Singapore International Water Week

THE GLOBAL PLATFORM TO SHARE AND CO-CREATE INNOVATIVE WATER SOLUTIONS

WATER CONVENTION ADVANCE PROGRAMME 2018

8–12 JULY 2018
SANDS EXPO & CONVENTION CENTRE
MARINA BAY SANDS, SINGAPORE

REGISTRATION FOR WATER CONVENTION OPENS IN JANUARY 2018.
VISIT HTTP://WWW.SIWW.COM.SG/WATER-CONVENTION FOR MORE INFORMATION.

www.siww.com.sg

Water Convention is jointly organised by:

IWA the international water association

PUB SINGAPORE'S NATIONAL WATER AGENCY

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 on business opportunities. SIWW is part of the strategic programme of the Singapore Government to grow the water industry and develop water technologies.

Held in between the main SIWW editions, the SIWW Spotlight series are exclusive by-invitation events to continue the dialogue from SIWW and foster ongoing exchanges on pressing challenges faced by the water industry worldwide. This meeting of minds focuses on critical issues and discussions in greater depth, where the outcomes will shape the programme and content for SIWW. These events are organised by Singapore International Water Week Pte Ltd, a company set up by Singapore's Ministry of the Environment & Water Resources and PUB, Singapore's National Water Agency.

The 8th Singapore International Water Week will be held in conjunction with the 6th World Cities Summit and the 4th CleanEnviro Summit Singapore, from 8 – 12 July 2018 at the Sands Expo and Convention Centre, Marina Bay Sands in Singapore.

PROGRAMME AT A GLANCE

DATE	AM	LUNCH	PM	EVENING
8 JUL (SUN)	World Cities Summit			Water Leaders Summit Networking Reception *(By Invitation)*
	Site Visits			
	SIWW Golf | Young Water Leaders Summit | TechXchange | Hot Issues Workshops	Networking Lunch	TechXchange | Hot Issues Workshops | Aqua Conversations	
9 JUL (MON)	City Solutions Singapore			
	Joint Leaders Programme Opening Ceremony, In Conversation, Opening Plenary; Expo Tour	Networking Lunch	Lee Kuan Yew Prize Lectures; *Joint Leaders Forums (By Invitation)*; *Joint Leader's Closing Keynote (By Invitation)*	Lee Kuan Yew Prize Award Ceremony & Banquet
	Young Water Leaders Summit		Water Convention Poster Presentation	
10 JUL (TUE)	City Solutions Singapore			Industry Night
	Water Leaders Summit *Insights Session 1 (By Invitation)*; Water Leaders Summit Closing Session (By Invitation)	Networking Lunch	Business Forums | Industrial Water Solutions Forum	
	Water Leaders Summit *Insights Session 2 (By Invitation)*		Young Water Leaders Summit	
	Water Convention Opening Plenary; Water Convention Tracks		Water Convention Tracks	
	World Cities Summit		World Cities Summit	
	CleanEnviro Summit Singapore		CleanEnviro Summit Singapore	
11 JUL (WED)	City Solutions Singapore			
	World Cities Summit	Networking Lunch	World Cities Summit	
	Water Convention Tracks		Water Convention Tracks; Water Convention Closing Plenary	
	Business Forums / Industrial Water Solutions Forum		Business Forums / Industrial Water Solutions Forum	
	CleanEnviro Summit Singapore		CleanEnviro Summit Singapore	
12 JUL (THU)	SIWW Site Visits			

● World Cities Summit (WCS) ● Singapore International Water Week (SIWW) ● CleanEnviro Summit Singapore (CESS) ● Joint Programme

Information accurate as of January 2018

WATER CONVENTION 2018

The eighth edition of Water Convention reinforces its focus on what makes cities resilient and liveable by providing a platform that allows water practitioners and leaders to share best practices, strategic approaches and innovations in addressing challenges and providing opportunities spanning across the following themes:

1. **Delivering Water from Source to Tap**
2. **Effective and Efficient Wastewater Value Management**
3. **Water for Liveability and Resilience**
4. **Water Quality and Health**

PROGRAMME COMMITTEE

HARRY SEAH	Assistant Chief Executive (Future Systems & Technology) PUB, Singapore's National Water Agency
DARRYL DAY	Managing Director, International Centre of Excellence in Water Resources Management (Australia)
ANDREW SHAW	Global Practice and Technology Leader, Black & Veatch (United States)
DAVID CUNLIFFE	Principal, Water Quality Adviser, SA Health (Australia)
FREDERIC LEUSCH	Associate Professor, Griffith University (Australia)
GANESH PANGARE	Regional Director, International Water Association (Asia-Pacific)
GARY AMY	Visiting Professor, NUS (Singapore); Dean's Distinguished Professor, Clemson University (United States)
GLEN DAIGGER	Professor of Engineering Practice, University of Michigan, Department of Civil and Environmental Engineering (United States)
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JENNIFER DE FRANCE	Technical Officer, World Health Organization (Switzerland)
JONATHAN CLEMENT	The Netherlands
LEONG CHING	Co-Director, Institute of Water Policy, Lee Kuan Yew School of Public Policy, NUS (Singapore)
MARION SAVILL	Executive Director, Affordable Water Ltd (New Zealand)
MARK FLETCHER	Director, Global Water Leader, Arup (UK)
MELISSA MEEKER	Executive Director, Water Environment & Reuse Foundation (United States)
MICHAEL TOH	Chief Information Officer, InfoTech and Digital Transformation Department, PUB, Singapore's National Water Agency (Singapore)
NIKOLAY VOUTCHKOV	President, Water Globe Consultants LLC (United States)
NILAKSH KOTHARI	CEO & General Manager, Manitowoc Public Utilities (United States)
ONG CHOON NAM	Director, NUS Environmental Research Institute, National University of Singapore (Singapore)
PASCAL DAUTHUILLE	Director, Partnerships and Collaborative Projects, SUEZ (France)
PAUL-JOEL DERIAN	AVRIL Group (France)
PUAH AIK NUM	Chief Engineer, Water Supply (Plants) Department, PUB, Singapore's National Water Agency (Singapore)
ROBERT BOS	Independent Consultant, Water, Sanitation, Environment and Public Health (Switzerland)
ROBERT SKINNER	Professorial Fellow, Monash Water Sensitive Cities, Monash Sustainable Development Institute, Monash University (Australia)
HONG SEUNGKWAN	Professor, Korea University (Korea)
STEPHANIE RINCK-PFEIFFER	Managing Director, Global Water Research Coalition (Australia)
SUDHIR MURTHY	Innovations Chief, DC Water (United States)
TAO LI	Regional Director, International Water Association (Greater China Office)
WAH YUEN LONG	Advisor (Used Water), PUB, Singapore's National Water Agency (Singapore)
YUAN ZHIGUO	Director, Advanced Water Management Centre, The University of Queensland (Australia)

MESSAGE FROM PETER JOO HEE NG, CHIEF EXECUTIVE OF PUB, SINGAPORE'S NATIONAL WATER AGENCY

The eighth staging of the Singapore International Water Week, the world's premier water show, takes place from 8 to 12 July 2018 at the Marina Bay Sands Singapore.

The biennial SIWW is, of course, the preferred gathering for international thought leaders and practitioners in water management. 21,000 participants from 125 countries and regions had attended SIWW 2016, which also saw more than US$13 billion of business done and the market launch of 53 new products.

We are hopeful that SIWW 2018 will prove even more successful. This July, SIWW will once again gather together in Singapore, the world's top leaders in the water sector from government, utilities, international organisations, industry and academia for dialogue and discussion. The SIWW offers an unprecedented networking opportunity to interact and confer with high-level officials, heads of industry and opinion makers. The many leading city mayors attending the **World Cities Summit** and **CleanEnviro Summit Singapore**, both held alongside SIWW, just means that you will have to be in Singapore in July.

As always, the **Water Convention** will be *le plat principal* on the SIWW menu. This year's Water Convention will directly address strategy, innovation and available solutions for water sustainability and security in the face of rampant urbanisation and accelerating climate change. I am certain that participants will again find insight and inspiration at the Water Convention during SIWW 2018.

There is more! Reuse, advanced treatment, and smart water will headline the **Business Forums** at SIWW 2018. Look forward to a special session on Singapore's upcoming Tuas Water Reclamation Plant, which is possibly the most advanced of its kind in the world. Connect to leading solution providers and get hands-on with the latest offerings at our largest ever **Water Expo @ City Solutions Singapore**. In addition, attend and benefit from deliberations at the **TechXchange & Innovation Pavilion**, a platform for the commercialisation of emerging and disruptive water technologies.

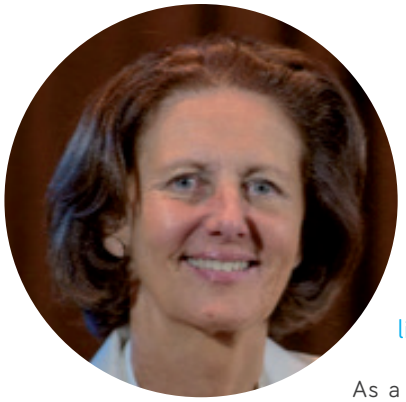
My gratitude to the Water Convention Programme Committee, whose ingenuity and hard work has produced this year's exciting agenda. I also extend a very special thank you to the International Water Association, our steadfast collaborator these last ten years. Without the IWA, the Water Convention would surely not be the shiny jewel that it is today.

My colleagues and I are highly anticipative of a most productive and profitable SIWW 2018.

See you all in Singapore in July 2018!

PETER JOO HEE NG
CHIEF EXECUTIVE
PUB, Singapore's National Water Agency

MESSAGE FROM THE PRESIDENT OF THE INTERNATIONAL WATER ASSOCIATION (IWA)



The water sector is facing a pivotal moment. The recent World Economic Forum Global Risks Report highlighted water crises as one of the critical risks we face over a ten-year horizon. Add to this risks associated with the failure of climate-change mitigation and adaptation, the growing threat from extreme weather events and natural disasters, and water is a risk of high likelihood and high impact almost everywhere in the world.

As a sector, we face a major challenge in terms of allocating water to several, ever-increasing demands: from cities, industries, power suppliers, farmers, nature, transport, and environment. At the same time, an increasing number of areas around the world experience either extreme water shortages or devastating flood events that affect energy production, agriculture, regional stability and economic performance.

The Singapore International Water Week is a well-established meeting point for all those who are contributing to solving these growing water problems, and to meet the ambitious UN Sustainable Development Goals. The Singapore Water Convention is where recent scientific research results and technological developments combine with a full-scale experience of up-to-date urban water quality and quantity solutions.

The International Water Week embodies many of the qualities of Singapore itself. It is a showcase for innovations in science, technology and full-scale solutions. This is the place to look for solutions to the complex urban water management problems we face, and is reflected in the 4 priority topics of the Water Convention, proposed by experts from PUB Singapore, together with the International Water Association: Delivering Water from Source to Tap; Effective and Efficient Wastewater Value Management; Water for Liveability and Resilience; Water Quality and Health.

