IDA 2022 WORLD CONGRESS

SYDNEY, OCTOBER 9 - 13, 2022

IDA CHARTING RESILIENT WATER SOLUTIONS

ADVANCED PROGRAM

Index

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.

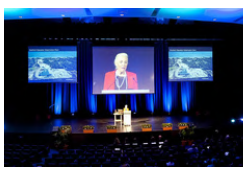
For more than 40 years, IDA has served as the global hub of expertise, news and information, and professional development for the global desalination industry. Its members include the world's leaders in desalination and reuse including end-users, and researchers representing governments, corporations 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.

Education is a key aspect of IDA's mission. Accordingly, IDA provides educational resources about desalination and water reuse to a variety of constituents, from industry professionals to graduate students to the general public. The IDA Desalination Academy is a global institute for specialized training in desalination and reuse and a higher school for special study in this field. It offers courses around the world as well as an online program to fulfill its mission of providing the highest level of training, education and instruction to individuals, utilities, companies, institutions, universities and other organizations interested in all aspects of desalination and reuse.

Other educational initiatives include a Scholarship Program and Fellowship Award that offer op-portunities for members to advance their knowledge and further their professional development. The IDA Young Leaders Program focuses on developing the next generation of industry leaders through mentoring and educational events.

In addition, IDA's print and online media create a library of resources rich in information and ideas. Publications include the IDA Desalination Yearbook, IDA Global Connections magazine and IDA Essentials.






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 of Directors

Term 19

- Hon. Fatme 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
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- Mr. Mohamad Jaroudi, Future Pipe Industries Qatar
- Ms. Jantje Johnson, OrangeBoat
- Mr. Fady Juez, Metito Overseas Ltd.
- Mr. Li Youqing, Harbin ROPV Industrial
- Prof. Dr. John H. Lienhard, Massachusetts Institute of Technology
- Mr. Imad Makhzoumi, ENOIA
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- Mr. Johnny Obeid, Veolia Water Technologies
- Mr. Juan Miguel Pinto, Energy Recovery
- Mr. Miguel Angel Sanz, SUEZ International
- Mr. Tim Lam Shing, Water Supplies Department, Hong Kong Government
- Mr. Devesh Sharma, Aquatech International
- Mr. Alejandro Sturniolo, H20 Innovation
- Mr. Victor Verbeek, Toray Membranes
- Dr. Domingo Zarzo Martinez, SACYR

Term 20

- Eng. Abdullah Alzowaid, Saline Water Conversion Corporation (SWCC)
- Mr. Carlos Cosín, Almar Water Solutions
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- Mr. José Díaz-Caneja, ACCIONA
- Mr. Jon Freedman, SUEZ Water Technologies & Solutions
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- 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

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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

Agencies & Public Institutions

Chairman:

Dr. Gonzalo Delacamara, IE University

Legal Firms

Co-Chairs:

Mr. Fernando Bernard, Cuatrecasas
Mr. Miguel Riano, Herbert Smith Freehills
Mr. Eduardo Orteu Berrocal, Gómez-Acebo & Pombo

Industrial Water

Chairman:

Mr. Devesh Sharma, Aquatech International / IDA Board Member

Co-Chair:

Mr. Robert Owens, Bechtel

YLP Co-Chair:

Mr. Michael Warady, Sylmar Group

Financial Institutions

Co-Chairs:

Mrs. Julie Carles, IFC
Mr. Rami Ghandour, Metito
Mr. Bastien Simeon, Amane Advisors

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 Members

AEDyR Asociación Española de Desalación y Reutilización

AMTA American Membrane Technology Association

Australian Water Association

CaribDA Caribbean Desalination Association

European Desalination Society

JDA Japan Desalination Association

Levant Desalination Association

中国膜工业协会 The Membrane Industry Association of China

Association Affiliate Members

亚洲和太平洋地区脱盐协会 Asia-Pacific Desalination Association

ALADYR

Indian Desalination Association

KDPA Korea Desalination Plant Association

Pakistan Desalination Association PakDA

SWA Singapore Water Association

جمعية علوم وتقنية المياه Water Sciences and Technology Association

IDA Membership and Benefits

IDA is dedicated to the development and promotion of desalination and water reuse worldwide. It is the only global association focused exclusively on advanced water treatment technologies and energy for these solutions.

- IDA provides educational resources to industry professionals and students through publications, online and multi-media communications, workshops, conferences, scholarships, and a fellowship program.
- An NGO of the United Nations, IDA is committed to outreach that informs the international community about advanced water treatment solutions and their critical role in providing new and sustainable sources of fresh water around the world
- IDA advocates the development of advanced water treatment solutions and practices that lower costs, reduce energy requirements, and enhance environmental responsibility. We represent the global desalination community at water, energy and environmental conferences and events.
- IDA's biennial World Congress is the premier global event for the desalination and water reuse community.
- IDA serves more than 60 countries from end users to financial institutions and from government organizations to academia.

IDA offers five categories of membership:

- Class I-A membership for corporations or utilities, is $1260 per year. Three employees are included in Class I-A membership.
- Class I-B membership for smaller companies with 10 employees or less. This category includes membership for two employees. Class I-B membership is also available to universities or NGOs. The annual Class I-B membership fee is $840.
- Class II-A membership for individuals. This category includes reduced conference registrations at IDA's World Congress, complimentary proceedings, complimentary online membership directory access, and more. The annual fee is $145.
- Class III-A, III-B, Class III-C membership is for students, non-profit libraries, and individuals from LDCs (respectively). Benefits include reduced fees at all Association activities, complimentary online membership directory access, and more. The fee is $30 / student or library.
- Individuals who are employees of Class I-A or I-B corporate members are $90 additional per person.

Please direct inquiries to membership@idadesal.org

02 ABOUT THE WORLD CONGRESS

Dear Colleagues:

The International Desalination Association's flagship event, widely recognized as the premier event on advanced water treatment solutions in desalination and water reuse, returns to Australia a decade after the 2011 IDA World Congress held in Perth. The World Congress will take place during the week of October 9 - 13, 2022, in the magnificent city of Sydney, Australia, at the International Convention Center Sydney (ICC Sydney), a spectacular location and state-of-the-art facility that opened in 2016 at the world-famous Darling Harbour.

IDA World Congress 2022 will consist of 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 to ensure a secure water future.

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 and how to secure a sustainable future that efficiently meets the growing water demand, threats to water security, and the increasing frequency and severity of droughts resulting from climate change.

We are looking forward to seeing you in Sydney!

