



Innovation, Vision & Insight

SEAWATER DESALINATION, RO/MEMBRANE & WASTE WATER RE-USE CONFERENCE , 2018

Venue: Hotel Apollo, Johannesburg, South Africa
Date: 27TH – 29TH March, 2018

Venue: Protea Hotel by Marriott Cape Town Sea Point, South Africa
Date: 18TH – 20TH April, 2018

Venue: Protea Hotel Umhlanga, Durban, South Africa
Date: 23rd – 25th May, 2018

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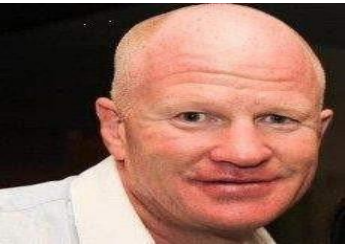
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SEAWATER DESALINATION, RO/MEMBRANE & WASTE WATER RE-USE CONFERENCE

INTRODUCTION

The insufficiency of fresh water has become a growing concern all over the world. Presently, over one-third of the world's population lives in water-stressed countries and by 2025, this figure is predicted to rise to nearly two-thirds. **Cape Town** is in the midst of the worst drought in living memory, which could soon become the first major city in the world to run out of **water**, the dam levels keep decreasing. It's an unpalatable predicament for everyone living on the southern tip of the country. Cape Town drought bites, as the day that the city runs out of **water**, ominously known as "**Day Zero**" is a phenomenon. Something has to be done about this water crisis, this should be a wake-up call to improve urban water services across Africa.

Desalination has been considered as an essential way to solve water stress all over the world. The sustainable treatment and supply of potable water and the disposal of wastewater are among the major challenges of the 21st century, and of rapidly growing national and international significance.

Membrane technology in water treatment is establishing itself as one of the most promising future solutions for the high quality, sustainable treatment of both potable and wastewater at reasonable price.

OBJECTION

The aim of this Conference is to provide an overview of both the theoretical and practical aspects of desalination, membrane technology, advanced oxidation processes, natural treatment systems, and water reuse. This Conference will highlight innovative ways of tackling water shortages and government initiatives across the continent. Major players from government, industry, academia and commerce will meet to discuss the way forward, to find out if Public Private Partnerships are the solution to the water crisis in Africa. We will also echo the digital age terminology: Speed and agility, "big data", cyber security, transparency and optimization, all global vectors of change that should be leading the modern water industry mindset. We are confident that you will benefit from the stimulating and dynamic atmosphere of the Zambezi Pride Conference.

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Target Audience

- Water Boards, Research Institutions, Collection System Managers
- Laboratory Technicians, Process Technicians, Analysts & Quality Analysts
- Irrigation Scientists, Water Scientists, Consultants, Chemical Technicians
- Environmental Engineers/Chemists/Scientists, Assets Managers
- Directors, CEO's, Facilities Managers, Project Managers, Water Resource Managers
- ISD Facilitators, Investment Houses, Structural Investment Managers
- Local, State, and Federal Regulators, NGO's, Abbatoirs
- Parliamentarians
- Banks, Finance Directors, Corporate Affairs Directors, Public Officials
- Water and Wastewater Operators, Plant Managers, Superintendents
- Students, Academia, Media, Planning Engineers, hydrologists-
- High Level Decision Makers, State Leaders
- Consultants, District Managers
- Equipment Manufacturers and Representatives, Equipment Suppliers
- Industrial Water and Wastewater Treatment Professionals
- Private Industry and Academia Researchers
- CSR/CSI Executives, Innovation Hubs.
- Water and Wastewater Utility Managers
- Government officials responsible for municipal industrial wastewater collection and treatment programmes, storm water management and surface water quality and ecology management.

The event provides a unique networking forum and excellent opportunity to establish new partnerships between the governmental and local policy makers, investors, business executives and representatives of business associations. These **strategies** will inform our future **water resource** planning, **management** and investment of the key factors to look at to solve the water crisis.

HIGHLIGHTS

- Desalination Projects implementation
- The future of Desalination
- Desalination vs. Sewage Reclamation
- Key Factors to consider for Investments
- Plant Design and Process
- Small Treatment Plants for Industrial Wastewater and Sewage
- Acid Mine Treatment
- Ground Water
- Sea Water Desalination project.
- Case studies of the implementation of successful BOT



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SEAWATER DESALINATION, RO/MEMBRANE AND WASTE WATER RE-USE CONFERENCE

Day 1: 27th March 2018

08am - 08:30 Registration and Tea

08:30 Introduction

Desalination Projects Implementation

- Desalination and membrane related technologies. Water sources, applications, capacities, and cost.
- Why is there an increasing demand for desalination?
- Strategies for future research and development in desalination.
- High efficiency water treatment solutions
- Mine water desalination
- Water reuse in the paper, textile, food and beverage industry.