In 2018, the long and successful co-operation between the International Water Association and Singapore International Water Week will mark its tenth year. It has been a decade of progress, and ours has been a partnership that has helped raise the profile of water issues on the international agenda. I look forward to meeting you all at this year's event, where ideas will be discussed, knowledge shared and solutions created to address the water challenges of the future.

DIANE D'ARRAS
PRESIDENT
International Water Association (IWA)

MESSAGE FROM THE CO-CHAIRS OF THE WATER CONVENTION 2018 PROGRAMME COMMITTEE

HARRY SEAH
ASSISTANT CHIEF EXECUTIVE
(FUTURE SYSTEMS & TECHNOLOGY)
PUB, Singapore's National Water Agency

DARRYL DAY
MANAGING DIRECTOR
International Centre of Excellence
in Water Resources Management
(ICE WaRM)

We are pleased to welcome you to Singapore for the eighth Water Convention, a flagship event of the Singapore International Water Week (SIWW) from 8-12 July 2018.

During the Water Convention 2018 Call for Papers, close to 500 papers were received from 45 countries, and we would like to express our sincere appreciation for your continued support for the Water Convention. There were many exceptional papers submitted this year, and among the Programme Committee members, there was unanimous consensus that this made selecting papers to fit into a very limited number of slots a challenging task.

We believe that the Water Convention 2018 programme will be the very best yet. The week will kick-start on Sunday, 8 July with the Hot Issues Workshops, featuring emerging topics such as potable reuse, social resilience in the face of extreme events and networks of the future. The following Monday afternoon, 9 July, will be dedicated for one of the most popular segments of the Water Convention, the Poster Presentation Session, when the conference corridors will come to life with more than 150 presenters pitching their projects to the poster judges and engaging the crowd in a lively Q&A session. The Technical Sessions will then begin on Tuesday, 10 July, covering diverse topics ranging from issues such as energy-efficient wastewater management technologies and smart water networks to building water-wise communities and regulatory frameworks for drinking water quality, before ending with the Closing Plenary on Wednesday, 11 July. All in all, close to 350 presentations and countless discussions will be conducted over the span of 4 days.

This year's Water Convention also marks the 10th year anniversary of the SIWW since the inaugural event back in 2008. Over the last decade, the Water Convention has evolved into a cornerstone of SIWW, and this has been made possible only through the active support and participation of its delegates – the open sharing, lively debates, and sense of camaraderie in our collective effort of building a sustainable water world is a rare and unique trait of the Water Convention which we hope to maintain and grow in the next decade to come. Thus, we hope that you will join us in July 2018 in Singapore to contribute your ideas and experiences, and together with the global water community, work towards our shared goal of building a sustainable world.

WATER CONVENTION 2018 PROGRAMME

SESSIONS	Theme 1: Delivering Water from Source to Tap		Theme 2: Effective and Efficient Wastewater Value Management		Theme 3: Water for Liveability and Resilience	Theme 4: Water Quality & Health
	(A) Network	(B) Treatment	(A)	(B)		
Sunday 8 July	Water Convention Hot Issues Workshops					
Monday 9 July	Opening Ceremony & In-Conversation					
	Opening Plenary					
	Lee Kuan Yew Prize Lectures					
	Water Convention Poster Presentation					
Tuesday 10 July	Water Convention Keynote Plenary					
	Network of the Future	Hybrid Advanced Oxidation Process	Membrane-based Wastewater Treatment	Flood, Drainage & Sewer Management	Sustainable Development Goals	Policy and Regulatory Framework for Drinking Water Quality
	Smart Network	Natural Organic Matter	Membrane Biofilm Reactor	Deep Tunnel System	Regenerative Water Services	Protection, Monitoring and Evaluation of Source Water Quality
	Network Condition Assessment	Treatment of Emerging Contaminants	Shortcut Biological Nutrient Removal	Sensors for Smart Wastewater Management	Water Sensitive Urban Design	Metagenomics
Wednesday 11 July	Non-revenue Water Reduction	Low Energy Desalination	Genomics for Community Selection	Energy Efficient Wastewater Management	Basin Connected Cities	Water and Sanitation Safety Plans
	Customer Centric Businesses	Electrochemical Desalination	Ceramic Membrane*	Biosolids & Energy Recovery	Water-Wise Communities (1)	Rapid Detection of Microbes
	Water Conservation & Efficiency Measures	Pre-treatment for Desalination	Potable Reuse**	Decentralised Wastewater Treatment	Water-Wise Communities (2)	Chemicals in Water
	Water Convention Closing Plenary and Best Poster Awards Presentation					

**, ** – Sessions under theme 1B — Delivering Water from Source to Tap (Treatment)*
Information accurate as of 31 Jan 2018

WATER CONVENTION 2018 HOT ISSUES WORKSHOPS

The Water Convention 2018 Hot Issues Workshops will take place on Sunday, 8 July 2018 when emerging topics such as potable reuse, social resilience in the face of extreme events and networks of the future will be featured. These workshops will run on a highly interactive, panel discussion-based format, providing a focused platform to stimulate more open engagement between experts and delegates on 'hot' or emerging issues facing the water industry today. This will serve as the perfect opening to the technical sessions on 10 – 11 July 2018.

WORKSHOP PROGRAMME

The details of the five workshops are as follows:

DATE	TIME	WORKSHOP TOPICS
Sunday 8 July 2018	MORNING 0900 – 1230hrs	**Workshop 1a** Year 2030 – Intelligent Water Networks
		Workshop 2 Pre-treatment for Anaerobic Digestion, Which Technology? (Part 1)
		Workshop 3a: Strengthening Delivery of WaSH to Urban Informal Settlements in the Asia Pacific
		Workshop 4 Emerging Contaminants – Real Concern or #FakeNews?
	AFTERNOON 1400 – 1730hrs	**Workshop 1b** Creating a Mindset Shift from a Radical Idea to a Sustainable One Whose Time Has Come
		Workshop 2 (cont'd) Pre-treatment for Anaerobic Digestion, Which Technology? (Part 2)
		Workshop 3b Coping With Extreme Events – Getting Real about the Inevitable

WORKSHOP SYNOPSIS

Workshop 1a: Year 2030 – Intelligent Water Networks

The drinking water supply pipeline or network represents one of the highest investment components for most utilities, and a challenging one to maintain effectively and efficiently to ensure safe and reliable supply for its customers. However, thanks to the advent of remote sensors, Big Data and the Internet of things (IoT), utilities now have the means by which to receive real-time information on their networks and react quickly to reduce service disruption. Beyond reducing reaction time and improving service delivery, utilities are also now looking toward systems that allow for pipeline condition assessment and predictive maintenance. This may not only lead to greater reductions in service disruption, but also enable better planning and more efficient deployment of operational resources.

This workshop aims to paint a visionary dream of the future intelligent water network and at the same time, explore the possibility of leveraging on disruptive technologies/ innovations and on the experience of other industries such as the power industry, to bring the vision closer to reality.

Workshop 1b: Creating a Mindset Shift from a Radical Idea to a Sustainable One Whose Time Has Come

The worldwide pressures of rapid urbanisation and increased variability in climatic conditions are creating a spectrum of peak water issues, from water scarcity and shortages, to near-catastrophic failures of surface water and ground water supplies. Global awareness of these challenges is growing, as the need for new ways to secure adequate and reliable water to meet societal needs becomes more evident. Advancements in science, technology and operational capacity have made potable reuse a viable and pivotal water supply diversification solution.

The widespread adoption of potable reuse requires not only the technical strengths of the water utility, but also the trust of the public. Utilities using the findings of social science research can contribute to a firm foundation of public trust by helping to create cohesive and meaningful narratives that transform perspectives, enabling people to really understand the value and purpose of recycled water in their daily lives.

The aim of this workshop is to bring together experts from the water reuse field to integrate the current innovations and understanding of potable reuse and to gain consensus on the next steps to be taken for the world to move closer towards wider-scale implementation of potable reuse. The first part of this workshop will review the scientific and technological achievements, as well as explore the needs for future optimisation or innovations while the second part of the workshop will explore how social research will create the pathway to communicate the importance of potable reuse to meet our collective water needs.

Workshop 2: Pre-treatment for Anaerobic Digestion, Which Technology?

Wastewater sludge is a good renewable energy source and its potential is commonly tapped through anaerobic digestion to convert the organics into biogas. However, although anaerobic digestion is a proven process, various factors can dampen its adoption, particularly the control and characteristics of the waste used which would affect its efficiency. Pre-treatment of the sludge hence is a particularly important step to ensure the digestion process is optimised and stabilised.

This workshop will present case studies and experiences from both utilities and the technology providers on both traditional and emerging pre-treatment solutions for enhancing anaerobic digestion, and provide the opportunity for all to discuss their efficiency, sustainability and operations and maintenance (O&M) costs.

Workshop 3a: Strengthening Delivery of WaSH to Urban Informal Settlements in the Asia Pacific

This workshop will bring together leading WaSH (Water, Sanitation and Hygiene) experts and institutions, local and central government partners, and international development agencies to critically examine modes of WaSH in informal settlement upgrading in developing countries, as well as examine the opportunities and challenges of a water sensitive cities approach to upgrading. In particular, the workshop will discuss the importance of implementing WaSH at the relevant scale to enable timely delivery of these services to the communities.

Moreover, the workshop will review the progress of the ambitious five-year Revitalising Informal Settlements and their Environments (RISE) program currently being implemented in Fiji and Indonesia. The RISE theory of change is that the Water Sensitive Cities (WSC) approach can interrupt the fecal-oral transmission route, resulting in an improvement in human gastrointestinal health, especially for children under 5 years of age. It is anticipated that the evidence-based and proof of concept of the WSC approach provided by the RISE program will provide a strong basis for strengthening the efficacy of WaSH in informal urban environments.

The workshop will also include a hands-on exercise on current WaSH approaches in informal settlements in developing countries and discuss the opportunities to advance WaSH by approaching upgrading from a water-sensitive cities lens.

Workshop 3b: Coping With Extreme Events - Getting Real about the Inevitable

In recent years, many countries have faced extreme weather events and it is expected that these events will become more frequent and intense in the future. Additionally, extreme events show that water availability is crucial for minimising the social impact of such events and for the recovery process. Thus, there is increasing concern about the risk and vulnerability water utilities face in preparing for and adapting to the growing number and intensity of extreme weather events.

This workshop will feature case studies of utilities' preparation and response to extreme events. Through the sharing of experience and lessons learnt, the workshop participants will have the opportunity to discuss on the preparedness, emergency response and long-term resilience necessary to mitigate and adapt to the potential impact of these events.

Workshop 4: Emerging Contaminants – Real Concern or #FakeNews?

