

Friday, October 23, 2009


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### MASAR Advanced & Intensive Training Workshop on



## MEMBRANE DESALINATION FOULING, ENERGY & COST MANAGEMENT

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MASAR Workshop includes this full, multi-media Workshop Training CD-ROM and a printed Workbook

An **advanced** and intensive membrane desalination technology training workshop will be conducted by two of the most recognized membrane desalination industry's leading and experienced experts and trainers. It will be held on Thursday, November 12, 2009, from 08:00-17:00 at the conclusion of the **2009 IDA World Congress on Desalination and Water Reuse** in Dubai, United Arab Emirates. The workshop will be conducted in English, with supplementary explanations in *Arabic* when needed.

The MASAR Workshop offers independent, user-minded and comprehensive perspectives on various aspects of the technology applications based on hands-on plant experience of over 55 years worldwide, mostly in the UAE, Saudi Arabia, Bahrain, Kuwait, Oman, Qatar, Malta, the Caribbean and the United States. The workshop presentations, problem-solving guidelines and discussions will reflect this enormous and unique combination of technical expertise, practical experience and on-site training of plant and business managers, engineers, supervisors, operators and technicians since 1983. What you will learn from the MASAR Workshop experience will not be anything you could be taught by your typical classroom instructions or video training!

The workshop's format will combine formal presentations and group interactive discussions, problem-solving and experience-sharing to encourage proactive participation via questions, input and feedback, and maximize trainee benefits.

### Who Should Attend?

The practical and intensive training workshop, based on extensive field experience of the instructors, is especially designed for membrane-based water desalination and purification plant operators, engineers and managers with varied levels of field experiences, technical background and industrial training. It is also beneficial for marketing, business and finance professionals from the desalination or other industries seeking a solid and practical understanding of membrane desalination technology applications, industry and markets.


### MASAR Workshop Focus & Topics

The MASAR workshop primarily focuses on applications of technologies such as Reverse Osmosis (RO), Nanofiltration (NF) and conventional pretreatment, as well as Ultrafiltration (UF) and Microfiltration (MF) processes as pre-treatment to RO/NF. Prime focus will be on fouling management in membrane systems, as the most critical issue in operating membrane desalination plants. Field-tested, innovative and practical approaches to system operation & performance monitoring, early fouling detection and measurement, and plant trouble-shooting will be discussed for effective prevention and control of most common types of fouling. Overviews and the latest advances in energy recovery technologies and devices, as well as costing analyses and management of seawater RO/NF plants will also be covered in detail.


Main topics of discussion include:

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#### MEMBRANE PLANT FOULING MANAGEMENT

 *Criteria for effective and comprehensive fouling management: biological, organic, colloidal, metal oxide fouling, chemical & silica scaling, and practical fouling trouble-shooting and control techniques.*


#### FOULING MONITORING & DETECTION

 *Data automation & reporting techniques, system performance criteria, data analysis & evaluation, ASTM normalization & trending vs. real-time monitoring, early detection & measurement of fouling & performance, and fouling prevention strategies.*


#### DESALINATION PLANT ENERGY MANAGEMENT

 *Energy usage criteria & technology advances, energy recovery devices, and comparisons of energy consumption at membrane vs. thermal desalination plants.*

#### DESALINATION PLANT COST MANAGEMENT

 *Seawater cost overview – surface intakes & seawells, comparisons of membrane vs. thermal desalination costs, and costing membrane & thermal desalination plants.*

#### TOP 30 PRACTICAL DESIGN, OPERATION & MAINTENANCE GUIDELINES

 *Summary of field-proven practices for optimal and trouble-free membrane plant design, operation and maintenance.*

The day session will conclude with a period of open discussion, sharing of experiences among attendees and one-on-one questioning.

Each trainee will receive a comprehensive, **Workshop CD-ROM**, with over 200 presentation slides, summary of practical plant O&M guidelines, technical papers, useful references and on-line resources. It is

designed with web-style links, colorful graphics and illustrations for on-the-job continuing education and reference by plant operators, engineers, supervisors, consultants, vendors and others. **We conduct the ONLY training workshops and courses in the water desalination industry today where attendees receive a full, interactive and multi-media CD-ROM with all presentations and technical materials**, instead of hard-copy handouts. Each attending trainee also receives an illustrative **Workshop Workbook** for presentation reference and notes during the workshop and afterwards. A **Certificate of Completion** is also issued to each attending trainee (you must attend at least 6 hours of the 8-hour workshop to be given your certificate).



#### **MASAR Workshop Instructors**

The MASAR workshop will be as conducted by **Eng. Mohamad Amin Saad**, President and Chief Consultant of **MASAR Technologies, Inc.**, and **Dr. Irving Moch, Jr.**, of I. Moch & Associates, Inc., with head offices in the United States.

Eng. Saad and Dr. Moch have extensive field, technical and business expertise and field training experience in the water desalination and membrane technology industry totaling over 55 years, especially in designing, monitoring, optimizing and trouble-shooting tens of key brackish, seawater and industrial wastewater RO and other membrane plants around the globe, especially in the United Arab Emirates, Saudi Arabia, Kuwait, , Bahrain, Malta and the United States.



