



IDA **WORLD CONGRESS**
2019
Dubai, October 20-24

**CROSSROADS TO
SUSTAINABILITY**

— FINAL —

PROGRAM

ABSTRACT

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 45 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 increase energy efficiency, lower costs and promote environmental stewardship.

The IDA World Congress, held every two years, is the most prestigious and best attended venue for stakeholders engaged in all facets of the advanced water treatment industry. In addition, IDA conducts an IDA International Water Reuse and Recycling conference every two years, an Action4Good conference, and several specialized seminars, forums and workshops in different regions of the world.

We invite you to learn more by visiting www.idadesal.org

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WELCOME



Welcome from Congress Host, HE Saeed Mohammed Al Tayer, Managing Director and CEO of Dubai Electricity and Water Authority

I am honoured to congratulate His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE, and His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, for DEWA's success in hosting the International Desalination Association's (IDA) 2019 World Congress on water desalination in Dubai with the theme 'Crossroads to Sustainability.'

This international conference is coinciding with the 21st Water, Energy, Technology and Environment Exhibition (WETEX), which is held under the directives of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and under the patronage of HH Sheikh Hamdan bin Rashid Al Maktoum, Deputy Ruler of Dubai, Minister of Finance and President of DEWA.

I would like to take this opportunity to highlight our continuous efforts with the IDA for the success of this global event. We have a shared vision to promote energy efficiency, sustainability and environmental responsibility through the development and use of innovative desalination technologies. This shared vision supports the Sustainable Development Goals of the United Nations 2030, including 'Clean Water and Sanitation.'

At Dubai Electricity and Water Authority (DEWA) we strive to instil the UAE's global competitiveness, and achieve both happiness and a brighter future for us all. We at DEWA are working to implement the directives of our wise leadership, who have put innovation and sustainability as key strategic priorities. DEWA's strategy is aligned with the UAE Centennial 2071, the UAE Vision 2021, and the Dubai Plan 2021 to ensure a sustainable, happy future and support the UAE to be number one in all areas.

We strive to achieve the Dubai Clean Energy Strategy 2050, launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, to transform Dubai into a global centre for clean energy and green economy, and increase clean energy's share in Dubai's total power output to 75% by 2050. Accordingly, we have launched several projects and initiatives to improve efficiency and reduce carbon emissions, directly contributing to sustainable water desalination. We aim to make Dubai the world's lowest carbon footprint by 2050, achieve the Demand Side Management Strategy to reduce energy and water demand by 30% by 2030, and exceed the Carbon Abatement Strategy to reduce carbon emissions by 16% by 2021.

DEWA will present during this international conference its initiatives in water desalination and clean energy, and Dubai's efforts in water conservation, development, sustainability, and energy. We hope that both our joint efforts of DEWA and IDA will make this conference an ideal global platform for discussing and addressing these issues and sharing the best expertise and world-class practices.

I hope this important conference will bring many benefits to us all.

HE Saeed Mohammed Al Tayer

MD&CEO of DEWA

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority





Message from President of the IDA Board of Directors

It is with great pleasure I now welcome you to the 2019 IDA World Congress in Dubai.

To begin, I give my utmost thanks to the Dubai Electricity and Water Authority, for their consistent and generous support to host the new IDA World Congress in Dubai. DEWA is renowned for its commitment to sustainability and best practices, as well as for its leadership in raising awareness about protecting the environment and conserving natural resources. We are privileged to be working with them.

It is one of the great honors of serving as IDA's President to watch its World Congress come into being. But to me, the 2019 World Congress holds special promise. As this program shows, the Congress is true to its name, "Crossroads to Sustainability." Over the next four days, we will address technical innovation and market and industry challenges to ensure sustainable solutions to the problems of water scarcity and population growth. This is much needed in a period where climate change is highlighting these problems on a global scale. As of June 2018, 20,300 desalination plants were contracted around the world, and according to the IDA Water Security Handbook, this number is expected to double by 2030. Now is the time to examine our industry, its potential for growth, and its future.

The IDA World Congress provides the ideal opportunity to address these challenges. On behalf of the Board of Directors, I would like to sincerely thank the IDA Secretary General, as well as our dynamic IDA team, for their tireless work to bring us all together in Dubai.

And so, a warm welcome to IDA's most impressive World Congress yet!

Miguel Angel Sanz
IDA President



Welcome from the IDA Secretary General

On behalf of the IDA Board of Directors, it's a pleasure to welcome you to IDA's 2019 World Congress, generously hosted by His Excellency Saeed al Tayer, CEO and Managing Director of the Dubai Electricity and Water Authority (DEWA). This Congress continues the longstanding tradition of knowledge sharing both from a technical and business perspective. We offer His Excellency and the DEWA team our sincerest thanks and gratitude for their support and dedication to IDA, this Congress, and our broader mission to ensure water sustainability.

We are excited to introduce two new and key aspects of the Congress' program: the IDA Affiliate Majlis Forums and the IDA Leaders Summit. Inspired by the Middle Eastern custom of majlis discussions, the IDA Affiliate Forums will allow delegates from across the world to meet, network, and explore cutting-edge projects and technologies. The exclusive Leaders Summit will also provide a platform for new connections and networking, creating a unique space for high level engagement among business and public sector leaders in the industry.

In addition to these new and exciting features, IDA's World Congress features an outstanding peer-reviewed Technical Program, supervised by the Technical Program Chairmen and Committee, as well as a booming exhibition hall, specialized training, and tours of DEWA's Jebel Ali Power Station. And as always, networking opportunities abound during the Congress, with a Welcome Reception, Corporate Golf Day, Gala Dinner, YLP gathering, Membership Meeting, and Closing Luncheon.

It is my pleasure to extend a special thanks to the IDA President and Board of Directors, to all volunteer committee members and to the IDA team itself, whose dedication has brought this program to life. Of course, none of this would be possible without our wonderful sponsors: Almar Water Solutions, Metito, Dupont, ROPV, Kurita, ILF Consulting Engineers, Toray, Aqualia, BESIX, Veolia, Engie, Abengoa, SUEZ, Jacobs, ACWA Power, Acciona, Amane Advisors, Sete Saudia, AECOM, Majis Industrial Services, GS Inima, and Aqseptence Group.

A final thank you to all our media partners for helping us promote the World Congress, and to all who are on site providing coverage throughout the week.

From all of us at IDA, welcome to Dubai!

Sincerely,

Shannon K. McCarthy
IDA Secretary General



Message from Chairman of the Technical Program Committee

My dearest friends, colleagues, and members of IDA,

On behalf of the World Congress Technical Program Committee, it is with great pleasure that I welcome you to Dubai!

The technical program encompasses a superb collection of papers, addressing a wide range of important issues facing the industry. In "Industrial Applications of Desalination and Water Reuse," authors present truly groundbreaking research, tackling critical questions such as the ability of factories to power themselves with their own waste. "Renewable Driven Desalination," a timely two-part topic, focuses exclusively on solutions with renewable and sustainable foundations; and the sessions "Innovation" and "Foundations for Success: Policy, Finance, and Market Challenges," cut across sectors, incorporating a business and financial perspective into the program.

Inspired, influenced, and empowered by the spirit and vision of Dubai's leadership, I am proud to lead this program with the IDA President and Secretary General, and the co-chairs of the 2019 Technical Program Committee, Mr. Fady Juez, Professor In S. Kim, and Mr. Rachid Ghamroui, as well as our DEWA experts, Mr. Nasser Lootah and Mr. Yousef Jebriil. I also thank the multi-cultural, gender, and age-balanced WC 2019 Technical Program Committee. All have worked tirelessly to make the 2019 World Congress truly unique.

And finally, I thank our wonderful IDA team and all delegates and authors for their innovative ideas, suggestions, and challenges they bring to Dubai this year.

Sincerely,

Imad Makhzoumi

World Congress 2019 Technical Program Chairman



SCHEDULE & GENERAL INFO

SCHEDULE & GENERAL INFORMATION

About the World Congress

Dubai World Trade Center – Dubai, United Arab Emirates

The **Dubai World Trade Centre (DWTC)** is a [skyscraper](#) in [Dubai, UAE](#) which was erected in 1979. It is a purpose-built complex for events and exhibitions. The building is featured on the 100 [dirham bank note](#).

With over 1.3 million square feet of covered exhibition and event space, comprising 21 halls and over 40 meeting rooms across 3 floors, Dubai World Trade Centre hosts over 500 events annually. In 2015, the venue held 396 trade events and welcomed over 2.74 million visitors.

World Congress 2019 Event App

The IDA Event App, powered through EventMobi, is the ideal place to arrange your one-on-one business meetings, schedule your day-to-day activities, and receive updates about Congress programming. Login using your registration email and build your profile so other delegates know who you are and where to reach out. You can then build your personalized schedule by clicking on the (+) button next to “Sessions,” “Forums,” and other events shown on the main agenda page. After that, you are all set! Use the app to set up meetings, browse the agenda, exhibitor profiles, technical sessions, keynote speakers, and things to do to make the most of your time in Dubai!

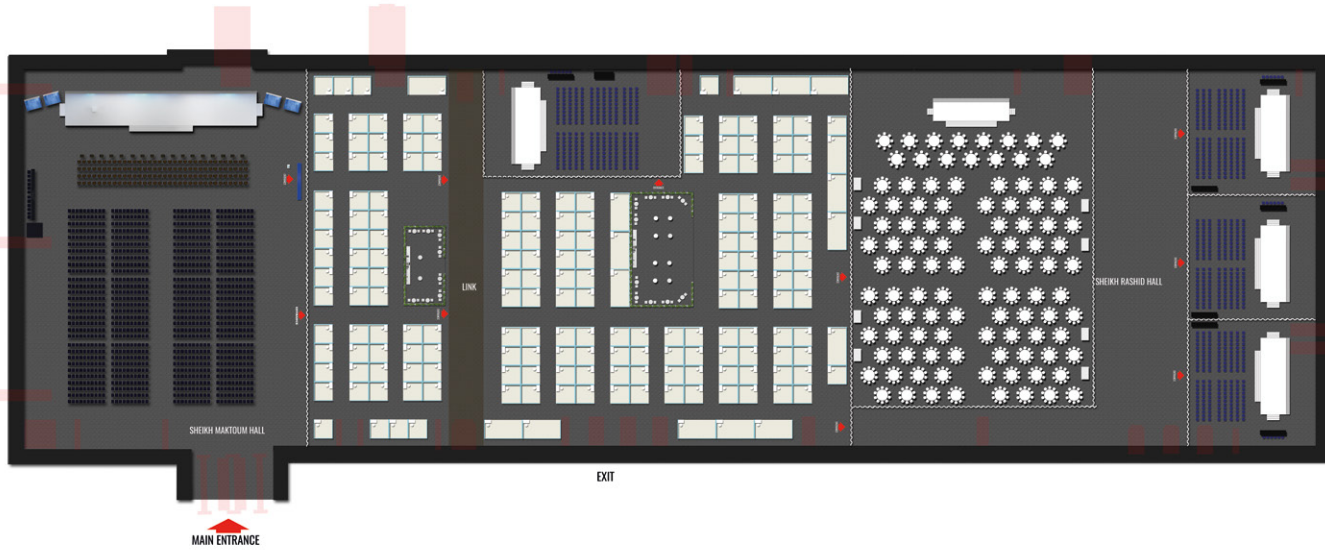


MASTER SCHEDULE FOLDDOUT

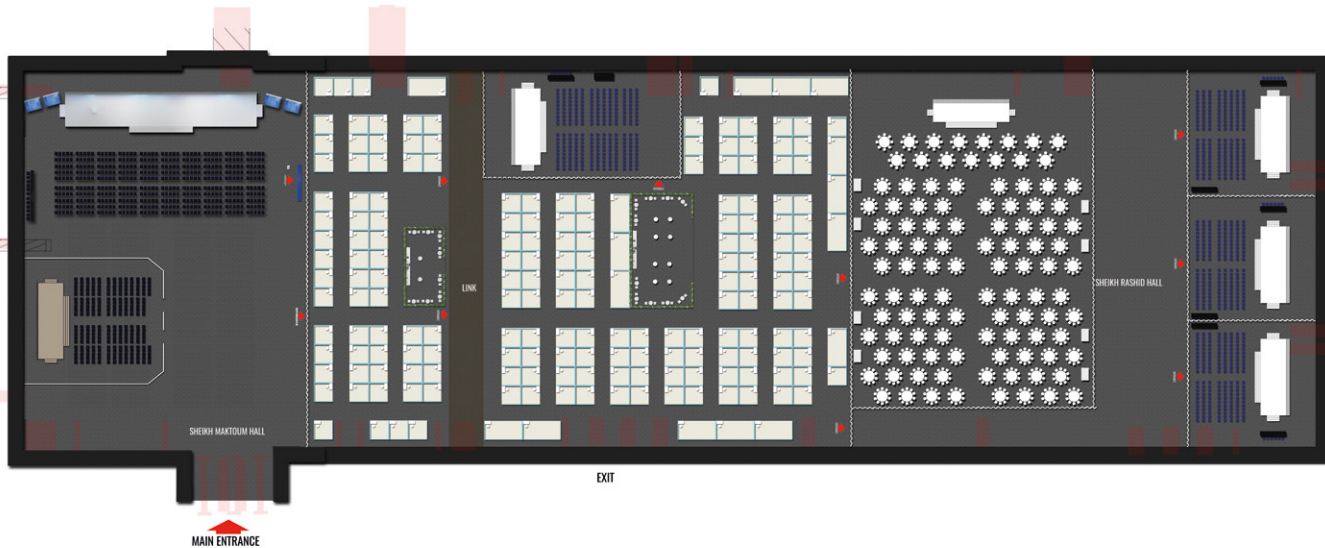
Congress Technical Session Schedule and Events

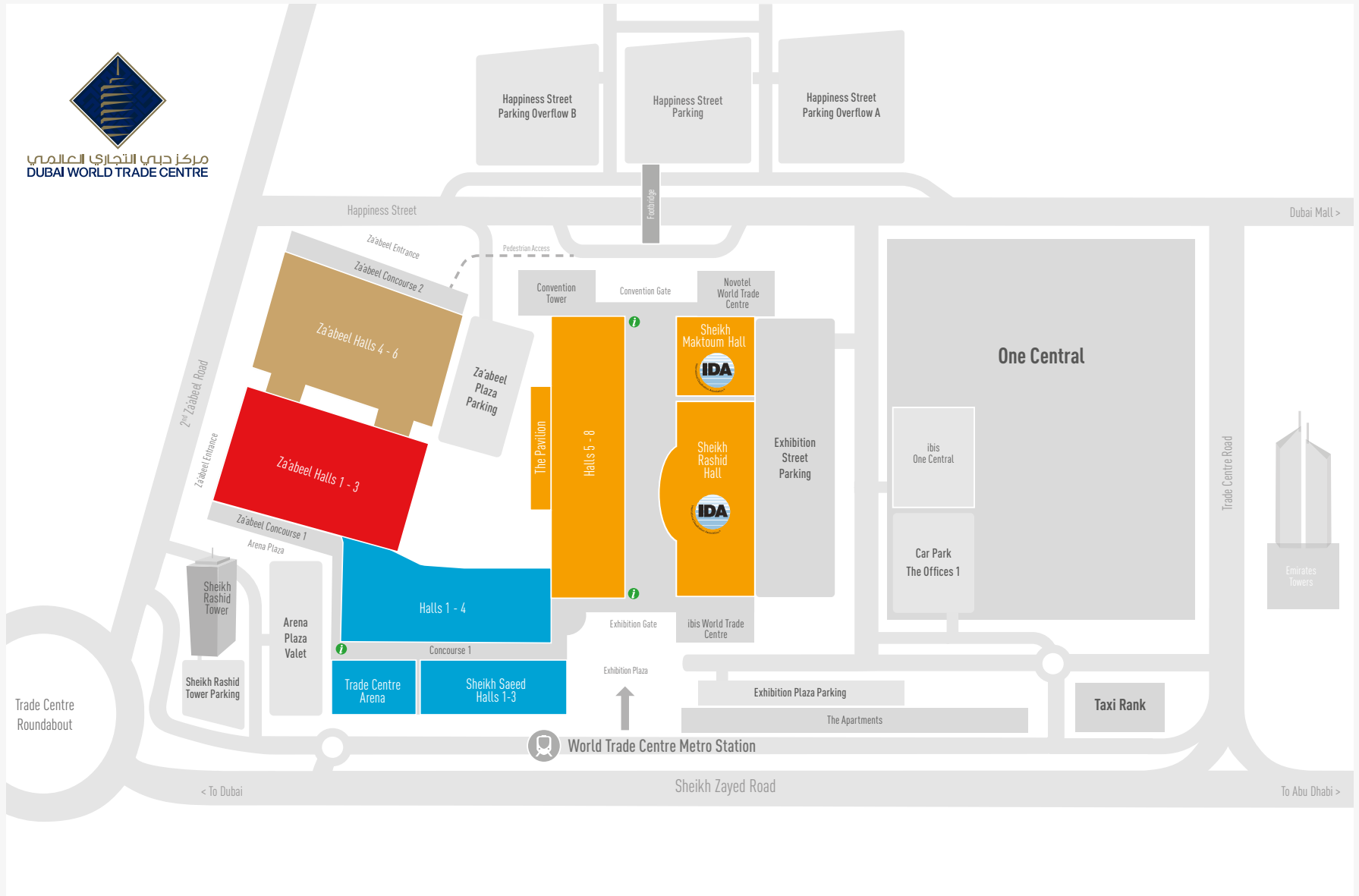
Sunday 20-oct-19		Monday 21-oct-19	TIME	Tuesday 22-oct-19	Wednesday 23-oct-19	TIME	Thursday 24-oct-19		
 RO Specialist Certification Course 8.00-17.00  "Crossroads to the Greens" Corporate Golf Day 08.00 	7.30 - 8.30	Co-Chairs & Presenters of the Day Meeting: Lunch Area	7.30 8.30	Co-Chairs & Presenters of the Day Meeting: Lunch Area	Co-Chairs & Presenters of the Day Meeting: Lunch Area	7.30 8.30	Co-Chairs & Presenters of the Day Meeting: Lunch Area		
		Room 1 Room 2 Room 3 Room 4 Plenary Hall		Room 1 Room 2 Room 3 Room 4 Plenary Hall	Room 1 Room 2 Room 3 Room 4 Majlis Theater / Plenary Hall		Room 1 Room 2 Room 3 Room 4 Majlis Theater / Plenary Hall		
	9.00-12.05	Opening Day Plenary Panel Discussions and Keynotes	8.50 9.10	S-2.6 S-6.1 S-3.1 S-8.1	S-2.5 S-2.11 S-2.8 S-4.3	9.10 9.30	S-9.1 S-2.9 S-7.1 S-10.2		
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		10.10 10.30	5 5 5 5	5 5 5 5	5 5 5 5				
			Refreshment Break 10.30-11.00					Refreshment Break 10.30-11.00	
	12.05-13.00	VIP World Congress Opening Ceremony and Official Opening of Exhibition Hall	11.10 11.30	6 6 6 6	6 6 6 6	11.00 11.20	5 5 5 5		
				11.30 11.50	7 7 7 7	7 7 7 7	11.20 11.50	6 6 6 6	
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	13.00-14.30	Lunch	Lunch 13.00-14.00					Closing Ceremony Luncheon and Awards	
		S-2.4 S-2.10 S-5.1 S-4.1 Plenary Hall	S-1.2 S-2.2 S-4.2 S-10.1				S-1.1 S-2.3 S-2.7 S-2.1		
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					17.00 17.20	7 7 7 7			
			Refreshment Break 15.30 - 16.00						
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	16.20 16.40	5 5 5 5	16.20 16.40	6 6 6 6	16.40 17.00	7 7 7 7			
	16.40 17.00	6 6 6 6	17h00-18h00	YLP Committee Meeting		17h00-18h00	IDA Membership Meeting		
	17.00 17.20	7 7 7 7				17h00-18h00			
		Leaders with Community 14.30-17.30 - Plenary Hall				19h30-22h30	Gala Dinner		
Welcome Reception 18.00-20.00 - DWTC 									

Day 1



Day 2, 3, 4





Awards

Presidential, Lifetime, and Emerging Leaders Achievement Awards

The following awards recognize individuals who continue to make outstanding contributions to IDA and the water reuse industry generally. Well-known throughout the field, these awards are some of the highest honors available in the desalination industry.

- **Presidential Awards**

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 award will be bestowed by the IDA President, Mr. Miguel Angel Sanz.

- **Lifetime Achievement Award**

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.

Technical Program 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.

The categories are defined as follows:

- **State-of-the-Art**, for the 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.
- **Innovation**, for the best paper that presents an innovative desalination or water reuse technology that has reached the commercial stage but is not yet considered to be widely adopted.
- **Research and Development**, for the 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 that could lead to game-changing discoveries or technologies once at maturity.
- **Environment and Sustainability**, for the best paper that presents a desalination or water re-use research topic, case study, technology or any project in such a way that it demonstrates how desalination can be applied while respecting the environment and applying the best sustainability principles.
- **Young Leader**, for the best paper presented by a member of the IDA Young Leaders Program demonstrating scientific originality on a topic that is relevant and important to the fields of desalination and/or water reuse.

Delegate-Voted Awards

In addition, delegates at the World Congress cast their votes for winners in four categories, and these awards are given during the World Congress Closing Ceremony:

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

Industry and Sustainability Awards

INDUSTRY AWARDS

At the World Congress Gala Dinner, IDA bestows the below awards on leaders throughout the water reuse industry. Winners are selected by members of the Industry and Sustainability Awards Committee, using a weighted percentage score that is applied to each award.

The categories are defined as follows:

- 1. Best Public-Private Partnership**
- 2. Most Innovative Utility in a Least Developed Country**
- 3-5. Best Private Company (Latin America-Caribbean, Asia-Pacific, and MENA Regions)**
- 6. Most Innovative Company**
- 7. Best Disruptive Technology**
- 8. Most Progressive Disruptive Policy in Water Reuse**
- 9. Best Performing Company in Water Reuse**

SUSTAINABILITY AWARDS

At the World Congress Gala Dinner, IDA bestows the below awards on leaders throughout the water reuse industry. Winners are selected by members of the Industry and Sustainability Awards Committee, using a weighted percentage score.

The categories are defined as follows:

- 1. The Best Nature-Based Solutions Technology**
- 2. The Most Resilient City**
- 3. Most Innovative Water – Energy Nexus Project**
- 4. Best SDG 6 Implementator**
- 5. Best Corporate Social Responsibility Project**

IDA Training Courses

Training Opportunity 1 and 2: Reverse Osmosis Specialist Opportunities



Exclusively being offered at the IDA World Congress in Dubai are two Reverse Osmosis training sessions. The two-day training and three-day certification class is instructed

by world-renowned training organization, David H. Paul, Inc. a leader in high-tech water treatment training.

These seminars provide the fundamental knowledge and proficiencies required to work in any reverse osmosis (RO) water treatment plant, including:

- Overviews of which industries RO is used
- What the typical process flows are in different industries
- The subsystems of a RO water treatment plant, like air, water and power
- The equipment used, such as tools, valves, instruments, pumps, etc.
- Overviews of RO, RO units and pretreatment

Reverse Osmosis Specialist I Certification

Trainer: Dick Youmans of David H.Paul, Inc.

Classroom Portion Online
+ 2 days
Hands-On Training

19-20 October 2019
8:00a-5:00p

Reverse Osmosis Specialist I Certification

Trainer: Dick Youmans of David H.Paul, Inc.

3-Days Classroom &
Hands-On Training

21-23 October 2019
8:00a-5:00p

Training Opportunity 3: Pretreatment, Cleaning, and Troubleshooting of Reverse Osmosis Systems: Seminar

Instructor: Mrs. Jantje Johnson, Founder, OrangeBoat



This one day seminar dives deeply into the design, operation and maintenance of RO systems. It is important that participants have a fundamental understanding of RO, pretreatment and operation and it is a good opportunity for RO system operators and designers to gather information, ask questions and solve problem.

The seminar includes:

- **Pretreatment:** technologies and chemicals
- **RO design:** RO membrane elements, RO configurations, membrane replacement strategies. A proprietary reference tool will be introduced that aids in selecting/screening membrane elements from different membrane manufacturers.
- **Cleaning:** Effective cleaning of reverse osmosis systems is dependent on several key parameters. These key parameters include RO system design, membrane selection, cleaning skid design, operation, membrane chemicals and cleaning procedures. Information on these key parameters and their impact on effective cleaning will be discussed in detail. Cleaning case studies of plants will be presented.
- **Troubleshooting:** Different methods are discussed that can be used to identify and locate the performance problem in the RO system. Hard copy handout is provided.

