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## Membrane Technology Management for Saline Water Date: View Online -- Venue: View Online -- Fee: £5,000

**Overview:**

Saline Water Membrane technology programme demonstrates to delegates how biological membranes and membrane processes can be used for water, wastewater, medical and processing industries by appropriate engineering materials and systems.

This courses is designed for delegates that are involved in the desalination industry such as suppliers of engineering system and components, chemical and materials as well as consultants and researchers within this field that aim to gain a deeper understanding of thermal desalination.

Our programme offers insight into the material science and engineering, fundamental principles of transportation, applications and process design within the context of the water and wastewater treatment industry where membrane is becoming an increasingly popular process.

We believe Saline Water Membrane Technologies will offer delegates a head start and a competitive edge in membrane technology in areas such as wastewater engineering or medicine.

**Coverage**

* Introduction to membrane permeation principles relevant to understanding the design and operation of membrane-based processes: membrane process types and key operating parameters, membrane and process configurations, fouling
* Dense membrane processes: reverse osmosis, Nano filtration and electro dialysis
* Porous membrane processes: ultrafiltration and microfiltration
* Membrane applications: desalination, municipal wastewater treatment, and wastewater reuse.

**Objectives**

* Be familiar with main membrane processes, principles, separation mechanisms, and applications
* Appreciate the selection criteria for different membrane processes
* Describe the principle of the most common membrane applications
* Carry out a concept to design project for a particular membrane technology application.

**How this helps your organisation?**

* Increase efficiency and effectiveness within organisational processes
* Employees attain a deeper theoretical knowledge
* Possess knowledge on the latest international practices
* Effective risk reduction
* Improved legal knowledge

## How this helps you personally?

* Increased knowledge and deeper understanding
* Improved skill set
* Increased confidence
* Increased recognition within the organisation
* Improved work performance and managerial skills
* Career enhancement

**Course Structure**

**Introduction**

* Membranes and it’s uses
* Post-Treatment stabilization of desalinated water
* How to identify the essential water quality parameters
* The design and fundamentals post-treatment
* How to identify the chief indices of corrosion
* Case Study 1 – Post Treatment
* Thermal Processing Analysis
* Desalination plants: Corrosion issues and materials
* Desalination plants and the involvement of sea water properties
* Group Discussion
* Pressure driven membrane processing analysis
* Case Study & Videos

**Desalination Technologies**

* Membrane Processes: Ultrafiltration, Reverse Osmosis, Microfiltration, Permeation, Gas separation
* Desalination and Reverse Osmosis
* The characterisation and manufacturing of membranes.
* Energy Replenishment
* Membrane Module fundamentals: Plate & Frame, Hollow Fibre, Tubular
* Modelling Exercise: Poiseuilles law and liquid flow
* RO Excel design

**The Environment & Cost Analysis**

* Design Parameters: Salinity, Composition, Temperature
* Cost analysis of the membrane markets
* Membrane System Concepts
* Membrane Operation & Cleaning concept
* Service-Life of Membranes
* Equipment costing
* Energy Import costing
* Cost consideration
* Solar powered vs. conventional pumping system comparison
* O&M Costing
* SWRO Process application
* Operation and Cleaning analysis on Membrane
* Procurement and costing within Desalination
* Implementation of renewable technology
* Scaling & Membrane Fouling
* Environmental cost analysis
* Case Study & Videos

**Environmental Analysis**

* Future Trends
* Research & Development
* Discuss the positive environmental impacts
* Water softening
* Critical improvements in sanitation and quality
* Cost reduction
* Agricultural impacts: Soil, groundwater, drainage
* Discussion of the negative environmental impacts
* Aquifer Impact
* The use of coastal land
* Noise pollution
* The impact on the marine environment
* The high energy requirements associated with membrane technologies
* Renewable energy & desalination
* Videos & Case Studies

**Renewable Energy Applications in Water Desalination**

* Sustainable development, water & energy
* Energy & environmental security initiatives
* Perspective analysis
* DOE approach
* Health Issues
* Message: Water pumping, desalination, water treatment, DOE capabilities, conclusions
* Life Cycle Cost analysis
* Solar Power vs conventional water pumping systems
* Case studies & videos

**Course Dates:** Weekly

**Venue:** View Online

**Address:** Radisson Hotel

**Fee:** £5,000