Emerging contaminants in source water are of increasing public health concern due to their potential adverse impacts on human and animal health, and on the environment and its health determinants. Such impacts may occur after long-term exposure to low doses, making attribution challenging. Contamination pathways include the discharge from wastewater treatment plants, untreated domestic and industrial wastewater, poorly managed animal waste and agricultural runoff. They include pharmaceuticals and personal care products (PPCPs), new generation pesticides and their residues, and new chemical compounds used in industrial processes. Hospitals, health care centres, and the pharmaceutical industry may be hotspots for waters polluted with emerging contaminants, whose impacts on human health may include endocrine disruption, toxicity and possibly carcinogenicity. The indiscriminate use of antibiotics and their release into the aquatic environment has been shown to accelerate the development of antimicrobial resistance, which is a serious threat to global public health. Microbial contaminants are not emerging per se, but outside pressures (intensified animal husbandry, changing weather patterns and aging infrastructure) create emerging pathways of contamination.

As the emphasis on water reuse increases, the quality of the wastewater, even if partially treated, also becomes increasingly important in its own right. However, the potential toxicological effects of emerging contaminants on the ecosystem and human health are yet to be fully understood and present datasets are unable to adequately address the hazards and risks to human health. Furthermore, media coverage of the issue often creates a blur between scientific evidence and public perception. Public health officials need to make decisions on how to address public concerns without causing panic or being accused of spreading fake news.

This workshop aims to bring together experts to identify current issues, risks and to contribute to the creation of a framework to correctly assess the impact of emerging contaminants on human health and the environment.

LIST OF ORAL PRESENTATIONS

Theme 1A: Delivering Water from Source to Tap (Network)

Earthquake Resilient. Keeping Water Flowing to 400,000 People Following a Major Earthquake in Wellington, New Zealand
A. Cameron, M. Kinvig. Cardno NZ (New Zealand)

Going Real Time in Water Conservation — Our Experience
W. C. Wong, H. T. Ng, R. Chan, B. Evain. Public Utilities Board (Singapore)

How Much Data is Enough? Financial Optimization of Condition Assessment Spending to Support Pipeline Replacement Decisions
K. Laven, F. Boyle, R. Diemel, P. Murray. Echologics (Canada)

Identifying Explanatory Variables of Failures for Asset Lifetime Models Construction
F. Cubillo, P. Gómez-Martínez. Canal de Isabel II (Spain)

New Sustainable Distribution Strategy by Pressure Modulation in the Paris Drinking Water Distribution System
A. Taliby, F. Rocher, N. Delivert, F. Montiel. Polytech, Montpellier (France)

Saving Every Drop — Detecting Leaks on Distribution and Transmission Pipelines
K. C. Lai, L. K. Sriramula, S. C. Ko. Public Utilities Board (Singapore)

Smart Water Network for Water Quality Optimisation
G. Booth, J. Cooper. Arcadis (United Kingdom)

Smarter Water Utility; Happier Customer
C. Kiely. DC Water (United States)

Strategic Cleaning Solution For Water Networks
D. Sinapah, T. VanBecelaere. SUEZ (France)

Transition From Intermittent to Continuous Water Supply
D. Duccini, A. Mokssit. SUEZ (France)

Water Management and Conservation in Industrial Sector
H. H. Huang, Y. D. Huang, C. P. Chu, Y. J. Chung. Sinotech Engineering Consultants, Inc. (Taiwan)

Water Network Renewal in Singapore; a Risk Based Approach
G. Booth, T. Qiu. Arcadis (UK)

Theme 1B: Delivering Water from Source to Tap (Treatment)

A Nanofiltration Membrane Bioreactor (NF-MBR)+Reverse Osmosis (RO) Process for Water Reuse: Comparison With an Ultrafiltration Membrane Bioreactor (UF-MBR)+RO Process
M. F. Tay. Nanyang Technological University (Singapore)

Alternative Treatment Strategy With Ceramic Membrane for Wastewater Reuse
R. Floris, S. Gabriel, J. Zheng. PWNT (The Netherlands)

Assessment of Using Salinity Gradient Technologies to Reduce the Cost and Environmental Impact of Seawater Desalination & RED/dRED Pilot Study for Desalination Brine Recovery
N. Moe, N. Voutchkov, J. Barber, R. Mallampati. GE Power and Water (United States)

Challenges in Designing of Desalination Plant With Dual Intakes for Energy Efficiency
K. P. Chiu, K. S. Goh, S. K. Chee, S. T. Leo, T. Mann, K. Khoo, G. Wu, E. K. Goh, P. T. Tay. AECOM (Singapore)

Characteristics of the Specific UV Absorbance at 254 Nm (SAC(254)) and Selected Applications Related to Water Treatment and Safety
A. Rodenberg. SWAN Analytical Instruments AG (China)

Developing a Regional Recycled Water Program in Southern California
R. Trussell, G. Lai-Bluml, M. Chaudhuri. Trussell Technologies, Inc. (United States)

Effect of Membrane Pore Size and Material on Catalytic Reaction in Hybrid System of Ozone/Ceramic Microfiltration
J. Hu, M. He. National Unviersity of Singapore (Singapore)

Emerging Technologies for Next Generation Low Carbon Power-Desal Plant Configurations
T. Altmann. ACWA Power (United Arab Emirates)

Engineered Nanoparticle Materials and Potable Reuse — Should We Be Concerned?
I. Law . IBL Solutions (Australia)

Experiences of Reuse Associated With Managed Aquifer Recharge
S. DONNAZ, P. Gislette, M. A. Sanz. SUEZ Treatment Infrastructure (France)

FePO4/rGO Composite Anode for High Performance Electrochemical Deionization & Dual-ion Electrochemical Deionization
L. Guo. Singapore University of Technology and Design (Singapore)

Footnote:
The confirmed list of presentations is accurate as of February 2018. For an updated list of presentations, please visit www.siww.com.sg.

LIST OF ORAL PRESENTATIONS

Forward Osmosis and Membrane Distillation as Emerging Desalting Technologies: Assessment of Technology Development Landscape
G. Amy, Z. Li, L. Francis, N. Ghaffour.
National University of Singapore (Singapore)

Groundwater Treatment by Ceramic Membranes — Pilot Tests at the Commonwealth Games Village Delhi, India
S. Pillai, C. Walder, J. Lahnsteiner, Y. P. Koganti.
VA Tech Wabag Ltd. (India)

HRSD's Vision for Advanced Water Treatment and Managed Aquifer Recharge in Eastern Virginia, USA: Sustainable Water Initiative for Tomorrow (SWIFT)
C. Bott, J. Dano, G. Salazar-Benites, C. Wilson, L. Zuravnsky, J. Mitchell, L. Rice, T. Nading, L. Schimmoller, D. Holloway, T. Henifin. Hampton Roads Sanitation District (United States)

Influence of Algae on Pre-Treatment by Ultrafiltration of Seawater Reverse Osmosis
P. Buchta, M. Hoffmann, C. Staaks, D. Vial, R. Winkler, P. Berg. inge Gmbh (Germany)

Influence of NOM on Post-Filtration Treatment
H. Shorney-Darby, I. Caltran. PWNT (The Netherlands)

Investigation of Ceramic Membrane for Pre-Treatment of Desalination Process & Performance of a Large-Scale Drinking Water Plant Using Flat-Sheet Ceramic Membrane to Treat Surface Water
T. Niwa, H. Noguchi, M. H. Oo, E. Fong.
Meiden Singapore Pte Ltd (Singapore)

Low Energy Sea Water Desalination Using NexEDTM Electro-Dialysis — Experience From the Demonstration Plant Development in Tuas Singapore
X. Qiao, H. Han, M. Shaw, K. Yeo, L. Liang, R. Sih, H. Seah.
Evoqua Water Technologies Pte Ltd (Singapore)

Ozonation and Advanced Oxidation for Micropollutant Control of WWTP Effluent in a Reuse Scheme in North Holland
A. Martijn, G. Zoutberg, J. C. Kruithof. PWNT (The Netherlands)

Ozone Enhanced Ceramic Membrane Filtration for Wastewater Recycling
P. Spencer, S. Domingos, B. Edwards, D. Howes, J. Clement, G. Milton, H. Scheerman. Water Corporation of Western Australia (Australia)

Pilot Demonstration of >90% Recovery NEWater Process Using RO-EDR Hybrid Technology
R. Mallampati, G. Gunasheela, N. Moe, B. John. GE Water & Process Technologies (Singapore)

Status Quo of Micropollutant Removal in Central Europe
L. Dinkloh. Xylem Services GmbH (Germany)

Study the Efficacy of UV AOPs to Improve Resilience of NEWater Treatment Processes
J. Scheideler, H. Stapel, A. Ried, M. Tan, Y. Zhang, E. Wong, P. C. Siow, E. Huang, P. W. Chue, K. Chua, F. K. Chwee, B. Viswanath, R. Hu, L. Zhang, Y. H. Leong, A. K. Puah, M. H. Lim. Xylem Services GmbH (Germany)

The New Chemical Free Way to Prevent Scaling and Fouling in a High Recovery RO Process
B. Liberman. IDE Technologies Ltd (Israel)

Water Purification by Novel Processes Combining Activated Carbon, Advanced Oxidation and Membrane Separation
A. Karabelas, K. Plakas, V. Sarasidis. Centre for Research and Technology Hellas (Greece)

Theme 2: Effective and Efficient Wastewater Management

A Pilot-Scale Membrane Bioreactor Plant Incorporating Mainstream Nitritation-Denitritation Process for Municipal Used Water Reclamation
Y. Liu, H. Wang, G. Xu, Z. Qiu, Y. Zhou, H. Png, W. Lay, B. Kwok.
Nanyang Technological University (Singapore)

A Smart Unmanned Aerial Vehicle (UAV) Based Imaging System for Inspection of Deep Hazardous Tunnels
S. Foong, C. H. Tan, D. Sufiyan Bin Shaiful, K. H. Win, W. J. Ang, H. B. Lim, S. K. Yeung. Singapore University of Technology & Design (Singapore)

A Study on Optimized Layout of Pollution Discharge Outlets and Water Supply Safety in Yangtze River Economic Belt
B. Tong, L. Zhang. Changjiang Water Resources Commission (China)

Accelerating Innovation of Community-Scaled Resource-Oriented Faecal Sludge Treatment Through International Standards
M. Y. Chan, R. Lee. TUV SUD Asia Pacific (Singapore)

Achieving Long-Term and Stable Mainstream Nitritation for Municipal Wastewater: A Sustainable NOB Repression for Shortcut Nitrogen Removal and Mainstream Deammonification
M. Caligaris, I. Mozo, T. Saur, G. Gaval, B. Barillon. SUEZ (France)

Advanced and Efficient MBR Integration of Two Giant WWTP in the Megacities of Beijing and Paris: The Huai Fang and Achères Projects
S. Donnaz, C. Roche, M. A. Sanz, Y. Yang. SUEZ International, Treatment Infrastructure (France)

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Anaerobic Digestion of Septage Sludge in Metro Manila
J. P. Serias, A. Adis, R. Echiverri. Manila Water Company, Inc. (The Philippines)