Ms. Shannon McCarthy, IDA Secretary General

Our World Congress History:

2024 To be announced at Sydney WC22
2022 Sydney, Australia
2019 Dubai, United Arab Emirates
2017 Sao Paulo, Brazil
2015 San Diego, CA, USA
2013 Tianjin, China
2011 Perth, Western Australia
2009 Dubai, UAE
2007 Maspalomas, Gran Canaria, Spain
2005 Singapore
2003 Bahamas
2001 Manama, Bahrain
1999 San Diego, CA, USA
1997 Madrid, Spain
1995 Abu Dhabi, UAE
1993 Yokohama, Japan
1991 Washington DC, USA
1989 Kuwait City, Kuwait
1987 Cannes, France

Visit wc.idadesal.org for more information.

Congress Sponsors as of August 2022

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

METITO
Commitment to a Cleaner Environment

GOLD SPONSORS

DUPONT

TORAY
Innovation by Chemistry

ACWA POWER
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QWI WATER IS OUR CONCERN

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03 SCHEDULE & GENERAL INFORMATION

Venue

Accessibility

Conditions of Entry

Entrance and Venue Levels

General Admission

Ticketing Information

FAQs

Registration

Delegate Registration is open. The IDA World Congress is a five-day event, a week for learning, sharing ideas, developing business, and expanding your network to advance the solutions that will secure water for all.

Registration includes:

Access to technical sessions and exhibition
(Sun Oct 9 to Thu Oct 13)

Lunch and refreshment breaks daily

Networking events:
opening ceremony, welcome reception, gala dinner and awards, closing luncheon

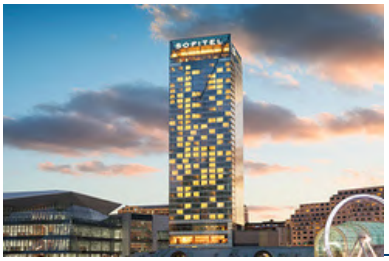
Congress proceedings

Plant Tour
(Friday, October 14) limited
Sydney Desalination Plant

To register please visit: https://wc.idadesal.org/registration/

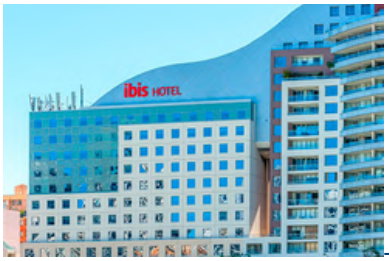
Accommodations

Take your pick from Sydney's huge choice of hotels to suit every taste, need and budget. The IDA has special rates at the following hotels. We recommend you to make your booking as soon as possible to ensure availability at special IDA room rates.



Sofitel Sydney Darling Harbour

Novotel Darling Harbour



Ibis Sydney Darling Harbour

Parkroyal Darling Harbour

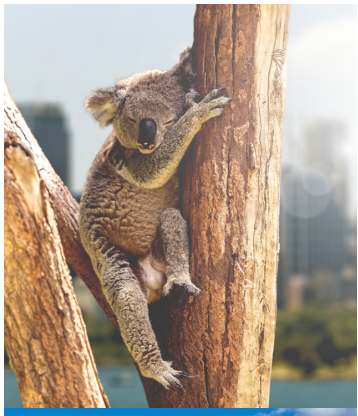
Mantra Sydney Central

More information at https://wc.idadesal.org/accommodation/

Visa Information

Request your Visa as soon as possible!

The Department of Home Affairs manages visas for Australia and the site is continually updated with the Australian law to insure site visitors are getting the most current information. Applications can be made electronically and most individuals attending the IDA World Congress 2022 would be applying for a (subclass600) as this is specific to attending a conference.



Those countries who participate in the Australian biometrics program should visit this link as it is in addition to the standard visa online process. This program is set in conjunction with your country travel requirements, and it requires an additional scanning process. Individuals who travel regularly would have this status on their International profile in any case and are very accustomed to the process.

World Congress Exhibitors and Speakers need to apply for a Subclass 651.

Requests for Visa Invitation Letters should be submitted to registration@idadesal.org.

Several reference links are below including up-to-date information about Covid-19 regulations.

Overseas Travellers (Exemptions)

Some travellers are automatically exempt from Australia's border restrictions and do not need to apply for an individual exemption. Among other groups, this includes:

- Australian citizens, Australian permanent residents and New Zealand citizens usually resident in Australia;
- Fully vaccinated eligible visa holders; and
- Individuals travelling to Australia under a safe travel zone arrangement.

A full list of travellers who are automatically exempt from border restrictions is available here.

Interstate Travellers

Domestic visitors are no longer required to quarantine or hold a permit to enter Victoria from another Australian state or territory to visit, work, transit, or if you are a cross-border resident.

Visa Options

Participants, attendees and speakers that will not be working, performing or otherwise be paid to contribute at the event may be eligible to apply for the following visa options:

- Visitor (subclass 600)(Business stream) visa. For more information click here.
- Electronic Travel Authority – ETA (subclass 601). For eligible passport holders and more information click here.
- Visitor (subclass 651)(Business Stream) visa. For eligible passport holders and more information click here.

A speaker, presenter, exhibitor, or other contributor invited to participate in an event by an Australian organisation may be eligible to apply for a:

- Temporary Activity (subclass 408)(Invited Participant) visa. For more information click here.

Important

Please note that a the letter of support from an Australian organisation is a legislative requirement for the Temporary Activity (subclass 408) (Invited Participant) visa.

Visa Processing Time

Please apply for you visa well in advance of your intended date of travel to Australia, as you could experience long processing times.