19 October 2019

Time: 08:00 - 17:00



About the Leaders Summit

The Leaders Summit responds to a growing need in the desalination and water reuse industry, the need to speak across sectors in order to effectively enact sustainable solutions. The effects of climate change, combined with the ever-growing demand for clean water across the globe, underscore the urgency of sustainable water solutions. At IDA, we understand the only way to create these solutions is by breaking down walls and building crossroads across industries and sectors to enlist the entire global community in our mission.

The Leaders Summit takes us one step closer to paving these crossroads. Bringing into dialogue executives from various sectors including finance, legal, project development, public and private utilities, and technical solution providers, the Summit will provide a common space for meaningful conversations to happen. Addressed topics include successful partnerships between the public and private sectors, recent market trends and their effect on financial investment and project funding, and how innovations in advanced water treatment solutions will perform across industries.

IDA Affiliate Majlis Forums and Corporate Sponsor Forums

IDA Affiliate Majlis Forums

The IDA Affiliate Majlis Discussions add an exciting new aspect to the World Congress. These forums will take place from 8.30-17.00 Wednesday and 8.30-13.00 Thursday during the general program and are open to all registered delegates. The inspiration for these Discussions is the concept of “majlis” a popular word in the Middle East. The word majlis, literally means “a place to sit and discuss” and in an effort to bring that spirit to the World Congress, IDA is creating a space for conversation among experts and colleagues within the program. They provide an opportunity for IDA’s growing network of affiliates to showcase what is going on in the water sector both regionally and nationally, along with, important game-changing projects or technologies in which their members are involved.

IDA Gold and Silver Corporate Sponsor Forums

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. This year, IDA will feature its sponsors in the IDA Gold and Silver Sponsor Forums, taking place from 8.30-13.00 on Wednesday during the general program. Come witness our sponsors’ unparalleled industry leadership and technological innovation as companies showcase their finest contributions to the desalination and water reuse industry.

Networking and Membership Events

In addition to the refreshment breaks and lunches, the Congress includes a number of networking opportunities bringing together delegates in an atmosphere of camaraderie. Connect with former and current colleagues and engage in dialogue with new business contacts throughout the Congress week at any of these events.

Welcome Reception-18:00-20:00, Sunday, October 20, 2019 (Dubai World Trade Center)

As the first social event kicking off the World Congress week, this is an excellent opportunity to connect early on with the IDA community, colleagues, new business contacts and schedule meetings in the days to come.



Membership Meeting, 17:00-18:00, Wednesday, October 23, 2019 (Dubai World Trade Center, Room Dubai E & F, Level 1)

IDA warmly invites all its current members to the IDA Membership Meeting and encourages all its members to gather, network, and share their thoughts for the association and the membership year ahead. On the agenda will be an introduction to the New Board, presentation of the Comptrollers Report, Upcoming Events, and Special Projects.

Gala Dinner, 19:30-22:30, Wednesday, October 23, 2019 (Dubai World Trade Center)

The IDA Gala Dinner will bestow Industry and Sustainability awards to leaders throughout the water reuse industry. This award presentation is new to the World Congress.

Closing Gala Luncheon, 13:00-15:00, Thursday, October 24, 2019 (Dubai World Trade Center)

Guest will gather after the conclusion of the Congress activities to celebrate the success of the 2019 World Congress, the Presidential Lifetime and Emerging Leaders Achievement Awards and the technical Program Awards. Look back with us at the activities of the Congress week, meet the new IDA President and Board members and share in the excitement of the upcoming 2020 World Congress.

YLP Meeting, Tuesday October 22, 18.00- 20.00, Dubai E + F


YLP members will gather from across the world to network, connect, and discuss upcoming program and initiatives.



MONDAY

MONDAY

Monday Oct 21 Schedule

07:30-17:30	Registration Open - <i>Outside Sheikh Makhtoum Hall</i>
07:30-08:30	Technical Program Speakers Breakfast - <i>Lunch Area</i>
07:30-08:45	VIP Speaker Meeting
08:00-17:00	RO Specialist Certification: Three-Day Classroom Hands-On Training - <i>Dubai A+B</i>
09:00-09:10	Morning Greetings - <i>Plenary Hall</i>
09:10-10:10	Honoring Lifetime Achievements and Progressive Visions, IDA Honorary Council Panel Discussion
10:10-11:10	Women Leaders in the Water Industry, Panel Sponsored by Acciona
	
11:15-11:30	Keynote, "Off-World: Above and Beyond" Dr. Adriana Marais, Director, Foundation for Space Development
11:30-11:45	Keynote, "Progress Towards a Sustainable Water Sector in Kingdom of Saudi Arabia" HE Khaled Al Qureshi, CEO, Saudi Water Partnership Company
11:45-12:00	Keynote, "Circular Water Economy: Crossroads to Sustainability," Dr. Gonzalo Delacamara, Global Water Economist, EU
12:05-13:00	VIP World Congress Opening Ceremony and Official Opening of Exhibition Hall
13:00-14:30	Lunch
14:25-17:30	Technical Sessions





14:30-14:45	Leaders with Community Welcome Remarks - <i>Plenary Hall</i>
14:45-15:00	Keynote, HE Julio César Kosaka, Vice Minister, Construction and Sanitation, Peru
15:00-15:15	Keynote, HE Simon Kiprono Chelugui, Cabinet Secretary Ministry of Water and Sanitation, Kenya
15:15-15:30	Keynote, Mr. Peter Joo Hee NG, Chief Executive, Singapore PUB
15:30-16:00	Coffee Break
16:00-17:30	Panel Discussion: Survival or Sustainability: The Role of Advanced Water Treatment Solutions

Opening Day Keynotes and Panelists



11:15 – 11:30

Keynote: Off-World: Above and Beyond

Dr. Adriana Marais, Director, Foundation for Space Development South Africa



11:30 – 11:45

Keynote: Progress Towards a Sustainable Water Sector in KSA

HE Khaled Al Qureshi, CEO, Saudi Water Partnership Company Kingdom of Saudi Arabia



11:45 – 12:00

Keynote: Circular Water Economy: Crossroads to Sustainability

Dr. Gonzalo Delacamara, Global Water Economist, EU Spain

09:10-10:10, Plenary Hall

Honoring Lifetime Achievements and Progressive Visions, IDA Honorary Council Panel

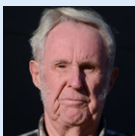
Description: The IDA Honorary Council is a recognition of notable individuals who have extensive industry expertise, outstanding contribution to the global water sector marking milestone achievements in the field of advanced water treatment and who have devoted their time to the Association over the years. As Ambassadors for the Association, they intensify IDA's engagement with the world's policy-makers to encourage research, innovation, and education to ensure sustainable solutions to growing water scarcity challenges. Members of the Honorary Council will share their experience on the evolution of the industry and their views on creating water sustainability.

Moderator:



Shannon McCarthy
IDA Secretary General

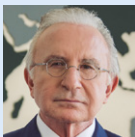
Panelist:



Dr. Jim Birkett
Past President of IDA



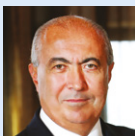
Eng. Ghassan Ejeh
Past President and Director of IDA



Hon. Mutaz Ghandour
Past Director of IDA



Dr. Masaru Kurihara
Director of IDA



H.E. Fouad Makhzoumi
Past President and Director of IDA



Dr. Emilio Gabbrielli
Past President and Current Comptroller of IDA

10:10-11:10, Plenary Hall
**Women Leaders of Our Industry,
Panel Discussion**

Description: This panel consists of an ensemble of some of the most dynamic women leaders in the global water industry. Panelists will share their thoughts on building a successful career, sharing their greatest accomplishments and challenges. They will also provide their outlook on what lies ahead and how the industry can become an incubator to encourage more women to pursue careers in the water sector.

Moderator:



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

Panelist:



**Hon. Fatma
Awale**
Minister
of Water,
Mombasa
County



**Dr. Miriam
Balaban**
Secretary
General of
European
Desalination
Society



**Ms. Annelise
Avril**
CEO of SUEZ
Consulting



**Ms.
Menatalla
Sadek**
CEO of
Hassan Allam
Utilities



**Mrs. Hattie
Wang**
Vice President
of Global
Markets, ROPV

Leaders Summit: Leaders with Community **Plenary Hall**

14:30 – 14:45

Welcome Remarks



14:45 – 15:00

Keynote

HE Julio César Kosaka, Vice Minister, Ministry of Construction and Sanitation, Peru



15:00 – 15:15

Keynote

HE Simon Kiprono Chelugui, Cabinet Secretary, Ministry of Water and Sanitation, Kenya



15:15 – 15:30

Keynote

Mr. Peter Joo Hee NG, Chief Executive, Singapore PUB

15:30 – 16:00

Coffee Break, Exhibition Hall

Leaders Summit: Leaders with Community **Plenary Hall**

16:20 – 17:20

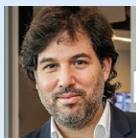
Survival or Sustainability: The Role of Advanced Water Treatment Solutions

Description: The panel will discuss global water challenges including mounting environmental change, water pollution, the draining of non-replenishable major aquifers, and increasing clean water demands. As these obstacles must be confronted, these experts will share how their organizations are tackling these multifaceted issues within an international, multilateral context and through product and engineering innovation.



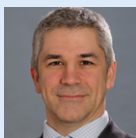


Moderator:



Dr. Gonzalo Delacamara | Global Water Economist, European Union and European Parliament Special Advisor and Water Policy Advisor to FAO, UNDP, UN-Water, World Bank Group

Participants:



Mr. Jean François Nogrette
CEO of Veolia Water Technologies



HE Khaled Al Qureshi
CEO, Saudi Water Partnership Company



Mr. Carlos Cosin
CEO, Almar Water Solutions



Mr. Nasser Lootah
EVP G (P&W) of DEWA



Mr. Peter Joo Hee NG
Chief Executive, PUB Singapore



Mr. Jose Diaz Caneja
CEO, Acciona



Dr. Corrado Sommariva
CEO, SWPC Italy

17:00 – 17:30

Q&A and Closing Remarks

Participants:



Mr. Miguel Angel Sanz
President, IDA



Mr. Imad Makhzoumi
World Congress Technical Program Chairman

Opening Day Technical Program Sessions

Monday, October 21 (Afternoon) 14.30-17.30

Session 2.4, Pre-Treatment (Part 1) Room 1

- **Session Chair:** Mr. Alejandro Sturinolo (Fluence Corp)
- **Co-Chairs:** Mr. Guillaume Clairret (H2O Innovation) and Mr. Yahya Alzafin (DEWA)

Session 2.10, Material, Corrosion, and ERD Room 2

- **Session Chair:** Mr. Greg Wetterau (CDM Smith Inc.)
- **Co-Chair:** Mr. Ziad Salibi (Future Pipe Industries)

Session 5.1, From Mineral Recovery to Remineralization Room 3

- **Session Chair:** Dr. Mike Dixon (Synauta Inc.)
- **Co-Chairs:** Mr. Rodrigo Segovia (Almar Water Solutions) and Mr. Rama Jagwani (PROJECX)

Session 4.1, Thermal Desalination (Part 1) Room 4

- **Session Chair:** Dr. Corrado Sommariva (SWPC)
- **Co-Chair:** Dr. Muhammad Wakil Shahzad (KAUST) and Mr. Nebojsa Simic (DEWA)

Session 2.4: Pre-Treatment (Part 1)

Monday, October 21, 14.25-17.30, Room 1

Session Chairs and Co-Chairs

- Mr. Alejandro Sturinolo (Fluence Corp)
- Mr. Guillaume Clairet (H2O Innovation)
- Mr. Yahya Alzafin (DEWA)

Oral Presentations

SUBSURFACE INTAKES FOR DESALINATION FEEDWATER SUPPLY: LESSONS LEARNED FROM TWO SLANT WELL TEST SITES AND LONG-TERM PUMPING PROGRAMS IN CALIFORNIA

Country of Attribution: USA

Authors: Mr. Brian Andrew Villalobos, Dr. Dennis Edgar Williams

Presented by: Mr. Brian Andrew Villalobos

MAXIMIZING MF/UF MEMBRANE LIFE - EXCEEDED INDUSTRY EXPECTATIONS THROUGH A UNIQUE FOULANT MANAGEMENT STRATEGY

Country of Attribution: USA

Authors: Mr. James C. Lozier, Mr. Srinivas Jalla, J.C. Lan

Presented by: Mr. James C. Lozier

SURVEY COMPARING UF AND CONVENTIONAL PRE-TREATMENT FOR THE CONTROL OF BIO-FOULING IN SEAWATER DESALINATION

Country of Attribution: United Kingdom

Author: Mr. Graeme K. Pearce

Presented by: Mr. Graeme K. Pearce

MONITORING FOULING POTENTIAL ALONG THE PRE-TREATMENT OF AN SEAWATER REVERSE OSMOSIS DESALINATION PLANT

Country of Attribution: The Netherlands, France, Switzerland

Authors: Almotasembellah Abushaban, Sergio G. Salinas-Rodriguez, Delia Pastorelli, Brigitta Saul, Jan C. Schippers, Maria D. Kennedy

Presented by: Mr. Almotasembellah Abushaban, Ms. Delia Pastorelli

HOW TO SELECT THE CORRECT CARTRIDGE ELEMENT TO ACHIEVE THE BEST RO MEMBRANE PERFORMANCE AND LOWEST OPERATING COSTS?

Country of Attribution: Saudi Arabia, Cyprus

Authors: Nadia M. Farhat, Christodoulos Christodoulou, Panayiotis Placotas, Johannes S. Brouwenvelder, Olga Sallangos

Presented by: Olga Sallangos

COMBINATION OF ULTRAFILTRATION AND CERAMICS ADSORPTION FILTER AS PRETREATMENT FOR SWRO DESALINATION PROCESS

Country of Attribution: Saudi Arabia, Cyprus

Authors: Keiko Nakano, Jingwei Wang, Lee Nuang Sim, Tzyy Haur Chong, Yusuke Kinoshita, Kenichiro Sekiguchi

Presented by: Keiko Nakano

ADVANCED CHARACTERISATION OF ORGANIC MATTER TO REDUCE FOULING AT A FULL SCALE SEAWATER REVERSE OSMOSIS PLANT

Country of Attribution: Australia

Authors: Amos Branch, Alberto de Miguel, Sharon McNeil, Thomas Ransome, Farah Shiran

Presented by: Sharon McNeil

Oral Reserves

NUMERICAL SIMULATION OF THE FLOW AND STRUCTURE OPTIMIZATION OF A 2D DISSOLVED AIR FLOTATION TANK

Country of Attribution: China, Australia

Authors: Yun Long, Bo Xiao, Peter Kerscheberger, Yu Fu

Presented by: Mr. Peter Kerscheberger

Session 2.10: Material, Corrosion, and ERD

Monday, October 21, 14.25-17.30, Room 2

Session Chairs and Co-Chairs

- Mr. Greg Wetterau (CDM Smith Inc.)
- Mr. Ziad Salibi (Future Pipe Industries)

Oral Presentations

SECURING QUALITY IN PROCUREMENT, MANUFACTURE & FABRICATION OF SUPER DUPLEX STAINLESS STEEL PARTS FOR SWRO APPLICATIONS

Country of Attribution: USA

Author: Dr. Glenn Byrne

Presented by: Dr. Glenn Byrne

**MATERIAL SELECTION OF A TYPICAL SWRO
DESALINATION PLANT FOR THE ARABIAN GULF
ENVIRONMENT**

Country of Attribution: United Arab Emirates

Authors: Eng. Fayyaz Muddassir Mubeen, Dr. Corrado Sommariva, Mr. Roberto Mangano, Mr. Mohamed El-Zaemey

Presented by: Eng. Fayyaz Muddassir Mubeen

**MULTI STAGE MULTI TURBO CONFIGURATION FOR
HIGH RECOVERY IN SWRO: PILOT TEST RESULTS**

Country of Attribution: USA

Authors: Dr. Giancarlo Barassi, Mr. Rafal Alshukri, Ms. Alisha Cooley, Mr. Mike Gisclair, Mr. Ger-ald Ross, Mr. Haytham Ahmed Eli Okelejas

Presented by: Dr. Giancarlo Barassi, Mr. Rafal Alshukri

**PRESSURE EXCHANGER TECHNOLOGY, YESTERDAY,
TODAY AND TOMORROW**

Country of Attribution: Canada, Peru, USA

Authors: Mr. Erik Alfredo Tynes, Eng. Rolando Bosleman, Mr. David Kim-Hak

Presented by: Mr. Erik Tynes

**RETROFIT OF BRACKISH WATER DESALINATION
PLANT FROM DOUBLE STAGE TO TRIPLE STAGE
USING TURBO CHARGER**

Country of Attribution: Egypt

Authors: Mr. Mohamed-AbdelWahab-Swidan, Mr. Amr-Mohamed-Seoudy

Presented by: Mr. Mohamed-AbdelWahab-Swidan

**BRINE RECIRCULATION AND OTHER HIGH RECOVERY
SWRO PROCESS INNOVATIONS UTILI-ZING ISOBARIC
ENERGY RECOVERY DEVICES**

Country of Attribution: USA

Authors: Eng. Rolando A. Bosleman, Mr. Jeremy G. Martin

Presented by: Eng. Rolando A. Bosleman

**YESTERDAY'S SOLUTION = TODAY'S PROBLEM,
TODAY'S SOLUTION = TOMORROW'S PROBLEM:
INTEGRATED WATER MANAGEMENT FOR
AUTHORITIES**

Country of Attribution: United Arab Emirates

Authors: Eng. Asam Amin Al Mulla, Mr. Rolf Richard Keil

Presented by: Eng. Asam Amin Al Mulla

Poster Presentations

**MOST SUITABLE AND PROVEN MATERIAL FOR HIGH
PRESSURE PIPING IN THE ARABIAN GULF SEAWATER
ENVIRONMENT**

Author: Eng. Fayyaz Muddassir Mubeen

Presented by: Eng. Fayyaz Muddassir Mubeen

Session 5.1, From Mineral Recovery to Remineralization

Monday, October 21, 14.25-17.30, Room 3

Session Chairs and Co-Chairs

- Dr. Mike Dixon (Synauta Inc.)
- Mr. Rodrigo Segovia (Almar Water Solutions)
- Mr. Rama Jagwani (PROJECX)

Oral Presentations

AN ECOSYSTEM FOR POWERING SEAWATER DESALINATION WITH RECYCLED ALUMINUM

Country of Attribution: USA

Author: Mr. Peter Godart, Daysia Douglas, Douglas Hart

Presented by: Mr. Peter Godart

THE USE OF NATURAL MINERALS FOR THE REPLENISHMENT OF MAGNESIUM INTO DRINKING WATER FOLLOWING DESALINATION

Country of Attribution: Switzerland

Authors: Mr. Nicholas Charles Nelson, Dr. Antonella De Luca, Mr. Anthony Bouton, Jochen Kallenberg

Presented by: Dr. Antonella De Luca

REVERSE OSMOSIS PERMEATE POST TREATMENT WITH LIMESTONE CONTACTORS. THEORETICAL AND EXPERIMENTAL DATA COMPARISON FOR EBCT CALCULATION

Country of Attribution: Italy

Author: Mr. Giorgio Migliorini

Presented by: Mr. Giorgio Migliorini

REMINERALIZATION: PERFORMANCE IMPROVEMENT AT THE ADELAIDE DESALINATION PLANT

Country of Attribution: Australia

Authors: Eng. Rimon Gergawy, Eng. Javier Artal Gonzalez

Presented by: Eng. Rimon Gergawy, Eng. Javier Artal Gonzalez

SEWAGE TO HIGH PURITY TREATED EFFLUENT WITH NO LIQUID WASTE- BIOPIPE AND LOW TEMPERATURE DISTILLATION

Country of Attribution: United Arab Emirates

Authors: Mr. Nassem Zaya, Mr. Mohammed Harron, Mr. Murat Ege

Presented by: Mr. Naseem Zaya

**OPTIMIZATION OF PROCESS DESIGN MODELING AT A
LARGE SEAWATER TREATMENT FACILITY IN MIDDLE
EAST – A CASE STUDY**

Country of Attribution: USA, United Arab Emirates

Authors: Dr. Ersin Kasirga, Mr. Ahmed Ifthikar

Presented by: Dr. Ersin Kasirga

Poster Presentations

**EXPERIMENTAL ANALYSIS ON DISSOLUTION OF
CALCITE GRANULE AND POWDER FOR REMIN-
ERALIZATION**

Authors: Dr. Yu Chang Kim, Mr. Jeong Woo Lee, Se Jin
Jeong

Presented by: Dr. Yu Chang Kim

Session 4.1, Thermal Desalination (Part 1)

Monday, October 21, 14.25-17.30, Room 4

Session Chairs and Co-Chairs

- Dr. Corrado Sommariva (SWPC)
- Dr. Muhammad Wakil Shahzad (KAUST)
- Mr. Nebojsa Simic (DEWA)

Oral Presentations

DEWA EXPERIENCE IN LIFETIME EXTENSION OF MSF DESALINATION EVAPORATORS

Country of Attribution: United Arab Emirates

Authors: Mahmoud Baniabbasi, Giovanni Guidi, Luigi Del Rio

Presented by: Mr. Mahmoud Banibbasi

TECHNICAL AND OPERATIONAL FEATURES OF NEW GENERATION OF SAUDI MSF DESALINATION PLANTS APPLICATIONS

Country of Attribution: Saudi Arabia

Author: Professor Ibrahim S. Al-Mutaz

Presented by: Professor Ibrahim S. Al-Mutaz

LOW TEMPERATURE DISTILLATION (LTDIs) DESALINATION APPLICATION WITHIN A REFINERY COMPLEX USING WASTE HEAT APPLICATIONS

Country of Attribution: United Arab Emirates

Authors: Mr. Mohammed Haroon Siyech, Mr. Naseem Zaya

Presented by: Mr. Mohammed Haroon Siyech

A PRACTICAL MANUAL ON SEA WATER DISTILLATION" BY FRANK NORMANDY (1909) –A 110-YEAR-OLD BOOK REMINDS US OF OUR TASK

Country of Attribution: USA

Author: Dr. James D. Birkett

Presented by: Dr. James D. Birkett

NEW COST EFFECTIVE ANTISCALANT SOLUTION FOR MED DESALINATION UNITS WORKING IN SEVERE CONDITIONS

Country of Attribution: Italy

Authors: Mr. Daniele Ciferri, Mr. Marino Mastria

Presented by: Mr. Daniele Ciferri

**SCALE INHIBITION UNDER CRITICAL WETTING
CONDITIONS IN MULTIPLE-EFFECT DISTILLERS FOR
SEAWATER DESALINATION**

Country of Attribution: Germany

Authors: Dr. Heike Glade, Mr. Maximilian Waack, Mr.
Stephan Nied

Presented by: Dr. Heike Glade

**IMPROVED FILM FLOW IN MULTIPLE-EFFECT
DISTILLATION PLANTS TO REDUCE SCALE FOR-
MATION**

Country of Attribution: Germany

Authors: Dr. Heike Glade, Mr. Maximilian Waack, Mr.
Stephan Nied

Presented by: Mr. Maximilian Waack



TUESDAY

TUESDAY

Tuesday Oct 22 Schedule

07:30-17:30 Registration Open

07:30-08:30 Technical Program Speakers Meeting
- *Lunch Area*

07:30-08:45 Leaders Summit Speaker Breakfast
Meeting - *Majlis Room*

08:00-17:00 RO Specialist Certification: Three-Day
Classroom Hands-On Training - *Dubai
A + B*

09:00-17:30 Exhibition Hall Open

09:00-17:30 Leaders Summit (Special Registration
Required) - *Majlis Theater*

08:50 -17:00 Technical Sessions

10:30-11:00 Coffee Break

13:00-14:00 Lunch

15:30-16:00 Coffee Break

18:00-20:00 YLP Committee Meeting - *Dubai E + F*

Leaders with Leaders

On October 22nd, the Summit will host its exclusive “Leaders with Leaders” program. This series of panel discussions and keynote addresses will provide the opportunity for high-level interaction with distinguished experts in finance, market development, public and private sector partnerships, and technology innovation.



