

<p>2.6 DIGITAL TOOLS FOR WASTEWATER PROCESS OPTIMISATION</p> <p>Room B5 a Technical</p> <p>Chairs: Juan Antonio Baeza, Spain and Saba Daneshgar, Belgium</p> <p>Benchmarking plant-wide monitoring strategies in wastewater treatment plants, Pedram Ramin, Technical University of Denmark, Denmark</p> <p>Operation diagnosis and carbon source optimization of Yongchuan WWTP using process modelling, Qiaosi Deng, Sichuan Wentao Engineering Technology Co. Ltd, China</p> <p>Comparison of guideline and model-based WWTP design for uncertain influent conditions, Erik Lindblom, IVL Swedish Environmental Research Institute AB, Sweden</p> <p>How to enable responsible consumption & production (SDG12) and reduce the climate impact (SDG13) on a WWTP by digitally enhanced primary treatment, Patricia Aubeuf-Prieur, Kemira</p> <p>--- POSTERS ---</p> <p>SAC254 on-line measurement: a key surrogate parameter for micropollutants removal, Marie Inizan, Hach Lange GmbH, Germany</p> <p>Model-based assessment of alternative modes of operation in a full-scale industrial water treatment system, Xavier Flores-Alsina, DTU, Denmark</p>		<p>Wednesday 10:30 -12:00 Optimisation</p> <p>10:30-10:50</p> <p>10:50-11:10</p> <p>11:10-11:30</p> <p>11:30-11:50</p> <p>11:55-12:00</p>
<p>3.14 DIGITAL WATER</p> <p>Room B4 a Technical</p> <p>Chairs: Hector Monclus, Spain and Tamlyn Sasha Naidu, South Africa</p> <p>How to improve management of storm-water planning using green-growth technology and machine learning?, Andreja Ostojic, BI Norwegian Business School, Norway</p> <p>Benefits and challenges of pre-paid water meter installation piloted in Jenin City of Palestine, Ryuji Ogata, Japan International Cooperation Agency (JICA), Japan</p> <p>High-resolution automated monitoring of microbial concentrations in greywater effluent by online flow cytometry, Konstanze Schiessl, ONCyt Microbiology AG, Switzerland</p> <p>Microbiological dynamics and risk assessment of drinking water and reclaimed water processes, Susana Gonzalez, CETAQUA (Water Technology Center), Spain</p> <p>--- POSTERS ---</p> <p>Use of soft sensors for improved drinking water treatment, Stephan Köhler, Swedish University of Agricultural Sciences, Sweden</p>		<p>Wednesday 10:30 -12:00 Digital water</p> <p>10:30-10:50</p> <p>11:55-12:00</p>
<p>4.4.7 THE URBAN WATER CYCLE: MONITORING AND MODELLING</p> <p>Room B3 b Technical</p> <p>Chairs: Rolf Johnsen, Denmark and Timo C. Dilly, Germany</p> <p>Drinking water pollution event in Frederiksberg Denmark, quickly located with hydraulic aqis online network model, Jesper Jorgensen, NIRAS A/S, Denmark</p> <p>Development and implementation of a large-scale real time control system: the Rotterdam case study, Jeroen Langeveld, TU Delft, Netherlands</p> <p>What is the socio-economic cost of sewer infiltration-inflows?, Anna Ohlin, Chalmers University of Technology, Sweden</p> <p>Using Nuclear Magnetic Resonance (NMR) sensors for water source tracing in a drinking water distribution network, Sebastian Nava, Hofor A/S, Denmark</p> <p>--- POSTERS ---</p> <p>Field measurements for surface permeability for permeable asphalt: the effects of site design and maintenance techniques, Jan Støvring, University of Copenhagen, Denmark</p> <p>The Three Points Approach (3PA) applied as rainfall depth to two Chinese and four European cities for comparison of stormwater challenges and strategies, Chris Zevenbergen, UN-IHE, Denmark</p>		<p>Wednesday 10:30 -12:00 Urban water</p> <p>10:30-10:50</p> <p>10:50-11:10</p>

