

## International Training Workshop (Advanced Program)

# UF/MF Membrane Water Treatment System Design & Optimization

28-29 June 2012, Concorde Hotel, Singapore

Program Instructor: Dr. Graeme Pearce, Membrane Consultancy Associates, UK



Water Treatment Academy, a division at TechnoBiz Communications Co., Ltd. is organizing 2-day workshop on "UF/MF Membrane Water Treatment – System Design & Control". This is advanced program focusing on practical issues related to UF/MF membrane selection, system design and control. All the registered participants will receive a copy of book "UF/MF Membrane Water Treatment – Principles and Design" written by Dr. Graeme Pearce. The program instructor, Dr. Graeme Pearce is world-renowned expert on membrane water treatment. This program is useful for engineers and managers at water treatment companies. This is also useful for operators of membrane water treatment systems in the process industries.

### Program Outline

#### UF/MF Products & System Design (Day 1)

- 1. UF/MF Properties**
  - Polymeric membrane fabrication, morphology and properties
  - Ceramic membrane manufacturing and properties
- 2. Comparative review of International UF/MF Suppliers – Part 1**
  - Detailed review of products and system design of market leaders
  - Product Specification, Mode of Operation, Pros & Cons, Experience
- 3. Membrane Filtration System Design**
  - Selection and sizing of racks and system components
  - System design exercise
- 4. Use of Chemicals**
  - Dosing chemicals
  - Cleaning chemicals

#### Applications, Performance, & Operation (Day 2)

- 5. Comparative review of International UF/MF Suppliers – Part 2**
  - Detailed review of products and system design of 2<sup>nd</sup> tier companies
  - Product Specification, Mode of Operation, Pros & Cons, Experience
- 6. Advanced Application Issues**
  - Occurrence and impact of dissolved organic carbon in water sources
  - Algae, metal ion and silica removal in drinking water
  - Wastewater reuse and emerging contaminants
  - Bio-fouling in UF/MF-RO systems in seawater
- 7. Membrane Bioreactors (MBR)**
  - An Introduction to MBR
  - MBR Formats
- 8. Monitoring and Permeability Trends**
  - Permeability trend analysis and monitoring indices
  - Permeability trend exercise
- 9. Troubleshooting**
  - Problem investigation and remedy
  - Failure modes and repair

**IMPORTANT NOTE:** All registered delegates must have basic knowledge on membrane water treatment to join this advanced program.

## Program Instructor: Dr. Graeme K Pearce, Membrane Consultancy Associates, UK



**Dr Graeme K Pearce** is a membrane technology specialist with 30 years experience in the membrane industry. A graduate of Oxford University in chemistry and chemical engineering, Dr Pearce's introduction to membrane technology started in BP in 1980. In 1991, he was Technical Director of the start up Kalsep, a buy-out from BP. The company was a key participant in the development of the UK membrane filtration market for drinking water. Dr Pearce joined Hydranautics in 2000, where he was responsible for the development and marketing of the ultrafiltration (UF) and microfiltration (MF) technology. In 2005, Dr Pearce left Hydranautics to form an independent consultancy, Membrane Consultancy Associates (MCA), working with a broad spectrum of users and providers of membrane technology, to improve the knowledge base and application of membranes in water, wastewater, and process industries. Dr Pearce has authored numerous papers and articles on membranes. He has recently written '**UF/MF Membrane Water Treatment**', a companion guide to this Workshop, and has provided the membrane filtration contribution to two books, namely 'The Guidebook to Membrane Desalination Technology' and 'The Guidebook to Membrane Technology for Wastewater Reclamation'.