Here are a few useful links to keep you in the loop:

- passports.gov.au – Guidance foreign vaccination certificates
- covid19.homeaffairs.gov.au – Travelling to Australia
- General information for visa applicants
- Travel Exemption Portal
- Choosing the correct Visa
- Visa processing times
- Entering Australia Border Checklist

General Schedule & Technical Sessions

Pre Congress - Day 1 Saturday, 8 October 2022

07:00 - 00:00 Construction of Exhibition Hall

13:00 - 16:00 Registration Desk Open for Exhibitors Only

Pre Congress - Day 2 Sunday, 9 October 2022

07:00 - 17:00 Construction of Exhibition Hall 5-6

10:00 - 17:00 Delegate Registration Open

14:30 - 15:30 Term 19 Outgoing Board Meeting

15:30 - 17:00 Term 20 Incoming Board Meeting

18:00 - 20:30 Welcome Reception on the Jackson Vessel

General Schedule & Technical Sessions

Congress - Day 1 Monday, 10 October 2022

07:30 - 08:15	Technical Program Speakers Breakfast Meeting
07:30 - 08:15	VIP Breakfast Meeting - Opening Plenary Speakers
07:00- 17:00	Delegate Registration Opens
08:30 - 11:30	Opening Ceremony
11:30 - 18:00	Exhibit Hall Open
12:30 - 14:00	Lunch Break
14:00 - 17:30	- IDA Innovation Forum - Outback Theater Discussions
14:30 - 17:30	Technical Sessions
15:30 - 16:00	PM Refreshment Break
18:30 - 19:45	Cocktail Reception
19:45 - 22:00	Gala Dinner and Awards Ceremony

General Schedule & Technical Sessions

Congress - Day 2 Tuesday, 11 October 2022

07:30 - 15:00	Delegate Registration / Information Desk Open
07:30 - 08:15	Technical Program Speakers Breakfast Meeting
07:30 - 08:15	Leaders Summit Speakers Breakfast Meeting
08:30- 17:30	IDA Sponsor Forums & Panels
08:30 - 18:00	Exhibit Hall Open
08:30 - 17:30	Technical Program - 4 Parallel Sessions
09:00 - 17:30	Leaders Summit
10:30 - 11:00	Refreshment Break
13:00 - 14:00	Lunch Break
14:00 - 17:30	Outback Sessions (YLP, Sponsors)
15:30 - 16:00	Refreshment Break
18:30 - 20:30	Leaders Summit Reception (invitation only)

General Schedule & Technical Sessions

Congress - Day 3 Wednesday, 12 October 2022

07:30 - 08:15	Technical Program Speakers Breakfast Meeting
08:00 - 14:00	Information Desk Open
08:30 - 17:30	IDA Sponsor Forums & Panels
08:30 - 17:30	Technical Program - 4 Parallel Sessions
09:00 - 18:00	Exhibit Hall Open
10:30 - 11:00	Refreshment Break
13:00 - 14:00	Lunch Break
15:30 - 16:00	Refreshment Break
16:00 - 17:00	YLP Round Table Session
17:00 - 18:30	IDA Membership Meeting
18:30 - 19:30	Term 20 Board Meeting

General Schedule & Technical Sessions

Congress - Day 4 Thursday, 13 October 2022

07:30 - 08:15	Co-Chairs & Presenters of the Day Breakfast Meeting
08:30 - 15:00	Exhibit Hall Open
09:00 - 11:00	Information Desk Open
09:00 - 12:30	Technical Program
09:00 - 13:00	IDA Sponsor Forums & Panels
10:30 - 11:00	Refreshment Break
13:00 - 15:00	Closing Luncheon and Technical Program Awards/Innovation Forum Awards
15:30	Exhibit Hall Breakdown

Congress - Day 5 Friday, 14 October 2022

08:30 - 12:30	Sydney Desalination Plant Tour

Sponsorship Opportunities

Support Dynamic Knowledge Exchange at WC 2022

Sponsorship

Sponsors of the IDA World Congress enjoy global renown and influence among esteemed delegates from both the public and private sectors. Sponsors establish themselves as the pioneers in the field and foster connections with potential clients and partners. Enjoy unmatched brand recognition, product and services endorsement, and extensive media coverage all the while reinforcing your leadership within the desalination and water reuse industry. Our Sponsorship Program includes diverse and unique opportunities to promote your company during the World Congress Week, and many packages that include strategically located exhibition space.

To learn more, please contact us at: sponsorships@idadesal.org

Marketing Opportunities

Secure visibility for your company at the world's largest congress on desalination and water reuse with new advertising opportunities. Enjoy the advantages of advertising in the different communication platforms that IDA has developed for the IDA 2022 World Congress and boost your company's reputation. Professionals worldwide will learn more about your company, services, and products in the different online and offline formats.

IDA offers companies in the sector different formats and resources to advertise. For more information, don't hesitate to get in touch with sponsorships@idadesal.org.

For more information, please visit: https://wc.idadesal.org/become-a-sponsor/

04 TECHNICAL PROGRAM

Message from 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 withing 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 Intelligence, where we have seen equally impressive developments in our industry. We will hear form 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
Synauta

Mr. Fady Juez
Metito

Mr. Greg Wetterau
CDM Smith

Mr. Victor Verbeek
Toray

Technical 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
- Dr. Mohammad Wakil Shazad, Northumbria University
- Dr. HK Shon, University of Technology Sydney
- Mr. Miguel Angel Sanz, SUEZ
- Mr. Antonio Casanas, Dupont
- Mr. Rama Jagwani, PROJECX
- Mr. Ravid Levy, RLV Consulting
- Mr. Tariq Nada, ACWA Power
- Prof. Duc Long Ngheim, University of Technology Sydney
- Dr. Tony Fane, University of New South Wales
- Mr. Neil Palmer, Osmoflo

Topic Chairs

Mr. Thomas Altman
ACWA Power

Mr. Borja Blanco
Aqua Advise

Dr. Veronique Bonnelye
Suez

Dr. Emilio Gabbrielli
Independent

Dr. Veronica Garcia Molina
Dupont

Dr. Tony Fane
University of New South Wale

Prof. Stephen Gray
Institute for Sustainable Industries and Liveable Cities

Dr. Jantje Johnson
OrangeBoat

Prof. John Lienhard V
Massachusetts Institute of Technology (MIT)

Mr. Jim Lozier
Jacobs

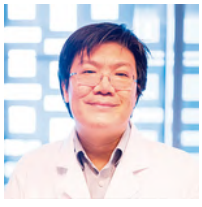
Mr. Neil Palmer
Osmoflo

Mr. Jonathan Pressdee
GHD

Mr. Kevin Prize
AWTT, LLC

Mr. Miguel Angel Sanz
SUEZ

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

Dr. Giancarlo Barassi
Aquatech International

Mr. Patrick Buchta
DuPont

Mr. Guillaume Clairet
H2O Innovation

Dr. Antonio Casañas
Dupont

Dr. Antonella DeLuca
OMYA International AG

Dr. Mike Dixon
Synauta

Dr. Heike Glade
University of Bremen

Dr. Belen 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. Maria Kennedy
UNESCO-IHE

