SECOND ANNOUNCEMENT

CROSSROADS TO SUSTAINABILITY

IDA WORLD CONGRESS
2019
Dubai, October 20-24

Hosted by

Dubai Electricity & Water Authority
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## About IDA
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The biennial IDA World Congress is a globally recognized event in the field of advanced water treatment specifically related to desalination and water reuse. In 2019, the World Congress is coming to Dubai, United Arab Emirates (UAE) from 20-24 October and is graciously hosted by the Dubai Electricity & Water Authority (DEWA) at the Dubai World Trade Center. The flagship event returns to Dubai after its highly successful 2009 World Congress patronized by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai.

Dubai, amid preparation for the World Expo 2020, is the epitome of a modern city that recognizes the necessity of pioneering water technology. The leaders of the water industry, both public and private will converge and connect to develop business opportunities, exchange ideas, share knowledge about cutting edge technologies, and their progress towards a sustainable future. Attended by public and private sector leaders, researchers, and academics in the fields of desalination, water reuse, energy, environment and project finance, the Congress will consist of panel discussions, an exceptional technical program, an industry driven exhibition, training courses, unparalleled networking opportunities, and specialized workshops.

Each Congress brings its own nuance by virtue of its location but the 2019 event is also expanding its programming to include a series of forums dedicated to our IDA Affiliates. The Majlis forums provide an opportunity for our affiliates to take a look into what is going on in the water sector in their respective region and showcase important game-changing projects or technologies that their members are involved in. We feel that these forums will create a balanced big-picture view of issues and how they are being tackled at a regional and local level.

Also new to the Congress will be an exceptional two-day event, the IDA Leaders Summit, held on October 20-21 in parallel with the Technical Program and IDA-Affiliate Majlis Forums. The IDA Leaders Summit will consist of a Leaders with Community session open to all conference delegates on the afternoon of Monday, October 21 and a Leaders with Leaders one-day, invitation only program Tuesday, 22 October. This is an exclusive opportunity to interact with peers from across the sector.

### IDA World Congress History

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
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<th>Location</th>
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<tbody>
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<td>2017</td>
<td>São Paulo, Brazil</td>
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<td>2011</td>
<td>Perth, Western Australia</td>
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<td>2009</td>
<td>Dubai, UAE</td>
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<td>2007</td>
<td>Maspalomas, Gran Canaria</td>
<td>1989</td>
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<td>2005</td>
<td>Singapore</td>
<td>1987</td>
<td>Cannes, France</td>
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<td>2003</td>
<td>Nassau, The Bahamas</td>
<td>1985</td>
<td>Bermuda</td>
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<tr>
<td>2001</td>
<td>Manama, Bahrain</td>
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</table>
About the Congress

A Note from the IDA President

It is my great pleasure to invite you to attend the 2019 IDA World Congress in Dubai, United Arab Emirates, from 20th to 24th October.

Firstly, 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 Second Announcement shows, the Congress is true to its name, "Crossroads to Sustainability," as we address market and industry challenges to ensure sustainable solutions to water scarcity and population growth, in a period where climate change is highlighting these effects especially in the dry areas of the World. These pathways are more needed than ever. The IDA Water Security Handbook (which includes data from the 31st desalination inventory) reports at June 2018, the total global installed desalination capacity stood at 98.2 million m3/d while the total global cumulative contracted capacity was 105.3 million m3/d. At this date, 20,300 desalination plants had been contracted around the world and it’s expected to have two times more capacity by 2030. Water Reuse capacity is on the same volumes and global contracted reuse capacity has almost doubled since 2010 and it’s growing 50% faster.

IDA World Congress is coming back to Dubai, the hosting city of our 2009 WC. A wonderful city in the heart of the Middle East Area, in a booming market momentum, and where it’s concentrated 42% of the global desalination capacity with over 44.5 million m3/d, and 29% of the total plants, over 5,800. This dry Region has the record of using seawater as desalination source, 82%, while the world average is around 60%. Middle East is expecting to sign contracts in the next 3 years with a total capacity over 8,0 million m3/d only fed by seawater. A huge challenge and opportunity for our industry!

This rapid growth and challenges needs to be addressed, and the IDA World Congress is the ideal opportunity to do so. The new program additions of the Affiliate Forums and Leaders Summit, combined with a wide array of technical papers and posters from over 300 abstracts received, are the perfect place to discuss our responses as an industry to the growing demand for water across the globe. It is my sincere hope you will join us in Dubai to evaluate the state of the art of our industry but also to exchange experiences, learning and networking in the great 2019 IDA World Congress.

I would like to thank the Technical Committee Chairmen for their diligent work on this year’s technical program, all volunteer committee and session chairmen, the IDA team for their tireless work, IDA Secretary General for her leadership, and all the sponsors and exhibitors who made this event a reality. And a special thank you to you who are planning to attend this exciting IDA World Congress doing it greater!

I hope to see all of you in Dubai.
Until October,

Miguel Angel Sanz
IDA President
About the Congress

A Note from the IDA Secretary General

On behalf of the IDA Board of Directors, we are excited to present the Second Announcement for IDA’s 2019 World Congress, “Crossroads to Sustainability.” Held at the Dubai World Trade Centre, this year’s Congress is generously hosted by HE Saeed Al Tayer, CEO and Managing Director of the Dubai Electricity and Water Authority (DEWA). We offer His Excellency and the DEWA team our sincerest thanks and gratitude for their ongoing support and dedication to this Congress, IDA, and our broader mission of creating new paths to water sustainability.

IDA has begun to forge new crossroads to endorse sustainable solutions, and this year, we are thrilled to introduce two key new aspects of the Congress’ program: the IDA Affiliate Majlis Forums and the IDA Leaders Summit.

The IDA Affiliate Majlis Forums will take place during the general program and are open to all registered delegates. Inspired by the Middle Eastern word “majlis,” or “a place to sit,” these forums provide an opportunity for delegates across the world to meet, network, and explore first-hand ground-breaking developments in different regions of the water sector. IDA Affiliates are encouraged to showcase cutting-edge projects, technologies, and market analyses to spark dialogue with new connections.

The IDA Leaders Summit is designed as a platform for high level engagement among business and public sector Leaders of our industry. This invite-only event is held in parallel with the Technical Program and runs for two days.

In addition to these new and exciting features, IDA’s World Congress will again feature a peer-reviewed Technical Program supervised by the Technical Program Chairmen and Committee, as well as a booming exhibition hall and tours of DEWA’s Jebel Ali Power Station. And as always, the Congress will provide ample opportunities for networking and discussion, including a Welcome Reception, Corporate Golf Day, a Gala Dinner, YLP event, Membership Meeting and Closing Luncheon. In short, the 2019 World Congress promises to be a place of new insight and connection, truly creating new crossroads toward a sustainable future.

I would like to give a special thanks to the IDA President who is the Chairperson of the World Congress, the volunteer committee members, especially to the Technical Committee Chairmen, the Awards Committee, and the DEWA team for their tireless support. Another thank you goes to the IDA team whose dedication has brought this program to life. And of course, none of this would be possible without our wonderful sponsors, whose support allows IDA to design and coordinate these knowledge sharing events. And so, we say a wholehearted thank you to Dubai Tourism, Metito, Almar Water Solutions, Dupont, ROPV, Kurita, ILF, Toray, BESIX, Veolia, ACWA Power, Amane Advisors, and Engie.

We also thank our media partners Water desalination+reuse, Waste & Wastewater International, WaterWorld, Everything About Water, Revolve and GWI for helping us promote the World Congress and many who will be on site to provide coverage throughout the week.