Ms. Shannon McCarthy
Secretary General, IDA



Mr. Miguel Angel Sanz
President, IDA



Mr. Jose Diaz Caneja
CEO, Acciona



Mr. Rachid Ghamraoui
Vice President, Besix ME



Mr. Peter Joo Hee NG
Chief Executive, PUB
Singapore



HE Mohammed Abdullah Mahrouqi
Chairman
DIAM, Oman



HE Simon Kiprono Chelugui
Cabinet Secretary,
Ministry of Water and Sanitation,
Kenya



Mr. Chiba Seiji General Manager,
Environment Infrastructure Department,
Marubeni



Mrs. Arantxa Mencia
Business Development Director, Almar
Water Solutions



Mr. Rami Ghandour
Managing Director,
Metito



Mr. Richard Parris
Partner, Clifford Chance



Mr. Frederic Claux
Head of GCC and Pakistan, Engie



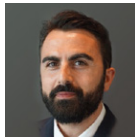
Mr. Shaheed Ali
Principal: Infrastructure, Public Sector & TMT Finance, Nedbank



Mr. Silvio Oliva
CEO, Fisia Italimpianti



Mr. Fady Juez
Managing Director, Metito



Mr. Roberto Mangano
Managing Director, ILF



Mr. Olivier Crasson
General Manager, Besix



Mr. Pedro Almagro
CEO, Abengoa's Water and Energy Division



Mr. Nasser Lootah
EVP G (P&W) of DEWA



Mr. Thierry Noel
CEO, Amane Advisors



Mr. Bastien Simeon
Global Water Infrastructure Lead, KPMG



HE Mr. Khaled Al Qureshi
CEO, Saudi Water Partnership Company



Mr. Carlos Cosin
CEO, Almar Water Solutions



Mr. Teruyuki Miyazaki Senior Vice President Investments and Infrastructure, Brookfield Asset Management



Mr. Rafael Pérez Feito
 Director,
 International
 Operations,
 Aqualia



Mr. Didier Sachot
 BOT/PPP
 Activity Vice
 President,
 Suez



Mr. Devesh Sharma
 Managing
 Director,
 Aquatech



Mr. Jonathan Pressdee
 Senior Vice
 President
 Drinking and
 Industrial
 Water, AECOM



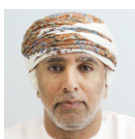
Mr. Vetrivel Dhagumudi
 Global Water
 Program
 Leader,
 Kimberly-Clark



Mr. Thamer Al-Mutairi
 President,
 SAWEA



Mr. Hubert Fleming
 Head, Water
 Strategy,
 Anglo
 American
 Mining



Mr. Ahmed Al Mazrouy
 CEO Majis
 Industrial
 Services



Robert G. Owens
 Business
 Development
 Operations
 Manager,
 Bechtel



Professor John H. Lienhard V
 ALJ Professor,
 Founding
 Director of the
 ALJ Water and
 Food Systems
 Lab at MIT



Mr. Alistair Munro
 CEO,
 PROJEX



Dr. Masaru Kurihara
 Senior
 Scientific
 Director,
 Toray



Mr. Vincent Baujat
 CEO, Sidem



Mr. Dave Johnson
 Technical and
 Marketing
 Director BD,
 Kurita



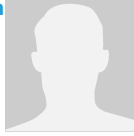
Mr. Alexander Lane
Commercial Director
EMEA, Dupont



Mrs. Hattie Wang
Vice President of Global Markets, ROPV



Dr. Mike Dixon
CEO and Founder,
Synauta Inc.



Eng. Abdullah Alabdulkariem
Deputy Governor SWCC

09:00 - 09:15

Welcome Remarks



Ms. Shannon McCarthy,
Secretary General, IDA



Mr. Miguel Angel Sanz,
President, IDA

09:15 - 09:30

Keynote

09:30 - 10:30

Public Utilities 2.0, More with Less

10:30 - 11:00

Coffee Break

11:00 - 12:00

Expanding the Public Private Partnership Model to New and Existing Markets

Sponsored by Almar Water Solutions



ALMAR[®]
WATER SOLUTIONS

12:00 – 13:00

Trends in the EPC Market: Is Competing on Cost vs Quality Sustainable?

13:00 – 14:30

Lunch

14:30 – 15:30

Bankability of Mega Water Projects: How to Increase the Appetite of Lenders and Financial Development Institutions?

Sponsored by SUEZ



15:30 – 15:45

Coffee Break

15:45 – 16:45

The Industrial Water – Energy Nexus: Are we on the Right Path?

Sponsored by AECOM | Sponsored by Majis Industries



16:45 – 17:45

Innovation in the Advanced Water Treatment Market

17:45

Closing remarks

Tuesday Technical Program Sessions

Tuesday, October 22 (Morning) 8.50-13.00

Session 2.6, RO Plant Case Studies Room 1

- **Session Chair:** Dr. Seungkwan Hong (Korea University)
- **Co-Chair:** Ms. Naomi Jones (Evoqua)

Session 6.1: Industrial Applications of Desalination and Water Reuse Room 2

- **Session Chair:** Mrs. Blanca Salgado (DuPont Water Solutions)
- **Co-Chairs:** Dr. Emilio Gabrielli (Toray) and Mr. Joan Galtes (Talis)

Session 3.1, Brackish Water Desalination Room 3

- **Session Chair:** Mr. Neil Palmer (Tonkin Consulting)
- **Co-Chairs:** Mr. Val S. Frenkel (Greeley and Hansen) and Mr. Shawn Meyer-Steele (H2O Professionals)

Session 8.1, Environment Room 4

- **Session Chair:** Professor Stephen Gray (Victoria University)
- **Co-Chairs:** Professor Maria Kennedy (UNESCO-IHE) and Mr. Emmanuel Gayan (SAUR)

Session 1.2: Desalination, Water Reuse, and Our Wider World (Part 2) Room 1

- **Session Chair:** Dr. Domingo Zarzo (Valoriza Agua)
- **Co-Chair:** Mr. Sylvain Donnaz (SUEZ)

Session 2.2: RO Fouling and Biofouling (Part 1) Room 2

- **Session Chair:** Ms. Veronique Bonnelye (SUEZ)
- **Co-Chairs:** Dr. Guoling Ruan (Institute of Seawater Desalination and Multipurpose Utilization) and Mr. Vasu Veerapaneni (Black & Veatch)

Session 4.2, Thermal Desalination (Part 2) Room 3

- **Session Chair:** Mr. Tariq Nada (ACWA Power)
- **Co-Chairs:** Dr. Osam Hamed (SWCC) and Dr. David Warsinger (Purdue University)

Session 10.1, Renewable Driven Desalination (Part 1) Room 4

- **Session Chair:** Ms. Chiara Fabbri (ILF Consulting Engineers)
- **Co-Chairs:** Ms. Monica Boodhan (University of Trinidad and Tobago) and Mr. Kishor Nayar (MIT – not in attendance)

Session 2.6: RO Plant Case Studies

Tuesday, October 22, 8.50-13.00, Room 1

Session Chairs and Co-Chairs

- Dr. Seungkwan Hong (Korea University)
- Ms. Naomi Jones (Evoqua)

Oral Presentations

THE BARREL, A DISRUPTIVE DESIGN FOR REVERSE OSMOSIS DESALINATION PLANTS

Country of Attribution: France

Authors: Mr. Vincent Baujat, Mr. Jean-Baptiste Thubert

Presented by: Mr. Vincent Baujat

PROSPECTS FOR IMPROVING THE PERFORMANCE OF SWRO PLANTS BY IMPLEMENTING AD-VANCED NF/RO TECHNIQUES: PART-II

Country of Attribution: Saudi Arabia

Authors: Mr. Abou Abdellatif, Mr. Ahmed Al-Amoudi, Dr. Mohammed Farooque, Mr. Troy N. Green, Gaheishi Ali Aldowis

Presented by: Dr. Mohammed Farooque

FIRST SUCCESSFUL SWRO REFERENCE IN KHAFJI GULF

Country of Attribution: Saudi Arabia, United Arab Emirates, Japan

Authors: Mr. Hussein AlMughrabi, Mr. Abdallah Alzyoud, Mr. Mansour Tahir, Masahide Tanigu-chi, Takashi Kurai, Takuro Shishiyama

Presented by: Mr. Hussein AlMughrabi

SHUQAIQ-IWPP RO PLANT OPTIMIZED OPERATION DURING HIGH SDI SEASON

Country of Attribution: Saudi Arabia

Authors: Mr. Ahmad AlAsam, Fwazi AlSaidi, Hassan Tharwan, Ahmad AlHaidah

Presented by: Mr. Ahmad AlAsam

BORON REJECTION WITH ADVANCED MEMBRANE TECHNOLOGY IN THE MEDITERRANEAN SEA, NORTH AFRICA AND CANARY ISLANDS

Country of Attribution: Spain

Authors: Eng. Alvaro Lagartos, Mr. Eugene Rozenbaum, Mr. Metin Oruc, Hoon Hyung, Mr. Da-vid Sacco, Andres Rodriguez

Presented by: Eng. Alvaro Lagartos

**DESIGN, CONSTRUCTION AND OPERATION OF TWO
LARGE SCALE DESALINATION PLANTS IN THE
ARABIAN GULF: LESSONS LEARNED**

Country of Attribution: The Netherlands

Author: Mr. Frans Knops

Presented by: Mr. Frans Knops

**EMERGENCY WATER SUPPLY – WATER TALES OF
THREE CITIES**

Country of Attribution: Australia

Author: Mr. Hiep Le

Presented by: Mr. Hiep Le

**MAMELLES DESALINATION PLANT, DAKAR,
SENEGAL: ONE OF THE FIRST SWRO PLANTS IN
WEST AFRICA**

Country of Attribution: Senegal, Japan, France

Authors: Eng. El Hadji Ada Ndao, Takayuki Hagihara,
Mohamed Lassoued, Gwenaelle Fleury, Magnus
Holmer

Presented by: Eng. El Hadji Ada Ndao, Ms. Gwenaelle
Fleury

**EL YOSR SEA WATER REVERSE OSMOSIS
DESALINATION PLANT 80,000 M3 /DAY**

Country of Attribution: Egypt

Authors: Mr. Amr-Mohamed-Seoudy, Mr. Mohamed-
AbdelWahab-Swidan, Hatem-Mohamed-Seoudy,
Ibrahim El Agawany

Presented by: Mr. Ibrahim El Agawany

QIPP RO PLANT UP-GRADATION

Country of Attribution: Saudi Arabia

Authors: Mr. Muteb Al-Thubaiti, Mr. Abdullah Al-Jubran,
Mr. Mufarreh Sharafi

Presented by: Mr. Muteb Al-Thubaiti

Session 6.1: Industrial Applications of Desalination and Water Reuse

Tuesday, October 22, 8.50-13.00, Room 2

Session Chairs and Co-Chairs

- Mrs. Blanca Salgado (DuPont Water Solutions)
- Dr. Emilio Gabbrielli (Toray)
- Mr. Joan Galtes (Talis)

Oral Presentations

CORROSION RESISTANT AND LOW FOULING POLYMER HEAT EXCHANGERS FOR THERMAL WATER TREATMENT

Country of Attribution: Germany, Spain

Authors: Ing. Thomas Orth, Dr. Heike Glade, Sebastian Schilling, Diego-Cesar Alarcon-Padilla, Patricia Palenzuela Ardila, Guillermo Zaragoza

Presented by: Ing. Thomas Orth

DECISION SUPPORT SYSTEM FOR OPTIMIZING MULTI-PROCESS WASTEWATER TREATMENT PLANTS IN THE OIL&GAS SECTOR

Country of Attribution: Spain

Authors: Mr. Jorge Juan Malfeito, Clara Sanroma, Carlos Bayona, Nil Llopart, Dr. Olga Ferrer, Dr. Ana Jimenez-Banzo

Presented by: Mr. Jorge Juan Malfeito

CHALLENGES IN REUSING OILFIELD PRODUCED WATER - INDUSTRIAL SCALE FIELD DEMONSTRATION OF CERAMIC MEMBRANE AND REVERSE OSMOSIS SYSTEM

Country of Attribution: Japan

Authors: Eng. Shun Hanawa, Masayo Shinohara, Satoru Mima, Fuyuhiko Ishikawa, Arata Naka-mura, Kazuyuki Kawamura

Presented by: Eng. Shun Hanawa

PERFORMANCE OF HYDRANAUTICS ULTRAFILTRATION AND RO MEMBRANES ON INDUSTRIAL WASTEWATER RE-USE APPLICATION

Country of Attribution: United Arab Emirates

Authors: Mr. Roman Boda, Dr. Craig Bartels

Presented by: Mr. Roman Boda

FIVE YEARS SUCCESSFUL OPERATION HISTORY FOR SEVERE RECYCLE INDUSTRIAL WASTE WATER

Country of Attribution: Saudi Arabia, United Arab Emirates, Japan

Authors: Mr. Abdallah Alzyoud, Mr. Hussein AlMughrabi, Ahmad Yousef, Majeb Al Oudyani, Masahide Taniguchi, Takashi Kurai, Takuro Shishiyama

Presented by: Mr. Abdallah Alzyoud

REPOWERING FACTORIES WITH ITS OWN WASTE

Country of Attribution: The Netherlands

Author: Mr. Ronald Van't Oever

Presented by: Mr. Ronald Van't Oever

LIFE-DESEACROP. DESALINATED SEAWATER FOR ALTERNATIVE AND SUSTAINABLE SOILLESS CROP PRODUCTION

Country of Attribution: Spain

Authors: Mercedes Calzada Garzón, Patricia Terrero Rodríguez, Elena Campos Pozuelo, Rafael Buendía Candel, Domingo Zarzo Martínez, Jose F. Maestre, Belen Gallego, Bernardo Gorriz, Victoriano Alvarez, Patricia Membrive, Diego Valera

Presented by: Mercedes Calzada

EXPERIENCE OF OPERATING UNIQUE WORLD CLASS INDUSTRIAL WASTEWATER TREATMENT PLANT, CHALLENGES & LESSONS LEARNED

Country of Attribution: Saudi Arabia

Authors: Mr. Ghazi Ozair, Mr. Salman A. Al-Zahrany

Presented by: Mr. Salman A. Al-Zahrany

REVERSE OSMOSIS AND ION EXCHANGE TECHNOLOGIES FOR PRODUCTION OF ULTRAPURE WATER: ORGANIC FOULING ISSUES AND MITIGATION

Country of Attribution: Australia

Authors: Dr. Kezia Kezia, Mr. David Reynolds, Mr. Justin Doyle

Presented by: Dr. Kezia Kezia

NEAR ZLD UTILIZATION OF MINE SALINE WATER IN AN INTEGRATED MEMBRANE EVAPORATIVE SYSTEM

Country of Attribution: Poland

Authors: Dr. Marian Turek, Krzysztof Mitko, Ewa Laskowska, Agata Jakobik-Kolon

Presented by: Dr. Marian Turek

Poster Presentations

PREMATURE FAILURE OF UNPROMOTED NON-THIXOTROPED CROSS-LINKED FRP TANK FROM FENTON TREATMENT SYSTEM – A CASE STUDY

Authors: Mr. Ghazi Ozair, Mr. Salman A. Al-Zahrany

Presented by: Mr. Ghazi Ozair

Session 3.1, Brackish Water Desalination

Tuesday, October 22, 8.50-13.00, Room 3

Session Chairs and Co-Chairs

- Mr. Neil Palmer (Tonkin Consulting)
- Mr. Val S. Frenkel (Greeley & Hansen)
- Mr. Shawn Meyer-Steele (H2O Professionals)

Oral Presentations

CASE STUDY: MITIGATING SEVERE ORGANIC FOULING IN A BRACKISH GROUNDWATER RE-VERSE OSMOSIS SYSTEM

Country of Attribution: USA

Authors: Mr. Mohannad Malki, Mr. Tom Knoell, Mr. Ken Ortega

Presented by: Mr. Mohannad Malki

TREATMENT OF BRINE THROUGH CHEMISTRY: LESSONS LEARNED

Country of Attribution: USA

Authors: Amy Nowlin, Garret McLean, David Beck, Carlos Quintero

Presented by: Ms. Amy Nowlin

REVERSE OSMOSIS MEMBRANE AUTOPSY TO EXPLAIN MEMBRANE FOULING AT KHENIFRA DESALINATION PLANT

Country of Attribution: Morocco

Authors: Lahcen Hasnaoui, Mariem Ennouhi, Abderrahim Khadir, Mohammed ElAzzouzi, Abderrahim El Hourch, Abdelilah Belhaj

Presented by: Mr. Lahcen Hasnaoui

INLAND DESALINATION: LESSONS LEARNED IMPLEMENTING RO IN LAND-LOCKED LOCATIONS

Country of Attribution: USA

Authors: Mr. Greg Wetterau, Dr. Mike Mickley

Presented by: Mr. Greg Wetterau

DESIGN AND CONSTRUCTION OF A HIGH ENERGY-EFFICIENT BWRO DESALINATION PLANT IN THE SOUTH EAST OF SPAIN

Country: Spain

Authors: Rafael Buendía Candel, Domingo Zarzo Martínez, Carlos Garcia Soto, Francisco Molina Serrano, Patricia Terrero Rodríguez, Elena Campos Pozuelo, Mercedes Calzada Garzón

Presented by: Eng. Rafael Buendia Candel

DEMINERALIZATION OF BRACKISH SURFACE WATER BY REVERSE OSMOSIS IN MOROCCO

Country of Attribution: Morocco

Authors: Hicham Boulahfa, Sakina Belhamidi, Fatima Elhannouni, Mohamed Taky, Azzedine Elmidaoui

Presented by: Ms. Sakina Belhamidi

BWRO OPERATION OPTIMIZATION WITH ENERGY RECOVERY DEVICES

Country of Attribution: USA, France

Authors: Mr. Juan Miguel Pinto, Mrs. Blanca Salgado, Eric Kadaj, Alain Mokbel

Presented by: Mr. Juan Miguel Pinto, Mrs. Blanca Salgado

SMART RO, FIELD TEST VALIDATION OF CONTROL AND OPTIMIZATION OF BRACKISH WATER DESALINATION

Country of Attribution: Denmark, The Netherlands, Saudi Arabia

Authors: Dr. Victor Yangali-Quintanilla, Muhammed Mangal, Sergio Salinas, Jos Dusseldorp, Walter van der Meer, Bastiaan Blankert, Maria Kennedy, Jan Schippers

Presented by: Dr. Victor Yangali-Quintanilla

INTER-STAGE TURBOCHARGER FOR BRACKISH WATER REVERSE OSMOSIS DESALINATION TO ENHANCE THE ENERGY CONSUMPTION AND BALANCE FLUX BETWEEN THE STAGES

Country of Attribution: Egypt

Authors: Mr. Amr-Mohamed-Seoudy, Mohamed-AbdelWahab-Swidan, Hatem-Mohamed-Seoudy, Ibrahim-El.Agawany

Presented by: Mr. Amr-Mohamed-Seoudy

ZERO LIQUID DISCHARGE FOR SUSTAINABLE INLAND AGRICULTURAL DRAINAGE DESALINATION & SELENIUM REMOVAL

Country: USA

Authors: YuJung Chang, Miguel Arias-Paic, Aaron Gress

Presented by: Dr. YuJung Chang

ANALYSIS OF TRANSPORT PHENOMENA AND FILTER PERFORMANCES OF MESH TUBE FILTER MEDIA FOR THE DESALINATION PRIMARY PRETREATMENT PROCESS

Country of Attribution: Republic of Korea

Authors: Dong Ho Kim, Changkyoo Choi, Professor In S Kim

Presented by: Dong Ho Kim

Session 8.1, Environment

Tuesday, October 22, 8.50-13.00, Room 4

Session Chairs and Co-Chairs

- Dr. Stephen Gray (Victoria University)
- Dr. Maria Kennedy (UNESCO-IHE)
- Mr. Emmanuel Gayan (SAUR)

Oral Presentations

MICROBIAL DIVERSITY IN SEAWATER NEAR MARAFIQ DESALINATION PLANTS RATIFIES NON-THREATENING IMPACT ON MARINE ECOSYSTEM

Country of Attribution: Saudi Arabia

Authors: Mr. Ghazi Ozair, Mr. Salman A. Al-Zahrany, Mr. Ali A. Al-Shubaili

Presented by: Mr. Ghazi Ozair

SUBSURFACE INTAKES: WHERE TECHNICAL FEASIBILITY MEETS LEGAL IMPRACTICABILITY

Country of Attribution: USA

Author: Esq. Keith R. Solar

Presented by: Esq. Keith R. Solar

LESSONS LEARNT FROM 15 YEARS OF WORLDWIDE DESIGNS OF MARINE WORKS FOR DESALINATION PLANTS

Country of Attribution: Spain

Authors: Mr. Eloy Pita, Mr. Pablo Pita, Mario Sanchez-Barriga, Lucas Martin, Victor Martinez

Presented by: Mr. Eloy Pita

MARAFIQ'S QUEST TO MINIMIZING THE IMPACT OF DESALINATION ON THE MARINE ENVIRONMENT

Country of Attribution: Saudi Arabia

Authors: Mr. Ghazi Ozair, Mr. Salman A. Al-Zahrany, Mr. Ali A. Al-Shubaili

Presented by: Mr. Salman A. Al-Zahrany

HOW CAN SEAWATER INTAKE SOLUTIONS BE SUSTAINABLY DESIGNED IN TERMS OF: OPTIMIZED LIFE CYCLE COSTS, OPTIONAL FISH PROTECTION, DEALING WITH CORROSIVE ENVIRONMENTS / JELLYFISH AND RED TIDES ?

Country of Attribution: Germany

Authors: Ing. Lars Spaeth, Ms. Janine Isabelle Witt

Presented by: Ing. Lars Spaeth

ASSESSMENT OF REQUIREMENTS FOR MANAGING ENVIRONMENTAL IMPACTS OF BRINE DISCHARGES FROM DESALINATION PLANTS IN CHILE

Country of Attribution: Spain, Chile

Authors: Mr. Ivan Sola, Ms. Pamela Munoz, Enzo Garcia-Bartolomei, Dr. Domingo Zarzo, Claudio Saez, Jose Luis Sanchez-Lizaso

Presented by: Mr. Ivan Sola

FULFILLING ENVIRONMENTAL LAW REQUIREMENTS FOR INTAKES AND OUTFALLS IN DESALINATION PLANTS IN EGYPT

Country of Attribution: United Arab Emirates

Authors: Dr. Yahya ElSaie, Dr. Mahmoud ElSaie

Presented by: Dr. Yahya ElSaie, Dr. Mahmoud ElSaie

ANALYSIS OF THE PERFORMANCE OF DIFFERENT BRINE DIFFUSER TECHNOLOGIES WITH CFD SOFTWARE

Country of Attribution: Spain

Authors: Mr. Jabel A. Naranjo, Adrian Trujillo, Gregorio Louzara, Manuel Ruiz de la Rosa

Presented by: Mr. Borja Blanco

A NOVEL APPROACH TO MITIGATING ENVIRONMENTAL IMPACTS OF BRINE DISCHARGE IN THE UAE

Country of Attribution: USA, UAE, Italy

Authors: Mr. Omar Alzaabi, Caroline Lockhart Hughes, Giulio Mancini

Presented by: Mr. Omar Alzaabi

SEAWATER DESALINATION AND CARBON CAPTURE AND SEQUESTRATION SYSTEM

Country of Attribution: United Arab Emirates

Author: Mr. Thomas Altmann

Presented by: Mr. Thomas Altmann

Poster Presentations

BIODEGRADABILITY OF POLYMER AS SCALE INHIBITOR IN SEAWATER

Authors: Yahong Li, Xiaofang Zhao, Zheng Zhou

Session 1.2: Desalination, Water Reuse, and Our Wider World (Part 2)

Tuesday, October 22, 14.00-17.00, Room 1

Session Chairs and Co-Chairs

- Dr. Domingo Zarzo (Valoriza Agua)
- Mr. Sylvain Donnaz (SUEZ)

Oral Presentations

NOVEL MULTI-BARRIER SOLUTION TO ONE WATER COMBINING MUNICIPAL WATER REUSE WITH SEAWATER DESALINATION

Country of Attribution: USA

Author: Mr. Leon Awerbuch

Presented by: Mr. Leon Awerbuch

ECONOMIC IMPACT OF HIGH-QUALITY MEMBRANES ON THE PRICE OF DESALINATED WATER

Country of Attribution: Spain, Switzerland

Authors: Mr. Borja Blanco, Mr. Guillem Gilabert-Oriol, Ms. Veronica Garcia-Molina

Presented by: Mr. Borja Blanco

DEMONSTRATION OF SMALL SCALE POTABLE REUSE FOR THE ANTARCTIC

Country of Attribution: Australia

Authors: Dr. Stephen Gray, Jianhua Zhang, Mr. Mikel Duke, Ms. Adrian Knight, Ms. Mayumi Al-linson, Mr. Michael Packer, Ms. Kathy Northcott, Mr. Peter Hillis, Mr. Graeme Allinson, Mr. Jean-Philippe Croue, Dharma Dharmabalan, Mr. Peter Scales

