenter: : Mr. Iqbal Ahmed, Business Development Manager, Genesys-PWT*

15:40 - 16:00

Temporally Multi-Staged Batch Counterflow Reverse Osmosis for High Recovery Desalination

- ▶ *Presenter: Prof. David Warsinger, Assistant Professor, Purdue University*

16:05 - 16:25

Validation of a Method For Modeling Brine and Permeate PH in RO and NF Systems

- ▶ *Presenter: Mr. Mohannad Malki, Technical Director, American Water Chemicals*

16:30 - 17:00 PM Break

17:00 - 17:20

Use of Nanofiltration for Toc Removal While Optimizing Recovery on a Brackish Water Source

- ▶ *Presenter: Mr. Michael Bourke, VP Business Development, Wigen Water Technologies*

3.4 Semiconductor

Topic Chair:

- ▶ *Mr. Borja Blanco, CEO, Aqua Advise*

Session Chairs:

- ▶ *Mr. Roberto Mangano, Managing Director, ILF Consulting Engineers Abu Dhabi*
- ▶ *Prof. Long Ngheim, Professor, Director of the Centre for Technology in Water and Wastewater, University of Technology Sydney*

17:25 - 17:45

Advanced New RO Membrane Having High Rejection for Small Neutral Substance

- ▶ *Presenter: Mr. Hiroki Minehara, Professional Researcher, Toray*

17:50 - 18:10

On-Site Evaluation of Biocide Combination for Biofouling Mitigation

- ▶ *Presenter: Dr. Lu Yinghong, Chief Research Engineer, Kurita R&D Asia Pte Lt*

THEATER 4

3.5 Oil & Gas

Topic Chair:

- ▶ *Mr. Borja Blanco, CEO, Aqua Advise*

Session Chairs:

- ▶ *Mr. Roberto Mangano, Managing Director, ILF Consulting Engineers Abu Dhabi*
- ▶ *Prof. Long Ngheim, Professor, Director of the Centre for Technology in Water and Wastewater, University of Technology Sydney*

14:00 - 14:20

Membrane Distillation as an Environmentally Friendly Desalination System for Petroleum Refinery's Wastewater Reuse - A Technical And Environmental Case Study

- ▶ *Presenter: Dr. Mahdi Jalayer, Head of Basic Design and Senior Research Specialist / Technology Development Advisor, Bandar Abbas Oil Refining Company-Iran / OSMOTEC - Australia*

14:25 - 14:45

Using Direct Contact Condenser in a Wastewater Treatment System for Removal of Organic Contaminants

- ▶ *Presenter: Prof. Bahman Abbasi, Assistant Professor, Oregon State University*

14:50 - 15:10

Water for Hydrogen Production: Challenges and Opportunities Supported by Real- World Case Studies

- ▶ *Presenter: Mr. Brendan Dagg, Process Engineer, GHD*

2.2 Non-Potable Water Reuse Studies and Projects

Topic Chair:

- ▶ *Dr. Domingo Zarzo, Innovation and Strategic Projects Manager, Sacyr Water*

Session Chairs:

- ▶ *Dr. Monica Boodhan, Lecturer, the University of Trinidad and Tobago*
- ▶ *Mr. Alejandro Sturniolo, Global Head of Water Reuse & Strategic Partnerships, H2O Innovation*

15:15 - 15:35

Anderson Road Quarry Development Grey Water Treatment Plant -- A Triumph on Recycled Grey Water in Hong Kong Sar

- ▶ *Presenter: Mr. Colin Chan, Technical Director, Binnies Hong Kong Limited*

15:40 - 16:00

Application of LG New Generation Thin-Film Nanocomposite Membrane to Wastewater Treatment in a Steel Plant

- ▶ *Presenter: Ms. Lihua Wang, Technical Manager, LG Chem China Co. Ltd.*

16:05 - 16:25

Biofilm Cleaner Improves Effluent WWRO Membrane Plant Operation

- ▶ *Presenter: Mr. Maqsood Fazel, Senior Research Chemist, Genesys International*

16:30 - 17:00 PM Break

17:00 - 17:20

Nutrient Recovery from Brackish Groundwater with Monovalent Selective Electrodialysis and Nanofiltration

- ▶ *Presenter: Mr. Samuel Heath, Graduate Research Assistant, Massachusetts Institute of Technology (MIT)*

17:25 - 17:45

Smart-Ferti-Reuse - A Smart Decision Tool For Fertigation of Agricultural Crops: Assessment of Treated Water Quality

- ▶ *Presenter: Dr. Chrystelle Ayache, Project Manager, Veolia*

17:50 - 18:10

To Be Announced

- ▶ *Presenter: Dr. Tariq Nada, Chief Technical Officer, KSA Portfolio, ACWA Power*



Day 2

Tuesday

11 October 2022

08:30 - 17:35

THEATER 1

1.2 Brackish Plant Case Studies and Process Improvements

1.3 Novel Approaches to Design and Operation

1.4 Intakes and Outfalls

1.5 Planning for Major City, State and Country Desalination Upgrades

THEATER 2

2.1 Potable Water Reuse Studies and Projects

4.4 Cutting Edge Research in Desalination and Renewable Energy

THEATER 3

9.2 Thermodynamics of Thermal Systems

6.1 Advances in Membrane Chemistry and Efficiency

THEATER 4

10.1 Pretreatment Processes Including Media Filtration, Ultrafiltration and other Methods

THEATER 1

1.2 Brackish Plant Case Studies and Process Improvements

Topic Chair:

- ▶ *Dr. Veronique Bonnelye, Technical Support Manager, SUEZ International*

Session Chair:

- ▶ *Mr. Daniele Strongone, Business Manager, American Water Chemicals*

08:30 - 08:50

Sustainability and Cost of Water Savings Through New High Rejection FilmTec™BW30XHR PRO-440 Membrane For Seawater Desalination

- ▶ *Presenter: Mr. Javier Suarez, Technical Service & Development Leader, South Asia - DuPont Water Solutions*

08:55 - 09:15

RO Project with Higher Capacity and Its Delivery

- ▶ *Presenter: Eng. Abdulaziz Al-Ghamdi, Mechanical Engineer, Acwa Power*

09:20 - 09:40

The Myalup-Wellington Story - Is Help on the Horizon for Western Australian Horticulture, Dairy and Beef Farmers?

- ▶ *Presenter: Mr. Daniel Visser, Technical Director – Water Treatment & Desalination, GHD*

1.3 Novel Approaches to Design and Operation

Topic Chair:

- ▶ *Prof. John H. Lienhard V, Professor and the founding Director of the Abdul Latif Jameel Water and Food Systems Lab J-WAFS, MIT*

Session Chairs:

- ▶ *Mr. Joan Galtes, Commercial Managing Director SER & LAM, TALIS Group*
- ▶ *Dr. Victor Monsalvo, Head of Eco-efficiency Area, Innovation and Technology, Aqualia*

09:45 - 10:05

A Leap Forward in RO Membrane Pressure Vessel Service Life, Performance, Safety & Reliability - A New Best Practice Guide

- ▶ *Presenter: Mr. Sean McCagh, Engineer, RO-TEG*

10:20 - 11:00 AM Break

11:00 - 11:20

Parallel High-Pressure Pumps for Energy Savings in Desalination

- ▶ *Presenter: Dr. Georg Herborg, Director of Innovation, Danfoss*

11:25 - 11:45

A Proposed Safe Design of the Reverse Osmosis System

- ▶ *Presenter: Mrs. Maria Eugenia Beltran, Desalination Department Manager, ILF Consulting Engineers*

11:50 - 12:10

Advanced Rejuvenation Protocol with Chemical Agent for the Deteriorated RO Membrane

- ▶ *Presenter: Mr. Yoshiaki Ito, Research Manager, Mitsubishi Heavy Industries, Ltd.*

1.4 Intakes and Outfalls

Topic Chair:

- ▶ *Dr. Emilio Gabbrielli, International Water Advisor*

Session Chairs:

- ▶ *Mr. Steven Lam, Director, New Products Initiative, Gradient*
- ▶ *Mr. Scott Murphy, General Manager QLD, Veolia Australia & New Zealand*

12:15 - 12:35

Proper Design of Intakes and Outfalls to Avoid Main Risks During Operation

- ▶ *Presenter: Mr. Eloy Pita, CEO, INCREA*

12:40 - 13:00

Relationship Between the Desalination Plant Intake Tunnel Condition, Intake Flow, and Shock Dosing

- ▶ *Presenter: Mr. Rongtao Liu, Operation Support Engineer/Environment Manager, Adelaide Desalination Plant*

13:05 - 14:30 Lunch Break**14:30 - 14:50**

Seawater Intakes Prefiltration for Resilient Projects

- ▶ *Presenter: Mr. Lars Späth, Head of Global Water Segment WPS, Passavant- Geiger GmbH*

1.5 Planning for Major City, State and Country Desalination Upgrades**Topic Chair:**

- ▶ *Dr. Emilio Gabrielli, International Water Advisor*

Session Chairs:

- ▶ *Mr. Steven Lam, Director, New Products Initiative, Gradient*
- ▶ *Mr. Scott Murphy, General Manager QLD, Veolia Australia & New Zealand*

14:55 - 15:15

Desalination Responses for Greater Sydney Planned During the 2017-2020 Drought

- ▶ *Presenter: Mr. Francois Nesor, Senior Associate, Jacobs*

15:20 - 15:40

First Stage Tseung Kwan O Seawater Desalination Plant -- The New Strategic Water Source for Hong Kong

- ▶ *Presenter: Mr. Patrick Mak, Resident Engineer, Binnies Hong Kong, Hong Kong Special Administrative Region, Republic of China*

15:40 - 16:00 PM Break

16:00 - 16:20

Greater Sydney Water Strategy - Toward Greater Drought Resilience

- ▶ *Presenter: Dr. Dennis Cho, Principal Process Engineer, Jacobs Group Australia*

16:25 - 16:45

Here, There or Everywhere: A Comparison of Centralised and Decentralised Desalination Schemes

- ▶ *Presenter: Ms. Rebecca Argento, Process Engineer, GHD*

16:50 - 17:10

State of Desalination In Pakistan - Recent Trends and Future Prospects

- ▶ *Presenter: Mr. Jawwad Ahmed, Business Development Manager in Prime Chemicals Corporation (Pvt) Ltd.*

THEATER 2

2.1 Potable Water Reuse Studies and Projects

Topic Chair:

- ▶ *Mr. Jim Lozier, VP, Global Tech Leader for Desalination, Jacobs*

Session Chairs:

- ▶ *Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*
- ▶ *Dr. Heike Glade, Head of Research Group, University of Bremen*

08:30 - 08:50

Beenyup Advanced Water Recycling Plant Stage 2: Construction, Commissioning and Integration with Stage 1

- ▶ *Presenter: Ms. Lisa Chan, Innovation & Improvement Manager, SUEZ*

08:55 - 09:15

Implementing Direct Potable Reuse for the City of Los Angeles

- ▶ *Presenter: Mr. Greg Wetterau, Vice President, CDM Smith*

09:20 - 09:40

Direct Potable Reuse Combining Tertiary Effluent with Seawater Reverse Osmosis: An Opportunity for a Synergy

- ▶ *Presenter: Mr. Alvaro Lagartos, Senior Application Engineer, LG Chem*

09:45 - 10:05

Energy Recovery System and its Impact on the Copiapó SWRO Plant: A “Real World” Lifecycle cost Analysis

Mr. Rolando Bosleman, Technical Director, Water Applications, Energy Recovery, Inc.