Balancing Carbon and Biology to Maximise Biogas Production While Achieving NEWater and Effluent Goals at the Tuas WRP
T. Constantine, E. Shen, C. Newbery, S. T. Koh, W. H. Yong, W. S. Liow. CH2M Hill (Canada)

Benchmarking the 30 Largest WWTP Operated by SUEZ on the French Market: Emphasizing OPEX, Energy Efficiency and Sludge Disposal Towards Sustainable DBO and BOT Projects
S. Donnaz, M. A. Sanz. SUEZ Treatment Infrastructure (France)

Beyond Metagenomic Analysis of Microbial Communities to Understand Anaerobic Digester Performance
S. Wuertz, A. Ng, A. A. Cokro, Y. Xu, A. F. Mohiddin Batcha, K. Arumugam, E. Hill. Singapore Centre for Environmental Life Sciences Engineering (Singapore)

Commissioning and Demonstration Study of Low Energy Step[C-Feed Membrane Bioreactor for Water and Resource Recovery
G. Tao. Public Utilities Board (Singapore)

Decentralized Sewage (Non)Treatment — Tracking Flows and Impact
R. Shah. Peer Water Exchange (India)

Embracing Disruptive Technologies to Future-Proof Water Resource Recovery Facilities
P. H. Nielsen, J. Sandino. VCS Denmark (Denmark)

Energy Savings Performance Contract: A Case Study of Liverpool Waste Water Treatment Plant
K. Vijayanand, H. Andrew. Black & Veatch (United States)

Flood Controls in Southeast Asia
T. Hill. Eco-Business (Singapore)

Improving Flood Management in Metro Manila
J. Stoutjesdijk. World Bank (United States)

Interceptor and River Water Treatment for the River of Life, Kuala Lumpur, Malaysia
P. Von Huben. Jacobs (Australia)

Leveraging MABR Technology for Short-Cut Nitrogen Applications
L. Downing. CH2M Hill (United States)

MABR Goes Full-Scale: Design & Implementation of the World's Two Largest MABR Plants
J. Peeters, M. Di Pofi, D. Houweling, J. Ireland, C. Owerdieck. GE Water & Process Technologies (Canada)

Microbial Electrochemical Sensor (MES) for Real-Time Detection of Heavy Metals Present in Used Water
H. Y. Ng, S. Kharkwal, C. H. C. Trung, E. M. H. Tan, K. K. Liau, Y. Gu. National University of Singapore (Singapore)

Moving Towards Maximum Biosolids Reduction: Ultra-Dewatering of Sludge
M. Choo-Kun, C. Prevot, P. E. Pardo, J. L. Bourdais, E. Judenne, F. lebars, P. Camacho, A. Fournot McGill. SUEZ Treatment Infrastructure (France)

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Y. Law, S. Swa Thi, X. Chen, T. Q. N. Nguyen, R. B. H. Williams, B. Ni, T. W. Seviour, S. Wuertz. Nanyang Technological University (Singapore)

Reusable Water and Biogas From a Sustainable Mainstream anaerobic Treatment of Municipal Wastewaters
L. Rodríguez-Hernández, A. Silva-Teira, T. Reyes, C. Lardín, N. Moya, J. Garrido. Cetaqua Galicia/SUEZ Environnement (Spain)

Singapore Deep Tunnel Sewerage System Phase 2 — Tunnel Design/Hydraulic Modelling
W. Cox, S. Cheng, S. H. Lo. Joint Venture (Black & Veatch + AECOM) (Singapore)

Smarter Management of Waste Water Treatment Plant 360° Performance
P. Blanc. SUEZ (France)

Subregional Approach to Water Reuse Utilizing Hybrid Membrane Technology
A. Dale, L. Olds. Anaergia Services (United States)

Taking Mainstream Deammonification Out of the Box and Into Practice — Sustainable Water Reuse Using an Anammox Biofilter
S. Sathyamoorthy, H. Park. Black & Veatch (United States)

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B. Johnson, D. Gabel, P. Burrowes, L. Lum, D. Oerke, R. Rath, C. Newbery. CH2M Hill (United States)

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C. Lu, A. Soltan. BioGill Asia Pte Ltd (Singapore)

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D. Corbett, D. Brown, R. Skinner. Department of Environment, Land, Water and Planning (Australia)

A Wastewater Chain Network With Municipalities, a Waterboard and Water Companies Using the Mutual Gains Approach (MGA) to Realize Lower Costs And Less Vulnerability
M. Paardekooper. waterboard Delfland (The Netherlands)

Abatement of Pollution of Ground & Surface Water Bodies Through Better Total Water Cycle Management & Being Water Wise
S. Samuel, A. Ho, A. Das. ECOSOFTT Pte Ltd (Singapore)

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P. von Lany. CH2M Hill (United Kingdom)

Community Engagement And Pollution Mitigation At Kandy Lake, Sri Lanka
S. Jinadasa University of Peradeniya (Sri Lanka)

Creating Value With Water Sensitive Solutions
J. Verlinde. City of Rotterdam (The Netherlands)

Empowering Water Utility Innovation Innovation as a Pathway to Sustainability
J. Batten, J. Carter. Arcadis (United States)

Enhancing Livebility in the Dutch Delta by Combining Highway Developments With a Blue Green Corridor And Advanced Wastewater Reuse, a Success Story
J. Boorsma, O. Helsen. Regional Water Authority Delfland (The Netherlands)

Fair and Responsible Management of Water: Putting Value on Potable Water as a Political and Societal Priority
E. Fiechter-Widemann, B. Girardin. Workshop for Water Ethics (W4W) (Singapore)

Getting Ahead of Singapore's Storms: Return on Experience
O. Pison, A. Mahadevan, B. Chan, K. A. Makktom, K. T. P. Nguyen. SUEZ (Singapore) Services Pte Ltd

Improving Awareness of Emergency Water Supply Stations
Y. Unno. Yokohama Waterworks Bureau (Japan)

Manila Water's Resiliency and Business Interruption Study
D. A. V. Evangelista. Manila Water Company, Inc. (The Philippines)

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P. Brown, S. Trussell. Paul Redvers Brown Inc. (United States)

Planning for Resilience for the City of San Diego (California, USA) Through Increasing Water Supply Reliability
M. Meeker, J. Helminski, D. Owen, S. Trussell, J. Minton. Water Environment & Reuse Foundation (United States)

Soul of Nørrebro — Innovative Climate Adaptation Process as an Instrument for Increased Urban Quality and Resiliency at a District Scale
C. Nielsen. Ramboll (Denmark)

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N. Dolman. Royal HaskoningDHV (The Netherlands)

The Integration of Critical Facilities and Infrastructure Hardening and Longer Term Resiliency Strategies in the New York City and New Jersey Region
E. Westerhof. Arcadis U.S, Inc. (United States)

Toward Best Practices for Increasing Public Understanding of Water Reuse
M. Meeker, L. Macpherson, I. Law, J. Minton. Water Environment & Reuse Foundation (United States)

Transitioning to Water Sensitive Cities: Insights and Lessons From Six Australian Cities
K. Hammer, B. C. Rogers, A. Gunn, E. Church, C. Chesterfield. Monash University (Australia)

Water Management in Smart City: Case Study of Faridabad, India
S. Shekhar, A. Mukherjee, S.N. Dwivedi, S. Shekhar. Ministry of Water Resources, RD & GR (India)

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A Comprehensive Assessment of Level of Service Based on Risk
F. Cubillo. Canal de Isabel II (Spain)

Artificial Intelligence Based Monitoring System of Water Quality Parameters for Early Detection of Non-Specific Bio-Contamination in Water Distribution Systems
S. Tinelli, I. Juran. University of Pavia (Italy)

Characterization of Resistomes in Wastewaters and Surface Waters Using Metagenomics
C. Ng, M. Tay, B. Tan, L. Haller, H. Chen, K. Gin. National University of Singapore (Singapore)

Detection of Drinking Water Contamination by an Optical Real-Time Bacteria Sensor
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A. Carducci, I. Federigi, A. Landucci, G. Donzelli, R. Iannelli, C. Pretti, F. Tardelli, V. Casu, M. Verani. University of Pisa (Italy)

Ecological System Analysis: An Integral Approach for Sustainable Water Quality Management
G. Kruitwagen, S. H. Wee. Witteveen+Bos Consulting Engineers (The Netherlands)

Establishment of a System for Drinking Water Quality Management – Lessons From Ghana
S. Abaidoo, K. Tsekpetse-Akuamoah. Ministry of Sanitation and Water Resources (Ghana)

Extending Water Safety Plan Concept to Wastewater Treatment Operations
F. Arellano, K. Catangcatang. Maynilad Water Services, Inc. (The Philippines)

Improving Accountability and Accessibility of Water Quality Monitoring by Using Cellular Enabled Data Collection and Validation — a Case Study
A. Bhattacharya. Public Health Engineering Department, Government of West Bengal (India)

Improving Drinking Water Safety in Regional New South Wales, Australia
L. Jarvis, S. Leask, W. Henderson, T. Carr, J. Tickell, K. Wall, Z. Bradford-Hartke, P. Byleveld. NSW Health (Australia)

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Microscale FIB Detectors are Suitable for Automated Analysis and Coupling With Filtration Devices
J. Hinks, J. Y. E. Han, K. Palanisamy, S. Wuertz. SCELSE (Singapore)

Monitoring Water Quality in Singapore Reservoirs With Hyperspectral Remote Sensing Technology
S. C. Liew, C. K. Choo, T. C. Dang. National University of Singapore (Singapore)

Preventing Public Health Concerns by Using Advanced Water Quality Monitoring Sensors and Integrated Event Detection Software
B. Thompson. s::can Measuring Systems (United States)

Rapid Detection, Characterization and Enumeration of Pathogens in Environmental Waters
K. Gin. National University of Singapore (Singapore)

Regulatory Policies in Monitoring Emerging Contaminants and Antimicrobial Resistance
S. Koo-Oshima. U.S. EPA (United States)

Simulated Pathogen Survival in Open Canals Under Changing Flow Conditions in Singapore
N. Shome, S. Wuertz. Nanyang Technological University (Singapore)

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Analysis of International Trends in Municipal Per Capita Public Water Use
N. Paschke. University of Wisconsin-Madison (United States)

Application of Water Pinch Analysis Approach for Water Conservation in Industrial Facilities
M. Alhajji, S. Aljeshi. Saudi Aramco (Saudi Arabia)

CAPEX & OPEX Analysis for Water Network Performance
H. Yin, D. Duccini. Suez (France)

Computerized Simulation for a Quantitative and Qualitative Approach to Pump Suction Piping Design
O. Campagna. Flowserve (Singapore)

Data Analytics Revolution in Water Utilities Management
W. W. S. Teo. OSIsoft Asia Pte Ltd (Singapore)

Data Consolidation — An Easy Solution to NRW Data Management
M. Tomkins. WSO Australia Pty Ltd (Australia)