<p>1.4 DIGITAL WATER: BENEFITS AND RETURN ON EXPERIENCE FOR THE WATER SECTOR</p> <p style="text-align: right;">Room B3 d Workshop</p> <p>Chairs: Nico Caradot, <i>Germany</i> and Samuela Guida, <i>United Kingdom</i></p> <p>The workshop will provide direct feedback on the most recent outcomes of digital water projects to a wide range of stakeholders interested in discussing the current challenges of digitalization in the water sector. In particular, it will focus on quantifying the benefits obtained by utilities in implementing innovative digital solutions.</p> <p>Speakers: Nico Caradot, <i>Kompetenzzentrum Wasser Berlin (DE)</i>, Samuela Guida, <i>IWA (UK)</i>, Dragan Savic, <i>KWR Water Research Institute (NL)</i>, Dan Angelescu, <i>Fluidion (CA)</i>, Regina Gnirss, <i>Berliner Wasserbetriebe (DE)</i>, Alex van der Helm, <i>Waternet (NL)</i>, Nikolette Xanthopoulou, Elena Rumenoova & Apostolos Tzimas, <i>EMVIS Water Resources Management (GR)</i></p>		<p>Wednesday 10:30 -12:00 Digital water</p>
<p>1.1 THE ROAD TOWARDS CLIMATE AND ENERGY NEUTRAL WATER UTILITIES</p> <p style="text-align: right;">Room B3 g Workshop</p> <p>Chairs: Pär Dalhielm, <i>Sweden</i> and Marie Sagen, <i>Norway</i></p> <p>We will share lessons from leading water utilities in a number of countries on steps taken to be energy efficient, recover energy and later become climate neutral. Based on global lessons learned, we will discuss key principles for a climate neutral water sector.</p> <p>Speakers: Pär Dalhielm, <i>Swedish Water and Wastewater Association (SE)</i>, Marie Sagen, <i>Bergen Water (NO)</i>, Miriam Feilberg, <i>DANVA (DK)</i>, Jacob Kragh Andersen, <i>EnviDan A/S (DK)</i>, Amanda Lake, <i>Jacobs (UK)</i>, Corinne Trommsdorf, <i>Water Cities (FR)</i>, Felipe Andres Sanchez Ihl, <i>Aguas Andinas (CL)</i>, Sara Ekström, <i>VA SYD (SE)</i>, Anna Kuokkanen, <i>Helsinki Region Environmental Services Authority HSY (FI)</i>, Natalie Adamczyk, <i>Bergen Water (NO)</i>, Kees Roest, <i>KWR Water Research Institute (NL)</i> & Morten Rebsdorf, <i>Aarhus Vand A/S (DK)</i></p>		<p>Wednesday 10:30 -12:00 Energy neutrality</p>
<p>6.8 WATER RESOURCE MANAGEMENT AND ADAPTATION TO CLIMATE CHANGE IMPACTS</p> <p style="text-align: right;">Room B3 f Technical</p> <p>Chairs: Maryam Imani, <i>United Kingdom</i> and Thomani Manungufala, <i>South Africa</i></p> <p>Pumped storage hydro power down under — the antipodean energy transition, Mike Westerman, <i>GHD, Australia</i></p> <p>A new digital twin for climate change adaptation, water management and disaster risk reduction (DK-model HIP), Hans Jørgen Henriksen, <i>Geological Survey of Denmark and Greenland GEUS, Denmark</i></p> <p>Declining groundwater levels: a challenge for the drinking water supply in northern germany, Agnes Sachse, <i>Christian-Albrechts-Universitaet zu Kiel, Germany</i></p> <p>LIFE GREENADAPT — Nature-based solutions for climate change resilient waste infrastructures: a focus on landfill leachate and rainwater run-off, Luz Herrero Castilla, <i>AIMEN Technology Centre, Spain</i></p> <p style="text-align: center;">--- POSTERS ---</p> <p>Integration of UasB and vertical flow constructed wetlands to produce reclaimed water for irrigation, Taxiarchis Seintos, <i>National Technical University of Athens, Greece</i></p> <p>National N₂O mapping and reduction of N₂O-emission from fornaes WWTP through advanced online-control, Ellen Marie Drastrup, <i>Krøger A/S, Denmark</i></p>		<p>Wednesday 10:30 -12:00 Climate change</p> <p>10:50-11:10</p> <p>11:55-12:00</p>