Presented by: Dr. Stephen Gray

MBR: NOW THE TIME AGAIN

Country of Attribution: USA

Author: Dr. Val S. Frenkel

Presented by: Dr. Val S. Frenkel

DISRUPTIVE WATER REUSE SCHEME BASED ON DIRECT ULTRAFILTRATION OF MUNICIPAL WASTEWATER

Country of Attribution: France

Author: Dr. Hughes Humbert

Presented by: Mr. Herve Faujour

COMPLYING WITH FUTURE WASTE WATER RESTRICTIONS IN A MINIMIZED FOOTPRINT USING CONTINUOUS UF + O3 TECHNOLOGY

Country of Attribution: Spain

Authors: Ms. Beatriz Barranca, Mr. Pedro Otegui, Mr. J. Ignacio Lombrana, Mr. Inigo Gonzalez, Mr. Inaki Muga

Presented by: Mr. Pedro Otegui

THE MODIFIED FOULING INDEX ULTRAFILTRATION TO PREDICT THE PARTICULATE FOULING IN REVERSE OSMOSIS AND ULTRA FILTRATION

Country of Attribution: The Netherlands

Authors: Mr. Mohanad Abunada, Yuke Li, Nirajan Dhakal, Noredine Ghaffour, Jan C. Schip-pers, Maria Kennedy

Presenter: Mr. Mohanad Abunada

Oral Reserves

PERFORMANCE REVIEW OF UASB REACTORS WITH POLISHING PONDS IN TREATING SEWAGE OF VARYING STRENGTH

Country of Attribution: India

Authors: Dr. Ghulam Mustafa, Mr. Durga Prasad Singh, Mr. Uday Kelkar

Presented by: Dr. Ghulam Mustafa

Session 2.2: RO Fouling and Biofouling (Part 1)

Tuesday, October 22, 14.00-17.00, Room 2

Session Chairs and Co-Chairs

- Ms. Veronique Bonnelye (SUEZ)
- Dr. Guoling Ruan (Institute of Seawater Desalination and Multipurpose Utilization)
- Mr. Vasu Veerapaneni (Black & Veatch)

Oral Presentations

THE IMPORTANCE OF LONG TERM STABLE PERFORMANCE OF RESERVE OSMOSIS ELEMENTS

Country of Attribution: Spain, France, Switzerland

Authors: Dr. Guillem Gilabert-Oriol, Safiya Hassan Alsogair, Blanca Salgado, Veronica Garcia Molina

Presented by: Dr. Guillem Gilabert-Oriol

NEW DOSING STRATEGIES OF THE STABILIZED CHLORINE BIOFOULING CONTROL AGENT IN SEAWATER REVERSE OSMOSIS (SWRO)

Country of Attribution: Singapore

Authors: Dr. Yinghong Lu, Hideyuki Komori, Kunihiro Hayakawa, Jia Shin Ho, Lee Nuang Sim, Tzyy Haun Chong

Presented by: Dr. Yinghong Lu

OSMOTICALLY-INDUCED CLEANING OF FOULED REVERSE OSMOSIS MEMBRANES IN DESALINATION

Country of Attribution: USA, Singapore

Authors: Mr. Omar Labban, Grace Goon, Zi Hao Foo, Xuanhe Zhao, Dr. John H. Lienhard V

Presented by: Mr. Omar Labban

NEAR-NEUTRAL ENZYME CLEANERS FOR ORGANIC AND BIOLOGICAL FOULANTS: WASTE- AND SEAWATER APPLICATIONS

Country of Attribution: USA

Authors: Dr. Amit Sankhe, Ramiro Ramirez, Charles Wardle, Ryan Furukawa

Presented by: Dr. Amit Sankhe

UNEXPECTED CHANGES IN THE INTAKE AREA OF A SWRO INTAKE THAT MAY AFFECT DRAMATICALLY THE PERFORMANCE

Country of Attribution: Spain, Italy

Authors: Eng. Rafael Buendía Candel, Domingo Zarzo Martínez, Aldo Ravazzini, Elena Campos Pozuelo, Patricia Terrero Rodriguez, Mercedes Calzada Garzón

Presented by: Eng. Rafael Buendía Candel

A NEW PARADIGM OF HOW BIOFILMS FORM ON SEAWATER RO MEMBRANES: AGGREGATION OF BACTERIA ATTACHED TO A ROTARY CERAMIC ISOBARIC CHAMBER

Country of Attribution: USA, Singapore, Saudi Arabia, China, United Arab Emirates

Authors: Dr. Harvey Winters, Hong Gay Eu, Dr. Noreddine Ghaffour, Shen Li, Alla Alpatova, Ab-dullah Hasan Alshari, Naseem Nasar

Presented by: Dr. Harvey Winters

RELIABLE SEAWATER RO OPERATION WITH HIGH WATER RECOVERY AND NO-CHLORINE / NO-SBS DOSING IN ARABIAN GULF, SAUDI ARABIA

Country: Saudi Arabia, Japan

Authors: Mohammed Farooque Ayumantakath, Mohammed Maghram Al Shaiae, Troy N Green, Hiroki Miyakawa, Yohito Ito, Hideaki Kurokawa, Yoshinari Fusaok, AhmedSaleh Al Amoudi

Presented by: Dr. Mohammed Farooque Ayumantakath

Session 4.2, Thermal Desalination (Part 2)

Tuesday, October 22, 14.00-17.00, Room 3

Session Chairs and Co-Chairs

- Mr. Tariq Nada (ACWA Power)
- Dr. Osam Hamed (SWCC)
- Dr. David Warsinger (Purdue University)

Oral Presentations

USING A TOTAL COST OF OPERATION APPROACH TO OPTIMISE ANTISCALANT EFFECTIVENESS IN THERMAL DESALINATION PLANTS

Country of Attribution: United Kingdom, USA

Authors: Mr. David Benjamin Rose, Mr. William Walker, Mr. Fritz Alt

Presented by: Mr. David Benjamin Rose

INCREASING WATER PRODUCTION BY WORLD'S LARGEST MED UNIT USING EXCESS STEAM OF SWCC SHOIBA PLANT

Country of Attribution: Saudi Arabia, Japan

Authors: Mr. Al Talhi Sultan Abdulrahman, Mohammed Ayed Al Thubaiti, Hiroshi Sadayuki, Yo-shiyuki Hataro

Presented by: Mr. Al Talhi Sultan Abdulrahman

AN EXERGOCHEMICAL AND SUSTAINABILITY ANALYSIS OF COGENERATION SYSTEMS USING THERMAL AND MEMBRANE DESALINATION TECHNOLOGIES

Country of Attribution: Kuwait

Authors: Dr. Abdulrahman Almutairi, Hamed Alhajeri, Abdulrahman Alenezi, Hamad Almutairi

Presented by: Dr. Abdulrahman Almutairi

INNOVATIVE HYBRID CYCLE AND ITS COMMERCIALIZATION

Country of Attribution: Saudi Arabia

Authors: Dr. Muhammad Wakil Shahzad, Muhammad Burhan, Dokhan Ybyraimkul, Seung Jin Oh, Kim Choon Ng

Presented by: Dr. Muhammad Wakil Shahzad

WRDC APPROACH FOR MSF DISTILLERS INSPECTION

Country of Attribution: Kuwait

Authors: Mr. Naser Bader Boftain, Mr. Abdullah Awad Aladwani

Presented by: Mr. Naser Bader Boftain

MED BRINE TREATMENT FOR GEOTHERMAL INJECTION

Country of Attribution: USA

Authors: Mr. Thomas Peter Sephton, Dr. William Bourcier, Mr. Larry Lien, Mr. Richard Simonis

Presented by: Mr. Thomas Peter Sephton

INNOVATIVE POLYMER COMPOSITE HEAT EXCHANGER TUBES: HEAT TRANSFER AND CRYSTALLIZATION FOULING STUDIES"

Country of Attribution: Germany

Authors: Dr. Heike Glade, Mr. Sebastian Schilling, Mr. Thomas Orth, Mr. Dirk Moses

Presented by: Mr. Sebastian Schilling

Oral Reserves

NUMERICAL SIMULATION OF HEAT TRANSFER OF FALLING FILM OUTSIDE HORIZONTAL TUBE UNDER COUNTER-CURRENT AIR FLOW

Country of Attribution: China

Authors: Xiaocui Zhang, Xiaojing Zhu, Dr. Qinggang Qiu, Shi Chen, Shengqiang Shen

Presented by: Dr. Qinggang Qiu

Session 10.1, Renewable Driven Desalination (Part 1)

Tuesday, October 22, 14.00-17.00, Room 4

Session Chairs and Co-Chairs

- Ms. Chiara Fabbri (ILF Consulting Engineers)
- Ms. Monica Boodhan (University of Trinidad and Tobago)
- Mr. Kishor Nayar (MIT – Not in attendance)

Oral Presentations

TIME-VARIANT OPERATION OF SOLAR-POWERED ELECTRODIALYSIS SYSTEMS

Country of Attribution: USA

Authors: Ms. Anne-Claire Le Henaff, Wei He, Jeffrey Costello, Amos G. Winter V

Presented by: Ms. Anne-Claire Le Henaff

PROSPECTS OF WIND POWER PREDICTION AND VARIABLE OPERATION IN OPTIMIZING WIND-POWERED REVERSE OSMOSIS OPERATION

Country of Attribution: United Kingdom, Kingdom of Bahrain

Authors: Mohamed T. Mito, Xianghong Ma, Hanan Abuflasa, Philip A. Davies

Presented by: Mr. Mohamed T. Mito

DETERMINING THE OPTIMUM RENEWABLE ENERGY AND DESALINATION COMBINATION CON-FIGURATIONS ON THE COAST OF THE RED SEA IN EGYPT

Country of Attribution: Egypt

Authors: Eng. Ismail Yahya ElSaie, Christopher Nightingale

Presented by: Eng. Ismail Yahya ElSaie

RENEWABLE OFF GRID DESALINATION PLANTS – A FINANCIAL ANALYSIS CONSIDERING NEGA-TIVE ENVIRONMENTAL EXTERNALITIES

Country of Attribution: Switzerland, Saudi Arabia

Authors: Andrea Pedretti, Gianmarco Zorloni, Thomas Altmann, Jose Toti

Presented by: Andrea Pedretti

A NOVEL APPROACH FOR USING SOLAR TO DRIVE DESALINATION FOR LOW-COST, LARGE-SCALE WATER GENERATION

Country of Attribution: USA

Authors: Dr. Andrew Skumanich, Michael Skolmikov, Manoochehr Ghiassi

Presented by: Dr. Andrew Skumanich

WATER FROM THE SUN: THE BEST PV/CSP/RO COMBINATION TO MINIMIZE THE WATER COST IN A SELF-STANDING SOLAR DESALINATION PLANT

Country of Attribution: Italy

Author: Dr. Emilio Ghiazza

Presented by: Dr. Emilio Ghiazza

CASE STUDY OF MANUFACTURE AND OPERATION OF MOBILE SOLAR POWERED DESALINATION UNIT

Country of Attribution: United Arab Emirates

Author: Mr. Yahya Alzafin

Presented by: Mr. Yahya Alzafin

Oral Reserves

NUMERICAL SIMULATION OF A SOLAR PHOTOVOLTAIC REVERSE OSMOSIS PERFORMANCE FOR WATER DESALINATION

Country of Attribution: Kazakhstan, United Kingdom, India

Authors: Dr. Baimbetov Dinmukhambet, Ye Shakir, T. Radu, Ye. Belyayev, M. Mohanraj

Presented by: Dr. Baimbetov Dinmukhambet

Poster Presentations

IDENTIFICATION OF PROSPECTIVE AREAS IN WATER-STRESSED REGIONS FOR LOW-ENTHALPY GEOTHERMAL DESALINATION

Country: New Zealand

Authors: Kenneth B. Alexander, John R. Gilliland

Presented by: Mr. Kenneth (Keg) B. Alexander



WEDNESDAY

WEDNESDAY

Wednesday Oct 23 Schedule

07:30-17:30 Registration Open - *Sheikh Makhtoum Hall*

07:30-08:30 Technical Program Speakers Meeting
- *Lunch Area*

08:00-17:00 RO Specialist Certification: Three-Day
Classroom Hands-On Training
- *Dubai A+B*

08:30-17:30 IDA Affiliate Majlis Forums and
Corporate Sponsor Forums
- *Majlis and Plenary Theaters*

09:00-17:30 Exhibition Hall Open

09:00-17:30 Technical Program Sessions

10:30-11:00 Coffee Break

13:00-14:00 Lunch

15:30-16:00 Coffee Break

17:00-18:00 IDA Membership Meeting - *Dubai E & F, 1st Floor*

18:00-19:00 IDA Board Meeting, Term 19 - *Dubai E & F, 1st Floor*

19:30-22:30 Gala Dinner – Industry &
Sustainability Awards, hosted by
DEWA - *Plenary Hall*

IDA Affiliate Majlis Forums

The IDA Affiliate Majlis Discussions add an exciting new aspect to the World Congress. These forums will take place from 8.30-17.00 Wednesday and 08.30-13.00 Thursday during the general program and are open to all registered delegates. The inspiration for these Discussions is the concept of “majlis” a popular word in the Middle East. The word majlis, literally means “a place to sit and discuss” and in an effort to bring that spirit to the World Congress, IDA is creating a space for conversation among experts and colleagues within the program. They provide an opportunity for IDA’s growing network of affiliates to showcase what is going on in the water sector both regionally and nationally, along with, important game-changing projects or technologies in which their members are involved.

Below is the schedule for the Affiliate Majlis Discussions.

Wednesday, October 23rd

Majlis Affiliate Forum Theater: 8:30-17:30

08:30 – 09:30

American Membrane Technology Association (AMTA)



09:35 – 10:35

European Desalination Society (EDS)



10:35 – 11:00

Coffee Break

11:00 – 12:00

Asociación Latinoamericana de Desalación y Reuso del Agua (ALADYR)



12:00 – 13:00

Caribbean Desalination Association (Caribda)



13:00 – 14:00

Lunch

14:00 – 14:30

Water Sciences & Technology Association (WSTA)



جمعية علوم وتقنية المياه
Water Sciences and Technology Association

14.30-15.30

YLP Discussion Forum



15:30 – 16:00

Coffee Break

16:00 – 17.30

The Membrane Industry Association of China (MIAC)





中国膜工业协会
THE MEMBRANE INDUSTRY
ASSOCIATION OF CHINA

IDA Gold and Silver Corporate Sponsor Forums

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.

Below is the draft schedule for sponsor forums.

08.30 – 09:00	Toray (Silver)	
09.05 – 09:35	ILF (Silver)	
09.35 – 10:05	Kurita (Silver)	
10.05 – 10:35	Dupont (Silver)	
10:35 – 11:00	Coffee Break	
11.00 – 11:30	Aqualia (Silver)	
11.30 – 12:00	Metito (Gold)	
12:00 – 12:30	Almar Water Solutions (Platinum)	
13:00	Lunch	

IDA Membership Meeting

**17:00-18:00, Wednesday, October 23, 2019
(Dubai World Trade Center, Room Dubai E & F, Level 1)**

IDA warmly invites all its current members to the IDA Membership Meeting and encourages all its members to gather, network, and share their thoughts for the association and the membership year ahead. On the agenda will be an introduction to the New Board, presentation of the Comptrollers Report, Upcoming Events, and Special Projects.

IDA Board Meeting

**18.00-19.00, Wednesday, October 23, 2019
(Dubai World Trade Center Room Dubai E + F, Level 1)**

From 18.00-19.00, the new board of IDA will meet to discuss IDA, the association's upcoming events, and future plans.

IDA Gala Dinner, Hosted by DEWA

**19.30-22.30, Wednesday, October 23, 2019
(Dubai World Trade Center)**

The IDA Gala Dinner will bestow Industry and Sustainability awards to leaders throughout the water reuse industry. This award presentation is new to the World Congress.

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority



Wednesday Technical Program Sessions

Wednesday, October 23 (Morning) 8.50-13.00

Session 2.5, Pre-Treatment (Part 2) Room 1

- **Session Chair:** Mr. James C. Lozier (Jacobs)
- **Co-Chairs:** Mr. Jonathan Pressdee (AECOM) and Mr. Marc Fabig (Armas)

Session 2.11, FO and Electrolyse Room 2

- **Session Chair:** Professor In S. Kim (Gwangji Institute of Science and Technology)
- **Co-Chairs:** Dr. Nobuya Fujiwara (Toboyo Co., Ltd) and Mr. Vinod Ramachandran (SUEZ)

Session 2.8, RO Membrane Innovation Room 3

- **Session Chair:** Mr. Antonio Casanas (DuPont Water Solutions)
- **Co-Chairs:** Mr. Yoshinari Fusaoka (Toray Industries) and Mr. Hiep Le (Osmoflo Water Management)

Session 4.3, Thermal Desalination (Part 3) Room 4

- **Session Chair:** Mr. Leon Awerbuch (International Desalination Consulting Associates)
- **Co-Chair:** Dr. Ahmed Al Arifi (SWCC) and Mr. Mahmoud Baniabbasi (DEWA)

Session 1.1, Desalination, Water Reuse, and Our Wider World (Part 1) Room 1

- **Session Chair:** Mr. Miguel Angel Sanz (SUEZ)
- **Co-Chairs:** Mr. Francois Basselot (Atkins Global) and Mr. Robert Owens (Bechtel)

Session 2.3, RO Fouling and Biofouling (Part 2) Room 2

- **Session Chair:** Mr. Jorge Malfeito-Sanchez (Acciona Agua)
- **Co-Chairs:** Mr. Inaki del Campo (Consolidated Water Co., Ltd) and Mr. Santi Talo (Hydranautics)

Session 2.7, RO and Energy Room 3

- **Session Chair:** Mr. Roberto Mangano (ILF Consulting Engineers)
- **Co-Chairs:** Ms. Veronica Garcia-Molina (Dupont Water Solutions) and Mr. Francisco Bernaola (Metito)

Session 2.1, RO Membrane Distillation Room 4

- **Session Chair:** Mr. Alistair Munro (PROJECX)
- **Co-Chairs:** Ms. Delia Pastorelli (SUEZ) and Mr. Victor Verbeek (Toray Membrane)

Session 2.5: Pre-Treatment (Part 2)

Wednesday, October 23, 8.50-13.00, Room 1

Session Chairs and Co-Chairs

- Mr. James C. Lozier (Jacobs)
- Mr. Jonathan Pressdee (AECOM)
- Mr. Marc Fabig (Armas)

Oral Presentations

SIDEM'S COMBINED DUAL MEDIA AND CARTRIDGE FILTER

Country of Attribution: France

Author: Mr. Jean-Baptiste Thubert

Presented by: Mr. Jean-Baptiste Thubert

ALGAL BLOOMS AND FOULING POTENTIAL IN MEMBRANE BASED DESALINATION SYSTEMS

Country of Attribution: The Netherlands

Authors: Dr. Nirajan Dhakal, Sergio G. Salinas Rodriguez, Frans Knops, Jan C. Schippers, Maria D. Kennedy

Presented by: Dr. Nirajan Dhakal

MONITORING PARTICULATE FOULING OF NORTH SEA WATER WITH SDI, MFI0.45, AND MFI-UF

Country of Attribution: The Netherlands, Switzerland

Authors: Dr. Sergio Salinas, Nizaordinah Sithole, Dr. Nirajan Dhakal, Margot Olive, Jan Schippers, Maria Kennedy

Presented by: Dr. Sergio Salinas

PERFORMANCE EVALUATION OF PRESSURIZED ULTRAFILTRATION WITH RELEVANCE TO PRETREATMENT IN SEAWATER DESALINATION

Country of Attribution: Germany, India

Authors: Mr. Patrick Buchta, Lajos Harsanyi, Amrith Giridhar, Amir Basha K Syed, Denis Vial, Roland Winkler, Peter Berg

Presented by: Mr. Patrick Buchta

NUTRIENT DEPRIVATION FOR SEAWATER REVERSE OSMOSIS MEMBRANE BIOFOULING REDUCTION

Country of Attribution: Spain

Authors: Borjas Hernandez, Dr. Lidia Zulema, Bayona Gonzalez Carlos, Picazo Lopez Andrea, Dr. Olga Ferrer Mallen, Jorge Juan Malfeito

Presented by: Dr. Olga Ferrer Mallen

ADVANTAGES OF INSIDE-TO-OUT ULTRAFILTRATION AS PRETREATMENT OF SWRO DURING SEASONAL ALGAE BLOOM

Country of Attribution: France, United Arab Emirates, Germany, Oman

Authors: Mr. Jan Rasmus Radel, Denis Vial, Patrick Buchta, Roland Winkler, Peter Berg, Younis Al-Kiyumi, Abdullah Al-Sadi

Presented by: Mr. Jan Rasmus Radel

AUTOMATIC PROTECTION OF REVERSE OSMOSIS MEMBRANES – FEASIBLE LOW-ENERGY SOLUTION – PILOT STUDY

Country of Attribution: Hong-Kong, Germany

Authors: Mr. Ben Gido, Ravid Levy, Miyan Mears Dagan, Anat Weisbrod, Matan Ramot, Ralph Michael

Presented by: Mr. Miyan Mears Dagan

COMPARISON OF MEDIA FILTRATION AND MEMBRANE FILTRATION AS RO PRETREATMENT FOR REMOVAL OF IRON AND MANGANESE

Country of Attribution: USA

Authors: Dr. Srinivas Veerapaneni, Russel Ferlita, Aswathi Pradeep, Ryan Eck

Presented by: Dr. Srinivas Veerapaneni

PRETREATMENT AND THE PERFORMANCES OF THE REVERSE OSMOSIS MEMBRANES OF A SURFACE WATER DESALINATION PLANT IN MOROCCO

Country of Attribution: Morocco

Authors: Hicham Boulahfa, Sakina Belhamidi, Hanane Elkhdim, Mehdi Haidar, Fatima Elhan-nouni, Mohamed Taky, Azzedine Elmidaoui

Presented by: Sakina Belhamidi

EVOLUTION OR REVOLUTION? MEMBRANE GRAVITY FILTRATION (MGF) FOR SEAWATER DESALINATION PRE-TREATMENT

Country of Attribution: Canada, USA

Authors: Mr. Simon Breese, Mr. Martin Gravel, Mr. Jonathan Pressdee, Mr. Teo Kochmar

Presented by: Mr. Simon Breese

Oral Reserves

P-FREE REVERSE OSMOSIS ANTISCALANT DESIGNED TO WORK AT HIGH STRESS SCALING CONDITION

Country of Attribution: Italy

Authors: Mr. Daniele Ciferri, Marino Mastria

Presented by: Mr. Daniele Ciferri

SEAWATER RO PRETREATMENT: DIFFERENT OPTIONS TO IMPROVE THE RO PLANT AVAILABI- LITY

Country of Attribution: Italy

Authors: Mr. Giorgio Migliorini, Ms. Laura Enrica
Bruno

Presented by: Ms. Laura Enrica Bruno

Poster Presentations

INLINE COAGULATION AND ULTRAFILTRATION COMPARED TO CONVENTIONAL TREATMENT FOR ARSENIC REMOVAL

Authors: Eng. Victoria Vasini, Manuel Garcia de la
Mata

Presented by: Eng. Victoria Vasini

Session 2.11: FO and Electrolyse

Wednesday, October 23, 8.50-13.00, Room 2

Session Chairs and Co-Chairs

- Professor In S. Kim (Gwangji Institute of Science and Technology)
- Dr. Nobuya Fujiwara (Toboyo Co. Ltd)
- Mr. Vinod Ramachandran (SUEZ)

Oral Presentations

PILOT STUDY OF RECOVERING SEAWATER DESALINATION BRINE BY RED/DRED PROCESS

Country of Attribution: Singapore, USA, Canada

Authors: Dr. Han Zhuang, Dr. Neil Moe, Marvin Lumibao, Yonghong Zhao, Kia Kian Kee, John Barber

Presented by: Dr. Han Zhuang

MAKING SENSE OF ELECTRODIALYSIS REVERSAL (EDR) PLANT OPERATING DATA

Country of Attribution: USA

Author: Dr. Neil Moe

Presented by: Dr. Neil Moe

PILOT EVALUATION OF PRESSURE-ASSISTED FORWARD OSMOSIS-REVERSE OSMOSIS HYBRID SYSTEM: EFFECT OF OPERATING CONDITION ON MEMBRANE FOULING BEHAVIOR

Authors: Mr. Chulmin Lee, Thanh Tin Nguyen, Professor In S. Kim

Presented by: Mr. Chulmin Lee

MODELING OF PUMPING POWER IN ELECTRODIALYSIS STACKS ACROSS SIZE SCALES

Country of Attribution: USA

Authors: Mr. Rashed Al-Rashed, Natasha Wright, Amos Winter V

Presented by: Mr. Rashed Al-Rashed

EFFECT OF ORGANIC MACROMOLECULES AND FOULANT CONCENTRATION ON FOULING BEHAVIOR IN FORWARD OSMOSIS MEMBRANE: A STRATEGY OF FOULING MITIGATION-BASED CRITICAL FLUX