Delivering Water Project With Smart Check System for Holistic Project Implementation With Facilitative Consultation of All Stakeholders
S. Manjavkar. D. K. Mohta, P. Jasoria. Bentley Systems India Pvt Ltd (India)

Development of TerraSAN®(Anti-Microbial Ceramic-Composite) Pipe for Inhibition of Biofilm in Drinking Water Distribution Network
H. K. Lee. Terraheim Co., Ltd. (Korea)

Driving Towards a Smart Water Network With Smart Sensing and Analytics Capabilities — Our Experience and Future Developments
A. Preis. Visenti Pte Ltd (Singapore)

Employment of Economic Instruments for Improvement of Efficiency of Bulk Irrigation Water Supply in Tajikistan
M. Griffiths, T. Efimova, V. Tonoyan, B. Gaforzoda. OECD (France)

Estimating Daily Non-Revenue Water of Water Distribution System Using Random Forest
W. Liao. Taiwan Water Corporation (Taiwan)

Evaluation of Water System Capacity and Resources in the 1001 Cities Complex
F. Geramiraz. Monenco Company (Iran)

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M. Hatab. Future Pipe Industries (United Arab Emirates)

Improving Water Supply and Sanitation
J. P. Niyubahwe. Ministry of Energy and Mines (Burundi)

Innovative Fainting for National Water Commission of Jamaica
B. Johnson. Resource Mobilization Advisors (United States)

Just When You Thought You Had Seen it All — the Value of High Frequency Pressure Data
J. Dunning. Syrinix (United Kingdom)

Multi-objective Network Optimization — Calm Network
A. Chazerain, D. Duccini. Suez (France)

NETSCAN: The First Step of Dynamic Asset Management
T. Becelaere, H. Yin. Suez (France)

Pattern Recognition in Residential End Uses of Water Using Artificial Neural Networks and Other Machine-Learning Techniques
J. C. ibáñez. Canal de Isabel II (Spain)

Precision Tracking of Pressure Events: What's Going on in My Transmission Pipeline Loop?
J. Dunning. Syrinix (United Kingdom)

Prioritizing Repairs and Improved Water Quality Through Regular Inspection Using Robotics
C. Warner, B. Cook. Deep Trekker Inc. (Canada)

Reframing the Way Businesses Value Water
E. Tenuta, L. Bernick, S. Bullock, B. Burks, E. Chlebeck, D. Hobson. Ecolab Inc (United States)

Smart Utility Network for Preemptive Assets Management and Water Quality Control in Water Distribution Systems
S. Tinelli, I. Juran, I. Shahrour. University of Lille (Italy)

Stochastic Method for Water and Electricity Co-Optimisation: A South Australia Case Study
M. Zecevic, P. Carvalho. Energy Exemplar Pte Ltd (Australia)

Structural and Operational Resilience Analysis of Water Networks
N. Y. Aydin. ETH-Zurich (Singapore)

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G. Addicott. Hydraulic Analysis Limited (United Kingdom)

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M. Trembath, A. Gross. Raedlinger Primus Line Pty Ltd (Australia)

Using Smart Data to Build a Proactive and Reliability Based Approach for Maintaining Process and Safety Critical Assets
T. Koodie, C. Steele, C. Brigham. Black & Veatch (United Kingdom)

Utility of the Future: Mapping New Business Models Amidst a Convergence of Water & Data
R. Tisdale. Bluefield Research (United States)

Water Loss and Leakage Control in Water Supply and Distribution Systems in Turkey
A. Adiguzel. Ministry of Forestry and Water Affairs (Turkey)

World's First Fully Integrated Wireless Radar Level Sensor for the Water Sector
M. Rijn. SenZ2 BV (The Netherlands)

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L. N. Sim, S. R. Suwarno, T. H. Chong, A. G. Fane. Nanyang Technological University (Singapore)

A Novel Transparent Photoanode for Photoelectro-catalysis Combined With Electro-Fenton
O. Lefebvre, J. Xu. National University of Singapore (Singapore)

A Study of Biofouling Mechanism in Seawater Desalination RO Membrane
Y. Tanaka, V. Parida, B. Yeo, K. K. Latt. Toray Singapore Water Research Centre (Singapore)

Advanced Online Control for Ozone-Enhanced Biologically Active Filtration System for Municipal Water Reuse
A. Ried. Xylem Services GmbH (Germany)

Algorithmic Model Development and Quantitative Evaluation of Reverse Osmosis Membrane Train Performance to Enhance Operational & Maintenance Decision-making
G. Liu, Y. Zhao, P. Navaneethakrishnan, S. Pattanayak, R. Woodling. TUV SUD Asia Pacific Pte.Ltd (Singapore)

Alternative Approach for Municipal Water Reuse - Pilot Results
L. Eshed. IDE Technologies Ltd (Israel)

An Approach for Extraction, Digestion and Rapid - Screening of Microplastics in Fresh Water Environmental Samples Based on Fluorescent Tagging
J. P. Chen, H. Liu, J. Li, E. M. de Souza, J. Wu, J. Lim. National University of Singapore (Singapore)

Analysis and Water Treatment Options for Poly- & Perfluoro Alkyl Substances
M. Endrizzi. Arcadis (China)

Application of Water Treatment Process in Karst Ecosystem Case Study in Candirejo Village, Indonesia
A. Suyanto. Institute Technology of Yogyakarta (Indonesia)

AquaNES — EU Project Demonstrating Synergies in Combined Natural and Engineered Processes for Water Treatment
A. Ried. Xylem Services GmbH (Germany)

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G. Sun, X. T. Nguyen, C. Hélix-Nielsen. Aquaporin Asia (Singapore)

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J. Liaw, K. Zhang, P. Meemaytee. Ecolab Pte Ltd (Singapore)

Biological Groundwater Treatment for Multi-Contaminant Removal
R. Erlitzki. AdEdge Water Technologies LLC (United States)

Ceramic UF Membrane Retrofit of Polymeric MF for Second Stage High Turbidity Backwash Waste Recovery for Potable Use at Surface Water Treatment Plant
B. Wise, S. Smith, W. Shih. Nanostone Water Inc. (United States)

Challenges of Boron Removal in a Large-Scale Seawater Desalination Plant for the Semiconductor Industry
J. Ben Yaish. IDE Technologies Ltd (Israel)

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Characterization of Natural Organic Matter Originating From Algae in Surface Water Source for Drinking Water Treatment
E. Prest, M. Wokke, B. Martijn. PWN Technologies (The Netherlands)

Coagulant Dose as an Operating Parameter in a Solid Contact Clarifier
W. Illangasinghe, N. Ratnayaka, N. Jayasuriya, J. Manatunge. National Water Supply & Drainage Board (Sri Lanka)

Crossflow Microsand Filtration: Innovative Pretreatment for Seawater Desalination Plants
A. Silverwood, J. C. McClean. Evoqua Water Technologies (Canada)

Davao City Bulk Water Supply Project – "Water-Energy Nexus"
C. Almario. Apo Agua Infrastructura, Inc. (The Philippines)

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M. Padayachee. Rand Water (South Africa)

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K. Teshima, Y. Moriya, F. Hayashi. Shinshu University (Japan)

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L. Yerushalmi, B. Seyhi. Dagua Technologies Inc. (Canada)

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E. Gurbanov, G. Huseynov, Z. Gasimov. Azersu OJSC (Azerbaijan)

Development of Novel Hollow Fiber Hydrophobic PVDF Membrane by Thermal Induced Phase Separation for Vacuum Membrane Distillation
H. Wang, X. Liu, J. Zhao, F. Bi. Memsino Membrane Technology (Beijng) Co. Ltd (China)

Development of Yttrium Nanoparticle/PVA Modified PSF Membrane and Application in Decontamination of Arsenate From Water
P. Chen, Y. Yu. National University of Singapore (Singapore)

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K. Young, B. Mayer. Marquette University (United States)

Doha West WWTP: A New Step is Going to Make Treated Water Quality Safer, Opening Doors to More Reuse Opportunities
M. A. SANZ, D. Ratte. Suez Treatment Infrastructure (France)

DPRShield: A New Combination of Forward Osmosis (FO) and Reverse Osmosis (RO) for Real-Time Monitoring During Direct Potable REUSE (DPR)
E. Desormeaux. Porifera, Inc. (United States)

Effect of the PH on the Aggregation of Uncoated Silver Nanoparticles in the Aquatic Matrices
I. Fernando, Y. Zhou. Nanyang Technological University (Singapore)

Effect of Reaction Parameter and Possible Paths of Degradation of GSM and 2MIB in Water by UV/chlorine
F. Ma, F. Peng, H. Li, Z. Yang, H. Lee. Central South University (China)

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S. Veerapaneni, T. Koodie, J. Lim, S. Athreya. Black & Veatch (United Kingdom)

Enhancing the Reliability of Remote Fluorescence Sensors to Maximize Organic Matter Removal in Drinking Water Treatment Plants
E. Bertone, G. F. de Oliveira, R. Stewart, K. O'Halloran. Seqwater (Australia)

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W. Zhu. Nanyang Technological University (Singapore)

Feasibility of Solar-Powered Ultrafiltration Membrane Water Treatment Systems for Rural Water Supply in Malaysia
C. M. Chew, K. M. D. Ng, H. H. R. Ooi. Techkem Water Sdn. Bhd. (Malaysia)

Field Testing of AOP for Removal of Emerging Contaminants
J. Wood, C. Foss, S. Doung, C. Swanson. Evoqua Water Technologies, LLC (United States)

Flexible Carbon Composites Electrodes Derived From Metal-Organic Framework for Membrane Capacitive Deionization Devices
M. Ding. Singapore University of Technology and Design (Singapore)

Future Water Supplies Roadmap: Innovations in Hybridization
M. W. Shahzad, K. C. Ng, M. Burhan. King Abdullah University of Science & Technology (KAUST) (Saudi Arabia)

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S. Gootman. ICS2 (Israel)

Improve Water Efficiency Grade of Residential Reverse Osmosis (RO) Filter
Z. Peng. Marmon Product Development Centre (Singapore)

Improved Dissolved Carbon Dioxide Removal in Process Water Treatment With Membrane Contactors
S. Willis, P. Wong, A. Sengupta, A. Mancusi. 3M (United States)

Improvement of Microbial Desalination Cell Performance by Using Bicarbonate Electrolyte and External Electrolyte Reservoirs
L. Lai. National University of Singapore (Singapore)

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H. Zou. Aquapoten Company Limited (China)

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P. T. Chen. LotSoar Consultants Inc. (Taiwan)

Innovative Approach to Preventing RO Fouling Caused by Humic Substances
C. Shimpo. Kurita Water Industries (Japan)

Innovative Electrochlorination Cell Design
J. Griffis, P. Beddoes, A. Green. Evoqua Water Technologies LLC (United States)

Innovative Future Technology for Green Wastewater Treatment - Case Study for Saudi Arabia.
M. Kabeel. Advanced Water Technology (Saudi Arabia)