<p>2.2.3-1 RECOVERY OF NUTRIENT AND CHEMICALS — GROUP 1</p> <p>Chairs: Norbert Jardin, <i>Germany</i> and Jungbin Kim, <i>Korea</i></p> <p>Hydrothermal liquefaction as a technology for carbon and nutrient recovery from sewage sludge, Patrick Biller, <i>Aarhus University, Denmark</i></p> <p>Evolution of alternative fertilizers: from resource recovery in WWTPs to biorefineries (WRRFs) producing smart biofertilizers, Álvaro Pillado, <i>Cetaqua, Spain</i></p> <p>Implications of fundamental aspects of purple phototrophic bacteria for process upscaling, Gabriel Capson-Tojo, <i>INRAE, France</i></p> <p>Ash2®Phos: closing the phosphorus cycle: value added recycling from incinerated sewage sludge, Yariv Cohen, <i>EasyMining Services Sweden AB, Sweden</i></p> <p style="text-align: center;">--- POSTERS ---</p> <p>Acetate and ammonia recovery and enrichment from wastewater intended for single cell protein (SCP) production by electrodialysis-forward osmosis (ED-FO), Danfei Zeng, <i>Technical University of Denmark, Denmark</i></p> <p>Valorisation of brines for on-site production of disinfectants, Ignacio Casals, <i>CETAQUA, Spain</i></p>	<p>Room B3 e Technical</p>	<p>Wednesday 10:30 -12:00 Nutrient recovery</p>
<p>1.16 COVID-19 PANDEMIC SCIENTIFIC RESPONSES AT UTILITY LEVEL</p> <p>Chairs: Pawel Chudzinski, <i>Poland</i> and Annelie Hedström, <i>Sweden</i></p> <p>Quantification of SARS-CoV-2 in wastewater as an epidemiological tool in early stages for public health surveillance, Ane López Saiz, <i>Aigües de Barcelona, Spain</i></p> <p>The need for wastewater quality monitoring as part of wastewater-based epidemiology best practice, Andrew Engeli, <i>Kando, Israel</i></p> <p>Wastewater-based virus surveillance as a pandemic preparedness tool — a WastPan subproject, Sami Oikarinen, <i>Tampere University, Finland</i></p> <p>Detection of SARS-CoV-2 in wastewater: normalization for dilution and fecal load — an applied perspective, Simone S. Møller, <i>Eurofins Environment Testing, Denmark</i></p> <p style="text-align: center;">--- POSTERS ---</p> <p style="border: 1px solid red; padding: 2px;">A cyber-physical all-hazard risk management approach: the case of the WWTP of Copenhagen, Camillo Bosco, <i>SINTEF, Norway</i></p>	<p>Room B3 a Technical</p>	<p>Wednesday 10:30 -12:00 Pandemic responses</p> <p style="border: 1px solid red; padding: 2px; text-align: center;">11:50-11:55</p>
<p>UTILITY LEADERS FORUM IV — LIVING IN THE DIGITAL WORLD</p> <p>Chair: Shane Morgan, <i>COO Urban Utilities, Brisbane, Australia</i></p> <p>Igniting talks:</p> <p>Jason Tucker, <i>Director of Strategic Delivery and Commercial Assurance Anglian Water, UK</i>, Maree Lang, <i>MD, Greater Western Water, Australia</i>, Riksta Zwart, <i>MD, Waterbedrijf Groningen, NL</i>, Kishia Powell, <i>COO, DC Water, US</i></p> <p>Roundtables and panel discussion facilitator: Adam Lovell, <i>CEO Water Services Association of Australia</i></p>	<p>Room A2 Forum</p>	<p>Wednesday 10:30 -12:00 Utility leaders</p>

<p>REGULATORS FORUM I — "EXCEPT IN CASES OF FORCE MAJEURE": THE IMPACT OF ENVIRONMENTAL AND SOCIAL DISRUPTIONS ON ECONOMIC REGULATION. WHO PAYS FOR THE INCREMENTAL RISK?</p> <p>Chair: Patrick Lester N. Ty, <i>Philippines</i></p> <p>The 7th International Water Regulators Forum offers a platform for water sector regulators from all over the world to exchange experiences, transfer skills and build new partnerships. It gathers high-level representatives of regulatory authorities and officials of agencies with regulatory and supervisory functions over the provision of water, sanitation, and drainage services, as well as their peers from public health and environmental regulators. The discussions will focus on how regulatory functions are being supplied in times of increasing natural, social, and economic uncertainty. During the Forum, discussions are structured around highly interactive sessions that combine short inspirational presentations and roundtable discussions led by the speakers.</p>	<p>Room A3 Forum</p>	<p>Wednesday 10:30 -12:00 Force majeure</p>
