



## Dr. Graeme K. Pearce.

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*Dr Graeme K Pearce, is a membrane technology specialist with 30 years experience in the membrane industry*

A graduate of Oxford University with a chemistry first degree and a chemical engineering doctorate, Graeme's introduction to membrane technology started in BP Chemicals R&D in 1980. In 1991, Graeme was Technical Director of the core team to start up Kalsep, a Separations company formed by a management buy-out from BP. Kalsep specialized in membrane and filtration systems for water, wastewater, and process applications, and achieved a \$7.5 million dollar turnover within 6 years.

Graeme joined Hydranautics in 2000, where he was responsible for the development and marketing of the ultrafiltration (UF) and microfiltration (MF) technology.

In 2005, Graeme left Hydranautics to form an independent consultancy, Membrane Consultancy Associates (MCA). A deep understanding of both technology and markets enables Graeme to provide a comprehensive service in the field of membrane technology in liquid treatment. Assignments have included advice on technology development and improvement, competitive positioning, market strategy, and growth opportunities. Graeme has also acted as an advisor in mergers and acquisitions.

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### EDUCATION

#### **1974-1981 Oxford University**

B Sc Chemistry,

D. Phil Chemical Engineering

(Electrochemical Carbon Packed Bed Reactors)

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### PROFESSIONAL AFFILIATIONS

Institution of Chemical Engineers;

Chartered Chemical Engineer

Royal Society of Chemistry;

Chartered Chemist

CIWEM

IWA

IDA

EDS

AWWA

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### Employment History

#### 2005-present Membrane Consultancy Associates (MCA)

Director

MCA provides independent consultancy in UF/MF, MBR, and desalination

Project based activity

- Project feasibility for system integrators and end users

- Process design review for system providers

- Performance assessment and troubleshooting for operators

Business based activity for technology and system providers

- Strategy review – appraisal for new entrants or new direction

- Market studies – sector analysis by region, application, and technology

- Technology appraisal – comparative evaluation

Knowledge based activity

- Training – University lecturing and in-company teaching

- Seminars – UF/MF and MBR courses

- Publications – papers, articles, manuals, books, and PR

#### 2000 - 2005 Hydranautics

Business Development Director / Director – UF/MF Technology

- Pressure Driven UF / Submerged MF / Desalination

Responsibilities:-

- Responsibility for the development of the UF business Worldwide

- UF sales responsibility in the UK

- UF/MF technology development and training responsibility

- Responsibility for UF-RO desalination projects

- Hydranautics Technology Council member

#### 1988 - 2000 Kalsep Limited

Technical Director

- Fibrous filtration and

Ultrafiltration(UF)/Microfiltration(MF) systems

#### 1981 - 1988 BP Chemicals, R&D

Project Chemist/Leader - Separation

Processes (Membranes and Pressure Swing Adsorption), and Acetyls  
**Pervaporation Consultant,**

**1991** Project Management, Merck, Sharp & Dohme, Eire

#### Expert Witness

**1992** BP Chemicals / Union Carbide Arbitration - acetyls patent dispute

**1980** Allied / Negev Arbitration – Phosphoric Acid plant design dispute

### Professional Responsibilities & Achievements

#### Journals:

Referee for Journal of Chemical Engineering Science, 1984 – 1987

Editorial Board, Membrane Technology Newsletter, 1996 – present

Referee for Journal of Membrane Science, 2003 – present

Referee for Desalination, 2004 - present

#### Universities, Research Programmes, & Awards:

Industrial PhD supervisor, Bath & Aston Universities, 1984–1988; Separations

EU BRITE Award Program Manager, 1987 – 1989; Pervaporation-acetic acid/water

Norsk Hydro & Eurochem Filtration Product Awards, 1992

DTI Membrane Research awards (ETIS, SPUR, SMART 1&2), 1991 - 1997

M. Sc. Course Lecturer, Cranfield, Water Treatment M.Sc. 1997 – 2002

Chemical Engineering Seminar Series, Univ of Oxford, 2007 to present

#### Conferences:

Member of Programme Committee, Session Chairman, Member of Expert Panel to

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International Conference on  
Pervaporation 1989 - 1991