10:20 - 11:00 AM Break

11:00 - 11:20

Innovative Potable Reuse AWTF puts WRD of Southern California Closer to Water Independence

- ▶ *Presenter: Mr. Mark Donovan, North American Water Treatment & Desalination Lead, GHD*

11:25 - 11:45

Innovative Process to Produce Drinking Water from Wastewater for Small & Isolated Communities

- ▶ *Presenter: Dr. Philippe Sauvignet, Industrialization Manager, Veolia*

11:50 - 12:10

Jourdain: Paving the Way Towards Planned Indirect Potable Reuse in France

- ▶ *Presenter: Mr. Yvan Poussade, Product Owner - Water Reuse, Veolia*

12:15 - 12:35

Satisfying PRW Stakeholder Expectations -- Lessons for Engineers and Project Leaders

- ▶ *Presenter: Mr. Andrew Layson, Senior Principal Water Engineer, Jacobs*

12:40 - 13:00

Small-Scale and Household Methods to Remove Salinity & Hardness from Drinking Water - A Case Study of Abyek Qazvin

- ▶ *Presenter: Dr. Mohammad Alizadehfard, CEO in OSMOTEC*

13:05 - 14:30 Lunch Break

14:30 - 14:50

The Beenyup Advanced Water Recycling Plant -- Australia's First Large Indirect Potable Reuse Plant

- ▶ *Presenter: Mr. Keith Andes, Pacific Rim Technical Manager, Nitto Hydranautics*

4.4 Cutting Edge Research in Desalination and Renewable Energy

Topic Chair:

- ▶ *Mr. Kevin Price, Principal, AWTT, LLC*

Session Chairs:

- ▶ *Dr. Tariq Nada, Chief Technical Officer, KSA Portfolio, ACWA Power*
- ▶ *Mr. Ties Venema, Group Vice President & Managing Director S3C, H2O Innovation*

14:55 - 15:15

A Multifunctional Osmotic Battery for Desalination and Grid Energy Storage

- ▶ *Presenter: Dr. Qianhong She, Assistant Professor, Singapore Membrane Technology Centre (SMTC)*

15:20 - 15:40

Life Hyreward Project: Hybrid System for Renewable Energy Production from Desalination Brine

- ▶ *Presenter: Ms. Patricia Terrero, R&D Manager, Sacyr Water*

15:40 - 16:00 PM Break**16:00 - 16:20**

Robust Control and Experimental Validation of a Direct Drive Photovoltaic Electrodialysis Desalination System

- ▶ *Presenter: Mr. Jonathan Bessette, Graduate Research Assistant, Massachusetts Institute of Technology*

16:25 - 16:45

Wave-Powered Desalination: A Sustainable Way to Increase Resilience to Water Scarcity

- ▶ *Presenter: Ms. Camille St-Pierre, Commercial Manager, Oneka Technologies*

16:50 - 17:10

Experience with the New Flex Rotary Energy Recovery Device

- ▶ *Presenter: Mr. Beat Schneider, Director Global Desalination, Flowserve*

17:15 - 17:35

To Be Announced

THEATER 3

9.2 Thermodynamics of Thermal Systems

Topic Chair:

- ▶ *Mr. Thomas Altmann, EVP - Innovation & New Technology, ACWA Power*

Session Chair:

- ▶ *Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*

08:30 - 08:50

Computational Fluid Dynamics Modeling of a Novel Multi-Effect Membrane Distillation System

- ▶ *Presenter: Mr. Rishabh Srivastava, PhD Scholar, Indian Institute of Technology Gandhinagar*

08:55 - 09:15

Energy Recovery in Thermals Desalination Systems: A Way Forward to Improved Comprehensive Performance

- ▶ *Presenter: Mr. Muhammad Ahmad, PhD Student in Northumbria University*

09:20 - 09:40

To Be Announced

09:45 - 10:05

An Innovative Self-Cleaning Floating Solar Still for Low-Cost Water Desalination in Remote Areas

- ▶ *Presenter: Mr. Milad Mohsenzadeh, PhD Candidate, The University of Melbourne*

10:20 - 10:30 AM Break

11:00 - 11:20

To Be Announced

11:25 - 11:45

Solar Thermal High Efficiency-High Recovery Multi Effect Hybridized with Nanofiltration-Membrane Distillation Emets

- ▶ *Presenter: Mr. Leon Awerbuch, CEO, International Desalination Consulting Associates*

6.1 Advances in Membrane Chemistry and Efficiency**Topic Chair:**

- ▶ *Prof. HK Shon, Professor in School of Civil and Environmental Engineering, University of Technology Sydney*

Session Chairs:

- ▶ *Dr. Hoon Hyung, President, LG Water Solutions*
- ▶ *Dr. Miller Truby, Technical Sales Associate, Synauta*

11:50 - 12:10

3D-Printing of Desalination Device with Anti-Fouling Nanocellulose Membrane

- ▶ *Presenter: Dr. Liang Ying, Research Engineer, National University of Singapore*

12:15 - 12:35

A New Generation of Multi-Capillary PES Membrane

- ▶ *Presenter: Mr. Harith Alomar, Global Desalination Marketing Leader & Large Projects, DuPont*

12:40 - 13:00

Aminated Silica Grafted Carbon Nanotube-Based Membranes for Oily Wastewater Treatment

- ▶ *Presenter: Ms. Mariam Ouda, PhD Student, Khalifa University*

13:05 - 14:30 Lunch Break

14:30 - 14:50

20% Internal Renewable Energy Powering RO Plant

- ▶ *Presenter: Eng. Abdulaziz Al-Ghamdi, Mechanical Engineer, Acwa Power*

14:55 - 15:15

Development of Hollow Fiber Asymmetric Membrane for Osmotically Assisted Reverse Osmosis (OARO) Applicable to Brine Concentration and Its Long-Term Experimental Study

- ▶ *Presenter: Mr. Takahito Nakao, Senior Engineer, Toyobo Co., Ltd.*

15:20 - 15:40

Next-Generation Membranes: Printing Polyamide Thin-Film Composite Membranes Using Electro spray Technique

- ▶ *Presenter: Mr. Shiyang Huang, Ph.D. candidate, University of New South Wales*

15:40 - 16:00 PM Break

16:00 - 16:20

Novel Perforated-Pillar Spacer for Fouling Mitigation and Enhanced Hydrodynamics in Spiral Wound Modules

- ▶ *Presenter: Dr. Sarah Kerdi, Research Scientist, KAUST*

16:25 - 16:45

LoWatt: A Highly Resilient and Efficient Design Philosophy

- ▶ *Presenter: Dr. Giancarlo Barassi, Desalination and Reuse Market Manager, Aquatech International*

THEATER 4**10.1 Pretreatment Processes Including Media Filtration, Ultrafiltration and other Methods****Topic Chair:**

- ▶ *Mrs. Lindsey Brown, Australian Market Leader - Water, GHD*

Session Chairs:

- ▶ *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*
- ▶ *Mr. Javier Suarez, Technical Service & Development Leader, South Asia - DuPont Water Solutions*

08:30 - 08:50

AOM Characterization and Removal Efficiency Using Various SWRO Pretreatment Techniques

- ▶ *Presenter: Dr. Mohammed Al-Namazi, Deputy Executive Director in DTRI, Saline Water Conversion Corporation*

08:55 - 09:15

Best Value Solutions for Desalination Pretreatments: Towards Enhanced Flotation

- ▶ *Presenter: Ms. Caroline Barbé, Desalination Process Engineer, SUEZ*

09:20 - 09:40

Breakthrough Solution Against Biofouling at Maspalomas I Desalination Plant Demonstrates the Efficiency of DuPont™ B-Free™ Pre-Treatment

- ▶ *Presenter: Dr. Guillem Gilabert Oriol, Technical Leader, DuPont*

09:45 - 10:05

Case Study: The Use of a Novel Antiscalant to Prevent Iron Fouling in a Brackish Water RO System

- ▶ *Presenter: Mr. Daniele Strongone, Business Manager, American Water Chemicals*

10:20 - 11:00 AM Break

11:00 - 11:20

Commissioning in Times of Corona: Remote Assistance over Four Time Zones and 11,000 Km Distance Pretreatment Processes Including Media Filtration, Ultrafiltration and other Methods

- ▶ *Presenter: Mr. Frans Knops, Product Manager, Pentair*

11:25 - 11:45

Innovative Concept for Ultrafiltration Systems: Integration of Ultrafiltration Cartridges and Strainer in a Single Vessel. Case Study: Barge 150,000 m³/d

- ▶ *Presenter: Ms. Marta Otegui Martínez, Engineering & Quality Director, Fluytec*

11:50 - 12:10

Multibore® In-Out Ultrafiltration Replacement for Horizontal Membrane Systems Relation Between Pulse Bubble Aeration and Cake Layer Fouling Removal in Submerged Membrane Systems

- ▶ *Presenter: Mr. Harith Alomar, Global Desalination Marketing Leader & Large Projects, DuPont*

12:15 - 12:35

Relation Between Pulse Bubble Aeration and Cake Layer Fouling Removal in Submerged Membrane Systems

- ▶ *Presenter: Dr. Elham Radaei, Senior Water Engineer, KBR*

12:40 - 13:00

Robustness and Efficiency of an Integrated Flotation-Filtration Pretreatment for Seawater Desalination

- ▶ *Presenter: Mr. Jorge Malfeito-Sanchez, R&D Director Water, ACCIONA*

13:05 - 14:30 Lunch Break**14:30 - 14:50**

Submerged UF Membranes Pre-Treatment at the Adelaide Desalination Plant Vs Similar Projects with DAF

- ▶ *Presenter: Mr. Huw Lazaredes, Applications Development Manager, DuPont*

14:55 - 15:15

The Initiatives of Operation Excellence of Pretreatment System in Ras Al Khair SWRO Plant