Institutional Analysis of Critical Issues in Closing the Regional Water Cycle by Wastewater Reuse
O. Helsen, W. van Es, J. Boorsma. Regional Water Authority Delfland (The Netherlands)

Investigating Salinity Effect on Clathrate Hydrate Based Desalination (CHBD) Process
P. Linga, A. Nambiar, P. Babu. National University of Singapore (Singapore)

Investigating Seawater Scaling Potential in Single Pass SWRO Desalination Plants With Relation to Boron Removal at Moderate PH Conditions
S. Nied, P. Shaheen, M. Kellermeier, S. Sijandi. BASF SE (Germany)

Investigation of Coagulation/Dissolved Air Flotation Processes for Seawater Pre-Treatment Dedicated to Complete Removal of Undesirable Micro-Algae
K. Loganathan. Qatar Environment and Energy Research Institute (Qatar)

Iodinated Disinfection By-Products: Post-Formation Mitigation With UV, UV/H_2O_2, and UV/$S_2O_8^{2-}$ Treatment
Y. Xiao, T. T. Lim, L. Zhang, J. Yue. Public Utilities Board (Singapore)

Ionic Liquid-Graphene Oxide Sponge for Efficient Adsorption and Desorption of Anionic Dye
J. S. Antony Prince, R. Zambare, S. Bhuvana, P. Nemade. Ngee Ann Polytechnic (Singapore)

Isolation and Characterization of Phages for Antimicrobial Resistance Control of *Pseudomonas Aeruginosa*
K. Y. H. Gin, S. G. Goh, D. T. Tan, T. L. Gan. National University of Singapore (Singapore)

Mercury Hazards Awareness Program Among Different Communities Particularly Emphasized on School Children in Hisar, Haryana, India
R. Bala. Environmental and Culture Society of India (India)

Metal-Organic Framework/α-Alumina Composite With Novel Geometry for Enhanced Adsorptive Separation
P. Chen, C. Wang. National University of Singapore (Singapore)

Minimal Liquid Discharge in Coal Seam Gas Produced Water
H. Le. Osmoflo Water Management Pty Ltd (Australia)

New Membrane Technology Demonstrating Enhanced Long Term Fouling Resistance for UF Water Filtration Using Kynar® Durable Hydrophilic PVDF
W. Kosar, R. Reber III, G. O'Brien, F. Beaume, S. Stabler, O. Lorain, T. Fukuyama. Arkema Inc. (United States)

New Ultrafiltration Membrane Module Using Innovative Cellulose Derivative
T. Hamada. Daicel Corporation (Japan)

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On-line System for E.Coli and Total Coliform Quantification
J. Cros, M. Batlle, S. de Campos. ADASA Sistemas (Spain)

Optimization of Backwash Parameters for Hollow Fiber Membrane Filters Used for Water Purification
S. subbiah. IIT Guwhati (India)

Optimization of ZW700B Multi-Bore UF Hollow Fiber Membrane Operation for Seawater Desalination
Z. Alam, P. Udhayaragavan, N. Antonopoulos, B. Chaudhari. GE Water & Process Technologies (Canada)

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Overcoming Footprint Challenges Using Compact Solutions for Drinking Water Plants
C. Athreya, N. Burns, A. Elphinston. Black & Veatch (Singapore)

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J. Lahnsteiner, M. Koti, H. Lutze, F. Hell, S. Panglisch. VA TECH WABAG (Austria)

Pathogen Removal and Monitoring of MBR Systems for Potable Water Reuse Applications
S. Katz, P. Cote, A. Salveson, J. Citulski. GE Water & Process Technologies (Canada)

Performance of Membrane Distillation for Groundwater Treatment: Pesticide and Fluoride Removal
S. Vigneswaran, J. Plattner, G. Naidu, C. Kazner, T. Wintgens. University of Technology Sydney (Australia)

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N. Beheshtkar. MAPNA GROUP (Iran)

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S. J. You, S. H. Chuang, Y. F. Wang, K. C. Chang. Chung Yuan Christian University (Taiwan)

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J. Innanje. JVK Resources Pte Ltd (Singapore)

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E. Vaudevire, E. Cornelissen, J. Post, G. J. Witkamp, W. van der Meer. PWN Technologies (The Netherlands)

Quantification of Aquaporin-Z Reconstituted Onto Biomimetic Membrane for Desalination
Y. W. Tong, H. X. Gan, H. Zhou, Q. S. Lin. National University of Singapore (Singapore)

Reclaimed Water Planning in Hsinchu Area
B. J. Hong, C. H. Chen, K. C. Tseng, C. M. Tsai, Y. T. Tu. Water Resources Planning Institute, Water Resources Agency, Ministry of Economic Affairs (Taiwan)

Removal of Heavy Metal Ions From Aqueous Solutions by Flux-Grown $Na_2Ti_3O_7$ Crystals
K. Teshima, F. Hayashi, T. Sudare. Shinshu University (Japan)

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J. Boorsma, W. van Es. Delft University of Technology (The Netherlands)

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C. J. Chuang, K. Lee, K. Chang, Y. Wang. Chung Yuan Christian University (Taiwan)

Safe and Sustainable Reuse in New Mexico (USA) Through Ozone-Based AOP
K. Robinson. Xylem (United States)

Scaling Potential of Barium Sulfate Scaling at the Intake of Different Desalination Plants in Kuwait
M. Salman, G. G. Al-Nuwaibit, M. Safar, M. Rughaib, A. Al-Mesri. Kuwait Institute for Scientific Research (Kuwait)

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E. Koreman. PWN Technologies (The Netherlands)

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B. chaganti. Cow and Calf Dairy Farms Limited (India)

Strategies to Increase the Public's Acceptance of Recycled Water in Their Daily Lives
J. Vesey. Xylem Inc. (United States)

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Sustainable Concentrate Treatment and Resource Recovery Using an Integrated Membrane Distillation-Selective Sorption System
S. Jeong. Sungkyunkwan University (Korea)

Sustainable Water & Wastewater Treatment in Rural Scotland Using the Arvia™ Process
A. Nabeerasool. Arvia Technology (United Kingdom)

Synergistic Effects Using Ozone, UV and Advanced Oxidation in Multi Barrier Treatment Processes for Potable Water and Waste Water Reuse
J. Scheideler, A. Ried. Xylem Inc. (Ghana)

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H. Zeng. Institute of Bioengineering and Nanotechnology (Singapore)

System Safety Assessment and Thermo-Economic Analysis of Kalina Power-Cooling Cycle Integrated With RO Desalination Process
C. Yoo, Q. Li, J. Rashidi. Kyung Hee University (Korea)

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P. LINGA, A. Nambiar, P. Babu. National University of Singapore (Singapore)

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N. Love. University of Michigan (United States)

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P. Chen, C. Wang. National University of Singapore (Singapore)

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J. Gilron, A. N. Puah, K. Chua, F. K. Chwee, B. Viswanath, D. Peled, N. Perlmutter. Ben Gurion University (Israel)

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S. Ravi, S. Foo, K. H. Dharmarai, D. Mukhopadhyay. Boustead Salcon Water Solutions (Singapore)

Water Saving Solutions for the Wafer Fabrication and Semi-conductor Industry
Y. Zhou, W. Huang, D. Yan, K. Kekre, K. Deenadayalan. Nanyang Technological University (Singapore)

Water SMART Blue Buildings in Garden City: A Pioneering Model to Radically Enhance Water Sustainability in Buildings
M. Lim. ECOSOFTT Pte Ltd (Singapore)

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G. Huseynov, F. Imanov, R. Ismayilov. "Azersu" OJSC (Azerbaijan)

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T. Setiadi, J. C. Utomo, T. Setiawan, E. Saleh, S. Handoko. Institut Teknologi Bandung (Indonesia)

A New Type of Aerator for Landscape Water System and Comparative Analysis
Z. Wang, Y. Chen. Institute of Water Resources and Hydropower Research (China)

A Novel and Simply Applied Bioaugmentation Technology Which Improves Performance of Sewage Sludge Digestion Process
B. Sun. Novozymes (Japan)

A Study on Wastewater Treatment Using Attached Growth Batch Reactor (AGBR) Technology
V. Samuel G. Hindustan University (India)

A Systematic Optimization Technique of N2O Pinch Analysis for Minimization of N2O Emission and Operating Cost of Wastewater Treatment Plants
C. Yoo, S. Heo, S. Lee, S. HwangBo. Kyung Hee University (Korea)

Advancing of Wastewater System Through Network Layout Optimization and Process Technology Design Innovation
P. M. Magbanua. ARCADIS (The Philippines)

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A. Giesen, S. Kerstens, M. Pronk. Royal HaskoningDHV (The Netherlands)

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I. Rodriguez-Verde, Y. Lorenzo-Toja, C. M. Castro-Barros, P. Carrera, A. Val del Río, A. Mosquera-Corral. CETAQUA (Spain)

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N. Khandan, H. Delanka-Pedige, S. Munasinghe-Arachchige, Y. Zhang. New Mexico State University (United States)

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N. Khandan, S. Munasinghe-Arachchige, H. Delanka-Pedige, Y. Zhang. New Mexico State University (United States)

Algal Wastewater Treatment: A Sustainable Pathway for Nutrient Recovery
N. Khandan, M. Karbakhshravari, D. Tachinda, S. Henkanatte-Gedara. New Mexico State University (United States)

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E. Broeders, W. Menkveld, R. Haro, P. Nugroheni. Nijhuis Industries BV. (The Netherlands)

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J. Talkenberger. Binder GmbH (Germany)

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B. Wise, S. Li, S. Smith. Nanostone Water Inc. (United States)

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S. Wuertz, S. Roy, J. Jun, H. Y. Ng. National University of Singapore (Singapore)

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A. Das. ECOSOFTT Pte Ltd (Singapore)

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P. Roeleveld, A. Giesen, M. van Loosdrecht. Royal HaskoningDHV (The Netherlands)

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Y. Kim, W. Piao, H. Kim, K. Poo. Catholic University of Pusan (Korea)

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S. Wuertz, E. Santillan, W. X. Phua, F. Constancias. Nanyang Technological University (Singapore)

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S. Scherrenberg, M. van den Braak, J. Boorsma, E. Knol. Evides Industriewater (The Netherlands)

Efficient Groundwater Denitrification With Two Stage Bioelectrochemical Systems
A. Capodaglio, D. Cecconet, A. Callegari. University of Pavia (Italy)

Efficient Up-Stream Carbon Capture for Energy Self-Sufficient Wastewater Treatment Process
M. Caligaris, I. Mozo, J. Ng, J. Aussenac, J. De Montal, T. Saur, G. Gaval, B. Barillon, S. Martin Ruel. SUEZ (France)

Efficient Utilization of Underground Brackish Water for Sustainable Fish Culture Technology
R. Kumar. CCS Haryana Agricultural University, Hisar, Haryana (India)

Electrodialysis Reversal (EDR) Technology for Treating Industrial Wastewater (IWW) for High Grade Industrial Reuse
Y. Zhao. GE Water & Process Technologies (Singapore)