Mr. Hiep L
Gradiant

Dr. Jorge Malfeito
ACCIONA

Dr. Roberto Mangano
ILF Consulting Engineers

Dr. Victor Monsalvo
Aqualia

Mr. Alistair Munro
Ryse Energy

Mr. Scott Murphy
Veolia

Dr. Abraham Negaresh
Thames Water

Prof. Long Ngheim
University of Technology Sydney

Mr. Juan Miguel Pinto
Energy Recovery, Inc

Dr. 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
SWCC

Dr. Mohammad Wakil Shazad
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. These 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

Oral Presentations

Day 1 Monday, 10 October 2022

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*

13:00 - 13:20

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

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

13:25 - 13:45

Continous Online Monitoring for Potable Water Network

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

13:50 - 14:10

Abundance of Microplastics from Human Activities to Water Environment

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

14:15 - 14:35

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

- *Presenter: Dr. Sylvie Baig, Head of Scientific Innovation, Suez International*

14:40 - 15:00

Hybrid RO, Softening & Chromium Cr(Vi) Remediation

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

15:05 - 15:25
Multiple Point Ozonation for Micropollutants Removal from Wastewater: A Full-Scale Demonstration from Denmark

- *Presenter: Dr. Ronan Guillossou, Process Design Engineer, Suez*

15:30 - 16:00 PM Break

16:00 - 16:20
PFAS Removal with Thin Film Nanocomposite Reverse Osmosis Membranes

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

16:25 - 16:45
Remove Oil Contamination of Seawater by Aerogels

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

16:55 - 17:15
Using RO for Removal of Pfas and Other Cecs from a Wastewater Impacted Surface Water

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

THEATER 2

1.1 Seawater Plant Cases 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*
- *Dr. Olga Sallangos, Plant Manager, Caramondani Desalination Plants LTD*

13:00 - 13:20
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*

13:25 - 13:45
Novel Perforated-Pillar Spacer for Fouling Mitigation and Enhanced Hydrodynamics in Spiral Wound Modules

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

13:50 - 14:10
O&M Start Up: Maintenance Challenges

- *Presenter: Mr. Oscar Rodriguez, O&M Desalination Middle East Maintenance Director, ACCIONA*

14:15 - 14:35
Performance Study of Sulfuric Acid Shocks in Reverse Osmosis Membranes

- *Presenter: Mr. Pedro Cortes Reyes, Plant Manager, ACCIONA*

14:40 - 15:00
Resilience Through Disasters - The Reinstatement and Subsequent Restart of the Sydney Desalination Plant

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

15:05 - 15:25
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*

15:30 - 16:00 PM Break

16:00 - 16:20
The Effectiveness of Ceramic Ultrafiltration as a Pre-Treatment for SWRO at Tuas Spring Singapore

- *Presenter: Ms. Carol Wang, Assistant Marketing Manager, Nanostone Water*

16:25 - 16:45
Tuas Desalination Plant

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

16:55 - 17:15
Water for Fodder Initiative: Use of Desalination to Provide Drought Relief in Australia

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

THEATER 3

1.3 Novel Approaches to Design and Operation

Topic Chair:

- *Dr. Veronica Garcia Molina, Global Marketing Manager Municipal, Dupont*

Session Chairs:

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

13:00 - 13:20

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

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

13:25 - 13:45

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

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

13:50 - 14:10

Energy Recovery Devices in Advanced and Emerging Reverse Osmosis Applications

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

14:15 - 14:35

Four Simple Innovations to Reduce CO2 Emissions on Large SWRO Plants

- *Presenter: Mr. Stephen Chesters, VP and Managing Director, H2O Innovation*

14:40 - 15:00

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

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

15:05 - 15:25

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

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

15:30 - 16:00 PM Break

16:00 - 16:20
Validation of a Method For Modeling Brine and Permeate PH in RO and NF Systems Reverse Osmosis Plants Performance Index

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

16:25 - 16:45
Advanced New RO Membrane Having High Rejection for Small Neutral Substance

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

16:55 - 17:15
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:

- *Dr. 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*

13:00 - 13:20
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*

13:25 - 13:45
Using Direct Contact Condenser in a Wastewater Treatment System for Removal of Organic Contaminants

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

13:50 - 14:10

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. Abraham Negaresh, Senior Process Engineer, Thames Water*
- *Mr. Alejandro Sturniolo, Global Head of Water Reuse & Strategic Partnerships, H2O Innovation*

14:15 - 14:35

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*

14:40 - 15:00

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*

15:05 - 15:25

Biofilm Cleaner Improves Effluent WWRO Membrane Plant Operation

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

15:30 - 16:00 PM Break

16:00 - 16:20

Effect of RO Pretreatment Process to Minimize Brine Water when Reuse of Effluent from Public Wastewater Treatment Plant

- *Presenter: Dr. Soonbuhm Kwon, Head Researcher, K-water*

16:25 - 16:45

Nutrient Recovery from Brackish Groundwater with Monovalent Selective Electrodialysis and Nanofiltration

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

16:55 - 17:15

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

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

Day 2 Tuesday, 11 October 2022

THEATER 1

1.2 Brackish Plant Cases Studies and Process Improvements

Topic Chair:

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

Session Chairs:

- *Dr. Antonio Casañas, Senior Key Account Manager, DuPont Water Solutions*
- *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: Dr. Guillem Gilabert Oriol, Technical Leader, DuPont*

08:55 - 9:15

The Influence of Feed Spacer in Reverse Osmosis Operation: A case Study with a New Development

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

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 Lienhard V, Professor, Massachusetts Institute of Technology (MIT)*

Session Chairs:

- *Prof. Maria Kennedy, Professor of Water Treatment Technology at UNESCO-IHE*
- *Dr. Victor Monsalvo, Head of Eco-efficiency Area, Innovation and Technology, Aqualia*

09:45 - 10:15
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
A Novel PV-T Powered Multi-Effect Distillation Technology: A Conceptual Analysis Through Modelling

- *Presenter: Dr. Jiajun Cen, CSO, Desolenator*

11:25 - 11:45
A Proposed Safe Design of the Reverse Osmosis System

- *Presenter: Mr. Simone Puzzo, Head of Water & Environmental Projects, 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:

- *Mr. Emilio Gabbrielli, Independent Water Advisor*

Session Chairs:

- *Mr. Hiep Le, VP - Process & Applications Engineering, Gradiant*
- *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. Sean McCagh, Engineer, RO-TEG*

13:05 - 14:30 Lunch Break

1.5 Planning for Major City, State and Country Desalination Upgrades

Topic Chair:

- *Mr. Emilio Gabbrielli, Independent Water Advisor*

Session Chairs:

- *Mr. Matt Politzi, Director Smart OpsDirector Smart Ops, Gradiant*
- *Mr. Scott Murphy, General Manager QLD, Veolia Australia & New Zealand*

14:30 - 14:50
Seawater Intakes Prefiltration for Resilient Projects

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

14:55 - 15:15
Desalination Responses for Greater Sydney Planned During the 2017-2020 Drought

- *Presenter: Mr. Francois Neser, 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 Chun Yuen Mak, Resident Site Engineer, Binnies Hong Kong Limited*

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

RO: History, Benefits & Limitations

- *Presenter: Dr. Val Frenkel, Vice President, GRELEY and HANSEN*

17:15 - 17:35

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:

- *Dr. Mohammad Wakil Shazad, Deputy Programme Leader, 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 - 9:15

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

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

09:20 - 09:40

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

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

09:45 - 10:15
Implementing Direct Potable Reuse for the City of Los Angeles
- *Presenter: Mr. Greg Wetterau, Vice President, CDM Smith*

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, CHD*

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:

- *Dr. Kevin Price, Principal, AWTT, LLC*

Session Chairs:

- *Mr. Alistair Munro, Founder and CEO, Ryse Energy*
- *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: Mr. Francois Neser, Senior Associate, Jacobs*

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

Low Temperature Process Studies for Spent Desalination Membranes

- *Presenter: Dr. Prasad TL Gupta, Senior scientific officer, BARC*

THEATER 3

9.2 Thermodynamics of Thermal Systems

Topic Chair:

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

Session Chairs:

- *Dr. Mohammad Wakil Shazad, Deputy Programme Leader, Northumbria University*
- *Prof. Seungkwan Hong, Professor, Korea 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 - 9:15

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

Pilot Testing of Advanced MED Technolgy for Seawater Desalination

- *Presenter: Prof. Abdel Nasser Mabrouk, Senior Scientist, Qatar Environment and Energy Research Institute*

09:45 - 10:15

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 - 11:00 AM Break

11:00 - 11:20

Heat-Driven Direct Reverse Osmosis for Emergency Seawater Desalination Powered by Solar Thermal Energy

- *Presenter: Dr. Peter Godart, Postdoctoral Associate, MIT*

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 Idca*

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:

- *Mr. Hoon Hyung, President, LG Water Solutions*
- *Prof. Seungkwan Hong, Professor, Korea University*

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. Christian Staaks, Leader Application Development, 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

Autopsies and Hydraulic Tests to Detect Main Problems of Reverse Osmosis Elements

- *Presenter: Dr. Joan Antoni Salvadó, Researcher, ACCIONA Agua*

14:55 - 15:15
Desalination and Anti-Biofouling Performance of Graphene and Iron Nanoparticle Coated Membranes

- *Presenter: Mrs. Julia Madueño, Student, Instituto Tecnologico de Sonora*

15:20 - 15:40
Development of Anti-Fouling High Pressure RO and Application to ZLD Process

- *Presenter: Mr. Tomotsugu Miyabe, Chief Researcher, Nitto Denko Corporation*

15:40 - 16:00 PM Break

16:00 - 16:20
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.*

16:25 - 16:45
Evolution of First Pass Membrane Configuration at a Large Scale Desalination Plant Membrane Design of a Subsea Desalination System

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

16:50 - 17:10
Membrane Design of a Subsea Desalination System

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

17:15 - 17:35
Next-Generation Membranes: Printing Polyamide Thin-Film Composite Membranes Using Electrospray Technique

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

THEATER 4

10.1 Pretreatment Processes Including Media Filtration, Ultrafiltration and other Methods

Topic Chair:

- *Mr. Jonathan Pressdee, US Water Market Sector LeaderUS Water Market Sector Leader, GHD*

Session Chairs:

- *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*
- *Mr. Patrick Buchta, EMEA Technical Service &Development Leader, DuPont*

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 - 9:15

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 - 10:15

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

- *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. Jan Radel, Technical Manager, DuPont Water Solutions*

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: Dr. Olga Ferrer, Desalination & New Technologies Area Manager, ACCIONA*

13:05 - 14:30 Lunch Break

14:30 - 14:50
Submerged UF Membranes Pre-Treatment at the Adelaide Desalination Plant Vs SWRO Projects at Tuas In Singapore

- *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. Guillermo Hijos Gago, O&M Desalination ME Director, 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: Mr. Rafael Candel, RO Manager, SACYR AGUA*

16:25 - 16:45

Washable Microfiber Disc Filter for Pretreatment

- *Presenter: Mr. Seokho Choi, CEO, PurifiedU*

10.2 Risks to Pretreatment Efficiency such as Harmful Algae Blooms

Topic Chair:

- *Mr. Jonathan Pressdee, US Water Market Sector LeaderUS Water Market Sector Leader, GHD*

Session Chairs:

- *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*
- *Mr. Patrick Buchta, EMEA Technical Service &Development Leader, DuPont*

16:50 - 17:10

The Perils of Using Chloramines for Pretreatment of Water Reuse RO

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

17:15 - 17:35

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

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

Day 3 Wednesday, 12 October 2022

THEATER 1

1.5 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)*
- *Dr. Antonio Casañas, Senior Key Account Manager, DuPont Water Solutions*

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 - 9:15

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 - 10:15

Dynamic Modelling of Membrane Distillation for the Reduction of Cost of Water by Using Optimal Control Methods

- *Presenter: Mr. Bart Nelemans, Director, Aquastill B.V.*

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 Uinversity*

11:25 - 11:45

High Recovery Membrane Brine Concentration

- *Presenter: Dr. Omkar Lokare, NPI Manager, Membrane Systems, Gradiant Corp.*

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

Multi-Barrier Process Purification for Contaminants of Emerging Concern Removal

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

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

Past, Current and Future Directions of Batch and Semi-Batch Reverse Osmosis

- *Presenter: Mr. Robert Huehmer, Senior Process Development Engineer, DuPont*

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

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*

16:25 - 16:45

Validation of Recycled UF Membranes for RO Pretreatment Process

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

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

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

17:40 - 18:00

BIM and the Lifecycle Digitization, the Steps Towards the Future

- *Presenter: Mr. Ignacio Garcia, BIM Project Manager, Aqualia*

THEATER 2

7.1 Environmental Impact Assessments

Topic Chair:

- *Dr. Jantje Johnson, Founding Partner, Orange Boat*

Session Chairs:

- *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*
- *Prof. Maria Kennedy, Professor of Water Treatment Technology at UNESCO-IHE*