- ▶ *Presenter: Dr. Byungsung Park, Senior Desalination Expert, Saline Water Conversion Corporation*

15:20 - 15:40

Umm Al Houl SWRO Plant Ultra-Daf® Optimization for Turbidity Removal

- ▶ *Presenter: Mr. Javier Artal Gonzalez, Plant Manager, ACCIONA*

15:40 - 16:00 PM Break**16:00 - 16:20**

Validation of AFM Filtration Media for Pretreatment of the RO Process in Alicante Desalination Plant

- ▶ *Presenter: Dr. Domingo Zarzo, Innovation and Strategic Projects Manager, Sacyr Water*

16:25 - 16:45

Biofouling Risks Control by Reducing the Environmental Footprint and Optimising RO Plant Performance

- ▶ *Presenter: Mr. Harry Polman, Managing Director, H2O Biofouling Solutions B.V.*

16:50 - 17:10

The Perils of Using Chloramines for Pretreatment of Water Reuse RO

- ▶ *Presenter: Mr. Mohannad Malki, Technical Director, American Water Chemicals*

Day 3

Wednesday

12 October 2022

08:30 - 18:00

THEATER 1

5.1 Emerging Technologies in Desalination and Water Reuse

THEATER 2

7.2 Environmental Impact Assessments

11.3 Digital Twins in Desalination

11.1 Big Data and Data Monitoring in Desalination

12.1 Recovery of Minerals from Seawater

THEATER 3

12.3 Novel Treatment Processes for Resource Recovery

12.2 Recovery of Minerals from Industrial Brines

8.1 Project Delivery Models for Big-Desal

THEATER 4

3.6 Coal Industry Wastewater

9.1 Long Term Case Studies

1.1 Seawater Plant Cases Studies and Process Improvements

THEATER 1

5.1 Emerging Technologies in Desalination and Water Reuse

Topic Chair:

- ▶ *Prof. David Warsinger, Assistant Professor, Purdue University*

Session Chairs:

- ▶ *Dr. Jaichander Swaminathan, Research Assistant, Massachusetts Institute of Technology (MIT)*
- ▶ *Mrs. Esther Gonzalez, Business Development, M&A, Strategy, AquaAdvise*

08:30 - 08:50

A Comparison of Membrane-Based Brine Concentration Systems: An Analysis of OARO and LSRRO

- ▶ *Presenter: Dr. Andrew Bouma, PhD, Massachusetts Institute of Technology (MIT)*

08:55 - 09:15

Batch Reverse Osmosis Pilot Demonstration and Commercial Applications

- ▶ *Presenter: Dr. Quantum Wei, Co-founder, Harmony Desal*

09:20 - 09:40

Development of Forward Osmosis Membrane with Cellulose Triacetate Hollow Fibers for Enhancement of Desalination Performance

- ▶ *Presenter: Mr. Yuki Miura, Manager, TOYOBO CO., LTD.*

09:45 - 10:05

From Care and Maintenance to 100% Production and Back Again - Lessons from the Gold Coast and Sydney Desalination Plants

- ▶ *Presenter: Mrs. Tina Feenstra, General Manager, Water Queensland, Veolia*

10:20 - 11:00 AM Break

11:00 - 11:20

Electromagnetic Field as a Tool in Enhancing Water Desalination Processes

- ▶ *Presenter: Dr. Emad Alhseinat, Assistant Professor, Khalifa University*

11:25 - 11:45

High Recovery Membrane Brine Concentration

- ▶ *Presenter: Dr. Richard Stover, VP of Technology, Gradiant*

11:50 - 12:10

Manipulation of Ion and Water Permeabilities Across Salt Rejecting Membranes Using Magnetic Fields

- ▶ *Presenter: Prof. Jonathan Brant, Professor, University of Wyoming*

12:15 - 12:35

Membrane Cleaning Procedures: Performance of Commodities Vs Formulated Cleaners

- ▶ *Presenter: Mrs. Nuria Peña, Laboratory Manager, Genesys Membrane Products*

12:40 - 13:00

New PX, Pressure Exchanger, Energy Recovery Device: Improving and Optimizing Performance Over the PX-Q300 for Greater Energy Saving

- ▶ *Presenter: Mr. David Kim-Hak, Sr Director of Product, Energy Recovery Inc.*

13:05 - 14:30 Lunch Break

14:30 - 14:50

Membrane Design of a Subsea Desalination System

- ▶ *Presenter: Mr. Borja Blanco, CEO, Aqua Advise*

14:55 - 15:15

Rewaise - A Smart Water Ecosystem for a Sustainable and Efficient Water Cycle in Europe

- ▶ *Presenter: Dr. Victor Monsalvo, Head of Eco-efficiency Area, Innovation and Technology, Aqualia*

15:20 - 16:00 PM Break**16:00 - 16:20**

Validation of Recycled UF Membranes for RO Pretreatment Process

- ▶ *Presenter: Dr. Domingo Zarzo, Innovation and Strategic Projects Manager, Sacyr Water*

16:25 - 16:45

Toward the Validation of the World S Largest MDC Technology for Low Energy Drinking Water Production

- ▶ *Presenter: Dr. Victor Monsalvo, Head of Eco-efficiency Area, Innovation and Technology, Aqualia*

16:50 - 17:10

Stand-Alone, Portable Desalination System Based on Ion Concentration Polarization

- ▶ *Presenter: Dr. Junghyo Yoon, Postdoctoral Associate, Massachusetts Institute of Technology (MIT)*

17:15 - 17:35

Membrane Based Brine Concentration Solutions and Concentrated Brine Reuse Experiences

- ▶ *Presenter: Mr. Eugenio Páez, Head of Urban Water & Wastewater Treatment, TYPSA*

17:40 - 18:00

BIM and the Lifecycle Digitization, the Steps Towards the Future

- ▶ *Presenter: Mr. Ignacio Javier Garcia Galdon, BIM Manager, Aqualia*

THEATER 2

7.2 Environmental Impact Assessments

Topic Chair:

- ▶ *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*

Session Chair:

- ▶ *Dr. Christine Kleffner, Research Associate (Postdoc), TH Köln*

08:30 - 08:50

Reverse Osmosis Plants Performance Index

- ▶ *Presenter: Mr. Amr Seoudy, CEO & Founder, Water Treatment Consulting Office (WTCO)*

08:55 - 09:15

Virtual Power Plant and Virtual Water Plant

- ▶ *Mr. Sebastiano Onnis, Energy and Climate Engineering Manager, ILF Consulting Engineers*

09:20 - 09:40

Multi-Criteria Analysis for Sustainable Development of Desalination Plants in Chile

- ▶ *Presenter: Mr. Raul Lemes, Operation Director, Sacyr*

09:45 - 10:05

Positive Futures as Decision-Support Tools for Urban Water Planning

- ▶ *Presenter: Ms. Varsha Sivagurunathan, Postgraduate Student, The University of New South Wales*

10:20 - 11:00 AM Break

11:00 - 11:20

A Thermodynamic Platform for Evaluating Energy Efficiency of Multifarious Desalination Processes

- ▶ *Presenter: Prof. Kim Choon NG, Professor, KAUST*

11:25 - 11:45

Membrane Autopsy and Targeted Cleaning with Specialty Cleaners

- ▶ *Presenter: Dr. Amit Sankhe, Product Development Manager, PWT Chemicals*

11.3 Digital Twins in Desalination**Topic Chair:**

- ▶ *Prof. Tony G Fane Ph. D, University of New South Wales*

Session Chairs:

- ▶ *Dr. Antonella De Luca, Head of Competence Center Environmental Solutions, Omya*
- ▶ *Mr. Juan Miguel Pinto, Director, Sales and Strategy, Americas, Energy Recovery*

11:50 - 12:10

Digital Services Applied to Desalination Plants: Process Guidance, Problem Detection, Operating Point Optimization

Presenter: Mr. Jean-Baptiste Thubert, CTO, Veolia Water Technologies

11.1 Big Data and Data Monitoring in Desalination**Topic Chair:**

- ▶ *Prof. Tony G Fane Ph. D, University of New South Wales*

Session Chairs:

- ▶ *Dr. Antonella De Luca, Head of Competence Center Environmental Solutions, Omya*
- ▶ *Mr. Juan Miguel Pinto, Director, Sales and Strategy, Americas, Energy Recovery*

12:15 - 12:35

Designing Digital for Desalination Delivery

- ▶ *Presenter: Dr. Jesus Ortiz, Business Development Manager, ACCIONA Agua*

12:40 - 13:00

An AHP Model to Select Remineralization Process in the Desalination Industry

- ▶ *Presenter: Mr. Mohsen Al-Salmi, CEO, Shuaibah III IWP*

13:05 - 14:30 Lunch Break

14:30 - 14:50

Plant Performance Optimization Using Smartopstm

- ▶ *Presenter: Dr. Jia Shin Ho, NPI Scientist, Gradient*

14:55 - 15:15

Transforming the Digital Space of Desalination Through the DuPontWaterApp, the FT-Norm PRO and the Enhanced Digital Tools

- ▶ *Presenter: Dr. Maria Angeles Perez, Senior Technical Service Engineer, DuPont*

15:20 - 15:40 PM Break

12.1 Recovery of Minerals from Seawater

Topic Chair:

- ▶ *Mr. Felix Wang, VP of Marketing, Gradient*

Session Chairs:

- ▶ *Mr. Greg Wetterau, Vice President, CDM Smith*
- ▶ *Eng. Nikolay Voutchkov, President, Water Globe Consultants, LLC*

16:00 - 16:20

Circular Processing of Seawater Brines from Saltworks for Recovery of Valuable Raw Materials (Searcularmine): Project Update

- ▶ *Presenter: Ms. Delia Pastorelli, Process Engineer, SUEZ*

16:25 - 16:45

Investigating the Salt Crystallization Phenomena of Red Sea and Arabian Gulf SWRO Brines by Solar Evaporation

- ▶ *Presenter: Mr. Ammar Alnumani, Researcher, Saline Water Conversion Corporation (SWCC)*

16:50 - 17:10

Investigating the Potential For Closed Circuit Reverse Osmosis (CCRO) to Reduce Concentrate Flows on a Future Inland Water Reuse Application

- ▶ *Presenter: Mr. Christian Sanders, Environmental Engineer, CDM Smith*

17:15 -17:35

Pilot Scale Demonstration of Desalination of Acid Mine Drainage Water From an Australian Coal Mine

- ▶ *Presenter: Mr. Neil Palmer, Chief Technology Officer, Osmoflo*

17:40 -18:00

Long-term operating results of membrane brine concentration system integrated with a Seawater Reverse osmosis desalination plant.

