European Desalination Society in collaboration with itc INSTITUTO TECNOLÓGICO DE CANARIAS

EDS WEBINAR

Desalination in Agriculture and Water-Energy-Food Nexus

March 3rd, 2022, 15:30-17:00 CET

Welcome Message: Ursula Annunziata, President EDS

Moderator: Dr. Jauad El Kharraz

Executive Director of the Regional Center for Renewable Energy and Energy Efficiency – RCREEE (Intergovernmental Organization) based in Cairo, Egypt.
See detailed Bio on last page

Abstracts / Program

Dr. Domingo Zarzo Martinez
Innovation and Strategic Projects Manager, Sacyr Water, Spain

- **Experiences and Innovations of Desalination for agriculture in Spain**

Mario Araus Gozalo
Gerente de Explotación en ACUAMED, Aguas de las Cuencas Mediterráneas, S.A. , Spain

- **Solutions to the complex water management in the Mediterranean basin arch**

Dr. Domingo Zarzo Martinez
Innovation and Strategic Projects Manager, Sacyr Water
Spain

Bio

Bachelor's Degree in Chemistry, University of Alicante, Spain (1988) and PhD, Water and Sustainable Development, University of Alicante, Spain (2017).

34 years' experience in water treatment

Innovation and Strategic Projects Manager of Sacyr Water (SACYR GROUP) from 1995 and founding member of the company. Previously he worked as a researcher at the Chemical Engineering Department, University of Alicante (1988-1991) and O&M manager in different wastewater treatment plants (1991-1994).

More than 150 water treatment facilities have been designed and built under his supervision including some of the largest desalination facilities in the world (in Australia, Israel, Algeria, Chile, Spain, Oman, etc.), with different technologies (RO, EDR, NF) as well as large wastewater and reuse plants.

Member of the Board of Directors (since 2008) and current President of AEDyR (Spanish Desalination and Reuse Association), Member of the Board of Directors of IDA (International Desalination Association) and Member of the Board of Trustees and Scientific Committee in IMDEA Agua (Madrid Institute of Advanced Studies- Water).

10 years Associate Professor and currently Honorary Collaborator at the Chemical Engineering Department, University of Alicante, Spain.

Lecturer in different master courses related with water treatment in different universities.

More than 100 papers and publications in conferences, scientific journals, invited lectures and international congresses and 3 patents on water treatment systems.

Abstract: Experiences and Innovations of Desalination for agriculture in Spain

Spain is a leader country in the application of desalinated water for agriculture, with more than 21% of water produced by desalination being used for irrigation of different crops. The application of this non-conventional water source for agriculture represents a guarantee of water supply (both in quality and quantity) for farmers but increases water price and additionally some water quality aspects (such as Boron concentration or SAR equilibrium) must be taken into account.

In this presentation a general overview of the situation of this application in Spain will be shown including aspects related to water quality, economy, sustainability and some successful case studies.
To continue progressing in the extension of this application, research and innovation are crucial for demonstrating the benefits of desalinated water as an inexhaustible and safe source of high-quality water, increasing productivity and quality of agricultural products. In this presentation some research and development projects of Sacyr water related to this subject will be exposed, such as the project LIFE Deseacrop or the recently financed with EU Next Generation funds through the Spanish funding call from CDTI called SOS-AGUA-XXI.

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Mario Araus Gozalo
Gerente de Explotación en ACUAMED, Aguas de las Cuencas Mediterráneas, S.A.
Spain

Bio

Completed PhD in Advanced Water Management Centre (AWMC), University of Queensland, Australia in 2020. Currently working as a Research Fellow at Nanyang Environment and Water Research Institute (NEWRI), Nanyang Technological University (NTU), Singapore.

Abstract: **Solutions to the complex water management in the Mediterranean basin arch**

ACUAMED is a Spanish state own company which was set up in July, 2004 as a tool under the state general administration to provide solutions to the complex water management in the Mediterranean basin arch. To deal with the particular problems of the Mediterranean basin arch, ACUAMED has developed these kinds of projects: desalination, wastewater reuse, water management improvement, flood protection and environment restoration.

Related to desalination for agriculture, ACUAMED manages de the exploitation of 5 large reverse osmosis plants (Torrevieja, Águilas, Valdelentisco, Carboneras and Campo de Dalías) which provide water for agriculture in the southeast of Spain. In 2020, the volume of desalinated water produced in these plants for irrigation accounted for more than 100 hm3. Due to the increasing demand for desalinated water for agriculture, ACUAMED has investment plans to enlarge these plants. Besides, ACUAMED is currently studying the development of photovoltaic projects for energy self-consumption to reduce its energy cost.

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Bio Dr. Jauad El Kharraz

Currently Executive Director of the Regional Center for Renewable Energy and Energy Efficiency – RCREEE (Intergovernmental Organization) based in Cairo, Egypt.

He has been senior consultant, advisor and/or evaluator for several international institutions (European Commission, PRIMA Foundation, the Mediterranean Water Institute, FAO, UN-ESCWA, EU-GCC Clean Energy Technology Network, KAS-REMENA, Ocean Oasis, the Palestinian-Dutch Academic Cooperation Program on Water "PADUCO", COMSTECH Scientific Advisory Council (COMSTECH-SAC), the EMME-CCI Task Force on Water Resources led by the Cyprus Institute, the International Desalination Association as member of its R&D committee and the European Desalination Society where he was elected as a board member).

He has been the R&D Director at the Middle East Desalination Research Center, Oman (2015-2020), in charge of research programs/ projects on sustainable desalination technologies, renewable energies for desalination, water-energy-food nexus, climate change, and science diplomacy. He launched the USD 700.000 Prize Oman Humanitarian Desalination Challenge with his colleagues in MEDRC on 2018 and took part of its judging committee panel as well as its parallel research pathway panel.

He has been projects manager at the Euro-Mediterranean Information System on know-how in the Water sector (EMWIS), France (2004-2015). Earlier he was research at the Global Change Unit, University of Valencia (Spain), and he is still a Visiting researcher. He got MSc & PhD degrees in Earth Sciences (Physics) from the University of Valencia, Spain. He also got a Diploma in Enterprises Management & Strategy from SKEMA Business School, France.

He is Co-founder and Secretary General of Arab World Association of Young Scientists and member of the Society for the Advancement of Science and Technology in the Arab World (SASTA), and alumni of the Global Young Academy (GYA). He organized and launched an important number of scientific events and networks.

He was nominated in 2011 by the French Ministry of High Education & Research as representative at the Intergovernmental framework for EU Cooperation in Science & Technology (TN1301).

He has published and contributed to hundreds of conferences in more than 55 countries, journals and reports in the aforementioned fields. He co-authored UNESCO Science Report 2015. He has built a strong record of attaining progressively responsible managerial positions during his 20 years international career (MENA & Europe) in relation with sustainability, climate change impact and management of natural resources (water, energy, food, etc.), desalination technologies, water-energy-food nexus and agriculture.

He demonstrated efficiency in diversifying the funding of his organizations through obtaining funds from the European Commission programs as a PI, coordinator and contributor (FP7, H2020, ENPI CBC Med, INCO MED, INCO NGOs, SMAP, LIFE, PRIMA, etc.) and also from international donors such as GIZ, USAID, and national ones such as the research council of Oman, and also through CSRs from embassies and private companies (e.g. oil and gas companies, water & energy utilities, etc.).

Dr. Jauad is fluent in French, Arabic, Spanish and English.