

CONFERENCE TITLE

JOINT CONFERENCE & EXPOSITION • 25-28 FEBRUARY 2013 • SAN ANTONIO, TEXAS, USA

out why the PT3 is an indispensable instrument in the water quality professional's toolkit.

NANO H2O

Booth 508

NanoH₂O Inc manufactures the most energy efficient reverse-osmosis (RO) membranes for seawater desalination. Based on breakthrough nanostructured materials and industry-proven polymer technology, NanoH₂O's QuantumFlux membranes dramatically improve desalination efficiency and productivity, delivering the highest flux and the highest salt rejection of any seawater RO membrane on the market. QuantumFlux membranes are Standard 61 certified by NSF International and available in 8 in (20 cm) spiral-wound configurations that fit easily into new and existing desalination plants, purifying water from a broad range of sources with improved productivity and water quality.



PROCESS SOLUTIONS

Booth 624

Process Solutions Inc introduces the MicOclor System, a third generation onsite sodium hypochlorite generation (OSHG) system resulting from over 20 years of research and experience. The MicOclor system has enhanced safety features, the best warranty of all OSHG manufacturers and is designed for minimal system maintenance. The Tank Shark maintains complete mixing of the tank while generating real time water samples and automatic chlorine or chloramine injection to the desired levels.

QUA Group

Booth 612

QUA® is a developer and manufacturer of leading-edge advanced membrane products used in the water, wastewater, and water reuse markets. QUA's product offerings includes NSF-certified Q-SEP® ultrafiltration membranes, which take ultrafiltration to a new level with a patented cloud-point precipitation process and the innovative Fractional Electrodeionization (FEDI®) stack. This has superior hardness tolerance compared with the other electrodeionization offerings on the market. QUA® is able to manage the entire lifecycle of both products as they are the owners of the technology, holding several patents, as well as the owner/operator of the manufacturing facility.



SULZER PROCESS PUMPS (US)

Booth 620

As a global leader in pumping solutions, Sulzer Pumps is recognized for delivering excellent product quality and performance reliability for customers in the water and wastewater industries. Based on our state-of-the-art and proven technology, we meet customers' need within desalination, transport and water treatment applications. Our intensive research and development, process and application knowledge together with comprehensive understanding of market needs keeps us at the leading edge of technical development. Our global network of manufacturing and packaging facilities together with sales offices, service centers and representatives located close to major markets provide fast responses to customers' needs.



BOOK REVIEW

UF/MF Membrane Water Treatment – Principles & Design

Author: Dr Graeme K Pearce

Publisher: Water Treatment Academy, TechnoBiz Communications Co Ltd, Bangkok, Thailand

Reviewer: Dr Irving Moch, I Moch & Associates Inc, USA

THIS NEWLY issued book is a welcome addition to the global technical literature. It is extremely well written, extraordinarily documented with tables, figures, pictures and references, and provides a much needed primer in ultrafiltration (UF) and microfiltration (MF). It is highly recommended to anyone interested in this field, whether it be a technically trained individual or a layperson. Seldom does one find a technical subject written in such a highly readable fashion.

In each chapter there is, first, a modest repeat of background information that allows the chapter to be self sustaining. The chapters, themselves, are subdivided into many sections with a plentiful supply of pictures, charts and tables that add significant explanation to the text material.

At the end of each chapter are detailed references should the reader desire more information on any subject being discussed. These are from current published literature, web sites and personal experiences. One minor negative comment is that the book provides numerical terms in metric system units without somewhere in the text, such as the Appendix, citing conversion factors to other systems, particularly English and Australian units.

The general thrust of the book is to present

the current UF/MF technology in a way that melds theory with cost analyses. All the variations in configurations, chemistry and flow patterns are described in detail along with naming the major commercial manufacturers who are producing these units. Design guidelines are given so that users can establish a basis for understanding and commenting on projects.

Historical background information is presented so that the reader can comprehend how and why the technology has developed to the current commercial position. This is a fast-moving industry with technology and costs changing reasonably rapidly. Consequently, Dr Pearce should update this book frequently, say every 3-5 years.

There are nine chapters, appendices and other helpful information in the book:

- 1 – *Introduction:* An overview of the industry involving markets, products, drivers, segments, technology and regulations presented in graphs and tabular forms.
- 2 – *Membrane Filtration Fundamentals:* A text book primer on technology, including background information, design parameters, fouling theory, hydrophilic and hydrophobic membrane properties, cleaning criteria and temperature effect, and how it all affects product quality.
- 3 – *Commercial Membranes & Modules:* Detailed discussion on membrane materials, flow patterns, module configurations, leading suppliers and manufacturing techniques.

- 4 – *System Design:* Design guidelines for systems involving various membrane types and equipment needs, employing data from actual industrial cases and comparisons to RO/NF plants.
- 5 – *Drinking Water Treatment:* Using international standards, defining the needs for meeting regulations and avoiding undesirable contaminants along with system cost analyses using polymeric and ceramic membranes.
- 6 – *Wastewater Reuse:* Defining this fast-growing technology, suppliers, design, energy consumption and costs with information derived from various literature sources and supplier web sites includes membrane bioreactors.
- 7 – *Desalination Pretreatment:* Current status of a relatively new opportunity for UF/MF with detailed discussion on requirements, problems being faced in the field and possible solutions to difficulties within the real world.
- 8 – *Implementation and Operation:* How to be sure industrial plants are operating successfully including troubleshooting guidelines and fiber-repair techniques, discussing common problems and suggested solutions.
- 9 – *Case Studies:* Review of a number of actual typical plants with their designs and cost parameters within the three main fields of UF/MF use – drinking water, water reuse and seawater pretreatment desalination.