Country of Attribution: Republic of Korea

Authors: Mr. Chulmin Lee, Mr. Thanh Tin Nguyen, Professor In S. Kim

Presented by: Mr. Chulmin Lee

BATCH ELECTRODIALYSIS DESALINATION OF BRACKISH WATER USING ACTIVE VOLTAGE CONTROL

Country of Attribution: USA

Authors: Mr. Sahil Shah, Sandra Walter, Natasha Wright, Amos Winter V

Presented by: Mr. Sahil Shah

MODULE MODEL AND DESIGN FOR MAXIMIZING PERFORMANCE IN FORWARD OSMOSIS SYSTEM

Country of Attribution: Japan

Authors: Mr. Shohei Goda, Yuki Miura, Katsusige Marui, Masaaki Seikno

Presented by: Mr. Yuki Miura

NANOSTRUCTURED PSEUDOCAPACITIVE COMPOSITE ELECTRODES IN ELECTROSORPTION

Country of Attribution: United Arab Emirates

Authors: Dr. Linda Zhou, Hammed Younes, Florent Ravaux, Nabil El Hadri

Presented by: Dr. Linda Zou

IMPROVING GROUNDWATER QUALITY FOR IRRIGATION USING MONOVALENT SELECTIVE ELECTRODIALYSIS

Country of Attribution: USA

Authors: Mr. Danyal Rehman, Ms. Yvana Ahdab, Dr. John H. Lienhard V

Presented by: Mr. Danyal Rehman, Ms. Yvana Ahdab

A LABORATORY TO PILOT SCALE EVALUATION OF FORWARD OSMOSIS SEAWATER DESALINATION TECHNOLOGY IN THE STATE OF KUWAIT

Country of Attribution: Kuwait

Authors: Dr. Mansour Ahmed, Rajesha Kumar, Safeyah Al-Muqahwi, Yousef Al-Wazzan, Bhadrachari Garudachari, Jibu Thomas

Presented by: Eng. Safeyah Al-Muqahwi

Poster Presentations

THE DEVELOPMENT OF SEAWATER DESALINATION DEMONSTRATION PLANT USING THE NEXED ELECTRODIALYSIS SYSTEM

Authors: Dr. Xiangyi Qiao, Conde Dador, Kris Lim, Michael Shaw, Roderick Sih, Harry Seah

Presented by: Dr. Xiangyi Qiao

**MEMBRANE DEFORMATION BY SPACER
CONFIGURATION: EFFECT ON PERMEATION MECHANISM AND CHANNEL PRESSURE DROP**

Country of Attribution: Republic of Korea

Authors: Mr. Chulmin Lee, Thanh Tin Nguyen, Professor In S. Kim

Presented by: Mr. Chulmin Lee

Session 2.8: RO Membrane Innovation

Wednesday, October 23, 8.50-13.00, Room 3

Session Chairs and Co-Chairs

- Mr. Antonio Casanas (DuPont Water Solutions)
- Mr. Yoshinari Fusaoka (Toray Industries)
- Mr. Hiep Le (Osmoflo Water Management)

Oral Presentations

NEW SEAWATER FOULING RESISTANT MEMBRANE ELEMENT

Country of Attribution: Spain, Saudi Arabia, Switzerland

Authors: Dr. Guillem Gilabert-Oriol, Mr. Safiya Alsogair, Mr. David Arias, Mr. Gerard Massons, Mr. Jordi Bacardit, Ms. Veronica Garcia-Molina

Presented by: Dr. Guillem Gilabert-Oriol

ANTIFOULING AND CHLORINE RESISTANT CARBON NANOTUBES-AROMATIC POLYAMIDE DE-SALINATION MEMBRANES

Country of Attribution: Japan, USA

Authors: Dr. Morinobu Endo, Rodolfo Cruz-Silva, Aaron Morelos-Gomez, Josue Ortiz-Medina, Syogo Tejima, Ayaka Yamanaka, Michiko Obata, Kenji Takeuchi, Toru Noguchi, Takuya Hayashi, Mauricio Terrones

Presented by: Dr. Morinobu Endo

NOVEL THIN-FILM COMPOSITE HOLLOW FIBER MEMBRANE MODULES BASED ON LAYER-BY-LAYER ASSEMBLY FOR REVERSE OSMOSIS APPLICATIONS

Country of Attribution: Japan

Authors: Takashi Ohkame, Masafumi Shibuya, Ken Takasugi, Takuji Shintani, Keizo Nakagawa, Tomohisa Yoshioka

Presented by: Takashi Ohkame

ADVANCED RO MEMBRANE WITH HIGH SOLUTE REJECTION AND HIGH WATER PERMEABILITY

Country of Attribution: Japan

Authors: Dr. Masahiro Kimura, Takafumi Ogawa, Harutoki Shimura, Hiroki Minehara, Masaru Kurihara

Presented by: Dr. Masahiro Kimura

***DIRECT INCORPORATION OF EXPRESSED
AQUAPORIN INTO HYDROGEL MEMBRANE FOR NAN-
OFILTRATION APPLICATIONS***

Country of Attribution: Singapore, China

Authors: Dr. Wenming Shen, Siew Leng Loo, Xiao
Matthew Hu, Rong Wang

Presented by: Dr. Wenming Shen

***REDUCING THE COST OF DESALINATION WITH NEXT
GENERATION HIGH REJECTION SEA-WATER RO
MEMBRANES***

Country of Attribution: USA

Authors: Eng. Simon Bae, Eugene Rozenbaoum, Hoon
Hyung, Kenneth Chao

Presented by: Dr. Hoon Hyung

***STUDY OF THE LOSS PERFORMANCE OF REVERSE
OSMOSIS MEMBRANES AFTER AN EXPAN-SION OF A
SWRO DESALINATION PLANT***

Country of Attribution: Spain

Authors: Eng. Patricia Terrero Rodríguez, Zebenzui
Lemes Acosta, Rafael Buendía Candel, Elena Campos
Pozuelo, Mercedes Calzada Garzon, Domingo Zarzo
Martínez

Presented by: Eng. Patricia Terrero Rodríguez

***LOW ENERGY BWRO MEMBRANE DEVELOPMENT
WITH AQUAPORIN INSIDE TECHNOLOGY***

Country of Attribution: Singapore, Denmark

Authors: Dr. Yang Zhao, Brett Holmeberg, Weng Hong
Ho, Fook Sen Lee, Amalya Azman

Presented by: Dr. Yang Zhao

***NEW ALL MEMBRANE SYSTEM FOR WASTE WATER
RECLAMATION***

Country of Attribution: Japan

Authors: Mr. Koji Nakata, Mr. Keijirou Tada, Mr. Nozomu
Ikuno

Presented by: Mr. Koji Nakata

***THE OMAN HUMANITARIAN DESALINATION
CHALLENGE***

Country of Attribution: Oman, USA

Authors: Eng. M. Kevin Price, Dr. Jauad El Kharraz,
Ciaran O Cuinn, Dr. Hilal Al Hinai, Dr. John Wilson

Presented by: Engr. M. Kevin Price

Session 4.3: Thermal Desalination (Part 3)

Wednesday, October 23, 8.50-13.00, Room 4

Session Chairs and Co-Chairs

- Mr. Leon Awerbuch (International Desalination Consulting Associates)
- Dr. Ahmed Al Arifi (SWCC)
- Mr. Mahmoud Baniabbasi (DEWA)

Oral Presentations

EVOLUTION OF MULTIEFFECT DESALINATION PROCESSES AND FUTURE PROSPECTS

Country of Attribution: Saudi Arabia

Authors: Dr. Osam Ahmed Hamed

Presented by: Dr. Osam Ahmed Hamed

BAROMETRIC EVAPORATOR PROTOTYPE TEST

Country of Attribution: USA

Authors: Mr. Thomas Peter Sephton

Presented by: Mr. Thomas Peter Sephton

A NOVEL ENHANCED-MULTI EFFECT THERMAL SEPARATION TECHNOLOGY (E-METS) FOR DESALINATION

Country of Attribution: Switzerland

Authors: Dr. Chin Lee Ong, Xile Hu

Presented by: Dr. Chin Lee Ong

POTABLE WATER QUALITY CONTROL – A SIX SIGMA APPROACH

Country of Attribution: Saudi Arabia

Authors: Mr. Sohaib Alsafh

Presented by: Mr. Sohaib Alsafh

EXPERIMENTAL INVESTIGATION OF HEAT PUMP DRIVEN HUMIDIFICATION-DEHUMIDIFICATION DESALINATION UNIT

Country of Attribution: Saudi Arabia

Authors: Dr. Mohamed A. Antar, Dahiru Lawal, Atia Khalifa, Syed Zubair

Presented by: Dr. Mohamed A. Antar

DESALINATION & COOLING USING INNOVATIVE DUAL ABSORBER ABSORPTION CYCLE

Country of Attribution: Kuwait, Qatar

Authors: Dr. Hassan K. Abdulrahim, Mansour Ahmad, Abdelnasser Mabrouk

Presented by: Dr. Hassan K. Abdulrahim

INTERFEROMETRIC ANALYSIS OF FLOW AROUND A HORIZONTAL TUBE FALLING FILM EVAPO-RATOR FOR MED SYSTEMS

Country of Attribution: India

Authors: Akhil Krishnan Maliackal, A.R. Ganesan, A. Mani

Presented by: Akhil Krishnan Maliackal

MODELING AND MULTI-OBJECTIVE OPTIMIZATION OF MULTI-EFFECT EVAPORATION WITH THERMAL VAPOR COMPRESSION DESALINATION SYSTEM

Country of Attribution: China

Authors: Dr. Shihe Zhou, Shengqiang Shen, Xinyu Liu

Presented by: Dr. Shihe Zhou

SCALE FORMATION OVER TUBE SURFACE IN THERMAL DESALINATION

Country of Attribution: India

Authors: Arjun Jayakumar, Mani A

Presented by: Arjun Jayakumar

CRYO-THERMAL DESALINATOR

Country of Attribution: USA

Author: Mr. Garold Hines

Presented by: Mr. Garold Hines

Session 1.1, Desalination, Water Reuse, and Our Wider World (Part 1)

Wednesday, October 23, 14.00-17.00, Room 1

Session Chairs and Co-Chairs

- Mr. Miguel Angel Sanz (SUEZ)
- Mr. Francois Basselot (Atkins Global)
- Mr. Robert Owens (Bechtel)

Oral Presentations

MÖRBYLÅNGA DWTP, SWEDEN: DIRECT POTABLE REUSE IN COMBINATION WITH BRACKISH WATER DESALINATION

Country of Attribution: Sweden, Luxembourg

Authors: Mr. Peter Asteberg, Mr. Jordan Rogers

Presented by: Mr. Peter Asteberg

TOWARDS THE WORLD'S LARGEST MICROBIAL DESALINATION CELL FOR LOW ENERGY DRINKING WATER PRODUCTION

Country of Attribution: Spain

Authors: Ms. Patricia Zamora, Marina Ramirez-Moreno, Pau Rodenas, Juan M. Ortiz, Juan Are-valo, Dr. Victor M. Monsalvo, Mr. Frank Rogalla, Abraham Esteve Nunez

Presented by: Dr. Victor M. Monsalvo

PERTH WATER RECYCLING: BEENYUP AWRP STAGE 2

Country of Attribution: Australia

Authors: Mr. Andrew Layson, James Ross, Iwona Burak, Lisa Chan, Veronique Bonnelye

Presented by: Mr. Andrew Layson

SUCCESSFUL STAKHOLDER COOPERATION DELIVERING SUSTAINABLE WATER REUSE FOR INDUSTRIES

Country of Attribution: United Arab Emirates

Authors: Eng. Eryl Wyn Edwards, Mr. Mohammed Riyazudin Sultan

Presented by: Eng. Eryl Wyn Edwards

WHY YOUR RO MEMBRANE CLEANING MAY NOT BE EFFECTIVE. THE BENEFITS OF REVERSE CLEANING

Country of Attribution: Australia, USA

Authors: Mr. Keith Andes, Dr. Craig Bartels, Mr. Guillermo Hijos

Presented by: Mr. Keith Andes

TFN MEMBRANES FOR INDIRECT POTABLE REUSE AT ORANGE COUNTY WATER DISTRICT: A CASE STUDY

Country of Attribution: USA

Authors: Dr. Eugene Rozenbaoum, Roy Daly, Hoon Hyung

Presented by: Dr. Eugene Rozenbaoum

INTEGRATED ULTRAFILTRATION AND REVERSE OSMOSIS SYSTEM FOR WASTEWATER REUSE IN THE UNITED ARAB EMIRATES

Country of Attribution: Saudi Arabia, France, Switzerland, Spain

Authors: Mr. Safiya Alsogair, Hardik Pandya, Ms. Blanca Salgado, Ms. Veronica Garcia Molina, Guillem Gilabert-Oriol

Presented by: Mr. Hardik Pandya

Oral Reserves

DEVELOPMENT OF NEW NITROGEN REMOVAL TECHNOLOGY FOR HIGH N-LOADED EFFLUENTS BY PARTIAL NITRATION AND AUTOTROPHIC DENITRIFICATION (ANAMMOX) IN A SINGLE STAGE IN SUBMERGED FIXED FILM BIOREACTOR (DENITOX)

Country of Attribution: Spain

Authors: Dr. Elena Campos Pozuelo, Patricia Terrero Rodríguez, Asuncion Majua Montalbo, Javier Urrea del Moral, Giovanni Alexander Garcia Agudelo, Rafael Buendia Candel, Mercedes Calzada Garzón, Domingo Zarzo Martínez

Presented by: Dr. Elena Campos Pozuelo

Session 2.3, RO Fouling and Biofouling (Part 2)

Wednesday, October 23, 14.00-17.00, Room 2

Session Chairs and Co-Chairs

- Mr. Jorge Malfeito-Sanchez (Acciona Agua)
- Mr. Inaki del Campo (Consolidated Water Co., Ltd)
- Mr. Santi Talo (Hydranautics)

Oral Presentations

A NEW FAST ACTING LOW PH CLEANER PAVES THE WAY FOR A NEW CLEANING PHILOSOPHY FOR INTEGRATED MEMBRANE SYSTEMS

Country of Attribution: Scotland, USA

Authors: Ms. Fiona Finlayson, Daniel Freeman, Sara Pietsch

Presented by: Ms. Fiona Finlayson

EXPLORING SPECIAL PROPERTIES AND VERSATILE APPLICATIONS OF DENDRIMERS IN MEMBRANE-BASED WATER-TREATMENT SYSTEMS

Country of Attribution: USA

Authors: Mr. Ramiro Ramirez, Amit Sankhe, Ryan Furukawa

Presented by: Mr. Amit Sankhe

SUCCESSFUL LARGEST SWRO PLANT OPERATION IN ARABIAN GULF WITH CTA HOLLOWFIBER RO MEMBRANE

Country of Attribution: Japan, Saudi Arabia

Authors: Mr. Nobuyuki Masumoto, Toshitaka Tanaka, Yuji Ito, Mohamad AlHarthi, Abdullah Beshbesh Anazi, Hamid Mahmoud Johani

Presented by: Mr. Mohamad AlHarthi

CERAMIC MEMBRANE CLEANING STRATEGIES TREATING BRACKISH SURFACE WATER WITH HIGH FOULANT CAPACITY

Country of Attribution: Spain

Authors: Dr. Juan Arevalo, Jose Maria Vinas, Damian Amador, Marcelina Burgos, Frank Rogalla, Dr. Victor Monsalvo

Presented by: Dr. Victor Monsalvo

HOT WATER DISINFECTION EFFECT ON POLYAMIDE RO ELEMENTS

Country of Attribution: USA

Authors: Dr. Peter Karl Eriksson

Presented by: Dr. Peter Karl Eriksson

CHLORINE DIOXIDE AS BIOCIDES IN RO: EFFECT OF pH AND CHLORINE DIOXIDE DOSE ON MEMBRANE INTEGRITY

Country of Attribution: Denmark, Italy

Authors: Eng. Stine Kusk Thomsen, Victor Yangali-Quintanilla, Sergio Tosoni, Soren Venzel Nielsen

Presented by: Eng. Stine Kusk Thomsen

FINDING THE BIOFOULING CONTROL BALANCE FOR SWRO PLANTS

Country of Attribution: The Netherlands, Australia, United Kingdom, Saudi Arabia

Authors: Mr. Harry J.G. Polman, Mary Kanavoutsos, Tony Attenborough, Haider Kamal

Presented by: Mr. Harry J.G. Polman

Oral Reserves

BIOFOULING CONTROL FOR REVERSE OSMOSIS AND NANOFILTRATION MEMBRANES

Authors: Yutie Liu, Shaohu Chai, Lingfeng Han

Presented by: Sunil Wasle

Session 2.7: RO and Energy

Wednesday, October 23, 14.00-17.00, Room 3

Session Chairs and Co-Chairs

- Mr. Roberto Mangano (ILF Consulting Engineers)
- Ms. Veronica Garcia-Molina (Dupont Water Solutions)
- Mr. Francisco Bernaola (Metito)

Oral Presentations

SWRO ENERGY EFFICIENCY: PARADIGM SHIFT IN DESIGN AND OPTIMIZATION OF SWRO PLANTS USING GCC SEAWATER CONDITIONS

Country of Attribution: United Arab Emirates

Authors: Mr. Thomas Altmann, Mr. Justin Paden, Dr. Sergio Casimiro

Presented by: Dr. Sergio Casimiro

DEVELOPMENT OF CELLULOSE TRIACETATE HOLLOW FIBER TYPE HIGH PERFORMANCE RO MEMBRANE FOR ENERGY SAVING SEAWATER DESALINATION SYSTEM

Country of Attribution: Saudi Arabia, Japan

Authors: Ahmad Haidah, Ahmad Ettwadi, Ahmed Al-Asam, Nobuyuki Masumoto, Mikio Katsube, Yasuji Terashima, Katsushige Marui

Presented by: Nobuyuki Masumoto

TRUE BATCH REVERSE OSMOSIS PROTOTYPE: MODEL VALIDATION, SALT RETENTION, AND ENERGY SAVINGS

Country of Attribution: USA

Authors: Mr. Quantum J. Wei, Carson Tucker, Priscilla Wu, Ali Trueworthy, Emily Tow, Dr. John H. Lienhard V

Presented by: Mr. Quantum J. Wei

OSMOTIC DILUTION AND OSMOTIC ENERGY RECOVERY FOR LOW-ENERGY SEAWATER REVERSE OSMOSIS DESALINATION

Country of Attribution: Republic of Korea

Authors: Mr. Jungbin Kim, Kiho Park, Dae Ryook Yang, Seunghwan Hong

Presented by: Mr. Jungbin Kim

LOW PRESSURE BOOSTER PUMP FOR OPERATION STABILITY AND REDUCE THE POWER CONSUMPTION IN SWRO MEGA TRAIN SIZE

Country of Attribution: Egypt

Authors: Mr. Amr-Mohamed-Seoudy, Mohamed-AbdelWahab-Swidan, Hatem-Mohamed-Seoudy

Presented by: Mr. Amr-Mohamed-Seoudy

HOW TO OPTIMIZE CONTROL IN SWRO PLANTS OPERATING WITH MULTIPLE PUMPS IN PARALLEL

Country of Attribution: Spain

Author: Eng. Francisco Javier Lorenzo Moral

Presented by: Eng. Francisco Javier Lorenzo Moral

SWRO MEGA PROJECT: IMPACT ON PROJECT SCHEDULE AND PROCUREMENT

Country of Attribution: UAE

Authors: Mr. Simone Puzzo, Mr. Roberto Mangano

Presented by: Mr. Simone Puzzo

Poster Presentations

PROCESS OPTIMIZATION: DESIGN GUIDELINES IN BWRO AND SWRO FOR ENERGY EFFICIENT HIGH RECOVERY SYSTEMS

Authors: Mr. Haytham Ahmed, Alisha Cooley, Casey Bly, Giancarlo Barassi, Radu Danila, Eli Oklejas

Presented by: Mr. Haytham Ahmed

Session 2.1: RO Membrane Distillation

Wednesday, October 23, 14.00-17.00, Room 4

Session Chairs and Co-Chairs

- Mr. Alistair Munro (PROJECX)
- Ms. Delia Pastorelli (SUEZ)
- Mr. Victor Verbeek (Toray Membrane)

Oral Presentations

NOVEL FEED SPACER DESIGNS FOR FOULING MITIGATION AND MEMBRANE FILTRATION ENHANCEMENT

Country of Attribution: Saudi Arabia

Authors: Dr. Noredine Ghaffour, S. Kerdi, A. Qamar, J.S. Vrouwenvelder

Presented by: Dr. Noredine Ghaffour

DEVELOPMENT OF SOLAR ABSORBING NANOPOROUS MEMBRANES FOR DIRECT SOLAR SEA-WATER DESALINATION

Country of Attribution: United Arab Emirates

Authors: Arwa Ali Alshareif, Ibrahim Husein Mustafa, Wafa Alnaqbi, Faisal Al Marzooqi

Presented by: Faisal Al Marzooqi

ADVANCED MEMBRANE SYSTEMS FOR THE EXTRACTION OF MINERALS AND FOR THE PRODUCTION OF FRESHWATER FROM THE SEA

Country of Attribution: Italy

Authors: Dr. Enrico Drioli, Mirko Frappa, Zhaoliang Cui, Ho Kyong Shon, Francesca Macedonio

Presented by: Dr. Enrico Drioli

THE USE OF MEMBRANE DISTILLATION IN HIGH SALINITY STREAMS

Country of Attribution: The Netherlands, Spain

Authors: Mr. Bart Nelemans, Joana Carvalho, Olga Ferrer, Carlos Gonzalez, Jorge Malfeito Sanchez

Presented by: Mr. Bart Nelemans

FOULING OF HOLLOW FIBER MEMBRANE DISTILLATION (MD) MEMBRANE IN A PILOT-SCALE PLANT FOR BRINE CONCENTRATION: AN AUTOPSY STUDY

Country of Attribution: Republic of Korea, Saudi Arabia

Authors: Hyeonrak Cho, Yongjun Choi, Sangho Lee, Seung-Hyun Kim, Jarrah Saleh Alfozan, Mohammed Farooque Ayumantakath, Ahmed Saleh Alamoudi

Presented by: Jarrah Saleh Alfozan

EXPERIMENTAL AND NUMERICAL ANALYSIS OF MEMBRANE DISTILLATION AFFECTED BY SCALE FORMATION

Country of Attribution: Germany

Authors: Sebastian Schilling, Dr. Heike Glade

Presented by: Mr. Sebastian Schilling

A NEW APPROACH TO A TOTAL INTEGRATED WATER MANAGEMENT FOR AUTHORITIES

Country of Attribution: United Arab Emirates

Authors: Eng. Asam Amin Al Mulla, Mr. Eryl Edwards

Presented by: Eng. Asam Amin Al Mulla



THURSDAY

THURSDAY

Thursday Oct 24 Schedule

08:00-12:00 Information Desk Open - *Sheikh Makhtoum Hall*

07:30-08:30 Technical Program Speakers Meeting
- *Lunch area*

08:30-13:00 IDA Affiliate Majlis Forums and
Corporate Sponsor Forums
- *Majlis and Plenary Theater*

09:00-13:00 Exhibition Hall Open

09:00-12:30 Technical Program Sessions

10:30-11:00 Coffee Break

13:00-15:00 Closing Luncheon and Award
Presentation - *Lunch Room*

IDA Affiliate Majlis Discussions and Corporate Sponsor Forums

Thursday, October 24th

Majlis Affiliate Forum Theater: 08.30-13.00

09.00-09.30

Indian Desalination Association
(InDA)



09.30-10.30

Korea Desalination Plant
Association



10.30-11.00

Coffee Break

11.00-11.30

Asia Pacific Desalination
Association (ADPA)



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

11.30-12.00

Japanese Desalination Association
(JDA)



12.00-13.00

Asociación Española de Desalación
y Reutilización (AEDyR)



Plenary Theater: 08.30-13.00

08.30-09.00

Pakistan Desalination Association
(PAKDA)



09.00-10.30

Australian Water Association
(AWA)

**AUSTRALIAN
WATER**

ASSOCIATION

10.30-11.00

Coffee Break

11.00-12.00

Levant Desalination Association
(LDA)



12.00-13.00

IDA Energy and Environment
Committee Forum



IDA Closing Luncheon

Thursday, October 24, 2019 (Dubai World Trade Center) 13:00-15:00

Guest will gather after the conclusion of the Congress activities to celebrate the success of the 2019 World Congress, the Presidential Lifetime and Emerging Leaders Achievement Awards and the technical Program Awards. Look back with us at the activities of the Congress week, and meet the new IDA President and Board members.