We look forward to welcoming you in Dubai!

Sincerely,

Shannon McCarthy
IDA Secretary General
Sponsors of the Congress

Hosted by

Institutional Sponsor

Dubai

Gold Sponsor

METITO

Leader’s Summit Dinner Sponsor

ALMAR

Silver Sponsors

DUPONT

ROPV

Kurita

ILF

Iwan

aqualia

Bronze Sponsors

ALMAR

BESIX

VEOLIA

ENGIE

IDA Young Leaders Sponsor

Scholarship Sponsor

Women of Our Industry Sponsor

Acciona

Corporate Supporter

Amame Advisors

Leaders Summit Session Sponsor

AECOM

Media Partners

WATER DESALINATION & REUSE

EVERYTHING ABOUT WATER

Filtration & Separation

Water World

ReVolve

WWW
About the Congress

Venue

The 2019 IDA World Congress is being held at the Dubai World Trade Center (DWTC) located at Sheikh Zayed Rd - Dubai - United Arab Emirates. With more than one million square feet of multi-purpose space, the Center has welcomed some of the world’s most high-profile events. A destination in itself, DWTC hosts more than 500 events across international trade fairs, mega consumer shows and prestigious conventions - and welcomes more than 3 million visitors from 160 global markets every year. Whether it’s a large scale conference attracting thousands or a private event for a more exclusive gathering, our flexible space and adaptable attitude makes successful event planning a guarantee. The IDA World Congress 2019 will be taking place in the Sheikh Rashid Hall of the DWTC.

Day 1

Day 2, 3, 4

IDA EXHIBITION AREA
Registration

Full Registrations to the IDA World Congress include the following:

- Attendance at all IDA Technical Sessions and Exhibition (Mon-Oct 21 to Thu-Oct 24)
- Daily lunches at the Dubai World Trade Center
- Morning and Afternoon Refreshment Breaks daily in the Dubai World Trade Center
- Networking events:
  - Sun-Oct 20: Welcome Reception and Golf Tournament
  - Sun-Oct 20: DEWA Plant Tours
  - Mon-Oct 21: Opening Ceremony
  - Wed-Oct 23: Gala Dinner
- Congress Final Program Book and Proceedings

Accommodations

Take your pick from Dubai’s huge choice of hotels to suit every taste, need and budget – either within an idyllic beach setting or in the city centre. These include four excellent onsite accommodation options, which are:

The Apartments
- Located just beside the Dubai International Convention and Exhibition Centre
- Rates begin at 140 USD/night; more information can be found [here](#)

Novotel World Trade Centre
- Mid-scale hotel for business or family trips
- Direct access to Dubai World Trade Centre
- Rates begin at 89.55 USD / night; more information can be found [here](#)

IBIS World Trade Centre
- Economy hotel for business and leisure
- Direct access to Dubai World Trade Centre
- Rates begin at 81.47 USD / night; more information can be found [here](#)

IBIS One Central
- Economy hotel for business and leisure
- Easy access to Dubai World Trade Centre
- Rates begin at 67.50 USD / night; more information can be found [here](#)
### General Schedule

#### Pre-Congress - Saturday, October 19th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:30 - 17:30</td>
<td>Reverse Osmosis Training Course</td>
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<tr>
<td>08:30 - 17:30</td>
<td>IDA Workshop - TBD</td>
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#### Sunday, October 20th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:30 - 17:30</td>
<td>ROS1 DHP Training Course</td>
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<tr>
<td>08:30 - 17:30</td>
<td>IDA Training</td>
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<td></td>
<td>- A Comparison of Manufacturers’ Technology for Membrane Filtration Used in Water &amp; Waste Water (Morning Session)</td>
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<td></td>
<td>- A Comparison of manufacturers’ Technology for Membrane Bioreactors (MBR) used in Wastewater Treatment (Afternoon Session)</td>
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<tr>
<td>08:30-12:30</td>
<td>Plant Tour - Jebel Ali Power Station (participation limited)</td>
</tr>
<tr>
<td>14:00-18:00</td>
<td>Registration Open</td>
</tr>
<tr>
<td>15:00-16:00</td>
<td>IDA BOD Meeting - Term 18 Outgoing</td>
</tr>
<tr>
<td>16:00-17:30</td>
<td>IDA BOD Meeting - Term 19 Incoming</td>
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<tr>
<td>18:00-19:30</td>
<td>Welcome Reception</td>
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#### Monday, October 21st

<table>
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<tr>
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<tbody>
<tr>
<td>07:30-17:30</td>
<td>Registration Open</td>
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<tr>
<td>07:30-08:45</td>
<td>Technical Program Presenters / Session Chairs of the Day Breakfast</td>
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<tr>
<td>07:30-08:45</td>
<td>VIP Breakfast Meeting</td>
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<tr>
<td>08:30-17:30</td>
<td>Reverse Osmosis Training Course</td>
</tr>
<tr>
<td>08:30-17:30</td>
<td>IDA Training</td>
</tr>
<tr>
<td>09:30-13:00</td>
<td>Plenary Panel Discussions</td>
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<tr>
<td>13:00-13:30</td>
<td>Official Opening Ceremony</td>
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<tr>
<td>14:30-17:30</td>
<td>Leaders With Community</td>
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<tr>
<td>14:30-17:30</td>
<td>Technical Sessions</td>
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<tr>
<td>19:30</td>
<td>Leaders Summit Dinner (invitation only)</td>
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### Tuesday, October 22nd

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>07:30-17:30</td>
<td>Registration Open</td>
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<tr>
<td>07:30-08:45</td>
<td>Technical Program Presenters / Session Chairs of the Day Breakfast</td>
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<tr>
<td>07:30-08:45</td>
<td>Leaders Summit Speaker Breakfast Meeting</td>
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<tr>
<td>08:30-17:30</td>
<td>Reverse Osmosis Training Course</td>
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<tr>
<td>08:30-17:30</td>
<td>IDA Training</td>
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<tr>
<td>09:00-17:30</td>
<td>Leaders Summit</td>
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<tr>
<td>09:00-17:30</td>
<td>Technical Program Sessions</td>
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<tr>
<td>17:30-19:00</td>
<td>YLP Committee Meeting</td>
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<td>17:30-18:00</td>
<td>Membership Meeting</td>
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<tr>
<td>18:00-19:30</td>
<td>IDA BOD Meeting – Term 19</td>
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### Wednesday, October 23rd

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<th>Time</th>
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<tr>
<td>07:30-17:30</td>
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<td>07:30-08:30</td>
<td>Technical Program Presenters / Session Chairs of the Day Breakfast</td>
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<tr>
<td>08:30-17:30</td>
<td>IDA Affiliate Majlis Forums</td>
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<td>08:30-17:30</td>
<td>IDA Corporate Sponsor Forums</td>
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<tr>
<td>08:30-17:30</td>
<td>Reverse Osmosis Training Course</td>
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<tr>
<td>08:30-17:30</td>
<td>IDA Training</td>
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<td>09:00-17:30</td>
<td>Technical Program Sessions</td>
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<td>19:30-22:30</td>
<td>Gala Dinner – Industry and Presidential Awards</td>
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### Thursday, October 24th

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<tr>
<td>07:30-12:00</td>
<td>Registration Open</td>
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<tr>
<td>07:30-08:45</td>
<td>Technical Program Presenters / Session Chairs of the Day Breakfast</td>
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<tr>
<td>08:30-13:00</td>
<td>Majlis IDA Affiliate Forums</td>
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<tr>
<td>08:30-12:30</td>
<td>IDA Corporate Sponsor Forums</td>
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<tr>
<td>08:30-17:30</td>
<td>IDA Training</td>
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<tr>
<td>09:00-12:30</td>
<td>Technical Program Sessions</td>
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<tr>
<td>13:00-15:00</td>
<td>Closing Luncheon and Technical Program Awards</td>
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Exclusively being offered at the IDA World Congress in Dubai are two **RO 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:

**Reverse Osmosis Specialist I Seminar**
- Trainer: David H. Paul, Inc.
- Classroom Portion Online + 2 days Hands-On Training
  - 19-20 October 2019
  - 7:00a-5:00p
  - $1,899

**Reverse Osmosis Specialist I Certification**
- Trainer: David H. Paul, Inc.
- 3-Days Classroom & Hands-On Training
  - 21-23 October 2019
  - 7:00a-5:00p
  - $2,499
The seminar will include:

- **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.
Co-Located Events

DEWA Plant Tour

Exclusive tours of DEWA’s Jebel Ali Power Station (JAPS)’s M-Station precede the start of the World Congress. This facility is one of the main pillars that enable DEWA to provide Dubai with a very reliable, efficient and high-quality electricity and water supply. Upon registration, you will have the opportunity to reserve your spot on a space-available basis.

Visit the World Congress website, wc.idadesal.org/registration, for details.
Co-Located Events

Golf Tournament at the Emirates Club

This year, IDA is pleased to announce, "Crossroads to the Green," the IDA Corporate Golf Day on the championship Majilis course at the world-famous Emirates Golf Club.

The Golf Day will take place Sunday, October 20th. The Majilis course is ranked as one of the "Top 100 Golf Courses in the World" by Golf World Magazine. The fee to participate is $400 USD, including a BBQ buffet lunch, drinks, caps, a t-shirt, and balls.

The Gold Day also presents another opportunity for sponsorship! Brand a hole or tee with your corporate name and logo. Donation is $1000 USD per hole or tee.

Date: Sunday, October 20, 2019
Location: Emirates Golf Club Dubai
Presidential and Lifetime 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. Anyone who would like to nominate a worthy candidate should submit a 250-500 word summary detailing why IDA should recognize an individual for such a prestigious award. 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 corporate sponsored monetary award of $5000 US 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.

The nomination period is from June 1—July 30. Nominations must be sent to awards@idadesal.org. Use the subject line “Lifetime Achievement Award Nomination” or “Emerging Leader Achievement Award.”

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 that is applied to criteria for each award.

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 reuse 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**

IDA is delighted to announce that, at this year’s World Congress Gala Dinner in Dubai, Wednesday, October 23rd, 2019, we will be honoring the efforts of selected companies, organizations, and even cities with new awards. Those who challenge themselves to innovate and to meet the increasing demands for drinking water, industrial water use and reuse will be acknowledged for their exceptional contributions to the Desalination and Water Reuse Sectors. These expanded awards better reflect the diversity of contribution present in the water industry. From municipalities to corporations, the new IDA award categories are now able to recognize the varied ways in which the global community is tackling water scarcity in order to ensure a future in which clean water and sanitation are universal.

Below is the list of awards for the Desalination and Water Reuse Sector:

**INDUSTRY AWARDS**

<table>
<thead>
<tr>
<th>Award</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>01. Best Public Private Partnership</td>
<td>The company that exemplifies collaboration and creativity</td>
</tr>
<tr>
<td>02. Most Innovative Utility in a Least Developed Country</td>
<td>The utility that innovates this notoriously conservative industry</td>
</tr>
<tr>
<td>03. Best Private Company (Latin America and Caribbean Region)</td>
<td>The company making the most impressive overall contribution in this region</td>
</tr>
<tr>
<td>04. Best Private Company (Asia-Pacific Region)</td>
<td>The company making the most impressive overall contribution in this region</td>
</tr>
<tr>
<td>05. Best Private Company (MENA Region)</td>
<td>The company making the most impressive overall contribution in this region</td>
</tr>
<tr>
<td>Award Category</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>06. Most Innovative Company</td>
<td>For the company that executed the project we all wish we had thought of</td>
</tr>
<tr>
<td>07. Best Disruptive Technology</td>
<td>For the company that executed the project that employed a breakthrough technology that is changing the way we do business</td>
</tr>
<tr>
<td>08. The Most Progressive Disruptive Policy in Water Reuse</td>
<td>For the project that is moving the needle in the public sector to support and grow water reuse implementation</td>
</tr>
<tr>
<td>09. Best Performing Company in Water Reuse</td>
<td>For the company that has exemplified efficiency, best-in-class technology, and operations to earn the reputation for the highest quality performance</td>
</tr>
<tr>
<td>10. The Best Nature-based Solution Technology</td>
<td>For the company that is leveraging naturally occurring systems and technologies to create sustainable, renewable sources of water</td>
</tr>
<tr>
<td>11. The Most Resilient City</td>
<td>For the city that has created infrastructures and best practices for a community that can thrive and adapt to the changing climate and water availability</td>
</tr>
<tr>
<td>12. Most Innovative Water – Energy Nexus Project</td>
<td>For the project that bridges the gap and capitalizes on the synergies between the water and energy needs of its community</td>
</tr>
<tr>
<td>13. Best SDG 6 Implementor</td>
<td>For the project in the industry making the most strides in providing clean water and sanitation for all</td>
</tr>
<tr>
<td>14. Best Corporate Social Responsibility Project</td>
<td>For the company that utilized desalination or water reuse technology to improve the lives of the communities where they work or create a more sustainable supply chain in their business</td>
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</table>

SUSTAINABILITY AWARDS

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<thead>
<tr>
<th>Award Category</th>
<th>Description</th>
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<tr>
<td>10. The Best Nature-based Solution Technology</td>
<td>For the company that is leveraging naturally occurring systems and technologies to create sustainable, renewable sources of water</td>
</tr>
<tr>
<td>11. The Most Resilient City</td>
<td>For the city that has created infrastructures and best practices for a community that can thrive and adapt to the changing climate and water availability</td>
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<tr>
<td>12. Most Innovative Water – Energy Nexus Project</td>
<td>For the project that bridges the gap and capitalizes on the synergies between the water and energy needs of its community</td>
</tr>
<tr>
<td>13. Best SDG 6 Implementor</td>
<td>For the project in the industry making the most strides in providing clean water and sanitation for all</td>
</tr>
<tr>
<td>14. Best Corporate Social Responsibility Project</td>
<td>For the company that utilized desalination or water reuse technology to improve the lives of the communities where they work or create a more sustainable supply chain in their business</td>
</tr>
</tbody>
</table>

Nominations are to be submitted by qualified parties such as leaders of international water companies and water Utilities, top academics, head of International Organizations, and Government agencies on suitable candidates. A write up is required to be submitted. To nominate, please email smulrooney@idadesal.org with the following:

1. Nominated organization’s name
2. Link to the organization’s website
3. Award category
4. Detailed reason why the nominated organization deserves the award.
2019 IDA WORLD CONGRESS: Crossroads to Sustainability
Connecting people and innovative ideas to water solutions

My dearest friends, colleagues and members, it is with great excitement and anticipation that we are getting ready for the 2019 IDA World Congress, to be held in Dubai and hosted by the Dubai Electricity & Water Authority (DEWA), a globally recognized sustainable, innovative and world-class utility.

The countdown has started, with less than five months to go and the ultra-modern landscape of Dubai, the city of the future is the perfect location for the IDA 2019 World Congress.