- ▶ *Presenter: Mr. Keith Lampi, President, FTS, Inc.*

THEATER 3**12.3 Novel Treatment Processes for Resource Recovery****Topic Chair:**

- ▶ *Mr. Felix Wang, VP of Marketing, Gradient*

Session Chairs:

- ▶ *Mr. Greg Wetterau, Vice President, CDM Smith*
- ▶ *Eng. Nikolay Voutchkov, President, Water Globe Consultants, LLC*

08:30 - 08:50

A Long-Term Simulation Model under Super/Hyper/Ultra Salinity and High Hydraulic Pressure Condition for CTA Hollow Fiber Membrane Module for Brine Concentration Application

- ▶ *Presenter: Mr. Shohei Goda, TOYOBO CO., LTD.*

08:55 - 09:15

Fouling of Reverse Osmosis Membrane: Autopsy Results from a Wastewater Treatment Facility at Central Park, Sydney

- ▶ *Présenter : Prof. HK Shon, Professor in School of Civil and Environmental Engineering, University of Technology Sydney*

09:20 - 09:40

Redefining a Desalination Business Model to Achieve Zero Potential for Enviromental Impact.

- ▶ *Presenter: Mr. Rob Garner, Director (Water Supply), ENOWA - NEOM*

09:45 - 10:05

Lithium Recovery from Hypersaline Brines: Enhancing Selectivity and Optimizing Energy Consumption

- ▶ *Presenter: Mr. Danyal Rehman, PhD Candidate, MIT*

10:20 - 11:00 AM Break

11:00 - 11:20

Modeling and Simulation for the Use of Pervaporation in Treating the Brine from Seawater Reverse Osmosis Desalination Process

- ▶ *Presenter: Mr. Abdullah Albiladi, Researcher in DTRI, Saline Water Conversion Corporation*

11:25 - 11:45

Modeling, Optimization and Control of Convection-Enhanced Evaporation System (CEE) for Brine Volume Reduction

- ▶ *Presenter: Prof. Natasha Wright, Assistant Professor, University of Minnesota*

11:50 - 12:10

Novel Nanofiltration Remix Process and Water Recovery Leading to Minimum Liquid Discharge (MLD)

- ▶ *Presenter: Mr. Leon Awerbuch, CEO, International Desalination Consulting Associates*

12:15 - 12:35

Novel Polymer Composite Evaporator Tubes for Brine Concentration: Heat Transfer, Wetting and Scale Formation

- ▶ *Presenter: Dr. Heike Glade, Head of Research Group, University of Bremen*

12:40 - 13:00

Sea4value: Novel Technologies in Seawater Desalination to Extract Minerals and Metals from Seawater Brines

Presenter: Dr. Victor Monsalvo, Head of Eco-efficiency Area, Innovation and Technology, Aqualia

13:05 - 14:30 Lunch Break**14:30 - 14:50**

RO Brine Treatment and Desalination by Modified EDR and LPRO

- ▶ *Presenter: Dr. Mohammad Alizadehfard, CEO, OSMOTEC*

14:55 - 15:15

Sustainable Minimum Liquid Discharge for Inland Desalination

- ▶ *Presenter: Dr. Siva Kumar Kota, Gradiant*

15:20 - 16:00 PM Break**12.2 Recovery of Minerals from Industrial Brines****Topic Chair:**

- ▶ *Mr. Felix Wang, VP of Marketing, Gradiant*

Session Chairs:

- ▶ *Mr. Greg Wetterau, Vice President, CDM Smith*
- ▶ *Eng. Nikolay Voutchkov, President, Water Globe Consultants, LLC*

16:00 - 16:20

Lithium Recovery from Hypersaline Salt-Lake Brine with Selective Nanofiltration and Electrodialysis

- ▶ *Presenter: Mr. Zi Hao Foo, Ph.D. Candidate, Massachusetts Institute of Technology*

16:25 - 16:45

Successful Field Demonstration of a New High Recovery Semi-Batch Reverse Osmosis Technology

- ▶ *Presenter: Mr. John Korpiel, Principal Engineer at Veolia Water Technologies*

8.1 Project Delivery Models for Big-Desal

Topic Chair:

- ▶ *Dr. Veronique Bonnelye, Technical Support Manager, SUEZ International*

Session Chairs:

- ▶ *Mrs. Esther Gonzalez, Business Development, M&A, Strategy, AquaAdvise*
- ▶ *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*

16:50 - 17:10

Membrane Loader for the Reverse Osmosis Membrane Replacement at Gold Coast Desalination Plant

- ▶ *Presenter: Mr. Jonathan Jo, Process Engineer, Veolia Australia New Zealand*

17:15 - 17:35

The Importance of Shared Management to Promote Access to Water in the Brazilian Semi-Arid Region: Programa Água Doce

- ▶ *Presenter: Dr. Emilio Gabbrielli, International Water Advisor*

17:40 - 18:00

Collaborative Contracting: A Decade of Operating in an Alliance Contract Model

- ▶ *Presenter: Mr. Bradd Hamersley, Alliance Manager, Southern SeaWater Alliance*

THEATER 4

3.6 Coal Industry Wastewater

Topic Chair:

- ▶ *Dr. Rick Stover, Vice President of Technology, Gradient*

Session Chairs:

- ▶ *Dr. Ahmad Al Amoudi, Director General, Desalination Technologies Research Institute (DTRI)*
- ▶ *Mr. Victor Verbeek, ANZ Regional GM, Toray Membrane Australia*

08:30 - 08:50

Advanced Wastewater Treatment System Using Multiple Membrane Processes and Chemicals

- ▶ *Presenter: Mr. Bharat Dharamwani, GM - South Asia, Toray Industries, Inc.*

08:55 - 09:15

Continuous Batch Reverse Osmosis at Industrial Scale

- ▶ *Presenter: Mr. Saravana Perumal Shanmukham, Director, S P Elements*

09:20 - 09:40

Effects of Antiscalants and Cleaning Agents in Membrane Distillation for Brine Concentration

- ▶ *Presenter: Dr. Heike Glade, Head of Research Group, University of Bremen*

09:45 - 10:05

Shifting the Economics of ZLD By Using Energy Recovery Devices

- Presenter: Mr. Simon Bae, Technical Manager, Energy Recovery, Inc*

10:20 - 11:00 AM Break

11:00 - 11:20

Innovative Brine Concentration Membranes to Lower the Cost of MLD/ZLD Treatment

- ▶ *Presenter: Dr. Guillem Gilabert Oriol, Technical Leader, DuPont*

11:25 - 11:45

Novel Antiscalant to Inhibit Ultra-High Calcium Sulfate Scale Formation in High Stress Conditions

- ▶ *Presenter: Mr. Ankesh Bansal, Technical Development Manager, APAC, Italmatch Chemicals*

11:50 - 12:10

Pre-Treatment Requirements for Produced Water Treatment Using FO-MD Hybrid System

- ▶ *Presenter: Dr. Muhammad Saqib Nawaz, Postdoctoral Research Fellow, KAUST*

12:15 - 12:35

The UF-FO-MD Hybrid System for Resources Recycle from Wastewater Using SWRO Brine as FO Draw Solution

- ▶ *Presenter: Dr. Sheng Li, Water Expert, DTRI, Saline Water Conversion Corporation*

12:40 - 13:00

High-Pressure Membrane Processes with Energy Recovery: New Perspectives for Efficient Brine Concentration

- ▶ *Presenter: Dr. Christine Kleffner, Postdoc, TH Köln*

13:05 - 14:30 Lunch Break

14:30 - 14:50

Overview of Reverse Osmosis Silica Scaling and Management

- ▶ *Presenter: Prof. Stephen Gray, Executive Director, Institute for Sustainable Industries and Liveable Cities, Victoria University*

9.1 Long Term Case Studies

Topic Chair:

- ▶ *Mr. Thomas Altmann, EVP - Innovation & New Technology, ACWA Power*

Session Chairs:

- ▶ *Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*
- ▶ *Prof. Seungkwan Hong, Professor, Korea University*

14:55 - 15:15

Developing a New and Novel Antiscalant as a Targeted Approach to Maintaining Thermal Plant Performance

- ▶ *Presenter: Mr. Ankesh Bansal, Technical Development Manager, APAC, Italmatch Chemicals*

15:20 - 16:00 PM Break

16:00 - 16:20

Israel as a Model for Environmentally Responsible Desalination

- ▶ *Presenter: Mrs. Miriam Brusilovsky, Technical Director -Assets at IDE Technologies and Media Manager at Israeli Desalination Society*

1.1 Seawater Plant Cases Studies and Process Improvements

Topic Chair:

- ▶ *Mr. Miguel Angel Sanz, Independent Consultant*

Session Chairs:

- ▶ *Dr. Giancarlo Barassi, Desalination and Reuse Market Manager, Aquatech Int*
- ▶ *Mr. Guillaume Clairet, Chief Operating Officer, H2O Innovation*

16:25 - 16:45

Seawater RO Desalination Process: A Cost-Effective Solution for Potable Water Scarcity

- ▶ *Presenter: Mr. Ghulam Mustafa, Saline Water Conversion Corporation*

16:50 - 17:10

Boosting Permeate Production without Compromising on Sec: 60% Recovery and Beyond in SWRO

- ▶ *Presenter: Mr. Haytham Ahmed, Engineering Manager, Fluid Equipment Development Co. - (FEDCO)*

17:15 - 17:35

Tecno- Economic Evaluation of Magnesium Replenishment Options After Desalination

- ▶ *Presenter: Dr. Antonella De Luca, Head of Competence Center Environmental Solutions, Omya*

Day 4

Thursday

13 October 2022

08:30 - 12:35

THEATER 1

1.1 Seawater Plant Case Studies and Process Improvements

THEATER 2

11.2 Artificial Intelligence in Desalination

11.3 Digital Twins in Desalination

THEATER 3

2.5 New Treatment Techniques for Water Reuse

2.6 Virus and Bacteria Removal Including Log Credit Techniques

3.1 Environmental Issues in the Mining Industry

THEATER 4

4.1 Zero Liquid Discharge and Brine Concentration Techniques

4.2 Improvements for Hybrid Renewable Projects

4.3 Mega Projects Using Renewable Energy

THEATER 1

1.1 Seawater Plant Case Studies and Process Improvements

Topic Chair:

- ▶ *Mr. Miguel Angel Sanz, Independent Consultant*

Session Chairs:

- ▶ *Dr. Giancarlo Barassi, Desalination and Reuse Market Manager, Aquatech International*
- ▶ *Mr. Guillaume Clairet, Chief Operating Officer, H2O Innovation*