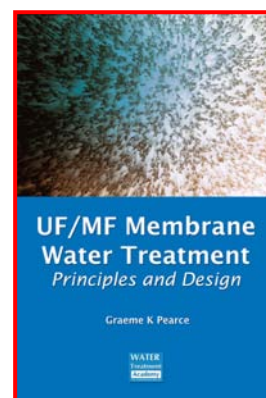
**Program Agenda:** 09.00 am to 05.00 pm

**Language:** ENGLISH

### **Book "UF/MF Water Treatment – Principles and Design"**

(This book will be given to all participants) (Author: Graeme K Pearce)

Membranes have been used in water treatment applications for nearly 50 years. However, it took the emergence of drivers for quality improvement and resource development in the 1990s to give rise to the last decade of explosive growth and falling prices. Membranes now compete with conventional technology in many areas, and will play a critical enabling role in meeting the challenges of water supply and wastewater treatment in the 21st century. This book provides a comprehensive description of the state of the art of ultrafiltration (UF) and microfiltration (MF) membrane technology in water and wastewater applications. The book will give practitioners a comprehensive understanding of all key facets of membranes and their application. The discussion of 'Fundamentals' will give a thorough grounding of the basis of the technology. Together with the review of 'Commercial Membranes and Modules', the reason for the relative diversity of this field will be explained. Readers will then be better equipped to select the most suitable option for a particular application.



The book then goes on to describe issues involved in 'System Design', including flux selection, selecting and sizing of components, and developing the process control philosophy. The major applications of drinking water, wastewater reuse, and desalination pre-treatment will then be explored, highlighting key technical issues, energy use, and cost. Procedures for monitoring and troubleshooting will be discussed to assist operating personnel to get the best from their plant by identifying shortcomings or emerging problems, developing remedies, and improving performance. The final chapters will illustrate examples of plants through 'Case Studies' and describe the issues involved in 'Project Execution'. The objective of the book is to provide a description and explanation of membrane technology in the water industry, and to improve the experience of trying to implement a scheme. The book will be essential reading for all project and process engineers, plant designers, planners, and operational personnel involved in municipal and industrial membrane projects. Also scientists and academics interested in the application of membranes in the water industry will find an insight into latest trends in commercial membrane technologies.

### **Program Organizer – Water Treatment Academy @ TechnoBiz**

Water Treatment Academy is a division at TechnoBiz Communications Co., Ltd., based in Bangkok. This academy is a educational and knowledge-based platform for water and wastewater treatment designers and operators. It organizes technical training programs and conferences on water and wastewater treatment. It publishes technical reference books on water and wastewater treatment. For more information on programs and activities of this academy, kindly visit website [www.watertreatment-academy.org](http://www.watertreatment-academy.org).



**Hotel Accommodation at Concorde Hotel in Singapore:** Concorde Hotel offers special rates for delegates of this training workshop. Please contact *Mr. Kenneth Looi*, Director of Catering ([kenneth.looi@concorde.net](mailto:kenneth.looi@concorde.net)) for reservation. The room rate is 250++SGD/night.

# Registration form – UF/MF Membrane Water Treatment

28-29 June 2012, Concorde Hotel, Singapore

Company Name .....

Address .....

Tel..... Fax..... Email.....

Contact Person ..... Tel..... Email.....

**Participant Names**

**Participant 1** ..... Position.....

Email..... Mobile Number.....

**Participant 2** ..... Position.....

Email..... Mobile Number.....

**Participant 3** ..... Position.....

Email..... Mobile Number.....

**Registration Fee / Person (US\$)**

Before 30 April 2012	Before 31 May 2012	Before 15 June 2012	After 15 June 2012
900 US\$	1,000 US\$	1,100 US\$	1,250 US\$

**Remark:** Payment is required with registration. Registration fee includes training documentation, lunch and refreshments during the program. The registration fee applies as per date paid.

**Group Registration Discount:** For group of 3 persons from the same company, 10% discount on the registration fee. For group of 5 persons from the same company, 6<sup>th</sup> person participation is FREE.

**Payment Method**

- Bank Transfer to Bangkok Bank, A/C Name: TechnoBiz Communications Co., Ltd.  
A/C Number: 177-0-70727-9, Ratchada-Latphrao Branch  
Swift Code: BKKBTHBK (Kindly make payment for all bank charges)
- Credit Card     Visa                       Master Card                      (5% bank fee will be applied for credit card processing)

Card Number ..... Cardholder Name .....

Card Expiry Date..... Last 3 digits on Signature Panel.....

Bank Name ..... Cardholder Signature..... Date.....

**Please send your registration form to**



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Contact Person : Khun Sirinthip, Program Coordinator W