<p>AFRICA BUSINESS FORUM — ACCELERATING ACHIEVEMENTS TOWARD SDG6 IN AFRICA: KEY STAKEHOLDERS, METHODS AND FOCUSES</p> <p>Chairs: Mugisha Silver, <i>Uganda</i> and Usher Sylvain, <i>Cote d'Ivoire</i></p> <p>The WHO/UNICEF joint report released in March 2022 found that achieving SDG6 targets in Africa will require a 12x increase in the current rate of progress on safely managed drinking water, a 20x increase in safely managed sanitation and a 42x increase in basic hygiene services. Indeed, in those 20 years, 411 million lacked basic water services, while 779 million lacked basic sanitation services and 839 million still lack basic hygiene services.</p> <p>In Africa, this could be explained by factors such as: (i) lack of skills, (ii) overlapping responsibilities in governance; as well as the Covid-19 pandemic. Hence, Africa is not on track to achieve SDG6 by 2030.</p> <p>Some potential solutions include: (i) sharing best practises in the sector through Peer-to-Peer Learning Partnership; (ii) emerging new actors and new collaboration approaches; (iii) improving governance; and (iv) capacity building.</p> <p>Presenters: Dr Rachid MBaziira, <i>AMCOW, Nigeria: Governance and Institutions</i>; Dr Eng. Simeon Kenfack, <i>AfWASA, Côte d'Ivoire: Approaches and Methods</i>; Yvonne Magawa, <i>ESAWAS, Zambia: Framework and Regulations</i></p> <p>Panellists: from NWSC, Uganda, SODECI and ONEP, Cote d'Ivoire, and the presenters</p>	<p>Room C0 Africa Day</p>	<p>Wednesday 10:30 -12:00 Africa</p>
<p>INNOVATORS PLATFORM I</p> <p>The Water Innovation Accelerator is the latest event to be held as part of the Innovators Platform initiative.</p> <p>The Innovators Platform is a collaborative effort to inspire innovation around water. The Innovators Platform frames innovation in a wide context, looking beyond technologies. It anticipates the broad benefits to society can be realised with innovation 'through' water. International participants will, over three sessions, explore opportunities arising from water's potential to be a vehicle for transformation through the adoption of a circular economy water journey for climate change mitigation and adaptation.</p> <p>The Water Innovation Accelerator event is facilitated by Water Valley Denmark.</p>	<p>Room C1 Innovators</p>	<p>Wednesday 10:30 -12:00 Innovators</p>

<p>1.4 SKILLS FOR A DIGITAL WATER FUTURE</p> <p>Chairs: Emma Weisbord, <i>Canada</i> and Lloyd Fisher-Jeffes, <i>South Africa</i></p> <p>In this session, we will introduce participants to the various flavours of skills and expertise needed for the future of digital water. We will provide a taste of two of these: machine learning concepts and agile ways of working.</p> <p>Speakers: Emma Weisbord, <i>IWA Emerging Water Leaders, SWAN Rising Smart Water Professionals (CA)</i>, Lloyd Fisher-Jeffes, <i>City of Cape Town (ZA)</i>, Irina Pulyakhina, <i>Xccelerated, (RU)</i></p>	<p>Room C2 Workshop</p>	<p>Wednesday 10:30 -12:00 ML and agile</p>