08:30 - 08:50

A Pilot Study of Low-Energy Seawater Desalination with Innovative Membranes and Pretreatment Systems

- ▶ *Presenter: Dr. Jungbin Kim, Postdoctoral researcher, Korea University*

08:55 - 09:15

20 Years of Data from 500 Seawater Membrane Autopsies

- ▶ *Presenter: Ms. Nuria Peña, Laboratory Manager, Genesys Membrane Products*

09:20 - 09:40

Application of New Technologies for Energy Savings in Desalination

- ▶ *Presenter: Mr. Francisco Jimenez-Castellanos, Global RO Application Manager Desalination & Water Reuse Market, Danfoss*

09:45 - 10:05

Comparison and Evaluation of Centralized & Decentralized Systems for Nuweibaa SWRO Desalination Plant - Case Study

- ▶ *Presenter: Mr. Amr Seoudy, CEO & Founder, Water Treatment Consulting Office (WTCO)*

10:20 - 11:00 AM Break

11:00 - 11:20

Control of SWRO Membrane Biofouling Through Removal of Planktonic Colloidal Biofilms Coming from RO Pretreatment and Rotary Energy Recovery Device

- ▶ *Presenter: Prof. Harvey Winters, Professor, Fairleigh Dickinson University*

11:25 - 11:45

High Recovery Reverse Osmosis Water Challenging

- ▶ *Presenter: Mr. Juan de Beristain, Regional Sales Manager Latin America, Fluid Equipment Development Co. (FEDCO)*

11:50 - 12:10

Energy Optimization and Management Of Mega Sea Water Reverse Osmosis (SWRO) Desalination Plants

- ▶ *Presenter: Dr. Yehuda Shevah, Consultant, Independent*

12:15 - 12:35

Dry Seawater Reverse Osmosis Elements

- ▶ *Presenter: Dr. Maria Angeles Perez, Senior Technical Service Engineer, DuPont*

THEATER 2

11.2 Artificial Intelligence in Desalination

Topic Chair:

- ▶ *Prof. Tony G Fane Ph. D, University of New South Wales*

Session Chairs:

- ▶ *Dr. Antonella De Luca, Head of Competence Center Environmental Solutions, Omya*
- ▶ *Mr. Juan Miguel Pinto, Director, Sales and Strategy, Americas, Energy Recovery*

08:30 - 08:50

A Theoretical Deep Neural Network Framework for Mapping Biofouling with Hydrodynamic Parameters

- ▶ *Presenter: Dr. Adnan Qamar, System Modeling and Data Specialist, KAUST*

08:55 - 09:15

Artificial Intelligent in Designing Water Desalination Plant

- ▶ *Presenter: Mr. Essam Albishi, Head of Artificial Intelligence, Saline Water Conversion Corporation*

09:20 - 09:40

A Machine Learning Deployment to a Large Middle East Sea Water Reverse Osmosis Plant to Save Energy

- ▶ *Presenter: Dr. Mike Dixon, CEO, Synauta*

09:45 - 10:05

Data-Driven Digital Tool for Smart Ro Membrane Management in a Large Scale Seawater Desalination Plant

- ▶ *Presenter: Ms. Marie Gaveriaux, Digital Product Owner, Veolia Water Technologies*

10:20 - 11:00 AM Break

11:00 - 11:20

Digitization of a Novel HDH System: An AI Framework to Optimize and Guide the Technology Development

- ▶ *Presenter: Prof. Bahman Abbasi, Assistant Professor, Oregon State University*

11.3 Digital Twins in Desalination

Topic Chair:

- ▶ *Prof. Tony G Fane Ph. D, University of New South Wales*

Session Chairs:

- ▶ *Dr. Antonella De Luca, Head of Competence Center Environmental Solutions, Omya*
- ▶ *Mr. Juan Miguel Pinto, Director, Sales and Strategy, Americas, Energy Recovery*

11:25 - 11:45

Pre-Commissioning Digital Twin for Optimising Operation and Knowledge Transfer of Tseung Kwan O Desalination Plant

- ▶ *Presenter: Mr. Chaim Kolominskas, Manager - EVS Water, Envirosuite*

11:50 - 12:10

Process Simulation for Design and De-Risking of a Complex Mine and Power Station Water Re-Use and Brine Project

- ▶ *Presenter: Dr. Matthew Brannock, Technical Director - Water & Brine Process, GHD*

12:15 - 12:35

The Barrel: The Next Generation of Desalination Plants

- ▶ *Presenter: Mr. Jean-Baptiste Thubert, CTO, Veolia Water Technologies*

THEATER 3

2.5 New Treatment Techniques for Water Reuse

Topic Chair:

- ▶ *Dr. Domingo Zarzo, Innovation and Strategic Projects Manager, Sacyr Water*

Session Chairs:

- ▶ *Dr. Monica Boodhan, Lecturer, the University of Trinidad and Tobago*
- ▶ *Mr. Alejandro Sturniolo, Global Head of Water Reuse & Strategic Partnerships, H2O Innovation*

08:30 - 08:50

Clarification of RO Biofouling Mechanism and Development Of New PVDF UF Membranes for RO Pretreatment

- ▶ *Presenter: Dr. Shigehisa Hanada, Research Associate, Toray Industries, Inc.*

08:55 - 9:15

Evaluating And Visualizing the Effect of Membrane and Feed Spacer in Biofouling Development Through FilmTec™ Fortilife™ Director Tool

- ▶ *Presenter: Dr. Guillem Gilabert Oriol, Technical Leader, DuPont*

09:20 - 09:40

High Recovery Water Treatment for Non-Potable Reuse Using an Integration of Ion Exchange and Reverse Osmosis

- ▶ *Presenter: Mr. Will McLean, Business Development Coordinator, Clean TeQ Water*

09:45 - 10:05

Implementing Desalitec™ Soar CCRO to Increase Efficiency and Reliability in Wastewater Reuse

- ▶ *Presenter: Dr. Santhosh Ramalingam, Technical Services Manager, DuPont*

10:20 - 11:00 AM Break

11:00 - 11:20

Investigating the Potential for Closed Circuit Reverse Osmosis (CCRO) to Reduce Concentrate Flows on a Future Inland Water Reuse Application

- ▶ *Presenter: Mr. Christian Sanders, Environmental Engineer, CDM Smith*

2.6 Virus and Bacteria Removal Including Log Credit Techniques

Topic Chair:

- ▶ *Mr. Jim Lozier, VP, Global Tech Leader for Desalination, Jacobs*

Session Chairs:

- ▶ *Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*
- ▶ *Dr. Heike Glade, Head of Research Group, University of Bremen*

11:25 - 11:45

RO and NF Membranes Performance Monitoring in Water Reuse Applications by Continuous Measuring of Adenosine Triphosphate

- ▶ *Presenter: Mr. Luis Navarro, Business Development Manager, Hach*

3.1 Environmental Issues in the Mining Industry

Topic Chair:

- ▶ *Mr. Borja Blanco, CEO, Aqua Advise*

Session Chairs:

- ▶ *Mr. Roberto Mangano, Managing Director, ILF Consulting Engineers Abu Dhabi*
- ▶ *Prof. Long Ngheim, Professor, Director of the Centre for Technology in Water and Wastewater, University of Technology Sydney*

11:50 - 12:10

A Novel Ion Exchange and Encapsulated Bacteria System for Complete Nitrate Removal

- ▶ *Presenter: Mr. Will McLean, Business Development Coordinator, Clean TeQ Water*

12:15 - 12:40

Solution Alternatives Study for Fouling MBR Membranes in an Industrial Wastewater Treatment Plant Ice Cream Factory

- ▶ *Presenter: Mrs. Patricia Terrero, Sacyr Agua*

THEATER 4**4.1 Zero Liquid Discharge and Brine Concentration Techniques****Topic Chair:**

- ▶ *Mr. Neil Palmer, Chief Technology Officer, Osmoflo*

Session Chairs:

- ▶ *Mr. Devesh Sharma, CEO, Aquatech International*
- ▶ *Mr. Victor Verbeek, ANZ Regional GM, Toray Membrane Australia*

08:30 - 08:50

Analytical Study of a Low-Grade Solar Heat Based Thermal Compressor Actuating a Novel Off-Grid Water Desalination

- ▶ *Presenter: Prof. Bahman Abbasi, Assistant Professor, Oregon State University*

08:55 - 09:15

Innovative Solar Driven Tri-Hybrid Cycle for Future Sustainability

- ▶ *Presenter: Ass. Prof. Muhammad Wakil Shahzad, Northumbria University*

4.2 Improvements for Hybrid Renewable Projects

Topic Chair:

- ▶ *Mr. Kevin Price, Principal, AWTT, LLC*

Session Chairs:

- ▶ *Dr. Tariq Nada, Chief Technical Officer, KSA Portfolio, ACWA Power*
- ▶ *Mr. Ties Venema, Group Vice President & Managing Director S3C, H2O Innovation*

09:20 - 09:40

Application of Artificial Neural Network to Model Hydrogen Production from Wastewater by Dark Fermentation Process

- ▶ *Presenter: Mr. Ahmad Hosseinzadeh, University of Technology Sydney (UTS)*

09:45 - 10:05

Energy and Water without Carbon: Integrated Nuclear Power and Large-Scale Desalination at Diablo Canyon

- ▶ *Presenter: Dr. Andrew Bouma, PhD, Massachusetts Institute of Technology (MIT)*

10:20 - 11:00 AM Break

11:00 - 11:20

Noble Approach for Net Zero Carbon Emission Desalination Configuration Facilitated in Hydrogen Production

- ▶ *Presenter: Mr. Youngwook Yoo, Senior Water Expert, Saudi Water Conversion Corporation (SWCC)*

11:25 - 11:45

Predictive Time-Variant Photovoltaic-Electrodialysis: A Novel Design Using Machine Learning and Control Theory

- ▶ *Presenter: Dr. Amos G. Winter, Associate Professor of Mechanical Engineering, Massachusetts Institute of Technology*

4.3 Mega Projects Using Renewable Energy

Topic Chair:

- ▶ *Mr. Kevin Price, Principal, AWTT, LLC*

Session Chairs:

- ▶ *Dr. Tariq Nada, Chief Technical Officer, KSA Portfolio, ACWA Power*
- ▶ *Mr. Ties Venema, Group Vice President & Managing Director S3C, H2O Innovation*

11:50 - 12:10

Analysis of Solar Thermal Driven Membrane Distillation System Developed for Desalination in Different Conditions

- ▶ *Presenter: Ms. Yingfei Huang, Ph.D. Candidate, University of New South Wales*

12:15 - 12:35

Dakhla Desalination Plant Intended for Irrigation and Drinking Water Supply Using Renewable Energy Mega Projects Using Renewable Energy

- ▶ *Presenter: Dr. Lahcen Hasnaoui, Hydro Advisor*

Outback Discussions

Outback Theater

Exhibition Hall 5-6



06 OUTBACK DISCUSSION PROGRAM- THEATER SCHEDULE

Sponsored by



Day 1

Monday, 10 October 2022

14:00 - 15:00 IDA - WRA Panel



Water Reuse: Moving Toward the Future of Water Management

Whether it is irrigation, industrial cooling, or drinking water, today's technology allows us to treat any water source to a quality suitable for any use. This panel will explore the steps to launch a successful water reuse project, including the decision path for communities, piloting, design and facility start-up. Learn about the use of membrane technology to allow potable and non-potable reuse, examples of innovative projects, and the evolution of purified recycled water for drinking around the world.