Thursday Technical Program Sessions

Thursday, October 24 (Morning) 9.00-12:30

Session 9.1, Innovation Room 1

- **Session Chair:** Mr. Kevin Price (AWTT, LLC)
- **Co-Chairs:** Mr. Thierry Noel (Armane Advisors) and Dr. Richard Stover (Gradiant Osmotics)

Session 2.9, RO Plant Commissioning and Operation Room 2

- **Session Chair:** Mr. Borja Blanco (Aqua Advise)
- **Co-Chairs:** Mr. Rachid Ghamraoui (BESIX) and Mr. Juan Miguel Pinto (Energy Recovery Inc.)

Session 7.1, Foundations for Success: Policy, Finance, and Market Challenges Room 3

- **Session Chair:** Ms. Jantje Johnson (OrangeBoat)
- **Co-Chairs:** Mr. Mounib Hatab (Future Pipe Industries) and Mr. Frank Rogalla (FCC Aqualia)

Session 10.2, Renewable Driven Desalination (Part 2) Room 4

- **Session Chair:** Mr. Thomas Altmann (ACWA Power)
- **Co-Chair:** Mr. Imad Feghali (Jacobs) and Mr. Jorge Salas (Abengoa)

Session 9.1, Innovation

Thursday, October 24, 9.00-12.30, Room 1

Session Chairs and Co-Chairs

- Mr. Kevin Price (AWTT LLC)
- Mr. Thierry Noel (Armane Advisors)
- Dr. Richard Stover (Gradiant Osmotics)

Oral Presentations

A COMPARISON OF DESALINATION TECHNOLOGIES ON THE BASIS OF PRIMARY ENERGY CON-SUMPTION

Country of Attribution: Saudi Arabia, USA, India

Authors: Mr. Thomas Altmann, Mr. Justin Robert, Mr. Andrew Bouma

Presented by: Mr. Andrew Bouma

UNLOCKING THE MYSTERY OF DESALINATION PROCESSES COMPARISON

Country of Attribution: Saudi Arabia

Authors: Dr. Muhammad Wakil Shahzad, Muhammad Burhan, Doskhan Ybraimkul, Seung Jin Oh, Kim Choon Ng

Presented by: Dr. Muhammad Wakil Shahzad

HIGH SALINITY BRINES AS A ROUTE FOR COMMERCIALISATION OF PRESSURE RETARDED OSMOSIS – FULL SCALE DEMONSTRATION

Country of Attribution: Denmark, Japan

Authors: Dr. Henrik Madsen, Takahito Nakao

Presented by: Dr. Henrik Madsen

4TH REVOLUTION, SMART WATER TREATMENT FACILITIES, FROM TOMORROWS FUTURE TO TODAYS REALITY

Country of Attribution: United Arab Emirates

Author: Dr. Jesus Ortiz Mingo

Presented by: Dr. Jesus Ortiz Mingo

DIGITAL MRO SUPPLY CHAIN ORCHESTRATION – THE ANSWER TO THE DIGITALISATION OF PURCHASING OF SPARE PARTS

Country of Attribution: Germany

Authors: Mr. Turgay Temur, Stefan Kessler

Presented by: Mr. Turgay Temur

INNOVATIVE SUPPLIER PARTNERSHIP TO SUPPORT SWRO LONG TERM OPERATION

Country of Attribution: Australia

Authors: Ms. Veronique Bonnelye, Pierre Lopez, Marc Gerguson, Jian Feng Wang, Kevin Clarke, Santhosh Ramalingam

Presented by: Ms. Veronique Bonnelye

LIFE+13 TRANSFOMEM: VALIDATION OF RECYCLED NF AND UF MEMBRANES IN FILTRATION PROCESSES

Country of Attribution: Spain

Authors: Patricia Terrero Rodríguez, Elena Campos Pozuelo, Mercedes Calzada Garzón, Raquel García Pacheco, Francisco Molina, Deborah Pomata, Manuel López, Junkal Landaburu, Eloy Garcia Calvo, Domingo Zarzo Martínez

Presented by: Eng. Patricia Terrero Rodríguez

IMPROVED BATCH REVERSE OSMOSIS CONFIGURATION FOR BETTER ENERGY EFFICIENCY

Country of Attribution: USA

Authors: Sandra P. Cordoba, Abhimanyu Das, Dr. David M. Warsinger

Presented by: Dr. David M. Warsinger

Session 2.9, RO Plant Commissioning and Operation

Thursday, October 24, 9.00-12.30, Room 2

Session Chairs and Co-Chairs

- Mr. Borja Blanco (Aqua Advise)
- Mr. Rachid Ghamraoui (BESIX)
- Mr. Juan Miguel Pinto

Oral Presentations

FUJAIRAH F1 SWRO EXPANSION, UAE. 3 YEARS OF ACCIONA O&M EXPERIENCE

Country of Attribution: United Arab Emirates

Authors: Mr. Emmanuel Pottier, Oscar Calles, Julio Ratia, Pedro Miranda

Presented by: Mr. Oscar Calles, Mr. Julio Ratia

O&M ENHANCEMENTS OF 10 MIGD BUSAN SWRO PLANT BY PUMPS CONFIGURATION MODIFICATIONS AND ICT SOLUTIONS

Country of Attribution: Republic of Korea

Authors: Seokho Choi, Younggeun Lee, Hyungkeun Roh, Sungju Park, Hogeol Ahn, Limhyun Cho

Presented by: Seokho Choi

NINE YEARS SUCESSFUL OPERATIONAL HISTORY OF SHUAIBAH 3 EXPANSION RO SEAWATER RO DESALINATION PLANT AT RED SEA COAST

Country of Attribution: Saudi Arabia, United Arab Emirates, Japan

Authors: Abdallah Alzyoud, Hussein AlMughrabi, Wael M. Khaldi, Ahmad Al Harth, Sultan Shamshudeen, Masahide Taniguchi, Takashi Kurai, Takuro Shishiyama

Presented by: Mr. Abdallah Alzyoud

OPERATING EXPERIENCE AND PROCESS OPTIMIZATION TO MAINTAIN THE LOW ENERGY CONSUMPTION FOR A 15 MIGD SWRO PLANT IN UAE

Country of Attribution: United Arab Emirates

Authors: Madanant Murugkar, Shrishail Kadam, Mandar Sapatnekar, C. Ravi

Presented by: Madanant Murugkar

ADVANCED SEAWATER REVERSE OSMOSIS SCHEME PROVIDES LOWEST ENERGY CONSUMPTION AND SAFER DRINKING WATER PRODUCTION IN OMAN

Country of Attribution: France, Belgium

Authors: Blanca Salgado, Delia Pastorelli, Dominique Martin, Sebastien Delagarde

Presented by: Ms. Delia Pastorelli, Ms. Blanca Salgado

IMPORTANCE OF PLANT OPTIMIZATION STRATEGIES

Country of Attribution: Oman

Authors: Kuteiba Hassan Hussein, Nilesh Prabhakar Mali

Presented by: Kuteiba Hassan Hussein

RO: HISTORY, BENEFITS & LIMITATIONS

Country of Attribution: USA

Author: Dr. Val S. Frenkel

Presented by: Dr. Val S. Frenkel

STABLE OPERATION OF FUJAIRAH II SEAWATER REVERSE OSMOSIS PLANT FOR A PERIOD OF OVER 8 YEARS

Country of Attribution: Saudi Arabia, United Arab Emirates

Authors: Abdallah Alzyoud, Lluís Artalejo, Marcelino Linas, Maaz Syed, Mr. Sridhar Gurusamy

Presented by: Mr. Sridhar Gurusamy

Oral Reserves

CAPITALISING ON EXPERIENCE IN SWRO COMMISSIONING

Country of Attribution: Oman

Authors: Kuteiba Hassan Hussein, Nilesh Prabhakar Mali

Presented by: Kuteiba Hassan Hussein

Session 7.1, Foundations for Success: Policy, Finance, and Market Challenges

Thursday, October 24, 9.00-12.30, Room 3

Session Chairs and Co-Chairs

- Ms. Jantje Johnson (OrangeBoat)
- Mr. Mounib Hatab (Future Pipe Industries)
- Mr. Frank Rogalla (FCC Aqualia)

Oral Presentations

NAVIGATING CROSS-INDUSTRY REGULATIONS TO ENSURE WATER SAFETY AND SECURITY FROM NUCLEAR DESALINATION PLANTS

Country of Attribution: USA, UAE, Italy

Authors: Ms. Caroline Lockhart Hughes, Mr. Omar Alzaabi, Mr. Giulio Mancini

Presented by: Mr. Omar Alzaabi

THE BENEFIT OF IMPROVING ASSET MANAGEMENT FOR DESALINATION PLANTS

Country of Attribution: United Kingdom, Italy, United Arab Emirates

Authors: Mr. Jonathan Bishop, Mr. Dario Breschi, Mr. Steve Dowell, Mr. Paul Chadwick

Presented by: Mr. Jonathan Bishop

SECURING SUSTAINABLE WATER RESOURCES FOR NUCLEAR POWER PLANTS

Country of Attribution: Austria

Authors: Dr. Ibrahim Khamis, Mr. Rami El-Emam

Presented by: Dr. Ibrahim Khamis

OPPORTUNISTIC WATER GENERATION WITH SWRO FOR SUSTAINABLE WATER GENERATION

Country of Attribution: United Arab Emirates, France

Authors: Dr. Corrado Sommariva, Yvan Treal

Presented by: Dr. Corrado Sommariva

DESALINATION IN EGYPT BETWEEN THE PRESENT AND THE FUTURE, INDUSTRY OR TRADE

Country of Attribution: Egypt

Authors: Mr. Amr-Mohamed-Seoudy, Mr. Hatem-Mohamed-Seoudy

Presented by: Mr. Amr-Mohamed-Seoudy

**OPERATIONS AND OPTIMIZATION OF WATER
MANAGEMENT IN THE ERA OF THE INDUSTRIAL
INTERNET OF THINGS**

Country of Attribution: Austria

Author: Dr. Uwe Seebacher

Presented by: Dr. Uwe Seebacher

**SOCIAL SUSTAINABILITY OF DESALINATION: A SWOT
ANALYSIS APPROACH**

Country of Attribution: United Arab Emirates

Authors: Yazan Ibrahim, Dr. Roqaya Ismail, Fawzi Banat,
Hassan A. Arafat

Presented by: Dr. Roqaya Ismail

**INCLUSIVE INNOVATIONS TO SUSTAIN ENVIRONMENT
AND SERVE MORE PEOPLE**

Country: Saudi Arabia

Author: Dr. Adil Ahmed Bushnak

Presented by: Dr. Adhil Ahmed Bushnak

Oral Reserve

**TOWARDS SUSTAINABLE DESALINATION INDUSTRY IN
GCC COUNTRIES**

Country of Attribution: United Arab Emirates

Author: Dr. Mohamed Abdel Hamyd Dawoud

Presented by: Dr. Mohamed Abdel Hamyd Dawoud

**AGRA WATER SUPPLY PROJECT – PROVIDING A
SUSTAINABLE SUPPLY OF DRINKING WATER TO THE
PEOPLE OF AGRA CITY**

Country of Attribution: India

Authors: Dr. Ghulam Mustafa, Mr. Rajesh Pankaj,
Peeyush Pankaj, Uday Kelkar

Presented by: Dr. Uday Kelkar

Session 10.2, Renewable Driven Desalination (Part 2)

Thursday, October 24, 9.00-12.30, Room 4

Session Chairs and Co-Chairs

- Mr. Thomas Altmann (ACWA Power)
- Mr. Imad Feghali (Jacobs)
- Mr. Jorge Salas (Abengoa)

Oral Presentations

ENHANCED-CYCLONE FOR SEAWATER DESALINATION: AN INNOVATIVE SOLAR DRIVEN SUSTAINABLE WATER SOLUTION WITH ENERGY STORAGE FOR ALL DAY OPERATION

Country of Attribution: Saudi Arabia

Authors: Kim Choon Ng, Muhammad Wakil Shahzad, Muhammad Burhan, Doskhan Ybyraiymkul

Presented by: Dr. Kim Choon Ng

SUSTAINABLE WATER DESALINATION BY MEANS OF A SOLAR PV-T POWERED MED-VC TECHNOLOGY

Country of Attribution: United Kingdom, The Netherlands, USA

Authors: Jiajun Cen, Lauren Beck, William Janssen, Leon Awerbuch

Presented by: Jiajun Cen

EFFORTS TOWARDS CHEMICAL FREE OPERATION: TWO YEARS EXPERIENCE AT UMLUJJ SWRO DESALINATION PLANT

Country of Attribution: Saudi Arabia

Authors: Mohammed Farooque, Abdullah Ahmed Alhajouri, MI Mohamed Ershath, Ahmed Saleh Amoudi

Presented by: Abdullah Ahmed Alhajouri

TIME-VARIANT ELECTRODIALYSIS DESALINATION

Country of Attribution: USA

Authors: Dr. Wei He, Ann-Claire Le Henaff, Jeffray Costello, Amos G Winter V

Presented by: Dr. Wei He

SEAWATER DESALINATION BY SOLAR REVERSE OSMOSIS BATTERY-LESS: RETURNS AND PERFORMANCES FROM FIELD OPERATION

Country of Attribution: France

Author: Dr. Daniel-Georges Villessot

Presented by: Dr. Daniel-Georges Villessot

DESIGN AND CONSTRUCTION OF A VARIABLE INPUT REVERSE OSMOSIS UNIT FOR RENEWABLE ENERGY APPLICATION

Country of Attribution: United Kingdom

Authors: Eng. Mercedesz Kovacsics, Paul Lamont-Kane, Matt Folley, David Rooney, Trevor Whittaker

Presented by: Eng. Mercedesz Kovacsics

COST EFFECTIVE SUSTAINABLE DISTILLATION USING HEAT LOCALIZATION THROUGH POROUS MEDIA

Country of Attribution: USA

Authors: Dr. Ethan Languri, Divya Jaladi, Bob Piras

Presented by: Dr. Ethan Languri

A SOLAR POWERED MED-VC HYBRID TECHNOLOGY FOR WATER DESALINATION

Country: The Netherlands, USA

Authors: William Janssen, Lauren Beck, Leon Awerbuch, Jiajun Cen

Presented by: Lauren Beck

NOVEL DELIVERY MODELS FOR SWRO DESALINATION PLANTS: KEY OPPORTUNITIES AND KEY DESIGN RISKS

Country of Attribution: United Kingdom

Authors: Paul M. Gerard, Hugh Thomas

Presented by: Paul M. Gerard

2017
ATION

PAULO, BRAZIL



EXHIBITION

EXHIBITION

Exhibitor Listing

Company - A	Booth Number
Abengoa	C8
Acciona AGUA	B20
American Water Chemicals, Inc.	C44
ANDRITZ	A32
Aquallia	A26
Arflu	B43
ASAHI KASEI CORPORATION	B35
Avista Technologies, Inc.	A44

Company - B	Booth Number
BEAUDREY	A33
BERNARD CONTROLS	B67
BESIX	C7
BMS Factories	C6
Boll & Kirch Filterbau GmbH	A46
BUTTING	B6

Company - C	Booth Number
CADAR Ltd.	A14

CARAMONDANI DESLINATION PLANTS LTD	B66
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CASTFLOW VALVES SL hilegems	B68
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Company - D	Booth Number
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DAICEL CORPORATION	A7
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Danfoss A/S	B8
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DUECHTING PUMPEN	B41
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DuPont Water Solutions	B29
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Company - E	Booth Number
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EBRO ARMATUREN	B44
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ENGIE (International Power SA)	A20
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Energy Recovery	C23
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Company - F	Booth Number
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FLOWSERVE	B58
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Fluid Equipment Development Co. (Fedco)	A50
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Fluytec	B10
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Fujifilm Membrane Technology	C20
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Company - H	Booth Number
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Harbin ROPV Industrial Co., Ltd.	A12
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Company - I	Booth Number
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International Desalination Association	A16
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ILF Consulting Engineers	A30
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INGE gMBh-basfS Ultrafiltration Membrane Business	B13
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Italmatch Chemicals – Advanced Water Solutions (BWA)	A25
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Company - K	Booth Number
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King Lee Technologies	B60
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Kurita Water industries	B42
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Company - L	Booth Number
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LG Water Solutions	C42
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Company - M	Booth Number
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Metito	C62
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MPG Mendener Praezisionsrohr	C25
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Company - P	Booth Number
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Piedmont	A55
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PROJECX & Partners	B46
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Promega Corporation	A15
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PROTEC ARISAWA	B5
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PWT	A54
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Company - S	Booth Number
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Sacyr Water Services	B28
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Saline Water Conversion Corporation	B25
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Sasakura Engineering Co. Ltd.	B50
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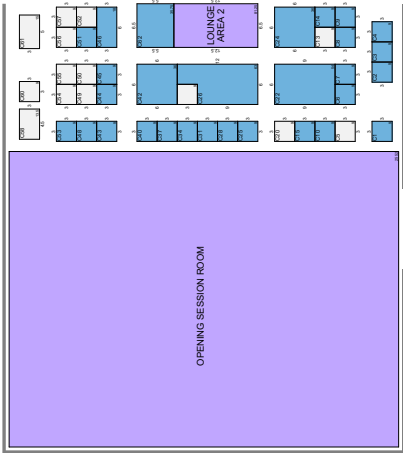
Solenis	B48
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SUEZ	C26
Sulzer	B2
Company - T	Booth Number
TALIS	B56
Technol Portoroz	B24
TECVAl, S.L.	B59
Toray Industries, Inc.	A10
Torishima Pump Mfg. Co., Ltd.	C46
TOYOBO CO., LTD.	A52
Company - U	Booth Number
UET Water	C45
Unique Solutions for Chemical Industries Co.	A6
Company - V	Booth Number
Veolia	C22
V-LINE EUROPE GmbH	B21
Company - W	Booth Number
WEG	A8
Company - Z	Booth Number
ZHE JIANG PARKSON WATER INDUSTRY EQUIPMENT STOCK CO., LTD.	A31



1000
DUBAI WORLD TRADE CENTRE

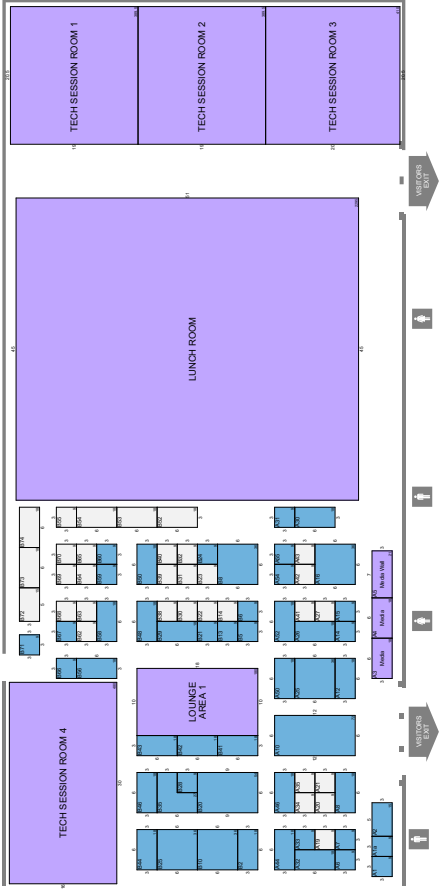
SHEIKH MAKTOUM HALL



IDA WORLD CONGRESS 2019

20-24th October

SHEIKH RASHID HALL



Exhibitor Profiles

ABENGOA

C8

Abengoa Agua, S.A.

Sevilla, Spain

Contact: *Maria Eugenia Baños Rojas*

Email: mariaeugenia.banos@abengoa.com

www.abengoa.com

The water sector is in continuous evolution searching for more sustainable solutions to water scarce, where Abengoa (www.abengoa.es), with over 75 years of experience, has developed large projects as desalination plants, with a total installed desalinated capacity of more than 1.7 million m³/day, that will increase to 3.7 when the portfolio under construction is completed.

Abengoa is an international company that applies innovative technology solutions for sustainability in the infrastructures, energy and water sectors.



B20

ACCIONA AGUA

Madrid Spain 28108

Contact: *Elena Reyna*

Email: elena.reyna.monasterio@acciona.es

www.acciona.es

The water business of ACCIONA is responsible for managing the complete water cycle to serve end users in areas from water collection and water purification—including desalination—to wastewater treatment and return to the environment.

Thanks to innovation in the design, implementation and operation of water treatment, purification and desalination plants, the company is a leader in global solutions that contribute to sustainable development in the water industry.

ACCIONA's strategy is to maintain its presence in the complete water cycle—construction, operation and services—both in Spain and in international markets.

Today, ACCIONA serves the supply needs of a total population of 100 million people in more than 30 countries across the world. In 2018, it had a portfolio which totaled 3,779 million euros and a turnover of 639 million euros.



C44

American Water Chemicals

Plant City, Florida USA

Contact: *Veronica Varo*

Email: info@membranechemicals.com

www.membranechemicals.com

American Water Chemicals® (AWC) was created in 1993 by a group of membrane desalination experts in response to the demand for more reliable membrane treatment chemicals and services. Over the years, our unique understanding of water chemistry has earned us a worldwide reputation for resolving complex operational issues. AWC® has become renowned as one of the most trusted suppliers of membrane chemicals for RO/NF systems. Our goal is to enable our customers to meet their increasing water production demands, cope with concentrate disposal restrictions, and reduce their energy consumption through the use of our membrane antiscalants, cleaning chemicals and biocides.

ANDRITZ

A32

ANDRITZ

Dubai, United Arab Emirates

Contact: *Muhammed Abou Daoud*

Email: Muhammad.AbouDaoud@andritz.com

www.andritz.com

ANDRITZ is a globally leading supplier of plants, equipment, and services for hydropower stations and for solid/liquid separation in the municipal and industrial segments. With over 160 years of experience, 25,600 employees, and more than 250 locations in over 40 countries worldwide, ANDRITZ is a reliable and competent partner and helps its customers to achieve their corporate and sustainability goals.

ANDRITZ Hydro is one of the leading global suppliers of electromechanical equipment for hydropower plants. With more than 31,000 turbines installed, the business area provides the complete range of products, including turbines, generators, and additional equipment of all types and sizes – “from water to wire” for small hydro applications to large hydropower plants with outputs of more than 800 megawatts per turbine unit. Pumps (for water transport, irrigation of agricultural land, and applications in various industries) and turbogenerators for thermal power plants are also assigned to this business area.

ANDRITZ Separation is one of the leading separation technology specialists with the broadest technology portfolio in solid/liquid separation. The industries served include sectors ranging from environment to food, chemicals, and mining and minerals. The comprehensive product portfolio comprises mechanical technologies such as centrifuges, filters, screens, thickeners, or separators, and thermal technologies such as dryers or coolers.



A26

Aqualia - booth 126

Madrid, Spain

Contact: *Alberto Justel Lera*

Email: AJustelL@fcc.es

www.aqualia.es

Aqualia is the water management company owned by the citizen services group FCC (51%) and by the Australian ethical fund IFM Investors (49%).

Aqualia is Europe's fourth largest private water company in terms of population served and ranks amongst the top ten worldwide (GWI, November 2017). We have achieved this position by rendering full service and being capable of providing solutions that satisfy the needs of public and private entities and organisations throughout all phases of the water cycle, regardless of whether the purpose is for human, farming or industrial use.

Aqualia is a benchmark in the sector and stands at the vanguard as a specialised, transparent and innovative entity. We've reached this position thanks to the commitment and extensive experience of our team of professionals who are constantly striving to improve efficiency in production processes and optimise resources, while placing citizens clearly at the core of our actions and policies.



B43

Arflu

Sopela, Spain

Contact: *Jon Lertxundi*

Email: *jon@arflu.com*

www.arflu.com

The company is structured into five different divisions, Petrochemical, Gas, Water, Energy & Marine. Arflu, incorporated in 1988, designs and manufactures a wide range of Industrial Valves such as Ball, Gate, Globe, Check, Plug and special products like Dual Expanding Plug, Rising Stem Ball, Desalination Plug & Control valves.

The aim of Arflu in the development of their products is customer and market satisfaction through tailor design, high quality products and careful service.

Arflu is a company with great capacity to adapt to the needs of both the market and clients and it is in continuous growth with multiple offices around the world. We take special care in pre and post sales with customer service.

microza

B35

ASAHI KASEI Corporation

– Microza Division

Tokyo, Japan

Contact: *Amrish Rathi*

Email: *amrish@microza.ae*

www.microza.com

Microza has built up its reputation as the top tier hollow-fiber membrane manufacturer through its global track records not only in the field of water and waste treatment but also in specialized process in various industries. The unique manufacturing process gives Microza membranes superior chemical & physical robustness and sharp pore size distributions that provide superior, proven and long-term stable filtration performance. These are available in a variety of product types and system configurations to meet variant filtration requirements. The Microza membranes can be used in water filtration for potable/surface water, waste water recycle and reuse, desalination pre-treatment and more.