Emerging Innovative Technologies for Energy Recovery from Wastewater Sludge – A Case Study from a Developing Country
E. V. Musvoto, J. N. Zvimba. South African Water Research Commission (South Africa)

Engineering Applications of Membrane Distillation Technology in Resource Recovery from High Strength Waste Water
Z. Shi, X. Li, Y. Gao. CSRE Technology Co. Ltd (China)

Enhanced Biodegradation of Persistent Pollutants by Using Adsorbant, High Performance Biocarriers
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Enzymatic Degradation of Endocrine Disrupting Compounds in Ultrafiltration and Nanofiltration Based Enzymatic Membrane Bioreactors
F. Hai, M. B. Asif, K. Yamamoto, W. E. Price, L. Nghiem. University of Wollongong (Australia)

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N. Uri Carreño, P. Henrik Nielsen. Vandcenter Syd (Denmark)

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A. Law, T. Li, D. Pang. Nanyang Technological University (Singapore)

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Y. Liu, H. Sun. Nanyang Technological University (Singapore)

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J. Josse. Anaergia Services (United States)

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C. Steen, S. Eriksen, P. H. Nielsen, J. Sandino, T. Constantine, A. Willoughby. VCS Denmark (Denmark)

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E. Kober, K. Kong, J Wojciechowski, R. Hedelson. Aeration Industries International (United States)

Improving the Energy Profile of BNR Facilities Through Advance Biosolids Processing
J. Sandino, P. Nielsen. CH2M Hill (United States)

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O. Icke, C. Lubbers, R. von Eijden, M. Koning, C. Huising, R. de Wit. Royal HaskoningDHV (The Netherlands)

Influence of Air Diffuser Position on Velocity Profiles of Bubble Flow Inside Hollow Fiber MBR Membrane Unit
H. Nagaoka. Tokyo City University (Japan)

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S. Abelin. Xylem (Sweden)

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J. He, Q. Wang, G. Tao, Y. Lee. National University of Singapore (Singapore)

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F. Yaycili. Ministry of Forestry and Water AFFAIRS (Turkey)

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L. J. Zamora. Manila Water Company Inc. (The Philippines)

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A. Fisher, J. Moeller, F. Karimova, A. Pramanik, M. Meeker. The Water Research Foundation (United States)

Longer First-Stage Thermophilic Anaerobic Digestion Enhances Biogas Quantity and Quality
S. Wuertz, A. F. Mohidin, A. Ng Tze Chiang, A. A. Cokro. Nanyang Technological University (Singapore)

Low Energy Aerobic MBR for Treatment of Municipal Used Water
C. H. Tan, P. Foo, C. Fu. Tritech Environment group (Singapore)

Management of Grey-Water Reuse in the Eastern District of Abu- Dhabi Emirate, UAE
M. Mohamed. UAE University (United Arab Emirates)

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A. M. Demape, C. Co. Manila Water Company Inc. (The Philippines)

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J. Coppens, Y. Law, C. Tsan, T. H. N. Nguyen, T. W. Seviour, R. B. H. Williams, S. Wuertz. Nanyang Technological University (Singapore)

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D. Goswami. Unilever (India)

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S. Hong, G. Gwak, D. Kim, H. K. Shon. Korea University (Korea)

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Y. F. Wang, T. C. Chang, K. C. Chang, W. Y. Sean, L. H. Chiang Hsieh. Chung Yuan Christian University (Taiwan)

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N. Boelee, H. Menkveld, P. Nugroheni, R. Haro. Nijhuis Industries (The Netherlands)

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E. Carson. Arvia Technology (United Kingdom)

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V. Saravanamuthu. University of Technology Sydney (Australia)

Reusing Challenging Industrial Wastewaters With Ceramic Membrane Technology for Removal of Fats Oils and Grease
M. Beery, D. Srinivasan, J. Ludwig. Akvola Technologies GmbH (Germany)

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M. Khan, J. Khan, Y. Chen, S. Ohgaki. Pacific Northwest National Laboratory (United States)

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C. Liu. K&C Protective Technologies Pte Ltd (Singapore)

Sewage Treatment Plant Energy Neutrality — Biosolids Waste to Energy, the Manila Water Example
B. Eaton. Cardno NZ (New Zealand)

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R. Shechter, L. Friendman, L. Dagai. Fluence Corp. (Israel)

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J. P. Serias. Manila Water Company, Inc. (The Philippines)

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A. Vellacott, J. Moss, J. Segal, D. Sharland, D. Lynch. Jacobs (Australia) (Australia)

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D. Johnstone. Akzo Nobel Pty Limited (Australia)

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Y. Zhou, D. Lu. School of Civil and Environmental Engineering, Nanyang Technological University (Singapore)

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A. Jawor. Water Planet (United States)

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A. Barucchi. Calix (Australia)

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S. Bauer, A. Dell, J. Behnisch, M. Wagner, H. J. Linke. Technische Universität Darmstadt (Germany)

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J. Li. Ryerson University (Canada)

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C. Chen, G. Meszaros. City of Austin, Austin Water (United States)

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A. Kumar. India Water Foundation (India)

Bracing for the Flood: The Role of Crowd-sourced Data in Readiness for Extreme Events
O. Jensen. National University of Singapore (Singapore)

Community Vulnerability and Adaptation to the Dynamic of Water Resources in Rejoso Watershed, East Java, Indonesia
N. Khasanah, B. Leimona. World Agroforestry Centre (ICRAF), Southeast Asia Regional Programme, Bogor, Indonesia (Indonesia)

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T. G. Hapsari. Seoul National University (Korea)

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J. Lhomme. Innovyze (Australia)

Cost-Effective Flood Hazard Assessment With Remote Sensing Technology and Artificial Intelligence
S. Y. Liong, D. E. Kim, Y. Sun, J. Liu. Tropical Marine Science Institute, National University of Singapore (Singapore)

Dammed If You Do, Damned If You Don't: A Global Comparative Assessment of Legal and Institutional Frameworks for Dam Safety
M. Wishart, S. Ueda, J. Pisaniello, J. Tingey, K. Lyon, E. Boj Garcia. the World Bank (United States)

Decision Support System of SWMM for the Design and Planning of Low Impact Development Practices: Case of a University Campus of South Korea
E. S. Chung, H. Lee. Seoul National University of Science and Technology (Korea)

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J. Chan. Mott MacDonald (Hong Kong)

Effectiveness of ABC Waters Design Features for Runoff Quantity Control in Urban Singapore
W. K. Yau, G. S. Ong, E. chen, S. Y. Liong. Public Utilities Board (Singapore)

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P. Dircke, J. Kabout, M. Blommestijn. Arcadis (The Netherlands)

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K. H. Kwan. SystemNix Technologies Pte Ltd (Singapore)

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B. Johnson. Respource Mobilization Advisors (United States)

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T. S. Munk. Ramboll (United States)

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L. Buckman, E. Huijskes, A. Smale, S. T. Chia. Deltares (The Netherlands)

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M. Prescott, D. Diego-Ramirez. Monash University (Australia)

Pilot Study on Sophisticated Agricultural Irrigation Requirement in Huwei Township, Yunlin County, Taiwan
C. C. Hsu, C. Chen, K. Tseng, C. Tsai, L. Pi. Water Resources Planning Institute, Water Resources Agency, Ministry of Economic Affairs (Taiwan)

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R. Brotchie. GHD (Australia)

River Restoration in India: A Critical Analysis Based on Benchmarking and Delphi Technique
M. Bedarkar, Urvashi Dhingra Gill. Symbiosis Institute of Business Management Pune, Symbiosis International Universityi (India)

Savannah Harbor Dissolved Oxygen Supplementation Through SuperOxygenation
D. Clidence, R. Speece. ECO2 Oxygen Technologies, LLC (United States)

Stakeholder Engagement and Issues Management for Watershed Conservation and Restoration: Case Study of Rejoso Watershed, Pasuruan Regency, East Java Indonesia
J. Ramelan. Social Investment Indonesia (Indonesia)

Subsurface Water Solutions: Saltwater on Bay, Freshwater at Hand
T. Boonekamp, K. Zuurbier. Arcadis (The Netherlands)

Testbedding the Feasibility of Large Scale Implementation of ABC Waters Design Features in a Public Residential Precinct
E. Chen, G. S. Ong, W. K. Yau, L. Ma. Public Utilities Board (Singapore)

Understanding Resource Conservation Campaigns: Evidences from a Field Experiment
Q. Neng, L. Goette. National University of Singapore/Institute of Water Policy (Singapore)

Unlocking Access to Perennial Sources of Water
A. Bhavsar, S. Damani, L. Khang. WaterQuest Hydroresources Management India Pvt. Ltd. (India)

Utilization of Reclaimed Island as Groundwater Reservoir
A. Saha, A. Bironne, W. K. Lee, V. Babovic, L. Vonhögen-Peeters, E. van Baaren, P. Vermeulen, G. O. Essink, G. Lange, R. Hoogendoorn. National University of Singapore (Singapore)

Water-Food-Energy Nexus: A Cross-Sectoral Approach to Liveability and Resilience
S. Malekpour, R. Caball, R. Brown, N. Georges, J. Jasieniak. Monash University (Australia)

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Theme 4: Water Quality & Health

A Study of the Spatio-Temporal Flow Characteristics of Groundwater in Jeju Island's Pyoseon Watershed
S. H. Moon, H. J. Koh, G. W. Koh, D. C. Moon. Jeju Special self-Governing Provice Development Co. (Korea)

Analysis of Residual Iodinated X-ray Contrast Media After Ozonisation in Water Treatment Facilities, by IC-ICP/MS.
A.K. HENG, P. Pfundstein, D. Flottmann, C. Martin, A. Steinbach, W. Schulz. Metrohm RSC Asia (Singapore)

Automated Sampler for Biological Samples
M. Q. X. Tay, J. K. K. Lau, S. Y. Chang, I. S. W. Lam. Public Utilities Board (Singapore)

Automated, Rapid Microbial Detection System for On-site Testing of E.coli & Total Coliforms Bacteria
S. Brown, D. Wilton, E. Marcotte, M. Miron. Tecta-PDS (Canada)

Challenges of Monitoring Rapidly Changing Environments in Different Socio-Economic Contexts
R. Lima, F. Boogaard, R. de Graaf, D. Setyorini. Indymo (The Netherlands)

Child Stunting and Cognitive Impacts of Water, Sanitation and Hygiene in Indonesia
C. Chase. the World Bank (United States)

Combining On-Site Rapid Testing and Connectivity for Better Management of Legionella Risk.
G. Tyrie, R. Campell, T. Ruth. Albagaia (United Kingdom)

Detection of Four Indole Drugs in Reclaimed Water and Identification of Their Transformation Products During Chlorination
Y. Huang, Q. Zhou. Nanjing University (China)