06 OUTBACK DISCUSSIONS

Moderator:



Mr. Paul Sciuto, General Manager,
Monterey One Water, USA

Panelists:



Mr. Michael Bourke, Director of
Business Development, Wigen
Water Technologies, USA



Mrs. Danielle Francis, Manager
Liveable Communities, Water
Services Association of Australia



Mr. Greg Wetterau, Vice President,
CDM Smith, USA

15:00 - 15:30 **The Future of Water**



NEOM

15:30 - 16:00 **Refreshment Break**

16:00 - 17:30 **Let's Hear from the
Leading Water Reuse Facilities
of the World**

This panel discussion will focus on real life testimony from major utilities around the World on how they made their Water Reuse program become a reality. Going from ideation, to convincing, to budgeting, to designing and to finally operating a Water Reuse facility requires resilience and perseverance. Many challenges of very

different nature depending on the stage of the project have to be overcome to develop such meaningful infrastructure. Our panelists, leaders of major utilities from around the World, will share with the audience the most interesting parts of their journey towards building a successful Water Reuse Program.

Moderator:



Mr. Guillaume Clairet, H2O
Innovation, Canada

Panelists:



Dr. Marcio José, Aquapolo
Ambiental, Brazil



Mr. Paul Sciuto, Monterey One,
USA



Mr. Evan Hambleton, Assets
Planning & Delivery Manager,
Water Corporation



Mr. Ryan Yuen, Managing
Director, SIWW, PUB, Singapore

Day 2

Tuesday, 11 October 2022

08:30 - 09:30 A Circular Future for Water



09:30 - 10:30



10:30 - 11:00 Coffee Break

11:00 - 11:30



11:30 - 12:30

Leading Sustainable
Desalination Now



12:30 - 13:00

Stantec Innovation Office
Equity Investment in Tech
Start-Ups

Dr. Marshall Davert, Head of
Innovation, Stantec



13:00 - 14:00 Lunch Break

14:00 - 14:30



14:30 - 15:00



15:00 - 15:30

**Nanostone Water Innovative
Ceramic Membrane Technology
in Water Treatment
Applications**



15:30 - 16:00

Refreshment Break

16:00 - 16:30

**Planning and Concept
Design of Perth's Third SWRO
Desalination Plant,
Co-development with
Groundwater**



16:30 - 17:30

**YLP Forum
Facing Water Availability
and Sanitation Challenges:
Thoughts from Industry
leaders**



Day 3

Wednesday, 12 October 2022

08:30 - 09:30 Trends in Desalination Technology, is RO Mature Enough? Do we Have Another Sustainable Technology on the Horizon?



09:30 - 10:00 

10:00 - 10:30 Challenging New Ways to Manage Water

Mr. Carlos Cosin, CEO, Almar Water Solutions

Mr. Gonzalo Gomez-Rodulfo, Chief Operation Officer, Almar Water Solutions



10:30 - 11:00 Coffee Break

11:00 - 13:00 SWCC: The Journey Beyond



13:00 - 14:00 Lunch Break

14:00 - 15:00 Innovation in Desalination

METITO



15:00 - 15:30 Refreshment Break

15:30 - 16:30 Dams Development under
the PPP Model & Future
SWPC Projects

الشركة السعودية لشراكات المياه
Saudi Water Partnership Company



16:30 - 17:30



Matlaq Al-Ghousari Contracting Co.

17:30 - 18:30 IDA Membership Meeting

Day 4

Thursday, 13 October 2022

08:30 - 09:00 Innovation to Tackle the Water
Tariff Inflation



09:00 - 10:30 IDA Innovation Forum

The IDA Innovation Forum, new to the World Congress, is specifically designed to introduce new and innovative solutions from universities, research centers, technology developers, and start-up companies to major organizations in the water and energy sectors, venture capitalists, developers, and investor's.

Moderators:



Dr. Victor Monsalvo, Aqualia,
Spain



Mrs. Olga Sallangos, Caramondani
Desalination Plants, Cyprus

Selection Committee:



Dr. Emilio Gabbrielli, International
Water Advisor, Australia



Mr. Robert Garner, Director
(Water Supply), ENOWA - NEOM,
Saudi Arabia



Prof. John H Lienhard V, MIT, USA



Mr. Kevin Price, Independent
Consultant, USA



Dr. Miriam Balaban, Secretary
General, European Desalination
Society, Israel



Dr. Jauad El Kharraz, Executive
Director, ICREE, Egypt



Dr. Masura Kurihara, Toray, Japan

10:30 - 11:00 **Coffee Break**

11:00 - 12:00 **Addressing Global
Membrane System Safety
and Reliability**

A Call to Action for Newer and Aging Installations. Description: Pressure Vessel technology utilizing FRP with flexible grooved end couplings became the industry standard in the early 1980s. In those early days, Pressure Vessel Service Life was estimated to be 15 to 20 years. Today, tens of thousands of membrane pressure vessels and interfacing connections throughout the desalination industry are reaching a critical period where many may be nearing the end of their service life and creating risks for plant operators.

This panel discussion will contain End Users, System Integrators, Consultants, Pressure Vessel and Coupling Suppliers to discuss the industry's current state and clearly identify the challenges ahead for the membrane system industry.

Moderator:



Mr. Doug Eisberg, Vice President
of Sales, Avista Technologies, Inc.,
USA

06 OUTBACK DISCUSSIONS

Panelists:



Mrs. Sharon McNeil, Manager –
Desalination Operations, Water
Corporation of Western Australia



Mr. Con Sikallos, Principal
Mechanical Engineer, Jacobs, USA



Mr. Greg Finlayson, Senior
Technical Director of Water and
Strategy, GHD



Mr. Sean McCagh, Commissioning
Start Up Engineer, RO-TEG, USA



Mr. Guillaume Clairet, Chief
Operating Officer, H2O /Piedmont,
Canada



Mrs. Miriam Brusilovsky, Technical
Director IDE Water Assets, IDE
Technologies, Israel



Mr. Olivier Bedague, Sales
Director, Protec / Arisawa, USA



Mr. Atul Kakkar, General Manager,
CodeLine, USA

12:00 - 12:30



13:00 - 15:00

Closing Lunch and Awards

Tuesday, 11 October 2022

07 IDA LEADERS SUMMIT

October 11, 2022

The effects of climate change and the ever-growing demand for clean water globally underscore the urgency of sustainable water solutions. We must chart resilient water solutions and enlist the global community in this mission.

The Leaders Summit takes us one step closer to addressing such solutions. The Summit will provide a shared space for meaningful conversations among executives from various sectors, including finance, legal, project development, public and private utilities, industrial water users, and technical solution providers. Topics include addressing the looming water crisis, the effect on food security, and the water-energy-food nexus. ESG Criteria and Ensuring Water Sector PPPs also fit the 2030 UN Agenda, how water will drive hydrogen, capture the value of water, how to innovate the water sector, and net zero and water positive goals for the industry.



IDA 2022 WORLD CONGRESS
LEADERS SUMMIT



Mr. Imad Makhzoumi
IDA Board
Member, CEO,
ENOIA



Ms. Shannon McCarthy
IDA Secretary
General



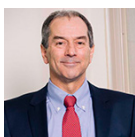
Mr. Carlos Cosin
IDA President
and CEO of Almar
Water Solutions



H.E. Eng. Ahmed Mohammed Belajar Al Rumaithi
Under Secretary for the
Department of Energy,
Abu Dhabi



Dr. Gonzalo Delacamara, Director
IE Centre for
Water & Climate
Adaptation



Prof. John H. Lienhard V
Professor and the
founding Director
of the Abdul Latif
Jameel Water and
Food Systems Lab
J-WAFS, MIT, USA



Mrs. Katrina Donaghy
CEO of Civic
Ledgers



Mr. Adam Wilson
CEO, Essential
Services
Commission of
South Australia
(ESCOSA)



H.E. Eng. Khaled Al Qureshi
CEO, SWPC



Dr. Tariq Nada
Vice President,
ACWA Power
Water CTS



Mr. Roch Cheroux
CEO, Sydney
Water



Mr. Paul Sciuto
CEO, Monterey
One Water



Mr. Jose Diaz Caneja
CEO, Acciona
Agua



Dr. Juan Carlos de Pablo
Managing
Partner,
Ecoinversol

Tuesday, 11 October 2022



Mr. Gavin Van Tonder

Water Sector Head, NEOM



Mr. Johnny Obeid

Vice President, Veolia Water Technologies, MENA



Dr. Hubert Fleming

Partner Upwell Water



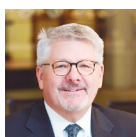
H.E. Eng. Abdullah Ibrahim Al Abdulkarim,

Governor of SWCC



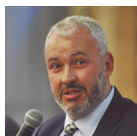
Mr. Devesh Sharma

CEO, Aquatech International



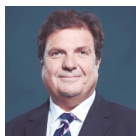
Dr. Marshall Davert

Head of Innovation, Stantec



Mr. Eduardo Orteu

Counsel, Gómez-Acebo & Pombo Abogados



Mr. Fady Juez

Managing Director, Metito



Mr. Alejandro Sturniolo

Global Head of Water Reuse & Strategic Partnerships, H2O Innovation



Mrs. Marta Verde

CEO, GS Inima Environment



Mrs. Eva Jalon

CEO, Sacyr Water

Schedule

Room E5.2 & 3, above exhibition hall on level 5

Emcee Morning Session:

Mr. Imad Makhzoumi, IDA Board Member,
CEO, ENOIA, UAE

09:00 - 09:15

Welcome Remarks

- ▶ *Ms. Shannon McCarthy, IDA Secretary General, Italy*
- ▶ *Mr. Carlos Cosin, IDA President and CEO of Almar Water Solutions, Spain*

09:15 - 09:30

Keynote: Addressing the Energy-Water Nexus

- ▶ *H.E. Eng. Ahmed Mohammed Belajar Al Rumaithi, Under Secretary for the Department of Energy, Abu Dhabi, UAE*

09:30 - 10:30

Panel 1: The Looming Water Crisis and the Effect on Food Security

As the global population grows from 7 billion in 2010 to 9.8 billion in 2050, and incomes steadily grow across the developing world, despite current sluggish rates, overall food demand is on course to increase by more than 50%, and demand for animal-based foods by nearly 70%. Cropland area has been slightly rising over the last decades (only as the outcome of the expansion of agriculture and cattle breeding in emerging economies, which offset the decrease in the most advanced economies). Cropland per capita, though, has collapsed. Producing more calories in less land per capita is only feasible through significant increases in yields per land unit. Some productivity improvements have actually been observed, yet at a pace that would not allow us to hit the target. This has driven major pressures on water resources and soil,

Tuesday, 11 October 2022

thus showing that enhanced water security (including through the diversification of water supply sources) within the context of climate change adaptation is a binding condition for food security.

