



# SINGAPORE INTERNATIONAL WATER WEEK

ONLINE



18 – 19 November 2020



9:00am – 6:30pm SGT (GMT +8)

## Ceramic Membranes – The Future of Water Treatment Technology

18 November 2020, Wednesday | 3.00pm – 4.30pm SGT (GMT +8)

Co-organised with



### About this webinar

Ceramic membrane-based water treatment technologies have gained traction and prominence in recent years, and are increasingly applied globally in full-scale plants for water treatment and recycling. Years of extensive research & development, piloting and demonstration-scale testing have built the solid foundations upon which ceramic membrane technology is now viable and cost-effective.

The growing interest in ceramic membranes is due to its high performance, specifically with regards to longer lifespan, ability to resist fouling, capability to treat water of variable water quality, and minimal operation and maintenance requirements. It has proved to be more energy-efficient with a smaller land footprint, more cost-efficient with a longer lifespan, and more durable as compared to conventional polymeric membranes, with a significant reduction in water loss.

This webinar will examine best practices of ceramic membrane systems and how ceramic membranes represents the future of water purification technology. Successful case studies will be featured on the applications of ceramic membrane technology in both municipal and industrial water treatment.

### Why you should attend

Hear from industry experts on the benefits of ceramic membrane as an advanced water treatment technology

Gain insights from real-life case studies on the applications of ceramic membrane in both municipal and industrial water treatment

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# Programme

3.00pm	Welcome Remarks by Singapore International Water Week
3.05pm	<p><b>PART 1 – Global Applications of Ceramic Membranes</b></p> <p><b>An introduction to ceramic membranes and what benefits they bring</b> Graeme Pearce, Principal, Membrane Consultancy Associates</p> <p><b>The unique position of Nanostone’s module and global applications</b> Gilbert Galjaard, Chief Process Engineer, Nanostone Water</p> <p><b>Industrial applications in China</b> Carlo Patteri, Business Leader Industrial Water, Nanostone Water</p> <p><b>Special applications of ceramic membranes: desalination and ozone</b> Jonathan Clement, Chief Technology Officer, Nanostone Water</p>
3.45pm	<p><b>PART 2 – Benefits of Ceramic Membrane Technology for Municipal Water Treatment: Successes Gained from Experience</b></p> <p><b>Benefits of CeraMac® for Municipal Water Treatment</b> Jacob Fonteijne, Chief Operating Officer, PWNT</p> <p><b>Operational best practices for full-scale plants utilising CeraMac®</b> Dr. Holly Shorney-Darby, Senior Project Manager, PWNT</p> <p><b>Robust Cleaning of Ceramic Membranes</b> Dr. Bram Martijn, Head of Research &amp; Development, PWNT</p> <p><b>Panel Discussion: A Conversation about Drivers and Experiences for Full-Scale Ceramic Installations</b> <b>Panellists</b></p> <ul style="list-style-type: none"><li>• Puah Aik Num, Chief Specialist, Water Treatment, PUB, Singapore’s National Water Agency</li><li>• Chris Rockey, Head of Drinking Water Quality, South West Water</li></ul> <p><b>Moderator</b></p> <ul style="list-style-type: none"><li>• Dr. Bram Martijn, Head of Research &amp; Development, PWNT</li></ul>
4.25pm	Closing by Singapore International Water Week
4.30pm	End of Webinar

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## Speakers



**JONATHAN CLEMENT**  
Chief Technology Officer  
Nanostone Water

Jonathan Clement currently is the Chief Technology Officer (CTO) of Nanostone Water working with global applications of Nanostone CM-151 ceramic module. Since 2004 he has focused on expanding and improving the application of ceramic membranes for drinking water treatment. Previously, Jonathan Clement was Chief Executive Officer of PWN Technologies, a subsidiary of PWN, the innovative water supply company of North Holland. At PWNT he led the application of two of the largest ceramic membrane plants in the world. One includes a 180 mld integrated ozone ceramic plant in Singapore.

He has been an IWA fellow since 2012. He was the founder of the Leading Edge Technology (LET) Conference and chaired the conference for six years, and is now the current chair of the LET. In 2013 he received a special award for outstanding leadership from the IWA. In 2018 he was listed at one of the top 25 global water leaders in the world.



**GRAEME PEARCE**  
Principal  
Membrane Consultancy Associates

Dr. Graeme K Pearce is an Oxford educated membrane technology specialist with more than 35 years' experience in the membrane industry. After working with BP, Kalsep and Hydranautics in various aspects of membrane R&D and system design, Graeme formed Membrane Consultancy Associates (MCA) in 2005. MCA works with a broad spectrum of users and providers of membrane technology on performance improvement, dispute resolution, and as an expert witness.

Graeme also works with new entrants and prospective investors. He is well known in the field of water and membranes through workshops, teaching, lectures and publications including his own book.



**GILBERT GALJAARD**  
Chief Process Engineer  
Nanostone Water

Gilbert Galjaard, as Chief Process Engineer, is responsible for process design and process development – he is the bridge between sales, application engineering and Research & Development. Gilbert joined Nanostone water Inc in 2018 with a background of more than 25 years in the field of drinking water technology including roles as, Chief Technology Officer for PWN Technologies and Research & Development director. His roles were from all the different angles within this industry having worked at utilities, technology providers, consultants, contractors, and research centers.