08:30 - 08:50

Climate-Smart Engineering Package for Seawater Desalination Facilities -- CSSDF: Ultimate Climatic Security on Earth

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

08:55 - 9:15

Desalination Brine Discharges on the Model Mediterranean Seagrass Posidonia Oceanica: Implications for Stress Biology Research and Biomonitoring

- *Presenter: Mr. Fabio Blanco-Murillo, PhD Student, University of Alicante*

09:20 - 09:40

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

- *Presenter: Dr. Ivan Sola, Postdoctoral Researcher, University of Alicante*

09:45 - 10:15
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 Multifunctional Osmotic Battery for Desalination and Grid Energy Storage
- *Presenter: Dr. Qianhong She, Assistant Professor, Singapore Membrane Technology Centre (SMTC)*

11:25 - 11:45
A Thermodynamic Platform for Evaluating Energy Efficiency of Multifarious Desalination Processes
- *Presenter: Prof. KIm Choon NG, Professor, KAUST*

11:50 - 12:10
Membrane Autopsy and Targeted Cleaning with Specialty Cleaners
- *Presenter: Dr. Amit Sankhe, Product Development Manager, PWT Chemicals*

11.1 Big Data and Data Monitoring in Desalination

Topic Chair:
- *Dr. Tony Fane, Professor, 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
From Chaos to Harmony with Double Diamond Establishing a Modern Performance Function for Old Plants
- *Presenter: Mr. Sohaib Alsafh, Desalination Engineer, NOMAC*

13:05 - 14:30 Lunch Break

14:30 - 14:50
Plant Performance Optimization Using Smartopstm

- *Presenter: Dr. Jia Shin Ho, NPI Scientist, Gradiant International Holdings*

14:55 - 15:15
Transforming the Digital Space of Desalination Through the DuPont WaterApp, the FT-Norm PRO and the Enhanced Digital Tools

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

15:20 - 15:40 PM Break

12.1 Recovery of Minerals from Seawater

Topic Chair:

- *Mr. Felix Wang, VP of Marketing, Gradiant Membrane Systems*

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. Neil Palmer, Chief Technology Officer, Osmoflo*

17:15 - 17:35
Pilot Scale Demonstration of Desalination of Acid Mine Drainage Water from an Australian Coal Mine

- *Presenter: Mr. Robert Garner, Director (Water Supply), NEOM*

17:40 - 18:00
Salt-Mine: Mineral Extraction from Seawater Desalination Brine and Seawater Greenhouse Farming

- *Presenter: Dr. Pawel Krzeminski, Researcher, Norwegian Institute for Water Research (NIVA)*

THEATER 3

12.3 Novel Treatment Processes for Resource Recovery

Topic Chair:

- *Mr. Felix Wang, VP of Marketing, Gradiant Membrane Systems*

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 - 9:15
Brine Management from Desalination Plants for Salt Production Utilizing High Current Density Electrodialysis-Evaporator Hybrid System: A Case Study in Kuwait

- *Presenter: Dr. Bader Al-Anzi, Faculty member in Kuwait University, Visiting Professor in University of Alberta*

09:20 - 09:40

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

- *Presenter: Dr. Bader Al-Anzi, Faculty member in Kuwait University, Visiting Professor in University of Alberta*

09:45 - 10:15

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

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

10:20 - 11:00 AM Break

11:00 - 11:20

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

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

11:25 - 11:45

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

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

11:50 - 12:10

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*

12:15 - 12:35

RO Brine Treatment and Desalination by Modified EDR and LPRO

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

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

Sustainable Minimum Liquid Discharge for Inland Desalination

- *Presenter: Mr. Hiep Le, VP - Process & Applications Engineering, Gradiant*

11.2 Recovery of Minerals from Industrial Brines

Topic Chair:

- *Mr. Felix Wang, VP of Marketing, Gradiant Membrane Systems*

Session Chairs:

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

14:55 - 15:15

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

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

15:20 - 16:00 PM Break

16:00 - 16:20

Membrane Based Brine Concentration Solutions and Concentrated Brine Reuse Experiences

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

8.1 Project Delivery Models for Big-Desal

Topic Chair:

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

Session Chairs:

- *Dr. Antonio Casañas, Senior Key Account Manager, DuPont Water Solutions*
- *Ms. Naomi Jones, Integrated Design Director, McCarthy Building Companies*

16:25 - 16:45
Membrane Loader for the Reverse Osmosis Membrane Replacement at Gold Coast Desalination Plant

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

16:50 - 17:10
Desalination in Chile: A Specific Legal Framework is Needed to Encourage Investment and Alleviate Water Scarcity

- *Presenter: Mr. Pedro Pablo Ballivian, Lawyer, Barros & Errázuriz*

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, Independent 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, Gradiant Membrane Systems*

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 - 10:15
High-Pressure Membrane Processes with Energy Recovery: New Perspectives for Efficient Brine Concentration
- *Presenter: Dr. Christine Kleffner, Postdoc, TH Köln*

10:20 - 11:00 AM Break

11:00 - 11:20
Innovative Brine Concentration Membranes to Lower the Cost of MLD/ZLD Treatment
- *Presenter: Dr. Tina Arrowood, Research Scientist, DuPont Water Solutions*

11:25 - 11:45
Novel Antiscalant to Inhibit Ultra-High Calcium Sulfate Scale Formation in High Stress Conditions
- *Presenter: Mr. Dave Rose, Technical Development Specialist, 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
Pretreatment of Seawater Desalination Brines with Nanofiltration for Brine Concentration and Mining
- *Presenter: Mrs. Mariana Figueira, PhD student, Universitat Politècnica de Catalunya (UPC)*

12:40 - 13:00
Shifting the Economics of ZLD By Using Energy Recovery Devices
- *Presenter: Mr. Simon Bae, Technical Manager, Energy Recovery, Inc*

13:05 - 14:30 Lunch Break

14:30 - 14:50
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*

14:55 - 15:15
Overview of Reverse Osmosis Silica Scaling and Management

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

15:20 - 16:00 PM Break

9.1 Long Term Case Studies

Topic Chair:

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

Session Chairs:

- *Dr. Mohammad Wakil Shazad, Deputy Programme Leader, Northumbria University*
- *Prof. Seungkwan Hong, Professor, Korea University*

16:00 - 16:20
Developing a New and Novel Antiscalant as a Targeted Approach to Maintaining Thermal Plant Performance

- *Presenter: Mr. Dave Rose, Technical Development Specialist, Italmatch Chemicals*

16:25 - 16:45
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, Director of Strategic Development, SUEZ International*