We are excited by the high potential that can be unlocked by the cross-cutting World Congress Technical Program encompassing a collection of superb papers. The IDA World Congress, aiming to create innovative, sustainable and inclusive ideas to water solutions is perfectly in line with IDA’s aim to promote the maximum practical use of non-polluting renewable energy sources to power desalination and water processing for reuse.

Inspired, influenced and empowered by the spirit and vision of the Dubai’s Leadership, I am proud to lead with the co-chairs of the 2019 Technical Program Committee, Mr. Fady Juez, Professor In S. Kim and Mr. Rachid Ghomraoui, as well as our DEWA experts, Mr. Nasser Lootah and Mr. Yousef Gebril. I also thank a multi-cultural, gender and age-balanced WC 2019 Technical Program Committee, highly focused on efficiency and excellence and already working to making our 2019 IDA World Congress unique.

We are looking forward to welcoming you to the 2019 IDA World Congress, here in Dubai, the city of the future, for an unforgettable experience. I thank you for all the innovative ideas, suggestions you will bring to the gathering.

Sincerely,

Imad Mahkzoumi
World Congress 2019 Technical Program Chairman
Technical Program

Technical Committee Members

The World Congress will feature four days of technical sessions, lectures, high-level plenary sessions, business roundtable discussions and academy courses.

The Congress Technical Program Committee is chaired by four members of the IDA Board of Directors and two senior technical experts from DEWA:

TPC Chairman:
Mr. Imad Mahkzoumi
Chairman and CEO of ENOIA
UAE

TPC Co-Chairman:
Mr. Rachid Ghomraoui
Vice President of BESIX ME
UAE

TPC Co-Chairman:
Mr. Fady Juez
Managing Director of Metito Overseas
UAE

TPC Co-Chairman:
Prof. In S. Kim
School of Environmental Sciences & Engineering
Gwanju Institute of Science & Technology (GIST)
South Korea

TPC Co-Chairman:
Mr. Nasser Lootah
EVP G (P & W) of DEWA
UAE

TPC Co-Chairman:
Mr. Yousef Gebril
DEWA
UAE
Committee Members

Mr. Thomas Altmann, ACWA Power, United Arab Emirates
Professor Gary Amy, Clemson University, United States of America
Mr. Borja Blanco, Aqua Advice, Spain
Ms. Veronqiue Bonnelye, SUEZ, Australia
Ms. Monica Boodhan, University of Trinidad & Tobago
Mr. Guillaume Clairet, H2O Innovation, Canada
Dr. Mike Dixon, Synauta, Canada
Mr. Yoshinari Fusaoka, Toray, Japan
Mr. Mounib Hatab, Future Pipe Industries, United Arab Emirates
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Ms. Naomi Jones, Evoqua, United States of America
Professor Maria Kennedy, UNESCO-IHE, Netherlands
Mr. Youqing Li, ROPV, China
Dr. Celeste Loturco, NEOM, United Arab Emirates
Mr. Shawn Meyer-Steele, H2O Professionals, United States of America
Dr. Tariq Nada, ACWA Power, Saudi Arabia
Mr. Thierry Noel, Amane Advisors, France
Mr. Juan Miguel Pinto, Energy Recovery Inc., United States of America
Mr. Jonathan Pressdee, AECOM, United States of America
Eng. Zamzam Saleh Al Rakaf, Kuwait Ministry of Electricity and Water, Kuwait
Dr. Guoling Ruan, Institute of Seawater Desalination, China
Mrs. Blanca Salgado, Dupont, France
Mr. Devesh Sharma, Aquatech, United States of America
Dr. Corrado Sommariva, SWPC, United Arab Emirates

Topic Chairs, Session Chairs, and Co-Chairs

Mr. Thomas Altmann, ACWA Power
Dr. Ahmed Al Arifi, SWCC, KSA
Mr. Leon Awerbuch, LET, United States of America
Mr. François Xavier Basselot, Atkins, United Kingdom
Mr. Borja Blanco, Aqua Advice, Spain
Ms. Veronqiue Bonnelye, SUEZ, Australia
Ms. Monica Boodhan, University of Trinidad & Tobago
Mr. Francisco Bernaola, Metito, Egypt
Dr. Glenn Byrne, Rolled Alloys, United Kingdom
Mr. Antonio Casañas, The DOW Chemical Company, Spain
Mr. Guillaume Clairet, H2O Innovation, Canada
Dr. Mike Dixon, Synauta, Canada
Mr. Sylvain Donnaz, Suez, France
Ms. Chiara Fabbri, ILF, United Arab Emirates
Mr. Marc Fabig, Armas Investments, Australia
Mr. Imad Feghali, Jacobs, United Arab Emirates
Mr. Val S. Frenkel, Greeley & Hansen, United States of America
Mr. Nobuya Fujiwara, Toyobo, Japan
Mr. Yoshinari Fusaoka, Toray, Japan
Dr. Emilio Gabbielli, Toray, Italy
Mr. Joan Galtes, TALIS, France
Mr. Emmanuel Gayan, fWE - Water Asset Developer, United Arab Emirates
Mr. Yousef Gebril, DEWA, United Arab Emirates
Mr. Rachid Ghamraoui, BESIX ME, United Arab Emirates
Professor Stephen Gray, Victoria University, Australia
Mr. Mounib Hatab, Future Pipe Industries, United Arab Emirates
Dr. Seungkwan Hong, Korea University, Korea
Mr. Rama Jagwani, Projex, United Arab Emirates
Dr. Jantje Johnson, OrangeBoat, United States of America
Mr. Lance Johnson, Hydranautics, United States of America
Ms. Naomi Jones, Evoqua, United States of America
Mr. Rolf Richard Keil, Besix, United Arab Emirates
Professor In S. Kim, Gwanju Institute of Science & Technology (GIST), Korea
Dr. Celeste Cecilia Moles Lo Turco, United Arab Emirates
Mr. James C. Lozier, Jacobs, United States of America
Mr. Jorge J. Malfeito-Sanchez, Acciona Agua, Spain
Mr. Roberto Mangano, ILF, United Arab Emirates
Mr. Shawn Meyer-Steele, H2O Professionals, United States of America
Ms. Veronica Garcia Molina, DowDupont, Spain
Mr. Alistair Munro, Gaia Wind (Green Energy Solutions), United Arab Emirates
Mr. Tariq Nada, Acwa Power, Saudi Arabia
Dr. Long Nghiem, UTS
Mr. Thierry Noel, Amane Advisors, France
Mr. Neil Palmer, Tonkin Consulting
Ms. Delia Pastorelli, Suez, France
About the Program

The IDA World Congress is widely recognized as the premier event on advanced water treatment solutions, specifically desalination and water reuse. The 2019 World Congress, “Crossroads to Sustainability,” promises to set new standards, providing abundant opportunities to expand knowledge, see the latest advancements in technology, and create business-building connections.

The IDA World Congress takes place October 20-24 in the Dubai World Trade Center, the UAE’s leading event venue and the region’s largest event and exhibition center. This year, it will be hosted by the Dubai Electricity & Water Authority (DEWA), one of the world’s best-known utilities whose name—like Dubai’s—is synonymous with sustainability.

This year’s Congress takes place at a time when experts predict that seawater desalination technologies will see the most growth since the late 2000s. Accordingly, the World Congress Technical Program explores all aspects of advanced water treatment technologies, practices, and experiences. Topics range from policy, finance and market challenges to operations and optimization of the energy-water-waste nexus; desalination, water reuse and our wider world; innovation; renewable-driven desalination, and environmental considerations.