Expert Panel Member, AWWA, IWA,  
JWWA, CIWEM on numerous occasions

Conference Session Chairman EDS  
2007, IWA 2007

Keynote Speaker IWA 2007, Australian  
Waterworks Association 2009

### **Partial List of Recent Membrane Publications**

**Permeability Trend Analysis for Two  
Years Operation on the 265 mld (70  
MGD)**

**Columbia Heights UF Plant**

*G K Pearce, A Bankston, W Broley, G  
Filteau, Desalination special issue, 2010*

**The Guidebook to Membrane  
Technology for Wastewater  
Reclamation**

*M. Wilf with chapters by C Bartels, D  
Bloxom, J Christopher, A Festger, K  
Khoo, V Frenkel, J Hudkins, J Muller, G K  
Pearce, R Reardon, A Royce, Balaban  
Desalination Publications, 2010*

**Pre-treatment of Feedwater to  
Seawater Desalination by Reverse  
Osmosis (SWRO)**

*G K Pearce, 4 articles in Filtration &  
Separation, Autumn 2009/Spring 2010*

**Fouling behaviour for different module  
formats in membrane filtration  
applications for surface water  
treatment**

*Desalination and Water Treatment, 8  
(2009) 1-6*

**The Mayor of London's Challenge to  
the Beckton Desalination Plant**

*G K Pearce, Proc IDA Conf, Dubai,  
November 2009*

**Development of Control Parameters to  
Improve the Operational Stability of  
Membrane Filtration Plants**

*G K Pearce, Proc AMTA Membrane*

*Conf, Naples, FL, USA, Jul 2008*

**A Cost Optimization Study of Flux and  
Fouling Rate for UF in the Water  
Industry**

*G K Pearce, Proc IWA Membrane Conf,  
Harrogate, UK, May 2007*

**UF/MF Pre-treatment to RO in  
Seawater and Wastewater Reuse  
Applications;**

**A Comparison of Energy Costs**

*G K Pearce, Desalination 222 (2008) 66-  
73*

**Development of the Sustainable Flux  
Concept to Provide Guidelines for  
Fouling Control in UF/MF System  
Design**

*G K Pearce, R W Field, Proc AWWA  
Membrane Technology Conf, Tampa, FL,  
March 2007*

**Introduction to Membranes: Filtration  
for Water and Wastewater Treatment**

*G K Pearce, Filtration and Separation, 13  
articles, March 2007- April 2008*

**The Case for UF/MF Pre-treatment to  
RO in Seawater Applications**

*G K Pearce, Desalination, 203 (2007)  
286-295*

**The Guidebook to Membrane  
Desalination Technology. Reverse  
Osmosis,**

**Nanofiltration and Hybrid Systems:  
Process, Design and Applications**

*M. Wilf with chapters by C. Bartels, L.  
Awerbuch, M. Mickley, G. Pearce and N.  
Voutchkov, Balaban Desalination  
Publications, 2006*

**Ultrafiltration Pre-treatment to RO:  
Trials at Kindasa Water Services,  
Saudi Arabia**

*G K Pearce, J Allam, K Chida, Proc IDA  
Conf, Bahamas, September 2003*

## **DR. GRAEME K. PEARCE**



### **Reclamation of Sand Filter Backwash Using Capillary UF Membrane Technology**

*G Pearce, J Allam, J Suarez, D James, UK Water Projects, 2003*

### **Application of UF Combined With A Novel Low Fouling RO Membrane For Reclamation Of Municipal Wastewater**

*G Pearce, M Wilf, S Alt and M Rutten, CIWEM Wastewater Conf, Edinburgh, April 2002*

### **Protecting the Public Water Supply from Cryptosporidium using Ultrafiltration Membrane Technology: A Case Study at Bristol Water in the UK**

*G K Pearce, M. Heijnen, and J. Reckhouse, Proc IWA Conference, Berlin, October 2001*

### **New Technology: Examining the Practical and Technical Issues of using Membrane Filtration in the Water Treatment Process Control of Cryptosporidium**

*R. Smith (Yorkshire Water), Dr. G. K. Pearce, IRR Cryptosporidium Conf, London. Jan 1999*

### **Applications Experience for the Novel Kalmem Low Fouling Membrane in Surface Water Treatment**

*Dr. G. K. Pearce, J. Allam, M. Heijnen, Proc Aquatech Conf, Amsterdam. September 1998*