Session Chairs:

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

16:50 - 17:10

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

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

1.3 Novel Approaches to Design and Operation

Topic Chair:

- *Dr. Veronica Garcia Molina, Global Marketing Manager Municipal, Dupont*

Session Chairs:

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

17:15 - 17:35

The Barrel: The Next Generation of Desalination Plants

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

1.1 Seawater Plant Cases Studies and Process Improvements

Topic Chair:

- *Mr. Miguel Angel Sanz, Director of Strategic Development, SUEZ International*

Session Chairs:

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

17:40 - 18:00

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

THEATER 1

1.1 Seawater Plant Cases Studies and Process Improvements

Topic Chair:

- *Mr. Miguel Angel Sanz, Director of Strategic Development, SUEZ International*

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 - 9:15

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 Strategy Manager - Desalination & Water Reuse Market, Danfoss*

09:45 - 10:15

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 - 11:0 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

Dry Seawater Reverse Osmosis Elements

- *Presenter: Dr. Maria Angeles Perez, TS&D Specialist, DuPont Water Solutions*

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

High Recovery Reverse Osmosis Water Challenging

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

THEATER 2

11.2 Artificial Intelligence in Desalination

Topic Chair:

- *Dr. Tony Fane, Professor, 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 Machine Learning Deployment to a Large Middle East Sea Water Reverse Osmosis Plant to Save Energy

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

08:55 - 09:15
A Theoretical Deep Neural Network Framework for Mapping Biofouling with Hydrodynamic Parameters
- *Presenter: Dr. Adnan Qamar, System Modeling and Data Specialist, KAUST*

09:20 - 09:40
Artificial Intelligent in Designing Water Desalinization Plant
- *Presenter: Mr. Essam Albishi, Head of Artificial Intelligence, Saline Water Conversion Corporation*

09:45 - 10:15
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:
- *Dr. Tony Fane, Professor, 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

Development of a Digital Monitoring System Solution - The Importance of the Dual Strategy Approach

- *Presenter: Mr. Mateus Nicoladelli, Digital Business Development & Product Manager, WEG*

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. Abraham Negaresh, Senior Process Engineer, Thames Water*
- *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 - 10:15

Implementing DesalitecTM Soar CCRO to Increase Efficiency and Reliability in Wastewater Reuse

- *Presenter: Mr. Korneel Caron, Business Development Manager DesaliTec™, 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:

- *Dr. Mohammad Wakil Shazad, Deputy Programme Leader, Northumbria University*
- *Dr. Heike Glade, Head of Research Group, University of Bremen*

11:25 - 11:45

O 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:

- *Dr. 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 - 12:35
Solution Alternatives Study for Fouling MBR Membranes in an Industrial Wastewater Treatment Plant Ice Cream Factory

- *Presenter: Mrs. Mercedes Calzada Garzón, Technical Specialist, Sacyr Agua*

THEATER 4

4.1 Zero Liquid Discharge and Drine 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 - 9:15
Innovative Solar Driven Tri-Hybrid Cycle for Future Sustainability

- *Presenter: Dr. Mohammad Wakil Shazad, Deputy Programme Leader, Northumbria University*

4.2 Improvements for Hybrid Renewable Projects

Topic Chair:

- *Dr. Kevin Price, Principal, AWTT, LLC*

Session Chairs:

- *Mr. Alistair Munro, Founder and CEO, Ryse Energy*
- *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 - 10:15

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

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*

4.3 Mega Projects Using Renewable Energy

Topic Chair:

- *Dr. Kevin Price, Principal, AWTT, LLC*

Session Chairs:

- *Mr. Alistair Munro, Founder and CEO, Ryse Energy*
- *Mr. Ties Venema, Group Vice President & Managing Director S3C, H2O Innovation*

12:15 - 12:35

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

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

04 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 nonmembers.

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.

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

05 IDA LEADERS SUMMIT

October 11, 2022

The effects of climate change, combined with the ever-growing demand for clean water across the globe, 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. Bringing into dialogue executives from various sectors including finance, legal, project development, public and private utilities, industrial water users, and technical solution providers, the Summit will provide a common space for meaningful conversations to happen. Addressed topics include how to be Water Positive, ESG Criteria and Ensuring Water Sector PPPs fit the 2030 UN Agenda, how water will drive hydrogen, capturing the value of water, how to innovate the water sector, net zero and water positive goals for industry, the looming water crisis and the effect on food security, and the water-energy-food nexus.

Schedule

09:00 - 09:15 **Welcome Remarks**

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

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**

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

Panelists:

- Dr. Adam Loch, Senior Lecturer and ARC DECRA Fellow with the Centre for Global Food and Resources, University of Adelaide, South Australia
- 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

11:00 - 12:00 **Panel 2: ESG Criteria and Ensuring Water Sector PPPs fit the 2030 UN Agenda**

Moderator: H.E. Eng. Khaled Al Quershi, CEO, SWPC, Saudi Arabia
Co-Moderator: Dr. Tariq Nada, Vice President, ACWA Power Water CTS, Saudi Arabia

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.

Panelists:
- Mr. Robert Bryniak, CEO, Golden Sands Management Consulting, UAE
- Mr. Roche Cheroux, CEO, Sydney Water, Australia
- Mr. Paul Sciuto, CEO , Monterey One Waer, 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**

Moderator: Mr. Carlos Cosin, IDA President, CEO Almar Water Solutions, Spain

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.

Panelists:
- H.E. Eng. Ahmed Mohammed Belajar Al Rumaithi, Under Secretary, Department of Energy, Abu Dhabi, UAE
- Dr. Juan Carlos de Pablo, Global Expert

13:00 - 14:30 **Lunch**

14:30 - 15:15 **Panel 4: Capturing the Value of Water**

Moderator: Mr. Gavin Von Tonder, Water 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**

15:45 - 16:00 **IDA Talk: Future of Industrial Water**
Mr. Devesh Sharma, CEO, Aquatech International, USA

16:00 - 16:15 **IDA Talk: Building an Innovative Future**
Mr. Marshall Davert, Head of Innovation, Stantec

16:15 - 16:30 **IDA Talk: The Red Book**
Mr. Eduardo Orteau, Counsel, Gómez-Acebo & Pombo Abogados, SLP, Spain

16:30 - 17:15 **Panel 5: Net Zero and Water Positive Goals for Industry**

Moderator: Mr. Fady Juez, Managing Director, Metito, UAE
Co-Moderator: Mr. Alejandro Sturniolo, Global Head of Water Reuse & Strategic Partnerships, H20 Innovation, Canada

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 represnting industrial water to discuss the various challenges and approaches to achieving this very important target.