This Leaders Summit session will look at this critical linkage from three atypical standpoints: the emphasis on food and water systems (rather than just on their long-term security), the importance of taking a long-term perspective from the regulatory point of view to pave the way for dialogue and to facilitate adaptation, and next generation marketplaces for water.

Moderator:

- ▶ *Dr. Gonzalo Delacamara, Director, IE Centre for Water & Climate Adaptation, Spain*

Panelists:

- ▶ *Prof. John H. Lienhard V, Professor and the founding Director of the Abdul Latif Jameel Water and Food Systems Lab J-WAFS, Massachusetts Institute of Technology (MIT), USA*
- ▶ *Mrs. Katrina Donaghy, CEO of Civic Ledgers, Australia*
- ▶ *Mr. Adam Wilson, CEO, Essential Services Commission of South Australia (ESCOSA)*

10:30 - 11:00

Refreshment Break

Foyer at Room E5.2 & 3, above exhibition hall on level 5

11:00 - 12:00

Panel 2: ESG Criteria and Ensuring Water Sector PPPs fit the 2030 UN Agenda

This panel brings developers, regulators, and lenders together to discuss the outcomes and success stories of PPP projects in the water sector and how this model has helped meet ESG criteria. World-class investors are conscious of the importance of sustainability to the success of long-term projects, which PPP projects are.

Moderator:

- ▶ *H.E. Eng. Khaled Al Qureshi, CEO, SWPC, Saudi Arabia*

Co-Moderator:

- ▶ *Dr. Tariq Nada, Vice President, ACWA Power Water CTS, Saudi Arabia*

Panelists:

- ▶ *Mr. Roch Cheroux, CEO, Sydney Water, Australia*
- ▶ *Mr. Paul Sciuto, CEO, Monterey One Water, USA*
- ▶ *Mr. Jose Diaz Caneja, CEO, Acciona Agua, Spain*

12:00 - 13:00

Panel 3: The Future of Clean Energy through Green Hydrogen is Non-conventional Water

While solar and wind are well established in the renewable energy mix with significant market share, Hydrogen is now taking an innovative step towards opening a new path as a clean, local, and efficient energy source with commercial viability. Clean water is a critical resource for the electrolysis process, and it will (no doubt) take a distinct role in redefining the energy, mobility, and other vital sectors by producing green Hydrogen.

Moderator:

- ▶ *Mr. Carlos Cosin, IDA President, CEO, Almar Water Solutions, Spain*

Panelists:

- ▶ *H.E. Eng. Ahmed Mohammed Belajar Al Rumaithi, Under Secretary, Department of Energy, Abu Dhabi, UAE*
- ▶ *Dr. Juan Carlos de Pablo, Managing Partner, Ecoinvertsol, Spain*

13:00 - 14:30 Lunch Lunchroom, Hall 5-6

Tuesday, 11 October 2022

Emcee Afternoon Session:

Mr. Borja Blanco, IDA Board Member, CEO,
Aqua Advise, Spain

14:30 - 15:15

Panel 4: Capturing the Value of Water

Moderator:

- ▶ *Mr. Gavin Van Tonder, Water Sector Head, NEOM, Saudi Arabia*

Panelists:

- ▶ *Mr. Johnny Obeid, Vice President, Veolia Water Technologies, MENA*
- ▶ *Dr. Hu Fleming, Partner, Upwell Water, USA*

15:15 - 15:30

Keynote: H.E. Eng. Abdullah Ibrahim Al-Abdulkarim, Governor of SWCC, Saudi Arabia

15:30 - 15:45 Refreshment

Foyer at Room E5.2 & 3, above Exhibition Hall on level 5

15:45 - 16:00

IDA Talk: Future of Industrial Water

- ▶ *Mr. Devesh Sharma, IDA Vice President, CEO, Aquatech International, USA*

16:00 - 16:15

IDA Talk: Building an Innovative Future

- ▶ *Dr. Marshall Davert, Head of Innovation, Stantec, USA*

16:15 - 16:30


IDA Talk: The Red Book

- ▶ *Mr. Eduardo Orteu, Counsel, Gómez-Acebo & Pombo Abogados, SLP, Spain*

16:30 - 17:15

Panel 5: Net Zero and Water Positive Goals for Industry

The global community's dedication to ESGs has reached new levels. Industry represents a key stakeholder in this process and the growing commitment to reach net zero carbon and



water positivity is a daily conversation. But....can this really be done? Join panelists representing industrial water to discuss the various challenges and approaches to achieving this very important target.

Moderator:

- ▶ *Mr. Fady Juez, Managing Director, Metito, UAE*

Co-Moderator:

- ▶ *Mr. Alejandro Sturniolo, Global Head of Water Reuse & Strategic Partnerships, H2O Innovation, Canada*

Panelists:

- ▶ *Mrs. Eva Jalon, CEO, Sacyr Water, Spain*
- ▶ *Mrs. Marta Verde, CEO, GS Inima Environment, Spain*

17:15 - 17:30

Closing Remarks: Outgoing and Incoming IDA Presidents

18:30 - 20:30

Cocktail Reception (Invite Only)



Special Programs





INNOVATION FORUM

The IDA Innovation Forum, new to the World Congress, is specifically designed to introduce new and innovative solutions from universities, research centers, technology developers, and start-up companies to major organizations in the water and energy sectors, venture capitalists, developers, and investor's.

This new event at the World Congress will be held on Thursday 13 October, 09:00-10:30, Outback Discussion Theater.

INNOVATION FORUM SPONSORS



YLP ROUND TABLE SESSION

The IDA Young Leaders Program was officially launched at the 2009 World Congress in Dubai. The goals of this exciting initiative are to help promote opportunities in the industry, support career advancement, and provide a forum for communication and the exchange of ideas among young professionals and the industry at large. The YLP is open to any IDA member 35 years of age or under.



Schedule

Wednesday, October 12, 16:00-17:00,
Lunchroom Exhibition Hall 5-6

Tackling SDG Goals

Dr. Monica Boodhan

At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, water and sanitation, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. join us in this discussion.

Wave to Water Technologies

Mr. Dragan Tutic

Learn about the latest advancements and how wave powered desalination is pushing for new standards of sustainability.

Energy Efficiency

Ms. Zaina Naser

Let's discuss about the energy efficiency and inefficiencies in Desalination and how to reduce the carbon footprint.

Brine Mining

Mr. Rory Weaver

Open discussion on technical and economic feasibility of brine mining, stimulated by progress in Saudi Arabian pilot aimed at extracting high purity sodium chloride for the chlor-alkali industry.

Next Generation Desal

Mr. Quantum Wei

Join me for a round table discussion on how the next generation of desalination systems may solve SDG6.

Thermal Desalination

Dr. Mohammad Wakil Shazad

At this round table we will discuss about state-of-the-art thermal desalination and their hybrids with other processes to improve overall performance. Panel will also shed light on performance evaluation of integrated desalination plants when operated with assorted form of energies.

Biofouling in Membrane Systems

Dr. Guillem Gilabert Oriol

Biofouling is one of the biggest pain points in desalination. Let's discuss how to prevent, mitigate and deal with biofouling.

Building your Personal Brand for Career Growth

Dr. Giancarlo Barassi

Let's discuss your plan short, mid and long term. What actions have you taken that will have a positive impact towards your career growth? What seems to work what doesn't. Let's share our experiences with one another.

The Role of Chemicals in Desalination

Mr. Daniele Strongone

Next generation of chemicals leading to environmentally friendly desalination and higher plant availability.

Remineralization

Dr. Antonella De Luca

Let's review the importance of minerals in drinking water and new techniques for remineralization.

AI and Machine Learning

Mr. Devesh Bharadwaj

Artificial intelligence enables operational teams at treatment facilities to do more with less. By pairing operators with AI, facilities are able to get predictive performance analysis and actionable recommendations on things like where to adjust a set point to lower energy consumption or when is the best time to service an asset, like conducting a membrane cleaning. AI empowers teams with the latest plant data so they can make better operational decisions, reducing risks and costs, as well as a plant's overall carbon footprint.

Life in Academia

Dr. Motasem Abushaban

Finishing your PhD there may be many paths. Academia is one. Learn more about this transition.

Sydney Desalination Plant Tour

SPONSOR



SYDNEY
DESALINATION
PLANT

An essential component of Sydney's water supply resilience supplying up to 250 megalitres per day of drinking water (15% of Sydney's water needs), the Sydney Desalination Plant was built between 2008 and 2010 in response to the millennium drought and operated successfully for two years. With water storage dams recovering to high levels, a decision was made to place the plant in a state of long term preservation ready to respond to the next drought. In late 2015 a tornado hit the plant causing extensive damage, and requiring thorough inspection and reinstatement to its pre-storm condition. This was completed successfully in late 2018. In January 2019, after seven years of preservation, the plant was successfully restarted and continues to be available to assist the supply of water to Sydney's customers. A tour of the Sydney Desalination Plant provides a unique insight to a large scale reverse osmosis plant that has faced many challenges that include full operations to deep preservation and the recovery from extensive tornado damage.

Tour Details:

Date: Friday, October 14, 2022

Duration: 08:30am – 12:30pm (Overall time from pickup to return 3.5 to 4 hours)

Pickup/Dropoff Location: ICC Sydney

Description: A detailed tour of all process treatment facilities from the seawater intake system through pretreatment, reverse osmosis, remineralization and on-site storage/pumping into distribution

Important Information:

Must bring a photo ID.