Microza Head office location: Asahi Kasei, Hibiya Mitsui Tower, 1-1-2 Yurakucho, Chiyoda-ku, Tokyo, 100-000



Creative Chemistry. Smart Solutions.

A44

Avista Technologies, Inc.

San Marcos, California USA

Contact: Melissa Kaysen

Email: mkaysen@avistatech.com

www.avistatech.com

Avista® Technologies: a Kurita company is an industry leader in specialty chemical formulations and process support for reverse osmosis, microfiltration/ultrafiltration and multimedia filtration systems in over 90 countries. Our extensive line of membrane specific formulations includes NSF certified antiscalants, cleaners, coagulants, chlorine scavengers, and membrane storage chemicals and EPA certified biocides.

Our laboratories foster continuous chemical development and membrane compatibility testing in accordance with key protocols accepted by the industry's leading manufactures. All Avista formulations undergo comprehensive product testing and regulatory certifications to ensure they meet the unique challenges posed by diverse applications and challenging feedwaters.

In our fully equipped laboratories, we develop chemistry and test for compatibility using a strict protocol widely accepted by all major membrane manufactures. We are leaders in membrane analytics with more than 3500 membrane autopsies using CEISM or Chromatic Elemental ImagingSM and data collected on over 150,000 cleaning studies.

Our team of Application Specialists and Technical Engineers provide worldwide support services including procedure and chemical application recommendations, data normalization and on-site troubleshooting.

Your success is the driving force behind everything we do to enhance the performance, reliability, and productive life of your membrane system and we are pleased to be your partner.



Beaudrey

Paris, France

Contact: Julien Burgue

Email: julien.burgue@beaudrey.com

www.beaudrey.com

A33

Beaudrey specializes in the design, fabrication and installation of seawater intake screens for all types of desalination plants (SWRO, MSF, MED). Beaudrey stop gates, trash rakes, traveling band screens, drum screens, microstrainers, pressure-line strainers, debris filters and continuous tube-cleaning systems have been supplied to over 80 countries worldwide and is leader in the Middle East. Most use materials are 316L, Duplex and SuperDuplex stainless steel. For more information please visit www.beaudrey.com



BERNARD[®]
CONTROLS

Bernard Controls

Paris, France

Contact: Abrar Shaikh

Email: abrar.shaikh@bernardcontrols.com

www.bernardcontrols.com

B67

Bernard Controls is an 80 year old France based company and is a Global Manufacturer of Electric Actuators. Bernard Controls has a vast reference list of globally installed projects. A world leader in the nuclear sector, Bernard Controls is one of the top 3 players in the world electric actuation business. We have Actuator ranges for PWI Market, Oil & Gas, Nuclear sectors and new range of Electro-Hydraulic Actuator -FSE (Fail-Safe Electric).



C7

BESIX

Dubai, United Arab Emirates

Contact: Rachid Ghamraoui

Email: rghamraoui@besix.ae

www.besix.ae

Since first going into action in 1909, the BESIX Group has over the years grown into a multidisciplinary company with a leading position in its markets: construction, property development and concessions. BESIX Contracting specializes in construction, infrastructure and marine works, often in contracts with a high level of complexity. In Benelux and France, the Group's regional affiliates BESIX Infra, Belemco, Cobelba, Jacques Delens, Vanhout, Wust and Lux TP ensure a strong presence and a local approach. With Franki Foundations, West Construct, Socogetra, Sanotec and Van den Berg, the Group offers specialist niche solutions for the building market like deep foundations, geo-engineering, road construction, water treatment and cable and pipeline construction.

Backed by our experience in our home markets, we have built up strong positions outside Europe. A typical example is the Middle East, where over a 50 year period we have built up an impressive portfolio. This diversification in activities and geography pays off by reducing our risk exposure.



A46

Boll & Kirch Filterbau GmbH

Kerpen, Germany

Contact: Joy Marx

Email: joy.marx@bollfilter.de

www.bollfilter.de

As an industry leader in filtration technology, BOLL & KIRCH offers integrated solutions for the protection of reverse osmosis plants. Our self-cleaning filtration solutions reliably remove impurities from the seawater. BOLLFILTERS enable efficient continuous operation of the membrane downstream in the desalination process.



BUTTING

B6

Butting

Wittingen/Knesebeck, Germany

Contact: Gabriele Schlundt

Email: Gabriele.schlundt@butting.de

www.butting.de

Since 30 years BUTTING has been supplying corrosion resistant and pressure resistant stainless steel pipes, pipe equipment and prefabricated piping components made from special alloys for sea water desalination plants all over the world. We offer our customers a wide range of services, from the production of pipes and prefabrication right through to site supervision and support. By our expertise and highest quality standards we can offer our customers perfect service and cost efficiency. The production of stainless steel pipes has always been our core competence. In addition, we offer extensive prefabrication of stainless steel pipelines according to models, isometric drawings and piping plans. By extensive prefabrication and further processing of our pipe at our works we are able to optimise the quality of the pipelines and offer products ready for installation at reasonable prices. Advantages to the customers will pay off:

- Savings in terms of space and staff on site
- Reduced installation time
- Improved product quality
- Reduced extent of testing
- Reproducibility

Our expertise in forming, welding, machining and materials technology, as well as quality assurance guarantee our customers the supply of first class products. BUTTING is a reliable supplier of pipelines for numerous industrial applications all over the world.



C6

BMS Factories

Jeddah, Saudi Arabia

Contact: Atef Khan

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BMS Factories Manufacturing full range of Water Treatment Filtration Media products with an active statistical processing control program monitoring material, products are tested as produced and all shipments are guaranteed to meet the stringent specifications standard of ANSI/AWWA B100-09 and ASTM E11. Advantages range from high quality and competitive pricing to immediate delivery nationwide, package variety, extremely pure Silica content ($\text{SiO}_2 > 99.18$)

We manufacture and supply products that include: Silica Sand, Natural Gravel, Quartz Pebbles, Anthracite, Garnet, Activated Carbon, Birm, Lime Stone, Calcium Carbonate, Silica Flour, Manganese Green Sand, Hydrated Lime, Marble chips, Dolomite, Frac Sand, Marble Powder and other natural minerals and are characterized by our strategic locations in all Saudi Arabia regions where extracting the world purest Silica Sand & Quartz Gravel.



A14

Cadar Ltd.

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CadarLtd was established in 1985 with a primary business of supplying components to the water treatment industry. Companies supplied may require such components for drinking water, industrial water, waste water or process water. The core business, however, is the supply of filtration components for the construction of rapid gravity and pressure sand filters. Over recent years Cadar has been more involved in the design and component supply of the complete filter floors. This may be a suspended concrete filter floors , a header and lateral design or a steel plate within a pressure vessel. Of particular success over the last 30 years has been our "Monolithic" concrete suspended floor. This has been very successfully installed into over 400 plants throughout the world for both new and retrofit projects. These projects may involve the treatment of drinking water, waste water or pre-treatment for sea water de-salination. In recent years the de-salination market has been very successful for Cadar Ltd, both using steel pressure vessels and Monolithic concrete systems. For our Monolithic filter floors we offer a comprehensive design and component supply package. This includes drawings, steel reinforcement design, structural load calculations and flow profiling of air and water. For and on behalf of Cadar Ltd Dave Thomas. Sales Director



B66

**Caramondani Desalination Plants Ltd/
Cobetter**

Nicosia, Cyprus

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Caramondani Desalination Plants Ltd is the owner and operator of the Dhekelia Desalination Plant (SWRO, 60.000m³/day) and the Paphos Desalination Plant (15.000m³/day) in Cyprus. The company which is active in desalination since 1973 provides high-quality solutions for various water treatment applications including ultra filtration, nano filtration, reverse osmosis, deionizers and brine concentration processes. Its scope of works includes the pre-treatment step, which can accommodate the most difficult waters as well as the required post-treatment to meet any international standards for drinking or industrial purposes.

The company's long experience in plant operation has provided valuable know-how which over the years has helped to effectively address a multitude of operational challenges and resulted in efficiently designed plants equipped with high-quality equipment ensuring long-term, trouble-free operation.

As a result of its operational experience Caramondani Desalination Plants entered into an agreement with leading global innovator of filtration solutions, Cobetter Filtration, for the distribution of its high-quality, high-flow cartridge elements.

The Cobetter 60" pleated high-flow element has an area of 8.4 m². Its 5-layer design provides gradient filtration resulting in a high dirt holding capacity and ensuring excellent water quality prior to the reverse osmosis membranes. The gradient filtration design results in longer filter life as the particles are trapped by the element according to their size: larger particles are trapped in the internal part of the element and as water flows through the element the particles are removed in a gradient so as to ensure that the element will have the maximum capacity. Cobetter Filtration elements are unique in that they are the only elements available with 5 layers and gradient filtration. Furthermore, Cobetter Filtration elements use a membrane thickness of 2.2 mm giving the possibility to operate at higher differential pressures. Beta factor at 5 micron is 5000.



Castflow Valves SL Hilegems

Madrid, Spain

B68

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Castflow valves is a valve manufacturer specialized in check valves. Manufacturing range BALL CHECK, DUAL PLATE, SILENT CHECK VALVE (NOZZLE CHECK and AXIAL CHECK) and FOOTVALVES. Our range of manufacturing covers DN25 (1") to DN1400 (56") and other sizes on demand Ratings PN10/16/25/40/64/ANSI150/300/600#wafer/flanged style. Valves can be casted in different materials: iron, Steel, Stainless, Superduplex and other special exotic alloys. Our company has been a reference in many of the most important desalination projects globally. Also we are main suppliers of important equipment builders that rely since many years on our professional collaboration and quality. The proper selection of the non-return check valves for pumping systems is very important and some elements are to be considered for selection. The type of application, the pressure drop, water hammer and the energy consumption and acquisition costs For smaller pumping systems these elements are less significant, however in bigger systems these elements can have an important impact on the total energy consumption. At Castflow Valves we can assist with the technical support in order to select most recommendable valves and materials.



A7

Daicel Corporation

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Daicel group is globally expanding its own business fields beyond the border of the chemical industry into pyrotechnical systems for automobile airbag as well as various chemical products, based on our core technologies such as cellulosic chemistry, organic chemistry, polymer chemistry and pyrotechnic engineering. We contribute to a better quality of life by developing and manufacturing products that society needs and values, through the application of proprietary technologies and specific know-how.

In the membrane business, we are providing total water services such as proposal of reverse osmosis (RO), ultrafiltration (UF), microfiltration (MF) membrane modules, installing processing systems and maintenance. Our products are used in a wide range of fields including water treatment, sewage, wastewater treatment, seawater desalination, food and medical industries. At present, we have combined various cellulose derivatives and developed hollow fiber membrane modules using our synthesized materials. Newly designed modules retain the cellulose features as its highly permeation flux and anti-fouling, which are superior in its resistance against chemical cleaning reagents and bacterial formations compared to conventional cellulose products.

Especially, our UF membrane modules will contribute to your solutions in desalination pretreatment applications with lower operating costs.



B8

Danfoss A/S

Nordborg, Denmark

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Danfoss –this is where energy efficient desalination and water reuse start Danfoss is committed to supporting the desalination industry with energy efficient SWRO solutions. Our solution portfolio displayed at IDA 2019 comprises four core technologies for efficient desalination: High-pressure pumps, AC drives, Energy Recovery Devices, pressure transmitters and controls. These combine into sustainable, highly efficient and lasting water purification solutions that return substantial energy savings in land-based, marine and mobile solutions. Explore our range of APP pumps used in more than 20,000 SWRO plants around the world to obtain maximum efficiency, reliability and flexibility in system set-up.

Learn more about the patented Danfoss iSave ERD, scalable for use in SWRO applications of any size and type.

Experience the Danfoss VLT® AQUA Drive FC 202, designed for maximum performance of water and wastewater systems with minimum energy consumption.

See the new Danfoss DST P40I titanium pressure transmitter designed to meet requirements in corrosive environments as desalination systems.

Check out the new Danfoss APP W HC pump for ZLD/MLD waste water treatment, built for outlet pressures of up to 120 bar and reducing energy consumption of ZLD/MLD plants significantly. Go to www.desalination.danfoss.com for more information.



B41

DÜCHTING PUMPEN

Witten, Germany

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www.duechting.com

Customized Solutions –No exception but our standard. DÜCHTING PUMPEN is an -in 3th generation privately owned -company with the headquarter in the Ruhr Area in Germany. With 80 years of experience in the field of advanced centrifugal pumps for use in the desalination reverse osmosis industry, flue gas desulphurisation industry, mining and chemical pigment industry. DÜCHTING PUMPEN offers the right solution for almost every application where the transport of liquids plays a role. The portfolio of DP mainly comprises the production of single-stage and multi-stage centrifugal pumps. Our motto “Customized Solutions –No exception but our standard” forms the basis of our sophisticated range of products. The capabilities of our company in the design, manufacture, testing and commissioning of our products is highly respected in the industries we serve. Our reputation is built on a sustainable corporate policy, efficiency, reliability, innovation and customer after-sales service. The roundabout 120 DP staff-members are committed to excellence, team spirit and commitment to the company and its products.



B29

Dupont Water Solutions

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Water creates unlimited possibilities, whether it's in manufacturing, growing, refining, or simply living. Through advanced technologies, access to global intelligence and a commitment to sustainability, DuPont Water Solutions helps customers produce, purify and extract some of the most commercially important products around the world. From oil and gas refineries to biopharmaceutical manufacturers and municipalities, moving customers forward, enabling them to confidently explore new opportunities and shape the future is the mission. For some, it's water. For us, it's possibility.

Since the 1940s, Water Solutions has been an innovator in water separation technologies, expanding and growing along the way. Today, Water Solutions offers the most complete portfolio of industry leading products available, along with a team that is second to none.

As the global leader in sustainable separation and purification technologies, we are helping customers across industries and countries make real progress in ways that not only improve productivity, efficiency and profitability, but also reduce waste, energy consumption and environmental impact.

Water Solutions brings a tremendous depth and breadth of resources to the table, and we invite you to join us. We are here to make your progress our promise, and are positioned to meet your needs in every region of the world.

DuPont Water Solutions – Possibility Flows with us!



B44

EBRO ARMATUREN

Hagen, Germany

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EBRO ARMATUREN, headquartered in Hagen, Germany, is one of the world's leading manufacturers of industrial valves, actuators and automation technology. With our international network of production plants, subsidiaries and representatives we are always close to the customer. Excellent expertise combined with high-quality products makes us an internationally acknowledged partner of the machine and plant engineering sector. As an owner-managed family business we stand for quick decision-making, high individual responsibility, continuity and sustainable investments in research and development. We offer customized solutions for almost every individual application. By developing and producing our own actuators, we can guarantee an optimal matching with the valves. Furthermore, we are able to react flexibly and quickly to special market requirements for offering individually developed solutions to our clients. Under the umbrella of the Bröer Group our product range is broadened by high-class knife gate valves produced by our Swedish subsidiary Stafsjö Valves AB, one of the leading suppliers in this sector. Worldwide more than 900 employees in 29 countries stand behind the Bröer Group. In the 2018 financial year a turnover of 158 million euros was generated.



C23

Energy Recovery

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Energy Recovery, Inc. (ERI) is an energy solutions provider to industrial fluid flow markets worldwide. Energy Recovery solutions recycle and convert wasted pressure energy into a usable asset and preserve pumps that are subject to hostile processing environments. With award-winning technology, Energy Recovery simplifies complex industrial systems while improving productivity, profitability, and efficiency within the oil & gas, chemical processing, and water industries. Energy Recovery products save clients \$2 billion (USD) annually. Headquartered in the Bay Area, Energy Recovery has offices in Dubai, Houston, Madrid, and Shanghai. For more information about the Company, please visit www.energyrecovery.com.



A20

ENGIE (International Power SA)

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ENGIE is a global reference in low carbon energy and services founded on three key activities: low CO2 electricity generation, particularly from natural gas and renewable energy, energy infrastructures and customer solutions. ENGIE is active in 70 countries, employs 160,000 people and achieved revenue 61 billion in 2018.

With the ambition to become the world leader in the zero-carbon transition, ENGIE develops solutions that combine performance and sustainability and that support its customers in building harmonious progress.

ENGIE Middle East, South and Central Asia and Turkey (MESCAT), with HQ in Dubai (UAE), has a regional presence of 30 years, during which it has been deploying expert solutions to support local customers – private, corporate and local authorities- in realizing their vision.

ENGIE is the regional leading independent power and water producer with 32 GW power production and 5.5 million m3/day potable water production. The portfolio includes 810MWp of solar PV and 80 MW wind in India. In Turkey, ENGIE has 370,000 customers in gas distribution via IZGAZ and is active in energy retail, trading and origination.

ENGIE owns 40% of Tabreed, the regional leader in district cooling, which is a key regional development platform. The Group is also a GCC's leading Facility Management provider via ENGIE Cofely.



B58

Flowserve Irving

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Flowserve Corporation is one of the world's leading providers of fluid motion and control products and services. For over 50 years, Flowserve has offered pumps, energy recovery devices, valves, valve automation and seals to the global desalination industry.

As global demand for clean water continues to accelerate, safe and reliable desalination solutions are increasingly important to many communities. The energy-efficient and scalable design of the seawater reverse osmosis (SWRO) process makes it the leading choice for municipal and commercial water supply.

With more than a half-century of experience providing key products incorporating the latest technologies and support services, Flowserve offers you trusted pumps and energy recovery solutions that are considered among the most efficient and reliable in the world.

By bringing together industry-leading pumps and valves, high-efficiency ERDs, unmatched materials expertise and desalination-specific application knowledge, Flowserve is a single-source provider of complete, integrated flow-control systems for desalination plants around the world.

A skilled local team will handle your services, upgrades and repairs. Long-term agreements are available from a specialized group capable to ensure you meet your operating goals.



Making fluid energy work for **you**™

A3

Fluid Equipment Development Co.(Fedco)

Monroe, Michigan USA

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Fluid Equipment Development Company (FEDCO) is a global leader in the design and manufacture of centrifugal pumps and turbocharger energy recovery devices (ERD) used in applications ranging from off-shore platforms and factory ships to mega-scale seawater RO and brackish water RO installations and everything in between. Simply put, FEDCO equipment can meet any challenge in desalination.

Our pumps and turbocharger ERDs are custom manufactured from super duplex stainless steel for corrosion resistance while engineered for optimum efficiency with flows from 5 m³/h to 3,200 m³/h, pressures to 120 bar and unmatched durability and warranty protection. Our products are designed and manufactured with only one goal - to provide our customer with the lowest cost water.

Partner with us to boost your RO systems to higher profits. FEDCO *is making fluid energy work for you*™.



B10

Fluytec

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FLUYTEC Filtration Technologies is a Spanish Engineering and Manufacturing Company with 40 years of history and more than 25 million m³/day of installed capacity worldwide. Specialized in RO pre-treatment filtration, Fluytec holds a global leadership in non-corrosive solutions and equipment for Seawater applications. As a result of continuous investments in R+D+i activities, Fluytec has developed a wide product range suitable for the vast majority of RO filtration needs:

- Macro-filtration: Removal of Suspended Solids $\geq 25\mu\text{m}$. Manual & Automatic Filters.
- Microfiltration: Removal of Suspended Solids $\geq 1\mu\text{m}$. Bag Filters & Cartridge Filter Housings.
- Ultrafiltration: Removal of Suspended Solids $\geq 0.03\mu\text{m}$. Conventional UF Systems & Patented Proprietary Technologies: Continuous Ultrafiltration (c-UF) & Integrated Ultrafiltration (i-UF). Additionally, several complementary products (Static Mixers, Filtering Nozzles, Filtering Elements ...) and customized Plug&Play systems are also available in Fluytec's offer.

FUJIFILM

C20

Fujifilm Membrane Technology

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FUJIFILM MEMBRANE TECHNOLOGY NEVER STOP

For more than 80 years, we've continued to transform ourselves. Building from our origins as a photographic film company we evolved into a technology company working in areas such as medial systems, photo- and electronic imaging, recording media and industrial products. We have adapted our film technology to create innovative ion exchange membranes to serve the desalination needs of the industry, our customers and the environment.

Fujifilm membranes are used in electro separation technologies, such as Electro Dialysis (ED) and Electro Dialysis Metathesis (EDM). As each technology has its own focus area and requirements (fresh water production, brine concentration), we developed a broad portfolio of membranes. This ranges from low electrical resistance membranes, broad pH range membranes to low water permeating membranes to boost your system performance.

To gain maximum advantage of our membranes performances, Fujifilm developed a robust and reliable EDR module design to enable:

- Up to 50% system foot print reduction.
- Simple tuneable product water desalination at fluctuating feed waters.
- Highest flow rate and desalination capacity in the market
- High water recovery and low energy consumption

Interested to learn more about our membrane technology? Visit www.fujifilmmembranes.com or stop over at our booth C20.



A12

Harbin ROPV

Harbin HeiLongjiang, China

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It all began in 1984, Harbin ROPV Industrial Co., Ltd set out with a single vision-become a global leader in the FRP pressure vessel and water treatment solutions. We focus on innovation and technology to deliver a broad range of water treatment applications worldwide.

Over the past 20 years, we've made major strides in realizing our vision and ROPV has emerged as a world class manufacturing company. Our engineering group is composed of member of the prestigious, government sponsored China FRP Design Institute.

ROPV has been engaged in the development and manufacture of FRP pressure vessels and OEM products for over 20 years, and is the largest and the most experienced pressure vessel manufacturer in the Asia/Pacific Region. ROPV offers a full-line of 2.5", 4", 8", 16" and 18" pressure vessels, covering all major industry system and application requirements with the maximum operation pressure of 1200PSI and multiple side port configurations up to 4".

ROPV continues to innovate by developing numerous registered patents related to our manufacturing process and product designs. We've successfully developed a number of OEM products for UF, EDI, large diameter membranes, and emerging water treatment technologies, and is certified by various international-standard-setting bodies.

Today, we have an established local presence, at the same time ROPV is realizing a broader vision of being a major contributor of water treatment applications technology globally.



CONSULTING
ENGINEERS

A30

ILF Consulting Engineers

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The ILF Group is an international engineering and consulting firm that helps its clients successfully execute technically demanding industrial and infrastructure projects. With 2,000 highly qualified employees at more than 40 office locations across five continents, the companies of the ILF Group have a strong regional presence. This enables ILF to interact with clients and project parties on site. At the same time, close cooperation within the network of the ILF Group makes it possible to draw on international experts and make use of their special experience, processes, and tools.

The combination of local presence and international expertise ensures that client needs are met in the best possible way. The company is privately owned by the founding families and is therefore completely independent. It has no affiliation.



B13

Inge GmbH-BASFs Ultrafiltration Membrane Business

Greifenberg, Bavaria, Germany

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www.inge.ag

inge GmbH, based in Greifenberg, Germany, is a world-leading provider of ultrafiltration technology, a membrane process used to treat drinking water, process water, waste water, and sea water. Its products are based on the Multibore® membrane developed and patented by inge GmbH. This membrane features extremely small pores that reliably intercept not only particles, but also microorganisms such as bacteria and even viruses, thereby ensuring a consistent supply of clean water. The company's range of products includes highly-efficient ultrafiltration modules and cost-effective, space-saving rack designs as the core components of water treatment plants, rounded off with outstanding technical support for its customers. In August 2011, inge® became part of BASF, the world's leading chemical company. You can find more information on inge GmbH at www.inge.basf.com.