IDA will present awards for the best oral and written papers presented as part of the Technical Program as well as awards in new categories recognizing achievements in desalination and water reuse.
Session Categories and Topics

The Call for Papers resulted in over 300 abstracts from countries across the globe. These technical papers will be presented in 24 sessions in the following categories and topics:

- **Desalination, Water Reuse, and Our Wider World**
  - Desalination and Water Reuse (Part 1)
  - Desalination and Water Reuse (Part 2)

- **Seawater Desalination**
  - MB Distillation
  - RO Fouling and Biofouling (Part 1)
  - RO Fouling and Biofouling (Part 2)
  - Pre-Treatment (Part 1)
  - Pre-Treatment (Part 2)
  - RO Plant Case Studies
  - RO and Energy
  - RO Membrane Innovation
  - RO Plant Commissioning and Operation
  - Material, Corrosion, and ERD
  - FO and Electrolysatse

- **Renewable-Driven Desalination**
  - Renewable-Drive Desalination (Part 1)
  - Renewable Drive Desalination (Part 2)

- **Thermal Desalination**
  - Thermal Desalination (Part 1)
  - Thermal Desalination (Part 2)
  - Thermal Desalination (Part 3)

- **Seawater Mining & Making Waste Useful**
  - Industrial Applications of Desalination and Water Reuse

- **Foundations for Success: Policy, Finance, and Market Challenges**
  - Environment
  - Innovation

- **Brackish Water Desalination**
Technical Program

Papers / Presentations

IDA thanks all authors who submitted abstracts.

Submitted abstracts were evaluated and accepted on the basis of technical merit and assigned to a related session. Currently, authors are preparing their manuscripts in collaboration with Session Chairs and Co-Chairs. These manuscripts are sure to include original findings and relevant insights, furthering the goal of the Congress. After manuscripts have been submitted for final review, the committee will determine which presentations will be given orally and which in poster format.

Listing of Manuscripts

Below is a list of papers for inclusion in the program. These are current to date, but are subject to change. The allocation of Oral and Digital Poster presentations will be published at a later date.

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

CONDENSATION RECOVERY IN QURANIC GIRL INTERMEDIATE SCHOOL, JUBAIL KINGDOM OF SAUDI ARABIA
Mudassar Idris Raut
India

CONTAMINANTS OF EMERGING CONCERN MASS BALANCE THROUGH A NOVEL MF/RO WATER RECLAMATION PROCESS-PILOT STUDY
Mohamadali Sharbatmaleki, Graham J.G. Juby, Saied Delagah, Mojtaba Farrokh Shad, Reza Baghæi Lakeh
United States of America

INTEGRATED ULTRAFILTRATION AND FILMTEC REVERSE OSMOSIS FOR WASTEWATER APPLICATIONS: CASE STUDY IN GCC
Safiya Hassan Alsogair, Hardik Pandya, Blanca Salgado, Veronica Garcia Molina
Saudi Arabia, Dubai, France, Switzerland

MORBYLANGA DWTP, SWEDEN: DIRECT POTABLE REUSE IN COMBINATION WITH BRACKISH WATER DESALINATION
Peter Asteberg
Sweden
Technical Program

PERTH WATER RECYCLING: BEENYUP AWRP STAGE 2
Andrew Layson, James Ross, Iwona Burak, Lisa Chan, Veronique Bonnelye
Australia

SEWAGE TO HIGH PURITY TREATED EFFLUENT WITH NO LIQUID WASTE: BIPIPE AND LOW TEMPERATURE DISTILLATION
Naseem Zaya, Mohammed Haroon, Murat Ege
United Arab Emirates

SUCCESSFUL STAKEHOLDER COOPERATION DELIVERING SUSTAINABLE WATER REUSE FOR INDUSTRIES
Eryl Edwards, Rolf Keil
United Arab Emirates

TFN MEMBRANES FOR INDIRECT POTABLE REUSE AT ORANGE COUNTY WATER DISTRICT: A CASE STUDY
Eugene Rozenbaoum, Roy Daly, Hoon Hyung
United States of America

TOWARDS THE WORLD’S LARGEST MICROBIAL DESALINATION CELL FOR LOW ENERGY DRINKING WATER PRODUCTION
Patricia Zamora, Marina Ramirez-Moreno, Juan M. Ortiz, Juan Arevalo, Victor M. Monsalvo, Frank Rogalla, Abraham Esteve-Nuñez
Spain

WHY YOUR RO MEMBRANE CLEANING MAY NOT BE EFFECTIVE: THE BENEFITS OF REVERSE CLEANING
Keith Douglas Andes, Craig Bartels

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

DISRUPTIVE WATER REUSE SCHEME BASED ON DIRECT ULTRAFILTRATION (DUF) OF MUNICIPAL WASTEWATER
Isabelle Saudrais, Catherine Daines, Yvan Poussade, Frederic Boisquillon, Herve Faujour, Hugues Humbert
France, United Arab Emirates

MBR: NOW THE TIME AGAIN
Val S. Frenkel
United States of America
MEMBRANE BIOREACTOR TECHNOLOGY FOR WASTEWATER TREATMENT AND REUSE
Sarra Kitanou, Sakina Balhamidi, Samira Benabdallah, Mohamed Taky, Azzedine Elmidaoui
Morocco

NOVEL MULTI-BARRIER SOLUTION TO ONE WATER COMBINING MUNICIPAL WATER REUSE WITH SEAWATER DESALINATION
Leon Awerbuch
United States of America

REMOVAL OF BENTZON HERBICIDE FROM WASTEWATER USING REVERSE OSMOSIS
Mohamad Nematzadeh, Abdolreza Samimi, Davood Mohebbi Kalhori, Soheila Shokrollahzadeh
Iran, United Arab Emirates

TECH-ECONOMIC ANALYSIS ON ULTRAFILTRATION MEMBRANE BIOREFRACTOR (UMBR) FOR DOMESTIC WASTEWATER TREATMENT
Sarra Kitanou, Mohamed Zait, Soukaina Benalla, Mustapha Tahaikt, Mohamed Taky, Azzedine Elmidaoui
Morocco

Session 2.1: MB Distillation

ADVANCED MEMBRANE SYSTEMS FOR THE EXTRACTION OF MINERALS FROM THE SEA, AND FOR ENERGY AND FRESHWATER PRODUCTION
Enrico Drioli, Mirko Frappa, Zhaoliang Cui, Ho Kyong Shon, Francesca Macedonio
Italy, Korea, Saudi Arabia, China, Australia

A COMPARISON OF DESALINATION TECHNOLOGIES ON THE BASIS OF PRIMARY ENERGY CONSUMPTION
Thomas Altmann, Andrew Thomas Bouma, Justin Robert, Jaichander Swaminathan, John Lienhard
United States of America, Saudi Arabia, India

DEVELOPMENT OF SOLAR ABSORBING NANOPOROUS MEMBRANES FOR DIRECT SOLAR SEA-WATER DESALINATION
Arwa AlShareif, Mona Bahman, Faisal AlMarzooqi
United Arab Emirates
EXPERIMENTAL AND NUMERICAL ANALYSIS OF MEMBRANE DISTILLATION AFFECTED BY SCALE FORMATION
Sebastian Schilling, Heike Glade
Germany

FOULING OF HOLLOW FIBER MEMBRANE DISTILLATION (MD) MEMBRANE IN A PILOT-SCALE PLANT FOR BRINE CONCENTRATION: AN AUTOPSY STUDY
Hyeongrak Cho, Yongjun Choi, Sangho Lee, Seung-Hyun Kim, Jarrah Saleh Alfozan, Mohammed Farooque Ayumantakath, Ahmed Saleh Alamoudi
Korea, Saudi Arabia