Detection of Vibrio Cholerae in Environmental Water Samples: Traditional Assay Verses Molecular Assays
S. W. Lam, T.W. Ng, S.Y. Chang, C. Feng, J. Tan, A. Chen, R. Colwell, A. Huq. Public Utilities Board (Singapore)

Determination of Three Marine Toxins (Saxitoxin, Okadaic Acid, Domoic Acid) in Water Samples by Direct Injection Combined With High Performance Liquid Chromatography Tandem Mass Spectrometry (HPLC-MS/MS)
J. Wu, J. Yue, L. Zhang. Public Utilities Board (Singapore)

Development of Mobile App Based Integrated Contamination Surveillance for Rural Drinking Water System in India
V. Manickam, N. Valliappan, S. Viswanathan. Trusty Water (India)

Efficient Parallel Surrogate Framework for Parameter Estimation and Optimization of Computationally Expensive Tropical Reservoir Hydrodynamic and Water Quality Models
C. Shoemaker, W. Xia, T. Akhtar, M. Nguyen. National University of Singapore (Singapore)

Enhanced Distribution System Water Quality Management Using 2nd Generation ATP Monitoring
D. Tracey, B. Travis. LuminUltra Technologies Ltd. (Canada)

Expand and Scale-Up the Safe Water Services for Rural Areas, Through the Provision of Loan by Financial Institutions in Indonesia - A Collaboration Between Water.org and WASH-CSR Program of Danone AQUA on CBO Strengthening Program
R. Hidayad. Water.org (Indonesia)

Framework for Developing an Algal Proliferation Prediction System in Singapore Coastal Waters
S. K. Ooi, B. Foortse, S. H. X. Tay, M. Wang, V. Babovic, R. Gao. National University of Singapore (Singapore)

High Throughput Detection of Chironomid Larvae in Water Samples Using Convolutional Neural Networks
M. Q. X. Tay, E. de Souza, Z. Hou. Public Utilities Board (Singapore)

High-throughput and High Concentration-Ratio of Online System for Bacterial Detection in Drinking Water
A. Liu, Y. Chen, S. Xiong, L. K. Chin, J. Zhang. Nanyang Technological University (Singapore)

Improving Reservoir Water Quality Through Realtime Monitoring and Machine Learning
R. Kadiyala, T. Lee. CH2M Hill (United States)

Molecular Identification and Detection of 2-Methylisoborneol (MIB) Producing Cyanobacteria in Surface Water Bodies
C. Feng, S. W. Lam, S. Y. Chang, J. Tan. Public Utilities Board (Singapore)

Monitoring and Evaluation Surface Water Quality Using Water Quality Index for Water Supply Production in Thailand
P. Srirungruang. Metropolitan Waterworks Authority (Thailand)

New Turbidity Measurement Technology — A Step Forward in Ensuring Drinking Water Quality
V. Malkov, L. Johnson. Hach Company (United States)

Footnote:
The confirmed list of presentations is accurate as of February 2018. For an updated list of presentations, please visit www.siww.com.sg.

LIST OF POSTER PRESENTATIONS

On-chip Spectrometer for Rapid Phosphorus Detection for Water Quality Monitoring
A. Liu. S. Zheng, Y. Y. Chen, H. Cai, A. Gu.
Nanyang Technological University (Singapore)

Online SPE Method for Detection and Analysis of PFOA/ PFOS in Water Samples
A. Duarah, J. Yue, L. Zhang. Public Utilities Board (Singapore)

On-line TOC, NPOC, TIC, TC and VOC Analyses by Catalyzed Ozone Hydroxyl Radical Oxidation Process in Drinking Water Applications
A. Demir. BioTector Analytical Systems Ltd. (Ireland)

Optofluidic Cytometer for Single Bacteria Detection in Drinking Water Quality Monitoring
A. Liu, S. Xiong, Y. Chen, L. K. Chin, H. Chen, C. Hsieh, J. Zhang. Nanyang Technological University (Singapore)

Rapid On-Site Water Pathogen Detection System for Recreational Aquatic Facilities and Cooling Towers
K. C. L. Lee, J. Chia. Singapore Polytechnic (Singapore)

Remote Water Quality Monitoring Using Whole-Cell Biosensors
R. Hammond. Cambridge Consultants Ltd (United Kingdom)

Simulation of Hydrodynamic and Water Quality in a Tropical Reservoir in Singapore
M. T. Nguyen. Public Utilities Board (Singapore)

Smartphone Integrated Optoelectrowetting (SiOEW) for in Situ and Real-Time Monitoring of Marine and Freshwater Algae
S. Bae, S. Lee, S. Y. Park.
National University of Singapore (Singapore)

Solid Phase Extraction-Capillary Electrophoresis Determination of Lipopolysaccharides in Water
S. Li. National University of Singapore (Singapore)

Source to Tap Assessment of Drinking Water Management in Turkey
F. Yaycili. Ministry of Forestry and Water Affairs of Turkey (Turkey)

The Impact of Climate Change on Reservoir Water Quality in Singapore
V. Babovic, J. Zhang, S. Tay, G. Pijcke, X. Li, X. Wang, A. Meshgi, N. Manocha, J. Gils, M. Tiessen, R. Dahm, T. Minns. National University of Singapore (Singapore)

Unmanned Vehicle on Water Quality Monitoring in Reservoir
S. J. You, Y. Wang, F. Kang, H. Lu. Chung Yuan Christian University (Taiwan)

Use of Remote Sensing Techniques to Monitor Algal Blooms in Singapore: Towards Bloom Detection and Forecasting to Improve Management and Operations
D. anderson, R. Kudela, R. Gao, L. Xia. Woods Hole Oceanographic Institution (United States)

Water Quality Assessment of the River Stream, Case Study: The Effect of Human Activity on Water Quality Change in Cileles River, Jatinangor
B. Nugraha, B. Rachmat Suganda, M. S. Dwi Hadian, M. N. Barkah. Laboratory of Hydrogeology and Environment, University of Padjadjaran (Indonesia)

Footnote:
The confirmed list of presentations is accurate as of February 2018. For an updated list of presentations, please visit www.siww.com.sg.

REGISTRATION INFORMATION

Please register online at www.siww.com.sg before 30 April 2018 to enjoy the early bird discount.

ACCOMMODATION

The list of official hotels for SIWW 2018 will be available at www.siww.com.sg.
Reservations may be made online through the website.

CONTACT INFORMATION

For any enquiries, please contact the Water Convention secretariat at:

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Detailed information is also available at http://www.siww.com.sg/water-convention.

Singapore International Water Week

WATER CONVENTION 2018

REGISTRATION FORM

CONFERENCE FEE

	EARLY BIRD (ENDS 30 APRIL 2018)	TICK	FULL RATES (FROM 1 MAY 2018)	TICK
FULL CONFERENCE AND EXPO				
Non-Member	S$ 1,440		S$ 1,600	
Members of Strategic Partners & Supporting Organisations (Local and International)	S$ 1,280		S$ 1,440	
Delegates from Low Income Countries	S$ 800		S$ 960	
Delegates from Low Middle Income Countries	S$ 1,280		S$ 1,440	
Hot Issues Workshops Day Pass (8 Jul)	S$ 100 [ ]			
Day Passes for 10 and/or 11 July (fees are for single day pass)				
Non-Member	S$ 630		S$ 700	
Members of Strategic Partners and Supporting Organisations (Local and International)	S$ 560		S$ 630	
For more discounts, please register online at http://www.siww.com.sg/registration.				

- Strategic Partners refers to staff and members of SIWW Strategic Partners (IDA, IWA, LKY SPP, SWA, ADB, World Bank).
- Countries eligible for Low Income rate refers to countries classified in the Low-Middle and Low Income Countries as indicated on www.worldbank.org.
- The registration fees for:
- **Water Convention Full Package** includes attendance to Joint Leaders Programme, Water Expo @ City Solutions Singapore, and Water Convention Sessions including Hot Issues Workshops.
- **Water Convention Day Pass on 10 and/or 11 July'** include/s the entrance to Water Convention Sessions (based on the day pass purchased), Lunch and Tea breaks.
- Day Pass holders will need to make additional purchase for the various Networking Events.
- All Water Convention passes include entrance to City Solutions Singapore.
- All delegates are to register on-site after 25 June 2018.
- Early Bird Rates only apply to registrations and payments received before 30th April 2018.
- If you require an invitation letter for VISA application, please email us at waterconvention@siww.com.sg.
- Registration fees must be settled in full prior to event commencement.
- There will be no cancellation & refund of ticket/s once purchased. Replacements are allowed.
- Registration for Singapore delegates and new registrations made onsite are subject to 7% GST in the total fees.
- Discounts only apply for online registrations. Registrations made onsite will be charged

NETWORKING EVENTS

Admission to the Lee Kuan Yew Prize Award Ceremony & Banquet is payable at S$ 600.
Please indicate your attendance accordingly. Additional admission tickets can be purchased for accompanying guest(s).

	DATE	FEE	DELEGATE ATTENDANCE		ADDITIONAL TICKET(S)
			YES	NO	
Lee Kuan Yew Prize Award Ceremony & Banquet*	9 July 2018 (Evening)	S$ 600			

**If you are interested to purchase a table for 10 persons, please contact the organizer at info@siww.com.sg*

PERSONAL DETAILS OF DELEGATE

Title:	First Name:	Last Name:	
Job Title:		Organisation:	
NRIC/Passport Number:		Email Address:	
Company Address:		Country:	Postal Code:
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FULL NAME	ORGANISATION (IF ANY)
1.	
2.	

METHOD OF PAYMENT

All bank charges are to be borne by delegates.

☐ I enclose a cheque / bank draft for **SGD** _____ payable to **"Experia Events Pte Ltd"**

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Bank Name : United Overseas Bank Limited, Raffles Place Branch
Bank Address : 80 Raffles Place, UOB Plaza 1, Singapore 048624
Swift code : UOVBSGSG Branch code: 7375 Branch code : 001

☐ Please debit my Visa / Mastercard for the amount of **SGD** _____

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The conference fee does not include hotel accommodation.
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*Terms & Conditions Apply.

REGISTRATION CONTACT

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INTERNATIONAL WATER ASSOCIATION (IWA)

The International Water Association is the organisation that brings together science and practice of water management in order to reach a world in which water is wisely managed to satisfy the needs of human activities and ecosystems in an equitable and sustainable way.

The IWA is a global knowledge hub and international network for water professionals and anyone concerned about the future of water. We bring together know-how and expertise to instigate ground-breaking solutions.

PUB, SINGAPORE'S NATIONAL WATER AGENCY

PUB is a statutory board under the Ministry of the Environment and Water Resources. It is the national water agency, and manages Singapore's water supply, water catchment and used water in an integrated way.

PUB has ensured a diversified and sustainable supply of water for Singapore with the Four National Taps (local catchment water, imported water, NEWater, desalinated water).

PUB calls on everyone to play a part in conserving water, in keeping our waterways clean, and in caring for Singapore's precious water resources. If we all do our little bit, there will be enough water for all our needs — for commerce and industry, for living, for life.

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