A25

Italmatch Chemicals
– Advanced Water Solutions (BWA)

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Italmatch Chemicals “Advanced Water Solutions” platform is the result of the acquisition and integration of BWA Water Additives into Italmatch Water and Oil Performance Additives business unit. The combination creates a leading global manufacturer and supplier of specialty water management additives into the oil and gas, industrial water & process treatment, desalination, mining and HI&I markets. With strong complementary brands and over 40 years’ experience, the business provides customers with innovative solutions, supported by wide-ranging technical support and dedicated customer service. Desalination of water has become common practice with processes based on both distillation and membrane separation techniques. Italmatch Advanced Water Solutions chemical range offers solutions to optimize pretreatment systems, control foam, enhance tube wetting and prevent scale build up on heat transfer surfaces and reverse osmosis membranes. Italmatch Advanced Water Solutions product line includes:

- Flocon® and Dequest® SPE ready to use antiscalants and membrane cleaners for reverse osmosis and nanofiltration applications.
- Albrivap® and Belgard® antiscalants for thermal desalination (MED and MSF)
- Albrivap® and Belite® range of antifoams
- Qualipol and Qualifloc liquid emulsion polymers and specialty acrylamide-free grades For more information on Italmatch

Advanced Water Solutions business, please visit www.italmatch.com www.dequest.com and www.wateradditives.com



B60

King Lee Technologies

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King Lee Technologies uses specialized chemistry and process support to optimize operational costs for reverse osmosis (RO) and nanofiltration (NF) membrane systems. Since originating membrane support chemistry in 1977, we have benefitted thousands of brackish ground, surface, seawater, and wastewater facilities. We formulate and manufacture specialty antiscalants, antifoulants, membrane cleaners, sanitizing and preservative agents, and microbiological control chemistry. We distribute membranes and cartridge filters and perform off-site membrane cleanings. Our technical experts conduct membrane autopsies, cleaning studies and provide process support through chemical testing, piloting, and offer innovative web-based normalization software, iWaterPRO™. As your partner in the pure water industry, we commit our decades of field experience to support plant managers, system operators, OEMs, consulting engineering firms, and distributors. We will help you treat challenging water, increase product recoveries, extend cleaning intervals, and excel beyond each new challenge to maximize the productivity, efficiency, and life of your membrane systems.



B42

Kurita

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Kurita is one of the international market leaders in water and process treatment. More than 6,600 employees strive daily to improve the efficiency of our customers' industrial plants and projects. More than 2,400 patents are proof of Kurita's innovative approach to a resource-saving consumption of water. The theme of the IDA World Congress 2019 'Crossroads to Sustainability' is pivotal to the Kurita Group which provides comprehensive solutions to ensure the sustainability of water resources by integrating a variety of technologies, products, and services in three business areas: water treatment chemicals, water treatment facilities, and IoT services. The three solutions of Refining, Supply and Reclamation will not only solve our customer's unique water challenges but also protect valuable resources for future generations: • KURITA Water Supply Solutions provide stable quality and quantity of water treatment • KURITA Water Refining Solutions optimize all industrial water • KURITA Water Reclamation Solutions support water reuse initiatives We warmly invite you to visit our stand B42 at IDA World Congress 2019 to discover all there is to know about the Kurita Group!



C42

LG Water Solutions

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Innovation. Proven. Trusted. LG Chem manufactures the full line of NanoH₂O™ seawater and brackish water reverse osmosis (RO) membranes based on innovative Thin Film Nanocomposite (TFN) technology. We are constantly evolving and have had great success in winning large desalination projects and continue to strengthen market leadership for seawater RO. Beyond SWRO, our BWRO products have already proven their performance and quality that have led to repeat customers.

METITO



*Commitment to a
Cleaner Environment*

C62

Metito

Dubai, United Arab Emirates

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www.metito.com

Metito is a global leader and provider of choice for total intelligent water management solutions with operations covering three business areas: design and build, specialty chemicals, and utilities. With over 60 years of experience, the Group provides customized, comprehensive and advanced solutions across the full spectrum of its industry; from clean to dirty water; desalination and re-use; industrial solutions (up to hyper pure water); investing into water and wastewater assets; and structuring both Greenfield and Brownfield schemes under project finance structures. The Group also provides custom alternative energy development and management solutions for utilities and corporations looking to uphold sustainable operations through generating clean, emissions-free energy.

Metito is at the forefront of the water and wastewater industry and is extending its experience and success into the alternative energy sector. Metito has an impressive project portfolio that includes more than 3000 projects in more than 46 countries managed by over 3000 experienced and talented employees worldwide in strategically located operational offices.



C25

MPG Mendener Praezisionsrohr

Menden, Germany

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MPG is a German high-performance supplier specialized in production of heat exchanger tubes and one of the world's leading companies in tubes made of special brass and copper-nickel alloys for refineries, power, chemical and desalination plants. MPG has more than 100 years of experience in the production of heat exchanger tubes. MPG is the only manufacturer of heat exchanger tubes in Western Europe covering all copper alloys and the complete production from casting the alloys to the finished tube. MPG's tubes are installed in plants of ADWEA, DEWA, EWA (Bahrain), MARAFIQ (KSA), BAPCO, KNPC, Saudi Aramco, Shell, SONATRACH and many others. MPG's Product Range includes:

- Heat exchanger tubes in various copper alloys (like copper nickel or brass)
- Pipes in copper nickel or brass up to 3 in OD
- U tubes with a leg length of up to 12 m
- Low-finned tubes in all alloys (incl. carbon steel and stainless steel)
- Other surface-structured tubes (like corrugated or enhanced) in different alloys
- Safety double-wall tubes for leakage monitoring
bimetallic tubes for combining alloy advantages

For more information, please visit www.mpg-tubes.com or send an e-mail to hamse.naasan@mpg-tubes.com.

Piedmont

A55

Piedmont

Vista, California USA

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www.pwtchemicals.com

Piedmont Pacific is a global leader in corrosion resistant equipment for desalination plants and meets critical customer demand for a wide range of applications in the industrial and municipal markets. Established in 2002 in the city of Piedmont California, Piedmont was the first flexible grooved-end coupling company to design and manufacture its products in Duplex and Super Duplex. Today, Piedmont enjoys a leading position in the desalination market. Our couplings, designed for low to high pressure environments, are available in a variety of material and sizes to ensure your system's performance along with your team's safety. Piedmont also offers a full range of fiberglass reinforced polyester (FRP) cartridge filter housings. The FRP filter housings are designed specifically for highly corrosive environments. Their design includes small innovations, simplifying cartridge installation and replacement. Other products in the FRP product line include bag filters, cartridges, and strainers.



A15

Promega

Promega Corporation

Madison, Wisconsin USA

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Promega Corporation develops innovative tools for molecular microbiological methods which are useful for water analysis. Promega offers solutions for laboratory and online analysis of water to rapidly determine viable microbial load. Our diverse product portfolio includes reagents and kits for ATP analysis, tools for DNA and RNA extraction and sample processing for next generation sequencing, as well as reagents for PCR.

PROJECX

B46

PROJECX & PARTNERS

Dubai, United Arab Emirates

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PROJECX is a Dubai based technical, consulting and product representation Company established in 2005 and actively involved in the field of desalination, water & wastewater treatment water re-use and power. PROJECX is the regional partner for a range of process equipment manufacturing companies and PROJECX personnel are highly technical & commercial with regional and global experience of EPC business. PROJECX also has warehousing facilities in Dubai for consumables. Please visit our website www.projecx.biz



B5

Protec Arisawa

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www.protec-arisawa.com

Protec Arisawa (PA) manufactures fiberglass reinforced plastic (FRP) membrane pressure vessels for the water and wastewater treatment industries, and other separation processes. PA markets its vessels under the PROTEC trademark.

PA provides FRP membrane housings in 2.5 inch, 4 inch, 8 inch, (standard design and centerported design), and 16 inch diameters as standard products, as well as custom diameters and configurations.

PA meets stringent certification criteria for NSF 61, ASME, CE, and NR-13 for all products in all three manufacturing facilities.

PA is a true global manufacturer with fabrication facilities in Vista, California, Munguia, Spain, and Minami-honcho, Japan.

Protec Arisawa is truly the industry innovator. PA's first to the market innovations include the patented head retaining ring with a finger-pull for faster and easier vessel access, large diameter side ports (3 and 4 inch) for the 8 inch diameter vessel, and the patented centerported vessel to further reduce system losses.



A54

PWT

Vista, California USA

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www.pwtchemicals.com

Since 1998, PWT has focused on chemical manufacturing and supply for the membrane industry, with a product line developed around our unique dendrimer-based antiscalant chemistry for scale and fouling control. Growing in step with the membrane industry, we have developed solutions and services to support our customers who are addressing varied and difficult applications like seawater desalination and wastewater re-use. Today, PWT offers a complete portfolio of antiscalants, antifoulants, dispersants, cleaners, coagulants, biocides and preservatives for even the most difficult of MF/UF and NF/RO source waters. At our Head Office in Vista, CA, we synthesize the dendrimer which is the primary component for our SpectraGuard™ antiscalants and blended Lavasol™ and OptiClean™ cleaners, giving us ultimate control over product quality. As the first company to offer an 11x concentrated formula, we have remained competitive in markets around the world. To complement our chemistry, our Membrane Forensics™ offering includes autopsy and analytical work, technical support, and field service. Our team of experts is available around the clock to help you troubleshoot and optimize your membrane system.

B28

SACYR Water

Madrid, Spain

Contact: *Domingo Zarzo*

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www.sacyr.com

SACYR Water is a water treatment company that belongs to the SACYR Group, one of the largest Construction and Services Holdings in Europe. Our operations are spread out throughout the globe. The group has been involved in some of the world's most important projects in terms of complexity, size and technical difficulty, such as the expansion of the Panama Canal (one of the largest engineering projects in the world). Sacyr Water has become a well-known reality in the market in record time (established in 1995), thanks to the quality and prestige of its brand name by addressing this reality with state-of-the-art engineering applied to water treatment and supply, desalination and reuse projects. Sacyr Agua continues to prove its excellence delivering outstanding complex desalination projects and innovative solutions like the unbeatable project of 306 m³/d Southern Seawater Desalination Plant (SSDP) in Australia. With a turnover over 1,655 Million Euros and with a backboard on his parent company SACYR, Sacyr Agua is in place at the top table of international desalters, overtaking some of its longer established Spanish competitors in terms of contracted capacity (more than 2 million m³/day), with large projects in Spain, Chile, Australia, Algeria, Tunisia, Iraq, Oman and Israel.

المؤسسة العامة لتحلية المياه المالحة
Saline Water Conversion Corporation



B25

Saline Water Conversion

Riyadh, Saudi Arabia

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www.swcc.gov.sa

The Saline Water Conversion Corporation (SWCC) is a Saudi Government Corporation responsible for the desalination of seawater and supplying various regions in the Kingdom with desalinated water. The corporation was established by royal decree dated 20/08/1394 H, corresponding to 07/09/1974 H, as an independent government corporation..



B50

Sasakura Engineering Co. Ltd.

Osaka, Japan

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www.skm.sasakura

Since the founding of Sasakura in 1949 in Osaka, Japan, we have been engaged in research and development of marine equipment, desalination plants, air-cooled heat exchangers and other environmental protection devices which have earned us worldwide distinction.

In order to preserve the natural environment of the Earth, we constantly seek to develop new products that meet the needs of the times.

Sasakura aims to make the most effective use of the world's limited resources and create a rich environment utilizing the people and environmentally friendly technology that has become a close part of people's daily lives and the global environment.

Especially, seawater desalination has long been a core water technology that has enabled Sasakura to ensure the supply of fresh water in countries with growing water demands.

Through enthusiastic research and development over a period of many years, Sasakura has become an experienced and reliable supplier of desalination plants. Sasakura is known as "The Desalination Expert", because we supply not only Multi-Stage Flash (MSF) plants but also many other types as well, including Thermal Vapor Compression and Reverse Osmosis plants.



B48

Solenis

Schaffhausen, Switzerland

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www.solenis.com

Solenis is a leading global producer of specialty chemicals for water-intensive industries, including the pulp, paper, oil and gas, chemical processing, mining, biorefining, power and municipal markets. The company's product portfolio includes a broad array of process, functional and water treatment chemistries as well as state-of-the-art monitoring and control systems. These technologies are used by customers to improve operational efficiencies, enhance product quality, protect plant assets and minimize environmental impact. Headquartered in Wilmington, Delaware, the company has 41 manufacturing facilities strategically located around the globe and employs a team of approximately 5,200 professionals in 120 countries across five continents. For additional information about Solenis, please visit www.solenis.com.



C26

SUEZ

Paris, France

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www.suez.com

With 90,000 people on the five continents, SUEZ is a world leader in smart and sustainable resource management. We provide water and waste management solutions that enable cities and industries optimize their resource management and strengthen their environmental and economic performances, in line with regulatory standards. With the full potential of digital technologies and innovative solutions, and major investments in research and development, the Group secures water resources. With 50 years' experience in the desalination sector, SUEZ is pioneer with more than 3,300 desalination plants built or equipped with the Group's technology and 13,250,700 m³ of desalinated water produced per day. SUEZ designs and builds seawater and brackish water desalination plants, small or large, modular or standardized, providing a customized response to its customers' needs. The Group also designs advantageous solutions for agricultural, urban or industrial needs and to replenish natural water reserves.

SULZER

B2

Sulzer

Winterthur, Switzerland

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www.sulzer.com

As a global leader in pump design, Sulzer is recognized for delivering excellent product quality and performance reliability for the most critical applications in desalination. With our experience and proven technology, we help you to operate your plants more efficiently. We share our expertise and create enduring and economical solutions. Sulzer primarily focuses on pumps for the reverse osmosis processes, but we also serve the distillation area. We are a full-line pump supplier for medium-to-large reverse osmosis plants. We provide pumps for seawater intake, pretreatment, high-pressure membrane feed, energy recovery device boosting, and product water transport. Our customers benefit from getting all pumps from one supplier, and we make sure to optimize the desalination process using Sulzer quality pumps and know-how. Sulzer also delivers products such as pumps, mixers, compressors and other aeration products for applications within cleanwater, municipal and industrial wastewater.



B56

Talis

Mungia, Spain

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www.talis.-group.com

TALIS is a world leading valve manufacturer with a specialized Desalination Business Unit. Our Low Pressure and High Pressure valves are installed in the Pre and Post treatment and RO unit of the Desalination plants. TALIS has equipped numerous desalination plants all over the world with BELGICASTrange, which reliably perform their task for long term. During last 20 years, we have equipped numerous Large Scale Desalination plants, dealing with special requirements and complex installations. The high reliability of our products reduces the risks connected with large-scale installations and thus ensures a successful and economic on-time completion of the projects.



Technol Portoroz

Izola, Slovenia

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B24

TECHNOL is a designer and manufacturer of vertical and horizontal FRP pressure multimedia and cartridge filters for desalination plants. FRP is an ideal material for sea water environments as it is 100% resistant to corrosion. Technol filters can be used as a pre-treatment in facilities of all sizes, stabilizing the quality of filtered water before the reverse osmosis phase. Technol produce pressure filters up to 4m in diameter and 15m in length or height and max. 10bar of working pressure, filters backwashing is possible with water and air. Technol is specialized in FRP production with the experience of more than 30 years. Beside FRP multimedia filters Technol produces other pressure vessels, storage tanks and other product by request. The location of Technol is ideal as it is 20km away from 2 international ports and 200m from the sea, where ships can load the goods and transport it to the final destination. CONTACT Technol Portoroz d.o.o. Industrijska cesta 6e 6310 Izola, Slovenia +386 5 66 25 340 info@technol.si www.technol.si



B59

Tecval, S.L.

Vacarisses, Spain

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www.tecval.es

Creating Special Alloy Valves for Desalination.

Tecval it's a family run company, located in Barcelona (Spain), with over 35 years experience developing, manufacturing and supplying special alloy valves and fittings. We are focused on providing advanced and flexible solutions for the desalination industry. Our portfolio includes ball, needle, check valves as well as manifolds and fittings, designed to meet the high technical requirements of SWRO plants. We maintain ample stocks of valves in Superduplex (1.4410/1.4501), Duplex (1.4462), to enable us to offer efficient and reliable service. Narcis Ferran Tecval, S.L. tecval@tecval.es www.tecval.es C/Berlin, 1 Nave 4 Pol. Can Torrella08233-VACARISSES Barcelona (Spain)+34 93 8280055 | Phone+34 93 8280174 | Fax



Innovation by Chemistry

A10

Toray

Dubai, United Arab Emirates

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Toray Industries, Inc., founded in 1926 as a rayon manufacturer, consistently pursues to diversify and globalize its technology offerings as a basic materials provider. In addition to fiber and textile products, Toray creates cutting-edge and high value-added products including films, fine chemicals, plastic resins, electronics & information-related products, carbon fiber composite materials, pharmaceutical and medical products, and solutions for the water treatment and environmental fields. Today, Toray operates in 26 countries through a total of 275 affiliated companies and subsidiaries worldwide.

In the field of Environment and Engineering, Toray offers high-quality water treatment membrane technologies and technical support:

Reverse Osmosis (RO) - ROMEMBRA™

Toray began its membrane development program in 1967, starting with cellulose acetate membranes. Toray now offers a full scope of cross-linked polyamide composite membranes manufactured in KSA, Japan, Korea, China and the USA.

Nanofiltration (NF) - CSM™

Toray offers nanofiltration membrane products with polyamide and piperazine membrane base for applications requiring selective ion removal.

Ultrafiltration (UF) - TORAYFIL™

Toray's PVDF hollow-fiber membrane modules effectively remove suspended solids and microorganisms and boast as one of the most durable fibers in the industry.

Membrane Bioreactor (MBR) - MEMBRAY™

Toray's MBR modules integrate PVDF MF technology for durability and high permeability.



C46

Torishima Pump

Osaka, Japan

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Founded in 1919 in Japan, Torishima is celebrating its 100th anniversary this year. We are an engineered pump company committed to providing innovative and reliable pumping solutions worldwide. Particularly Seawater Desalination, we have supplied pumps for RO, MED, and MSF processes for over 40 years. There are now over 2,000 pumps operating in desalination plants worldwide. We are also a world leader in supplying pumping equipment for the water and wastewater industry. We do not only supply the pumps, but design, install, and commission the complete pumping stations. As a premier engineered pump supplier, we are capable of providing the highest quality aftermarket service. Our service bases are located in Dubai and the KSA on top of sales/projects offices across the Middle East. Our innovative service solutions can enhance performance and increase the lifespan of pumps, other equipment, and plants. This allows operators to maximize efficiency, reduce maintenance costs and conserve energy.



A52

Toyobo

Osaka, Japan

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Toyobo was founded in 1882 as a textile company when it began its spinning and textile business. We continued to adapt to the changing needs of the times, utilizing our core technologies in polymerization, modification, processing and biotechnology to expand our business fields and develop high performance products. Toyobo has innovative membrane technologies and an extensive record of accomplishments over more than 30 years of experience. We have been providing cellulose triacetate (CTA) -hollow fine fiber (HFF) RO membrane for seawater desalination. Our CTA HFF RO membrane has a large membrane surface area and excellent resistance to biofouling and chlorine and continues to enable stable operations at our customers' facilities. Thanks to these merits, TOYOBO is the largest RO membrane provider in the KSA and one of the Top 3 in the GCC. Toyobo, in a joint venture with ITOCHU, established Arabian Japanese Membrane Company, a manufacturing and sales company of RO membrane. Through AJMC is our hub to provide high quality RO membranes and full technical services in the GCC and MENA region. Furthermore, Toyobo has developed an innovative Forward Osmosis (FO) / Brine Concentration (BC) membranes that will suit a wide range of applications.



UET WATER

C45

UET Water

Carson, California USA

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www.uetwater.com

Design, engineer, manufacture complete reverse osmosis seawater desalination systems and waste water treatment plants. We provide various tailored water treatment solutions for your projects. We add value to your scope of supply as a main contractor with full scope, or as a subcontractor with specific limited scope. We strive on flexibility and have been in the industry for over 33 years with excellent pump and membrane supplier relations. We have over 30 years in reputation and knowledge to provide the best technological solution for your water treatment projects. With assembly locations in multiple regions, we are a low cost provider. Technologies provided are: Reverse Osmosis, Ultrafiltration, DAF, Extended aeration, ASBR (Advanced Sequential Batch Reactor), Ozone and UV. We also offer aftermarket spares and technicians world-wide at competitive prices. Please contact us today and lets see how we can add value to your project! Email: sales@uetwater.com Tel: USA +1(310)871-5504 or,+1(310)356-6611



شركة محاليل المميزة للصناعات الكيماوية

UNIQUE SOLUTIONS FOR CHEMICAL INDUSTRIES CO.

A6

Unique Solutions for Chemical Industries Co.

Jeddah, Saudi Arabia

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www.usi.com.sa

Unique Solution for Chemical Industries Co (USCI) is a subsidiary of Aquapharm Chemicals Pvt. Ltd & one of the largest specialist manufacturers of Antiscalant and associated products for use in the Desalination and Water Treatment industries registered and based in Saudi Arabia. Aquapharm Chemicals Group has manufacturing operations in India, Saudi Arabia and United States, with customers across the world.

Trusted by leading organizations including SWCC, NOMAC, JECO, SEWA etc. to supply specialist water treatment chemicals and to advise on the safety, quality and performance of their use in operations. Our customers look to our expertise to deliver technically demanding products that help to protect and extend life of their key assets.

Having a strategically located GCC manufacturing facilities based in Jeddah in the Kingdom of Saudi Arabia, allows USCI to maintain a strong focus on customer service, including a proactive commitment to the quality and integrity of products supplied.

USCI's has accreditation for manufacturing water treatment chemicals in accordance with NSF and has quality accreditations for ISO 9001, ISO-14001 and OHSAS18001.

USCI is confident of being able to serve your company across a diverse range of Water Treatment Processes and Chemical requirements.



B21

V-Line

Setinde, Germany

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www.v-line.com

The V-LINE GROUP manages the procurement complexity of industrial spare parts for Maintenance, Repair and Operations for industrial plants worldwide. Best practice solutions are tailored to customer requirements to achieve the highest level of value creation within the entire supply chain by using automation techniques and Electronic data interchange formats for collaboration.

By keeping abreast of the latest trends and techniques, we are setting up new standards with our customers in terms of material inventory reduction at same or even better availability. Reducing operating and transactional costs through new collaboration models, data analytics and simulations, automated intelligent supply chains for our customers with thousands of manufacturers are created and managed worldwide.

The V-LINE GROUP is headquartered near Hannover, Germany, with branches in Saudi Arabia and customer service centers in other GCC countries as well as in Mexico and Brazil. Further sourcing and procurement centers are located in the United States, in China, Japan and Korea.



C22

Veolia (Sidem)

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SIDEM, a Veolia Water Technologies subsidiary, is dedicated to large desalination projects, providing expert services in design, engineering, procurement, commissioning, operation and maintenance. Headquartered in Paris, SIDEM relies on its regional offices in UAE, Saudi Arabia and India to provide local commercial support, engineering services and resources in field activities. SIDEM is the world leader in terms of installed desalination capacity, thermal and membrane technologies combined. Veolia Water Technologies specializes in water treatment solutions and provides the complete range of services required to design, deliver, maintain and upgrade water and wastewater treatment facilities for industrial clients and public authorities. Our portfolio of proprietary technologies features everything from online diagnostic solutions to evaporation and crystallization, energy-producing sludge treatment, state-of-the-art desalination, laboratory-grade water and mobile water services. Veolia group is the global leader in optimized resource management. With nearly 171,000 employees worldwide, the Group designs and provides water, waste and energy management solutions that contribute to the sustainable development of communities and industries. Through its three complementary business activities, Veolia helps to develop access to resources, preserve available resources, and to replenish them.



A8

WEG

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Founded in 1961, WEG has grown into a global solutions provider of industrial electrical technologies. WEG is the largest industrial electric motor manufacturer in the Americas and one of the largest manufacturers of electric motors in the world producing more than 21 million units annually.

Committed to growth on a global scale, WEG continually invests in state-of-the-art manufacturing facilities and processes and the development of new and improved industrial electrical solutions. WEG offers a diverse and integrated product line that includes motors, drives, soft starters, controls, panels, transformers, generators, and custom solutions.



A31

Zhe Jiang Parkson Water Industry

Hangzhou, China

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www.passhz.com

Zhejiang Parkson Water Industry Equipment Stock Co.,Ltd is a professional corporation specialized in the design and manufacture of grooved pipe fittings. Located in beautiful Hangzhou , the company insists on quality-oriented principle, and manufactures products according to international first class standards. It depends on perfect sales and service network, to provide customers with overall service.

The PASS company has independent product development and design capability. Its products include stainless steel pipe fittings with diameter range from 20mm to 300mm, ductile iron pipe fittings with diameter ranging from 20mm to 600mm, plastic pipe fittings with diameter ranging from 25mm to 200mm. The design and manufacture are in accordance with international first-class standards .The testing is in compliance with American Standard ANSI/AWWA and China National Standard GB5135. The metal and sealing materials meet American ASTM standard. The sealing material of drinking water fulfills ANSI/NSF 61 standard and China National Hygiene Standard GB/T 17219.

The Pass company has the flawless quality control management and strictly carries it out in the whole process which is in compliance with ISO9001 Quality System from designing, raw materials procurement, manufacturing process. The stainless steel couplings adopt international advanced Silica dewaxing with precise casting. The Ductile Iron couplings.

IDA WORLD CONGRESS
2019
Dubai, October 20-24
**CROSSROADS TO
SUSTAINABILITY**



**Connecting People and
Ideas to Water Solutions**

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