NOVEL MEMBRANE DISTILLATION MODULE CONFIGURATION FOR WATER VAPOR FLUX ENHANCEMENT
A. Alsaadi, A. Alpatova, J. Lee, N. Ghaffour
Saudi Arabia

OPTIMIZATION OF A NOVEL HOLLOW-FIBER MEMBRANE DISTILLATION MODULE FOR SEA-WATER DESALINATION APPLICATION
Mohamed Hamdi, Noreddine Ghaffour, Abdulhassan Ali, Aymn Abdulrahman, Saeed Alrubiaee, Abdullah Bin Mahfouz, Ahmad S. Alsaadi
Saudi Arabia

RED CLAY/GUM COMPOSITE MEMBRANE AS MEMBRANE DISTILLATION FOR SALTY WATER DESALINATION
Saad A. Aljlil
Saudi Arabia

SUSTAINABLE NUTRIENT RECOVERY FROM ANTHROPOGENIC WASTE STREAMS USING ISO-THERMAL MEMBRANE DISTILLATION
Ngai Yin Yip, Stephanie McCartney, Chanhee Boo, Natalie Williams
United States of America

THE USE OF MEMBRANE DISTILLATION IN HIGH SALINITY STREAMS
Bart Nelemans, Joana Carvalho, Olga Ferrer, Carlos Bayona Gonzalez, Jorge Malfeito Sanchez
Netherlands, Spain
Session 2.2: RO Fouling and Biofouling (Part 1)

THE IMPORTANCE OF LONG-TERM STABLE PERFORMANCE OF REVERSE OSMOSIS ELEMENTS
Safiya Alsogair, Justyna Warczok, David Arias, Blanca Salgado, Veronica Garcia Molina
Spain, France, Switzerland, Saudi Arabia

NEAR-NEUTRAL ENZYME CLEANERS FOR ORGANIC AND BIOLOGICAL FOULANTS: WASTE-AND SEA- WATER APPLICATIONS
Amit Sankhe, Ramiro Ramirez, Charles Wardle, Ryan Furukawa
United States of America

NEW DOSING STRATEGIES OF THE STABLIZED CHLORINE BIOFOUING CONTROL AGENT IN SEAWATER REVERSE OSMOSIS (SWRO)
Yinghong Lu, Hideyuki Komori, Kunihiro Hayakawa, Jia Shin Ho, Lee Nuang Sim, Tzyy Haur Chong
Singapore, Japan

A NEW PARADIGM OF HOW BIOFILMS FORM ON SEAWATER RO MEMBRANES: INVOLVEMENT IN ROTARY CERAMIC ISOBARIC CHAMBER ENERGY RECOVERY DEVICE
Harvey Winters, Hong Gay Eu, Noreddine Ghaffour, Sheng Li, Nasreen Nasar
United States of America, Singapore, Saudi Arabia, China, United Arab Emirates

PERFORMANCE STUDY OF SULFURIC ACID SHOCKS IN REVERSE OSMOSIS MEMBRANES IN THE UMM AL HOUL PROJECT SWRO PLANT
Pedro Cortes, Guillermo Hijos
Spain

RELIABLE SEA WATER RO OPERATION WITH HIGH WATER RECOVERY AND NO-CHLORINE / NO-SBS DOSING IN ARABIAN GULF, SAUDI ARABIA
Mohammad Farooque Ayumantakath, Mohammed Maghram Al Shaiaie, Troy Green, Hiroki Miyakawa, Yohito Ito, Hideaki Kurokawa, Yoshinari Fusaoka, Ahmed Saleh Al Amoudi
Saudi Arabia, Japan

SWELLING-INDUCED CLEANING OF FOULED REVERSE OSMOSIS MEMBRANES IN DESALINATION
Omar Labban, Grace Goon, Zi Hao Foo, Xuanhe Zhao, John Lienhard
United States of America, Singapore
UNEXPECTED CHANGES IN THE INTAKE AREA OF A SWRO INTAKE THAT MAY AFFECT DRAMATICALLY THE PERFORMANCE
Rafael Buendia Candel, Domingo Zarzo Martinez, Aldo Ravazzini, Elena Campos Pozuelo, Patricia Terrero Rodriguez, Mercedes Calzada Garzon
Spain, Italy

Session 2.3: Ro Fouling and Biofouling (Part 2)

CERAMIC MEMBRANE CLEANING STRATEGIES TREATING BRACKISH SURFACE WATER WITH HIGH FOULANT CAPACITY
Juan Arevalo, Jose Maria Vinas, Damian Amador, Marcelino Burgos, Frank Rogalla, Victor Monsalvo
Spain

CHLORINE DIOXIDE AS BIOCIDE IN RO: EFFECT OF PH AND CHLORINE DIOXIDE DOSE ON MEMBRANE INTEGRITY
Stine Kusk Thomsen, Victor Yangali-Quintanilla, Sergio Tosoni, Søren Venzel Nielsen
Denmark, Italy

EXPLORING SPECIAL PROPERTIES AND VERSATILE APPLICATIONS OF DENDRIMERS IN MEMBRANE-BASED WATER-TREATMENT SYSTEMS
Ramiro Ramirez, Amit Sankhe, Ryan Furukawa
United States of America

FINDING THE BIOFOULING CONTROL BALANCE FOR SWRO PLANTS
Harry Polman, Mary Kanavoutsos, Tony Attenborough
Netherlands, Australia, United Kingdom

HOT WATER DISINFECTION EFFECT ON POLYAMIDE RO ELEMENTS
Peter Eriksson
United States of America

A NEW FAST ACTING LOW PH CLEANER PAVES THE WAY FOR A NEW CLEANING PHILOSOPHY FOR INTEGRATED MEMBRANE SYSTEMS
Fiona Finlayson, Daniel Freeman
Scotland
SUCCESSFUL LARGEST SWRO PLANT OPERATION IN ARABIAN GULF WITH CTA HOLLOW-FIBER RO MEMBRANE
Nobuyuki Masumoto, Toshitaka Tanaka, Yuji Ito, Mohamad S. AlHarthi, Abdullah Beshbesh Al Anazi, Hamid Mahmoud Al Johani
Japan, Saudi Arabia

Session 2.4: Pre-Treatment (Part 1)

ADVANCED CHARACTERISATION OF ORGANIC MATTER TO REDUCE FOULING AT A FULL-SCALE SEAWATER REVERSE OSMOSIS PLANT
Thomas Ransome, Amos Branch, Alberto de Miguel, Sharon McNeil, Farah Shiran
Australia

ADVANTAGES OF INSIDE-TO-OUT ULTRAFILTRATION AS PRETREATMENT OF SWRO DURING SEASONAL ALGAE BLOOM
Jan RASMUS Radel, Denis Vial, Patrick Buchta, Roland Winkler, Peter Berg, Younis Al-Kiyumi, Abdullah Al-Sadi
United Arab Emirates, France, Germany, Oman

CARTRIDGE ELEMENT SELECTION TO OPTIMIZE RO MEMBRANE PERFORMANCE: FLUX, PRODUCED WATER QUALITY AND COST
Nadia Farhat, Christodoulos Christodoulou, Panayiotis Placotas, Johannes S. Vrouwenvelder, Olga Sallangos
Saudi Arabia

COMBINATION OF ULTRAFILTRATION AND CERAMICS ADSORPTION FILTER AS PRETREATMENT FOR SWRO DESALINATION PROCESS
Keiko Nakano, Jingwei Wang, Lee Nuang Sim, Tzyy Haur Chong, Yusuke Kinoshita, Kenichiro Sekiguchi
Japan, Singapore