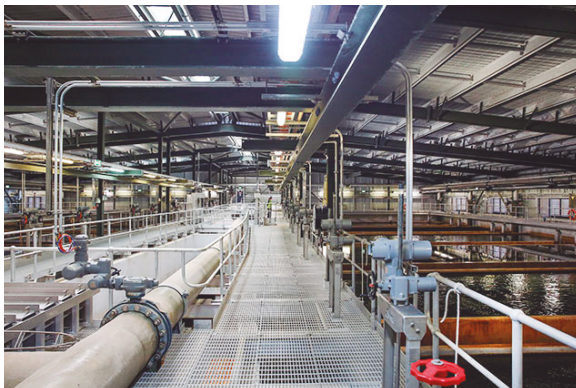
Smoking, snacking or drinking is not permitted.

Clothing requirements are long pants, long sleeve shirts and closed shoes.

08 SPECIAL PROGRAMS

The tour will take place rain or shine.
Picture and video taking is allowed.
Attendees must demonstrate that they are fully vaccinated.
Overall temperature in October is 20oCelsius/68o Fahrenheit.
The tour may be subject to change in the event of a Covid Outbreak.

To be waitlisted for the tour contact: jlandini@idadesal.org



UNESCO Centre for Membrane Science and Technology at UNSW Tour



The UNESCO Centre for Membrane Science and Technology at UNSW is Australia's oldest and continually operating academic research centre focused on membrane separations. Founded in 1980, with UNESCO accreditation in 1992, the UCMST is a multidisciplinary centre of fundamental and applied research on gas and liquid separations. Our research is divided across six themes including membrane development; water and wastewater, food and agriculture, process design, greenhouse gas technology and bioseparation. Facilities at UNSW include membrane fabrication and characterisation, membrane module design, small scale pilot equipment, gas separation and food and bio-processing systems.

Tour Details:

Duration: 1.5 hours including presentation and morning tea with Centre founders, Emeritus Professors Tony G Fane and Chris Fell.

Location: UNSW Sydney, 20 minutes from Circular Quay on the Sydney light rail. The membrane centre is located on the 5th floor of the Science and Engineering Building. (Grid Reference E8) at the UNSW Sydney Kensington campus.

Guests: The tour and morning tea is limited to 30 participants.

Date: Friday, October 14, 2022. Arrive 15 mins before start time.

Security & Safety: Closed toe shoes. Safety glasses and lab coats will be provided.

Transportation: Participants can take the local train/tram to the Centre. Cost is AUD2.75 each way and can be paid for at stations by Sydney transport card or credit card. There are two stations near the ICC – one across from the entrance of the Sofitel Hotel.

For more information contact kzilinek@idadesal.org.

09 AWARDS

Industry and Sustainability Awards

IDA is delighted to announce that, at this year's World Congress Gala event in Sydney, held on Wednesday, Monday October 10, 2022, we will honor the efforts of selected companies, organizations, and even cities with outstanding industry and sustainability awards. The nomination period for these awards is now open. Those who challenge themselves to innovate and meet the increasing demands for municipal and industrial water needs, will be acknowledged for their exceptional contributions. These awards reflect the diversity of contributions present in the water community. From municipalities to corporations, these award categories recognize the varied ways in which the global community is tackling water scarcity in order to ensure a future in which clean water and sanitation are universal.

The Awards are open to IDA members and non-members.



Industry and Sustainability Awards Committee

Meet the I&S Awards Committee members. The Industry and Sustainability Awards acknowledges leaders throughout the water reuse industry and this year's winners are selected by the I&S committee members using a weighted percentage score process.

Our committee members bring a vast amount of experience in the water sector. We thank all of you for your participation in this important and prestigious presentation at our World Congress.



Professor DucLong Nghiem
Director
Centre for Technology
in Water & Wastewater,
University of Technology
Sydney



Dr. Michael R. Markus, P.E., D.WRE, BCEE, F.ASCE
General Manager
Orange County Water
District



Dr. Jantje Johnson
Founder and Chief
Technology Officer
Orangeboat, LLC.



Dr. Gonzalo Delacamara
Director
Centre for Water &
Climate Adaptation, IE
University



Mr. Randy Truby
Consultant, R L Truby &
Associates

Industry Awards

01

Best Public-Private Partnership

The company exemplifies collaboration with a public utility.

02

Most Innovative Utility

A national or local utility that brings innovation to secure clean and fresh water for their consumers.

03

Best Private Company (Global)

The company makes an overall contribution to water sustainability using non-conventional water resources, to be Water Positive, in its region.

04

Most Innovative Company

The company that executed the project we all wish we had thought of and employed a breakthrough technology enhancing the desalination process.

05

The Most Progressive Disruptive Policy in Water Reuse

The project is moving the needle in the public sector to support and grow water reuse implementation.

06

Best Performing Company in Water Reuse

The company has exemplified efficiency, best-in-class technology, and operations to earn the highest quality plant performance.

Sustainability Awards

07**The Most Resilient City**

The city has created infrastructures and best practices for a community that can thrive and adapts to climate change and water scarcity.

08**Most Innovative Water-Energy Nexus Project**

The project that bridges the gap and capitalizes on the synergies between its community's water and energy needs.

09**Best Implementor of UN Sustainability Development Goal 6 Water for All (SDG6)**

The company that ensured availability and sustainable management of water and sanitation for all.

10**Best Corporate Social Responsibility Project**

The company that utilized desalination or water reuse technology to improve the lives of a community by creating a regenerative water economy to be Water Positive.

Technical Paper Awards

At each World Congress, IDA gives awards for the best oral and written papers presented as part of the Technical Program in five categories. Winners are selected by members of the World Congress Awards Committee, using a weighted percentage score. These awards are presented at the Closing Luncheon.

State-of-the Art

Best paper that presents the application of an established desalination or water reuse technology in a way that reflects the best engineering practices in all aspects of the project or topic presented that is significant for the global industry.

Innovation

Best paper that presents an innovative desalination or water reuse technology that has reached the commercial stage, is not yet considered to be widely adopted but is likely to become a game-changer for the industry.

Research and Development

Best paper that presents fundamental or applied research of a technology or concept related to desalination or water reuse that is at a pre-commercialization stage but shows interesting signs of development which could lead to impactful discoveries or technologies once at maturity.

Environment and Sustainability

Best paper presenting a desalination or water reuse topic, case study, a technology or any project in such a way that demonstrates how desalination can be applied while respecting the environment and applying the best sustainability principles.

05 AWARDS

Young Leader

Best paper presented by a member of the IDA Young Leaders Program demonstrating scientific originality relevant and important to the fields of desalination and/or water reuse.

Special Awards

Presidential

The Presidential Awards are conferred upon individuals and organizations whose work on behalf of IDA and the desalination industry demonstrate outstanding achievement, leadership and vision. The awards will be bestowed by the IDA President, Mr. Carlos Cosin.

Lifetime Achievement

IDA's Lifetime Achievement Award recognizes outstanding achievements and contributions to our industry. All IDA Lifetime Awardees receive a commemorative plaque and lifetime access to attend all IDA events at no registration fee.

Emerging Leader Achievement Award

Introduced in 2011, this award is given to one member of the IDA Young Leader's Program whose contribution to the desalination and water reuse industry has shown a track record of positive leadership and originality.

Delegate-Voted Awards

Delegates at the World Congress cast their votes for winners in the following four categories via the mobile app:

- ▶ *Best Moderator*
- ▶ *Best Session Chairman*
- ▶ *Best Presenter*
- ▶ *Best Poster*

10 EXHIBITION

The World's Most Extensive Desalination and Water Reuse Exhibition

The IDA World Congress is the most extensive desalination and water reuse exhibition globally. It's where world-leading private and public companies share the latest innovations in technologies, equipment, projects, and knowledge about desalination, water reuse, and advanced water treatment. And it's the best place for networking opportunities with stakeholders and professionals from the water sector.

[View the floor map](#)



Exhibitors



المؤسسة العامة لتحلية المياه المالحة
Saline Water Conversion Corporation (SWCC)



الشركة السعودية لشراكات المياه
Saudi Water Partnership Company

METITO



DUPONT

TORAY
Innovation by Chemistry

ACWA POWER
كوا باور



Mutlaq Al-Ghowsairi Contracting Co.

OSMOFLO

ALMAR
WATER SOLUTIONS

ROPV

nanostone water

suez

GRADIANT
NEW POSSIBILITIES FOR WATER

GS Inima

sacyr Challenge Success

Jacobs
Challenging today.
Reinventing tomorrow.

VEOLIA

RUHRPUMPEN
Specialist for Pumping Technology

lantania

Stantec

acciona

ANDRITZ

Aqseptence Group

arflu
INDUSTRIAL VALVES



Exhibitor Listing

Company - A	Booth Number
Acciona	42
ACWA Power	11
Almar Water Solutions	70
American Water Chemicals	122
Andritz	133
Aqseptance	30
Arflu	124
Avista	78
AWA	135

Company - B	Booth Number
Beaudrey	81

Company - D	Booth Number
Danfoss A/S	27
DMW Corporation	76
Dryden Aqua	138
Duchting Pumpen	62
DuPont Water Solutions	101

Company - E	Booth Number
Ebro Armaturen	82
Energy Recovery	114
Envirosuite	137

10 EXHIBITION

Company - F	Booth Number
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Flowserve	119
Fluytec SA	19

Company - G	Booth Number
-------------	--------------

Gradiant	51
GS Inima	28

Company - H	Booth Number
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H. Butting GmbH & Co. KG	75
H2O Innovation Group Companies	132
Hubert Water Treatment Solutions	121
Hydrolox	134

Company - I	Booth Number
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IDA	24
Ingeteam	123
Italmatch	58

Company - J	Booth Number
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Jacobs	80
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Company - L	Booth Number
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Lantania	120
LG Chem	86

Company - M	Booth Number
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Metito	32
Mutlaq Al-Ghowairi Contracting Co.	2

Company - N	Booth Number
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Nanostone Water	50
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Company - O	Booth Number
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Osmoflo	23
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Company - P	Booth Number
-------------	--------------

Protec Arisawa	127
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Company - R	Booth Number
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Rolled Alloys	140
ROPV	60
RuhrPumpen	74

Company - S	Booth Number
-------------	--------------

Sacyr	85
Stantec	31
SUEZ	5
Sulzer	125
SWCC	36
SWPC	46

10 EXHIBITION

Company - T	Booth Number
Talis Group – Belgicast	15
Tecval	29
Toray	55
Torishima Pump Mfg. Co., Ltd.	64
Toyobo	72

Company - V	Booth Number
Veolia	84

Company - W	Booth Number
WEG	129



IDA 2022
WORLD CONGRESS
SYDNEY, OCTOBER 9 - 13, 2022

**CHARTING RESILIENT
WATER SOLUTIONS**



Contact

www.idadesal.org

info@idadesal.org