13:00 – 14:00 LUNCH BREAK

Desalination, as alternative water source.

- The business case for desalination & The future of desalination.
 - Water scarcity and the place of desalination in South Africa. Securing water for the future;
 - Capital and operational cost considerations;
 - Evaluation of system efficiency (recovery and energy consumption) from components point of view.
 - Digital transformation. What role automation plays in desalination systems.
 - Evaluation of Membrane pretreatment for Seawater Reverse Osmosis Desalination
 - Developing Anti-Wetting and Anti-Fouling Membranes for Membrane Distillation
-
- Funding Water Infrastructure Projects
 - Typical PPP/BOT Risk Allocation in Water Desalination Projects
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- The principles of BOT/PPP methodology in seawater desalination projects, advantages and obstacles of such structures, main risks and mitigations, other form of business structures for seawater desalination projects, energy and desalination
-
- The description and explanation on financing methods for desalination projects and the differences between the financing methods used for large projects and for small projects.
-
- Case studies of the implementation of successful BOT Sea Water Desalination project

Day 2: 28th March 2018

08am - 08:30 Registration and Tea

RO theory

Understand RO/Membrane System Theory & Application

- Review the Different Classifications of Membrane Technologies Used for Water Treatment - MF, UF, NF, RO
- Discuss & Understand Basic Water Treatment & RO Theory
- Understand RO Terminology & Formulas: Array, Recovery, Rejection, Flux, etc.

10:00 TEA BREAK

Water Quality, RO/NF Pretreatment and Monitoring

- Basic principles. Flux, salt passage, rejection and concentration polarization.
- Overview of RO and NF membranes and elements.
- Single and multiple staging. Energy consumption.
- Summarizing process design of RO systems with spiral wound elements.
- Osmotic pressure, Net driving pressure. Permeate quality and flux

Fouling in RO and NF systems.

- Spacer and bundle fouling. Suspended and colloidal matter, iron and manganese, biofouling, organic fouling and scaling.
- Conventional pre-treatment techniques for RO and NF. Media filtration, coagulation, sedimentation, and flotation.
- Post-treatment options for RO and NF systems

13:00 – 14:00 LUNCH BREAK

Concentrate disposal in brackish & seawater reverse osmosis systems

- Recent advances in RO technology, brackish water and water reuse

15:00 TEA BREAK

Review Important Factors & Information Required to Properly Specify, Design, or Upgrade an RO/Membrane System

- Understand the Importance of Detailed Raw Water Data: Consider All Sources, Seasonal Changes, Future Trends, Sea Water Intrusion, etc.
- Learn How to Get What You Need: Correct Membranes, Flux, Flow, Quality.

16:30 Interactions & Close of Day

Day 3: 29th March 2018

08am - 08:30 Registration and Tea Water Reuse

- Fundamentals of water reuse
 - Applications and case studies for potable reuse, industrial reuse and aquifer recharge.
- ### Small Treatment Plants for Industrial Wastewater and Sewage, (black and grey water) re-use
- Technologies or regulation
 - Green Building and Green Star Rating
 - Different municipalities' approaches and by laws and possible municipal water and sanitation cost savings

10:00 TEA BREAK

Water Mix and Resource Management Strategies to reconcile supply and demand.

Innovations in Water Reuse Technologies Perceptions and Realities

- To Reuse or Not to Reuse
- General lack of understanding that water is a limited resource
- Bad stigma associated with water reuse
- Sense of entitlement to a natural resource
- Lack of regulation and standardization

Case Study

13:00 – 14:00 LUNCH BREAK

14:00 – 15:00 Networking & End Of Conference

Daily Program

08:00 Registration & Tea

10:00 – 10:15 Tea Break

13:00 – 14:00 Lunch Break

15:00 – 15:15 Tea Break

16:00 – 16:30 Interactions & Closing

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Registration Form

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- 27th -29th March 2018 JHB
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ZAMBEZI PRIDE SEAWATER DESALINATION, RO/MEMBRANE & WASTE WATER RE-USE CONFERENCE.

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- In- house at your own suitable dates

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