Dr. Irving Moch, Jr.      Workshop Administrator, Margaret Saad      Eng. Mohamad Amin Saad

Both instructors have been conducting intensive and highly-successful training workshops with the IDA World Congresses since 2002 (Bahrain 2002, the Bahamas 2003, Singapore 2005, Spain 2007). Eng. Saad has also been involved in conducting on-site and classroom technical training seminars and courses to membrane plant and industry trainees since 1984, including 2-day intensive courses conducted in association with the Saudi Water & Power Forum (Jeddah, 2006-2009), with EDS at its EuroMed and Desalination & the Environment conference series in Malta (2003) and Morocco (2004), and with MEDRC (3-day course in Muscat, 2007). He also conducted 2-day courses with the Water & Wastewater Conference in Dubai (2005), a 2-day course for Dubai Electricity & Water Authority (2006) and a 5-day course for MARAFIQ in Yanbu, Saudi Arabia (2007). In 2008, he conducted a 5-day course for the Ministry of Electricity & Water of Bahrain (MEW) and 3 other courses in Sharjah, UAE, Riyadh & Buraidah, Saudi Arabia.

#### **MASAR Training Workshop Registration Fees**

- A. **US\$550** per trainee - pay on site.
- B. Group Rate: One free registration with every 5 paid (ALL trainees must be registered paid for at the same time by the same organization).

On-line Pre-registration via the IDA web site has now closed. Registration will be open only on site.

If you wish to reserve your seat and register on site, please download, complete and bring this form with you to the IDA Registration Desk on site:

[MASAR Workshop On-Site Registration Form](#)

**Email a copy to** [MASAR Technologies](#).

You may also contact **Eng. Mohamad Amin Saad**, who is now on assignment in Riyadh, Saudi Arabia on his mobile number (**00-966-561174720**) or UAE mobile number (**00-971-509090217**) if you have any question on the MASAR Workshop.

Workshop registration fee includes:

- MASAR Workshop CD-ROM with all presentation slides, technical publications & on-line references.
- MASAR Workshop Workbook (printed).
- Lunch and 2 coffee breaks.
- Certificate of Completion issued to all workshop registrants who fully attend the workshop.

*Workshop's CD-ROM and Certificates will be prepared in advance and given on day of workshop to all attendees who have pre-registered by the Congress pre-registration deadline.*

**All registrations are final and no refunds will be made. However, substitutions will be accepted provided that the name and**

contact info of the substituting person to attend is furnished by November 10, 2009. All registered no-shows will receive the Workshop training CD-ROM (no workbook or certificate) within 2 weeks after the workshop is held.

Hope to see you in Dubai!

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# MEMBRANE DESALINATION FOULING, ENERGY & COST MANAGEMENT

## **MASAR WORKSHOP AGENDA**

2009 IDA WORLD CONGRESS, , Dubai, United Arab Emirates

Thursday, November 12, 2009, 0800-1700

Instructors: **Eng. Mohamad Amin Saad & Dr. Irving Moch, Jr.**

[www.masar.com/training/masarworkshop.html](http://www.masar.com/training/masarworkshop.html)

<b>WELCOME, INTRODUCTIONS &amp; AGENDA/CD REVIEW</b>	<b>0800–0815</b>
<b>I. MEMBRANE PLANT FOULING MANAGEMENT</b>	
<b>A. FOULING POTENTIAL, TYPES &amp; SOURCES</b>	<b>0815–1030</b>
❖ OBJECTIVES OF EFFECTIVE FOULING MANAGEMENT	
❖ TYPES OF FOULING	
• BIOLOGICAL FOULING	
• ORGANIC FOULING	
• COLLOIDAL FOULING	
• METAL OXIDE FOULING	
• CHEMICAL & SILICA SCALING	
❖ SEVEN QUICK DIAGNOSTIC CHECKS	
<i>COFFEE BREAK</i>	1030–1045
<b>B. FOULING MONITORING &amp; DETECTION</b>	<b>1045–1230</b>
❖ DATA AUTOMATION & REPORTING TECHNIQUES	
❖ RECOVERY RATIO OPTIMIZATION	
❖ OPTIMIZATION CONSIDERATIONS – HOW TO OPTIMIZE?	
❖ MEMBRANE ADDITIONS, REPLACEMENTS & CLEANING	
❖ TRENDING - ASTM STANDARD NORMALIZATION	
❖ REAL-TIME MONITORING, FOULING DETECTION & MEASUREMENT	
❖ FOULING DETECTION PRACTICAL GUIDELINES	
❖ PLANT CASE STUDIES – SURFACE SEAWATER & WELL BRACKISH	
❖ FOULING PREVENTION STRATEGIES & INNOVATIONS	
<i>LUNCH BREAK</i>	1230–1330
<b>II. DESALINATION PLANT ENERGY MANAGEMENT</b>	<b>1330–1430</b>
❖ ENERGY USAGE CRITERIA & TECHNOLOGY ADVANCES	
❖ ENERGY RECOVERY DEVICES	
❖ ENERGY CONSUMPTION COMPARISONS- <i>MEMBRANE VS. THERMAL</i>	
❖ THE FUTURE – IMPORVEMENTS ON THE HORIZON	
<i>COFFEE BREAK</i>	1500–1530
<b>III. DESALINATION PLANT COST MANAGEMENT</b>	<b>1530–1630</b>
❖ SEAWATER COST OVERVIEW	
❖ COST OF WATER COMPARISON - MEMBRANE VS. THERMAL	
❖ COSTING MEMBRANE & THERMAL PLANTS	
<b>IV. 30 PRACTICAL PLANT MANAGEMENT GUIDELINES</b>	<b>1630–1645</b>
<b>OPEN DISCUSSION, FEEDBACK &amp; QUESTIONS</b>	<b>1645–1700</b>
<b>CERTIFICATE AWARDS &amp; CONCLUSION</b>	<b>1700</b>