COMPARISION OF MEDIA FILTRATION AND MEMBRANE FILTRATION AS RO PRETREATMENT FOR REMOVAL OF IRON AND MANGANESE
Srinivas (Vasu) Veerapaneni, Russel Ferlita, Aswathi Pradeep, Ryan Eck
United States of America
LIFE+13 TRANSFORMEM: VALIDATION OF RECYCLED NF AND UF MEMBRANES IN FILTRATION PROCESSES
Patricia Terreo Rodriguez, Elena Campos Pozuelo, Mercedes Calzada Garzon, Raquel Garcia Pacheco, Francisco Molina, Deborah Pomata, Manuel Lopez, Junkal Landaburu, Eloy Garcia Calvo, Domingo Zarzo Martinez
Spain

MONITORING THE PRETREATMENT OF MIRFA SEAWATER REVERSE OSMOSIS DESALINATION PLANT
Almotasembellah Abushaban, Sergio G. Salinas-Rodriguez, Delia Pastorelli, Brigitta Saul, Jan C. Schippers, Maria D. Kennedy
Netherlands, Switzerland, France

NUMERICAL SIMULATION OF THE FLOW AND STRUCTURE OPTIMIZATION OF A 2D DIS-SOLVED AIR FLOTATION TANK
Yun Long, Bo Xiao, Peter Kerschberger, Yu Fu
China, Australia

PERFORMANCE COMPARISON BETWEEN HIGH FLOW AND TRADITIONAL CARTRIDGE FILTERS IN A SEA WATER RO PLANT
Leonardo Tua Parra, Guillaume Clairet, David Jimenez Madurga, Ties Venema
United States of America, Canada, Spain

SAVING THE WATER PRODUCTION BY CONTROLLING THE SILT DENISTY INDEX (SDI)
Husam Almaghrabi
Saudi Arabia

SURVEY COMPARING UF AND CONVENTIONAL PRE-TREATMENT FOR THE CONTROL OF BIO-FOULING IN SWRO
Graeme K. Pearce
United Kingdom

MAXIMIZING MF/UF MEMBRANE LIFE - EXCEEDED INDUSTRY EXPECTATIONS THROUGH A UNIQUE FOULANT MANAGEMENT STRATEGY
James Lozier, Srinivas Jalla, J.C. Lan
United States of America
ADVANTAGES OF INSIDE-TO-OUT ULTRAFILTRATION AS PRETREATMENT OF SWRO DURING SEASONAL ALGAE BLOOM
Jan Raedel

ALGAL BLOOMS AND FOULING POTENTIAL IN MEMBRANE BASED DESALINATION SYSTEMS
Nirajan Dhakal, Sergio G. Salinas Rodriguez, Frans Knops, Jan C. Schippers, Maria D. Kennedy Netherlands

ANALYSIS OF TRANSPORT PHENOMENA AND FILTER PERFORMANCES OF MESH TUBE FILTER MEDIA FOR THE DESALINATION PRIMARY PRETREATMENT PROCESS
Dong-Ho Kim, Changkyoo Choi, In S. Kim Korea

EVOLUTION OR REVOLUTION? MEMBRANE GRAVITY FILTRATION (MGF) FOR SEAWATER DESALINATION PRE-TREATMENT
Simon Breese, Martin Gravel, Jonathan Pressdee, Teo Kochmar Canada, United States of America

INLINE COAGULATION AND ULTRAFILTRATION COMPARED TO CONVENTIONAL TREATMENT FOR ARSENIC REMOVAL
Victoria Vasini, Manuel Garcia de la Mata Argentina

MONITORING PARTICULATE FOULING OF NORTH SEA WATER WITH SDI, MFI0.45, AND MFI-UF
Sergio Salinas, Nizordinah Sithole, Nirajan Dhakal, Margot Olive, Jan Schippers, Maria Kennedy Netherlands, Switzerland

NUTRIENT DEPRIVATION FOR SWRO MEMBRANE BIOFOULING REDUCTION
Borjas Hernandez Lidia Zulema, Bayona Gonzalez Carlos, Picazo Lopez Anrea, Olga Ferrer Mallen, Jorge Juan Malfeito Spain

PERFORMANCE EVALUATION OF PRESSURIZED ULTRAFILTRATION WITH RELEVANCE TO PRETREATMENT IN SEAWATER DESALINATION
Patrick Butcha, Lajos Harsanyi, Amrith Giridhar, Amir Basha K Syed, Denis Vial, Roland Winkler, Peter Berg Germany, India, France
Pretreatment and the performances of the reverse osmosis membranes of a surface water desalination plant in Morocco
Sakina Belhamidi, Hicham Boulahfa, Sarra Kitanou, Fatima Elhannouni, Taky Mohamed, Azzeddine Elmidaoui
Morocco

Seawater RO pretreatment: different options to improve the RO plant availability
Giorgio Migliorini, Laura Bruno
Italy

Session 2.6: Plant Case Studies

El Yosr Sea Water Reverse Osmosis Desalination Plant 80,000 M3/day
Amr-Mohamed-Seoudy, Mohamed-AbdelWahab, Hatem-Mohamad-Seoudy, Ibrahim-EI. Agawany
Egypt

Emergency water supply: the water tales of three cities
Hiep Le
Australia

First successful SWRO reference in Khafji Gulf
Hussein AlMughrabi, Abdallah Alzyoud, Mansour Tahir, Masahide Taniguchi, Takashi Kurai, Takuro Shishiyama
Saudi Arabia, United Arab Emirates

Improving boron rejection in sea water desalination with advanced membrane technology: operation experience in the Mediterranean Sea, North Africa and Canary Islands
Alvaro Lagartos, Eugene Rozenbaoum, Metin Oruc, Juan Carlos de Armas, Hoon Hyung, David Sacco, Andres Rodriguez
Spain, Turkey, United States of America, Malta

Mamelles desalination plant, Dakar, Senegal: one of the first SWRO plant in West Africa
El Hadji Ada Ndao, Takayuki Hagihara, Mohamed Lassoued, Gwanelle Fleury, Magnus Holmer
Senegal, Japan, France
OPTIMIZATION OF PROCESS DESIGN MODELING AT A LARGE SEAWATER TREATMENT FACILITY IN SOUTHERN IRAQ: A CASE STUDY
Erskin Kasirga, Ahmed Ifthikar
United States of America

PROSPECTS FOR IMPROVING THE PERFORMANCE OF SWRO PLANTS BY IMPLEMENTING ADVANCED NF/RO TECHNIQUES: PART-II
Abou-Elfetouh Zaki Abdullatif, Ahmed S. Al-Amoudi, Mohammed Farooque, Troy Green, Jaber H. Al-Feeefi
Saudi Arabia

QIPP RO PLANT UP-GRADATION
Abdullah Saeed Al-Jubran, Muteb Thallab Al-Thubaiti, Mufarreh Mohmmed Sharaﬁ
Saudi Arabia

SHQAIQ-IWPP RO PLANT HIGH SDI OPTIMIZED OPERATION
Ahmed Fatahaddien AlAsam, Fawzi Mubarak Al Saidi, Ahmed Mohammad AlHaidah, Hassan Yahya Tharwan
Saudi Arabia

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Corrado Sommariva, Yvan Treal
United Arab Emirates, France

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Yazan Ibrahim, Ruqaia Ismail, Fawzi Banat, Hassan A. Arafat
United Arab Emirates

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United States of America, Saudi Arabia

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Jabel A. Ramirez Naranjo, Adrian Gil Trujillo, Gregorio Louzara, Manuel Ruiz de la Rosa
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Ghazi Ozair, Salman A. Al-Zahrany
Saudi Arabia

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India, Netherlands

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United Arab Emirates

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Ismail ElSaie
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Andrew Skumanich, Michael Skolnikov, Manoocher Ghisanni
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Emilio Ghiazza, Guide Laguzzi, Francesco Bevilacqua
Italy

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Anne-Claire E.M. Le Henaff, Wei He, Jeffrey Costello, Amos G. Winter
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Lars Spaeth, Janine Isabelle Witt
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Egypt

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Jiajun Cen, Lauren Beck, William Janssen, Corrado Sommariva, Leon Awerbuch
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William Janssen, Leon Awerbuch, Jiajun Cen, Lauren Beck
IDA Leaders Summit

The IDA Leaders Summit is one of the most highly anticipated new features of the 2019 IDA World Congress. This exceptional event will bring together highly respected individuals from across the advanced water treatment sector for thought provoking discussions about the issues and opportunities that are shaping the industry.