Gilbert is a recognised leader in the field of membrane technology and advanced water treatment processes with 8 patents, over 90 published papers and 3 Global Innovation awards, and has served on the boards of several scientific program and review committees. Gilbert holds BSc degrees in Process Technology and Chemical Engineering.



**CARLO PATERI**  
Business Leader Industrial Water  
Nanostone Water

Carlo joined Nanostone in 2019 as Business Leader Industrial Water with responsibility to set up and implement the sales strategy for industrial segments and grow the industrial water and wastewater business worldwide. He brings almost twenty years' experience in water and energy projects.

He was previously Business Development Director for Veolia Water Technologies in South East Asia where he focused on water and wastewater applications for industrial markets. Before that he was Regional Manager APAC for Sofinter Group where he developed large projects for industrial steam generation across the region. He has a technical background holding a Master degree in Environmental Engineering and a Master in Business Administration.



**JACOB FONTEIJNE**  
Chief Operating Officer  
PWNT

Jacob Fonteijne works as Chief Operating Officer for PWNT and is part of the company's Leadership Team. He acts as the CEO's second-in-command and works closely together with PWNT's mother company PWN. At PWNT he carries responsibility for all the company's operational activities.

He started his career at Shell in the UK, where he worked internationally for ten years. Jacob has more than 25 years of management experience and has a proven record of taking customer-centric companies to the next level. He is a seasoned executive with a strong track record in delivering hands-on international business development and business turn-arounds. Jacob drives culture and delivers strategy. He holds a Master degree in Chemical Engineering from Delft University (The Netherlands) and an MBA from Cornell University (USA).



**DR. HOLLY SHORNEY-DARBY**  
Senior Project Manager  
PWNT

Dr. Holly Shorney-Darby is primarily responsible for the pilot-scale evaluation of the suspended ion exchange and ceramic microfiltration trials for PWNT. In her nine years with the company, she has been involved in over 14 pilot studies, in Singapore, the United Kingdom, Australia, the Netherlands, and the USA.

She has over 20 years of experience as a consulting engineer prior to working at PWNT, where she also conducted pilot studies and regulatory risk assessments in the United States. Holly obtained her master's degree in environmental engineering from Virginia Tech and her PhD from the University of Kansas in Public Health Engineering.





**PUAH AIK NUM**

Chief Specialist (Water Treatment)  
Technology Department  
PUB, Singapore's National Water Agency

Mr Puah Aik Num is the Chief Specialist for Water Treatment at PUB, Singapore's National Water Agency. He provides leadership to drive PUB's R&D initiatives, identifying and commissioning novel research and other test-bedding projects with both local and international universities, research institutions and water industrial partners.

The goal is to ensure the successful implementation of the research outputs and translation into practical applications that would benefit and enhances PUB's operation. He was instrumental in the deployment of ceramic membrane technology in PUB's newly upgraded Choa Chu Kang Waterworks, Singapore's most advanced water treatment facility which houses the largest ceramic membrane treatment system in the world.



**CHRIS ROCKEY**

Head of Drinking Water Quality  
South West Water

Chris Rockey is currently Head of Drinking Water Quality for South West Water (SWW), a major utility in the UK which has invested in a new state-of-the-art Mayflower Water Treatment Works which uses ceramic filtration technology. He manages a team of Water Quality Scientists, Laboratory Analysts and Water Regulation officers who have responsibility for ensuring the Company provides good safe drinking water that has the trust of customers.

Chris looks after all aspects of drinking water quality from source to tap focusing on developing and delivering a long-term water quality improvement strategy, exploiting research and innovation, technical process advice to operations, regulatory and operational monitoring and analysis, resolving customer complaints, and liaising with the Drinking Water Inspectorate (DWI), and Public health professionals. Chris began work for SWW in 1989, and has worked in various roles in operational water quality.



**DR. BRAM MARTIJN**

Team Manager Research & Development  
PWNT

Dr. Bram Martijn is a water treatment technologist with 20 years of experience in the field of surface water treatment. He currently heads research at PWNT, with the main responsibility of enrolling the technological research programme of PWN Water Supply Company North-Holland. Bram holds a MSc in Civil Engineering from Delft University and a PhD in Toxicology from Wageningen University.

About the Singapore International Water Week



The Singapore International Water Week (SIWW) is the global platform to share and co-create innovative water solutions. The biennial event gathers stakeholders from the global water industry to share best practices, showcase the latest technologies and tap business opportunities. SIWW is part of the strategic programme of the Singapore Government to grow the water industry and develop water technologies.

About Nanostone Water



Nanostone Water advances ceramic membrane technology in a wide variety of water and wastewater treatment applications. Nanostone's approach to understanding clients' key water challenges, combined with patented technology, has enabled rapid growth in both municipal and industrial markets globally, delivering exceptional reliability and robust performance across various water treatment applications.

About PWNT



PWNT is wholly owned by Dutch water utility PWN, and is unique in its formation and mission to make the utility's more than 100 years of experience and innovations in water treatment available worldwide. Our extensive R&D programmes have led to the development of efficient and sustainable solutions in water treatment based on suspended ion exchange, ceramic membrane applications and advanced oxidation, applications that can be used for a wide variety of water sources. All our solutions offer lower life cycle costs, greater efficiency and much lower environmental impact.

For more information, please visit: [www.pwnt.com](http://www.pwnt.com)

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