Panelists:
- Mrs. Sandy Fabritz, Director, Water Strategy,Freeport-McMoRan, USA
- 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**
Mr. Carlos Cosin, CEO, Almar Water Solutions, Spain

18:30 - 20:30 **Cocktail Reception (Invite Only), Zephyr Bar - Hyatt Regency Sydney**

06 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.

Be part of the global innovation discussions for the future of water at the IDA 2022 World Congress and connect with the international water community! Registration is now open.

Space larger than 18 sqm is considered space only. Please follow the links below to book a 9 or 18 sqm shell scheme or a couple of 9 sqm options. You may also book advertising opportunities through our World Congress website wc.idadesal.org. For all other exhibition inquiries, please email exhibits@idadesal.org.

Why You Should Exhibit:

- Maximize your visibility among the more than 1,200 delegates from around the globe
- Expand your knowledge of current and future desalination, water reuse, and renewable energy technologies
- Collect qualified leads
- Reinforce relationships with your existing customers
- Meet and educate prospective customers
- Network with colleagues from around the world

Book Your Booth Today

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Saudi Water Partnership Company


METITO
Commitment to a Cleaner Environment


DUPONT


TORAY
Innovation by Chemistry


ACWA POWER
أكوا باور


Mutlaq Al-Ghowairi Contracting Co.


OSMOFLO


ALMAR
WATER SOLUTIONS


ROPV


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NEW POSSIBILITIES FOR WATER


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DÜCHTING
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filtration technologies


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07 OUTBACK THEATER

Outback Theater Schedule

Sponsored by OSMOFLO

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.

Moderator: Mr. Paul Sciuto, General Manager, Monterey One Water

Panelists:

- Mr. Michael Bourke, Director of Business Development, Wigen Water Technologies
- Mrs. Danielle Francis, Manager Liveable Communities, Water Services Association of Australia
- Mr. Greg Wetterau, Vice President, CDM Smith

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

15:30 - 16:00 Refreshment Break

16:00 - 17:30 IDA R&D Committee

IDA Innovation Forum

Moderators:
- Dr. Victor Monsalvo, Aqualia,
- Mrs. Olga Sallangos, Caramondani Desalination Plants

Selection Committee:
- Dr. Emilio Gabbrielli, Independent Consultant
- Mr. Rob Garner, Director (Water Supply) at ENOWA - NEOM
- Prof. John H Lienhard V, MIT
- Mr. Kevin Price, Independent Consultant
- Dr. Miriam Balaban, Secretary General at European Desalination Society
- Dr. Jauad El Kharraz, Executive Director, ICREE
- Dr. Masura Kurihara, Toray

Day 2 Tuesday, 11 October 2022

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

09:30 - 10:30 TORAY Innovation by Chemistry

10:30 - 11:00 Coffee Break

11:00- 11:30 ROPV

11:30 - 12:30 Leading Sustainable Desalination Now DUPONT

12:30 - 13:00 Stantec

13:00 - 14:30 Lunch Break

14:30 - 15:00	Aquatech
15:00 - 15:30	Nanostone Water Innovative Ceramic Membrane Technology in Water Treatment Applications
15:30 - 16:00	Refreshment Break
16:00 - 16:30	Water Corporation
16:30 - 17:30	YLP Forum

Day 3 Wednesday, 12 October 2022

08:30 - 09:30	Trends in Desalination Technology, is RO Mature Enough? Do we Have Another Sustainable Technology in the Horizon?
09:30 - 10:00	tedagua
10:00 - 10:30	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
15:00 - 15:30	Refreshment Break
15:30 - 16:30	Dams Development under the PPP Model & Future SWPC Projects
16:30 - 17:30	

Day 4 Thursday, 13 October 2022

08:30 - 09:00 SUEZ

09:00 - 10:00 **Panel 1 : Let's Hear from the Leading Water Reuse Facilities of the World**

Moderators:
- Mr. Guillaume Clairet, H2O Innovation, Canada
- Mr. Ufuk Erdal, Arcadis, USA

Panelists:
- Mr. Hubertus Cox, Los Angeles Sanitation District, USA
- Dr. Marcio José, Aquapolo Ambiental, Brazil
- Mr. Paul Sciuto, Monterrey One, USA
- Mr. MOH, Tiing Liang, PUB, Singapore

10:00 - 10:30 LG Chem

10:30 - 11:00 Coffee break

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

Pressure Vessel technology utilizing FRP with flexible grooved end couplings became the industry standard in the early 1980s. These systems, like those today, used stainless steel manifolds with tight tolerance support frames to form reverse osmosis skids. 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 from 20 Bar (300 PSI) to 83 Bar (1200 PSI) are reaching a critical period where many may be nearing the end of their service life. While the facilities they are installed in may continue operation for many years without issue, many facilities have pressure vessels that have seen 30 years of service.

For End Users whose pressure vessels are already exceeding the expected service life, guidance is required regarding an appropriate approach to the replacement decision, given the consequences of operating under an increased risk of age-related catastrophic failures. In addition, and actually more alarming, the industry has now had several catastrophic pressure vessel failures, not from age, but from lack of proper maintenance.

This panel discussion will contain End Users, System Integrators, Consultants along with Pressure Vessel and Coupling Suppliers to discuss the current state of the industry and to clearly identify the challenges ahead for the membrane system industry. We welcome you to join in the conversation.

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

Panelists:

- Sharon McNeil, Water Corp
- Con Sikallos, Jacobs
- Mark Donovan, GHD
- Sean McCagh, RO-TEG
- Guillaume Clairet, H20 /Piedmont
- Miriam Brusilovsky, IDE Technologies
- Olivier Bedague, Arisawa/ Protec

12:00 - 12:30 OriginWater 碧水源

13:00 - 14:00 Lunch break

08 INNOVATION FORUM

SPONSORS

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 Monday, October 10, 2022.

The agenda of the Innovation Forum will be presented soon.

09 YLP ROUND TABLE

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

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 advcements 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 perfromance. 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 Growthl

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 SHARMA

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. ABUSHABAN

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

10 CO-LOCATED EVENTS

Sydney Desalination Plant Tour

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.

SPONSOR SYDNEY DESALINATION PLANT

Please visit wc.idadesal.org on how to register or contact us at registration@idadesal.org.

IDA 2022 WORLD CONGRESS

SYDNEY, OCTOBER 9 - 13, 2022

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