Held in parallel with the Technical Program, the Leaders Summit consists of a Leaders with Community session open to all conference delegates held on the afternoon of Monday, October 21 in the Plenary Hall, and a Leaders with Leaders one-day, invitation-only program on Tuesday, October 22. This Summit provides the opportunity for high-level interaction with some of the world’s foremost individuals in desalination and water reuse.

IDA Affiliate Majlis Discussions

The IDA Affiliate Majlis Discussions add an exciting new aspect to the World Congress. These forums take place on Wednesday, October 23 through Thursday, October 24 during the general program and are open to all registered delegates. They provide an opportunity for IDA’s growing network of affiliates to explore what is going on in the water sector regionally and showcase important game-changing projects or technologies in which their members are involved.

The inspiration for these Discussions is the concept of “majlis” that is popular in the Middle East. The word majlis, literally means “a place to sit,” 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.

The IDA Affiliate Majlis Discussions will take place on Wednesday from 8:30-17:00 and Thursday from 8:30-13:00 during the general program and are open to all registered delegates. Each affiliate forum will run for 60 minutes, while each corporate sponsor forum will run for 30 minutes.
### IDA Affiliate Majlis Discussion Forums - Wednesday, October 23rd

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Organization</th>
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<tbody>
<tr>
<td>08:30 – 09:30</td>
<td>American Membrane Technology Associations (AMTA)</td>
</tr>
<tr>
<td>09:30 – 10:30</td>
<td>European Desalination Society (EDS)</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td>Coffee Break</td>
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<tr>
<td>11:00 – 12:00</td>
<td>Asociación Española de Desalación y Reutilización (AEDyR)</td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>Caribbean Desalination Association (Caribda)</td>
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<tr>
<td>13:00 – 14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00 – 15:00</td>
<td>Water Sciences &amp; Technology Association (WSTA)</td>
</tr>
<tr>
<td>15:00 – 16:00</td>
<td>Singapore Water Association (SWA)</td>
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<tr>
<td>16:00 – 16:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16:30 – 17:30</td>
<td>The Membrane Industry Association of China (MIAC)</td>
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</tbody>
</table>

### IDA Affiliate Majlis Discussion Forums - Thursday, October 24th

**Majlis Affiliate Forum Theater: 8:30-14:30**

<table>
<thead>
<tr>
<th>Time</th>
<th>Organization</th>
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<tbody>
<tr>
<td>08:30 – 09:30</td>
<td>Levant Desalination Association (LDA)</td>
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<tr>
<td>09:30 – 10:30</td>
<td>Korea Desalination Plant Association (KDPA)</td>
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<td>10:30 – 11:00</td>
<td>Coffee Break</td>
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<tr>
<td>11:00 – 11:30</td>
<td>Asia Pacific Desalination Association (APDA)</td>
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<tr>
<td>11:30 – 12:00</td>
<td>Japanese Desalination Association (JDA)</td>
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<tr>
<td>12:00 – 13:00</td>
<td>Asociación Latinoamericana de Desalación y Reúso del Agua (ALADYR)</td>
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**Plenary Theater: 8:30-13:00**

<table>
<thead>
<tr>
<th>Time</th>
<th>Organization</th>
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<tbody>
<tr>
<td>08:30 – 09:30</td>
<td>Pakistan Desalination Association (PAKDA)</td>
</tr>
<tr>
<td>09:30 – 10:30</td>
<td>Australian Water Association (AWA)</td>
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<tr>
<td>10:30 – 11:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11:00 – 12:00</td>
<td>Indian Desalination Association (InDA)</td>
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<tr>
<td>12:00 – 13:00</td>
<td>Water Desalination Engineering Chapter, Saudi Arabia (WDEC)</td>
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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.

### IDA Gold and Silver Corporate Sponsor Forums - Wednesday, October 23rd

Plenary Hall (Corp): 8:30-17:30

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<tr>
<th>Time</th>
<th>Sponsor</th>
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<tbody>
<tr>
<td>08.30 – 09:00</td>
<td>Toray (Silver)</td>
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<tr>
<td>09.05 – 09:35</td>
<td>ILF (Silver)</td>
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<tr>
<td>09.35 – 10:05</td>
<td>Kurita (Silver)</td>
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<tr>
<td>10.05 – 10:35</td>
<td>Dupont (Silver)</td>
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<tr>
<td>10.35 – 11:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11.00 – 11:30</td>
<td>ROPV (Silver)</td>
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<tr>
<td>11.35 – 12:05</td>
<td>Metito (Gold)</td>
</tr>
<tr>
<td>12.05 – 12:35</td>
<td>Veolia (Bronze)</td>
</tr>
<tr>
<td>13:00</td>
<td>Lunch</td>
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About IDA

Who We Are

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

For more than 40 years, IDA has served as the global hub of expertise, news and information, and professional development for the global desalination industry. Its members include the world’s leaders in desalination and reuse including end-users, and researchers representing governments, corporations and academia. A non-profit organization, IDA is associated with the United Nations as part of a growing international network of non-governmental organizations (NGOs). IDA views desalination and reuse as critical aspects of the solution to address the world’s water problems and advocates their use to provide a reliable and sustainable source of fresh water in all parts of the globe. To this end, IDA supports the development of technological solutions that enhance increase energy efficiency, lower costs and promote environmental stewardship.

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

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

In addition, IDA’s print and online media create a library of resources rich in information and ideas. Publications include the IDA Desalination Yearbook, the water.desalination+reuse (WD+R) Quarterly Magazine, the Quarterly IDA Newsletter, IDA Global Connections.

The IDA World Congress, held every two years, is the most prestigious and best attended venue for stakeholders engaged in all facets of the industry. In addition, IDA conducts several specialized seminars, forums and workshops in different regions of the world each year.

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

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IDA Affiliates

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

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

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

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

For more information, visit http://www.idaswrf.org/.
About IDA

IDA Membership and Benefits

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

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

IDA offers six categories of membership:

* **Class I-A membership for corporations or utilities**, at $1260 per year. Three employees are included in Class I membership.

* **Class I-B membership for smaller companies with 10 employees or less**. This category includes membership for two employees. Class I-B membership is also available to universities or NGOs. The annual Class I-B membership fee is $840.

**Class II-A membership for individuals.** This category includes reduced conference registrations at IDA’s World Congress, complimentary proceedings, complimentary online membership directory access, and more. The annual fee is $145.

**Class III-A, III-B, Class III-C membership is for students, non-profit libraries, and individuals from LDCs (respectively).** Benefits include reduced fees at all Association activities, complimentary online membership directory access, and more. The fee is $30 / student or library.

* Individuals who are employees of Class I-A or I-B corporate members are $90 additional per person.

Please direct inquiries to membership@idadesal.org