<p>2.1.3B ACTIVATED SLUDGE PROCESSES: THE NITROGEN CYCLE</p> <p>Chairs: Anna Katrine Vangsgaard, <i>Denmark</i> and Andrea Carranza Muñoz, <i>Colombia</i></p> <p>Novel ammonia-oxidizing bacteria (AOB) to enhance wastewater and sludge management, Zhiyao Wang, <i>The University of Queensland, Australia</i></p> <p>Exploring the microbial influence on seasonal nitrous oxide emission in a full-scale wastewater treatment plant using genome-centred metagenomics, Miriam Peces Gomez, <i>Aalborg University, Denmark</i></p> <p>Effect of the aeration strategy on the competition between comammox-nitrospira, canonical nitrifiers and anammox bacteria in a deammonification system, Dominika Sobotka, <i>Gdańsk University of Technology, Poland</i></p> <p>Effect of dissolved oxygen on Simultaneous Nitrification and Denitrification (SND) in a Sequencing Batch Reactor (SBR), Susan James, <i>Indian Institute of Technology Delhi, India</i></p> <p style="text-align: center;">---- POSTERS ----</p> <p>Nitrous oxide emission at Ornum wastewater treatment plant - deep learning assisted process analysis, Gürkan Sin, <i>Technical University of Denmark, Denmark</i></p> <p>Sulfamethoxazole and COD removal by a novel anaerobic aerobic SBR supplemented with magnetite, Yutaka Sakakibara, <i>Waseda University, Japan</i></p>	<p>Room C3 Technical</p>	<p>Wednesday 10:30 -12:00 Nitrogen cycle</p>
<p>3.6 EMERGING CONTAMINANTS (PFAS, PESTICIDES AND OTHERS) — I</p> <p>Chairs: Vânia Serrão Sousa, <i>Portugal</i> and Jiaying Li, <i>Australia</i></p> <p>Challenges with emerging contaminants in groundwater and possible removal options, Mathilde Hedegaard, <i>Hofor A/S, Denmark</i></p> <p>An answer to DMS removal from groundwater in drinking water applications — a collaboration-based solution, Inês Breda, <i>YWPDK, Denmark</i></p> <p>Per- and polyfluoroalkyl substance (PFAS) removal using nanofiltration (NF) systems: influence of steady state and operating conditions on performance, Gilda Carvalho, <i>Australian Centre for Water and Environmental Biotechnology (ACWEB) The University of Queensland, Australia</i></p> <p>PFAS removal from drinking water using nanofiltration with foam fractionation treatment of membrane concentrate, Philip McCleaf, <i>Uppsala Vatten och Avfall AB, Sweden</i></p> <p style="text-align: center;">---- POSTERS ----</p> <p>1,4-dioxane decomposition with VUV and its computational prediction taking into account effects of inorganic ions, Taku Matsushita, <i>Hokkaido University, Japan</i></p> <p>Removal of pesticide metabolites, e.g. DMS (N,N-dimethylsulfamide) from drinking water by H₂O₂-UV oxidation, Manuela Schliemann-Haug, <i>NIRAS, Denmark</i></p>	<p>Room B5 b Technical</p>	<p>Wednesday 10:30 -12:00 PFAS etc.</p>

<p>5.5 WASH AND COMMUNITY-SCALE WATER MANAGEMENT</p> <p>Chairs: Kenneth Johnson, Canada and Albert Acheampong, Ghana</p> <p>Technology transfer barriers of frugal water treatment technologies: a case study on solar drinking water disinfection, Anni Juvakoski, Aalto, Finland</p> <p>Abandonment factors in villages triggered by the implementation of the Community Led Total Sanitation (CLTS) approach in Burkina Faso, Hemez Ange Aurélien Kouassi, International Institute for Water and Environmental Engineering (2iE), Burkina Faso</p> <p>Justice and sanitation wellbeing: a case of slippage in sanitation in Two Gram Panchayats, Shrivasti, UP, India, Kopal Khare, Birla Institute of Technology and Science, Pilani-Hyderabad Campus, India</p> <p>Water consumption patterns in rural households in Ghana, Anise Sacranie, Grundfos Holding A/S, Denmark</p> <p style="text-align: center;">--- POSTERS ---</p> <p>Improving decentralized sanitation solutions in Ethiopia through market-based interventions, Lars Osterwalder, IRC Wash, Ethiopia</p> <p>Community empowerment for the successful implementation of alternative technology applied to access to safe drinking water in Brazil: a comparative study, Yannick Duchesne, University of Brasilia, Brazil</p>	<p>Room B4 b Technical</p>	<p>Wednesday 10:30 -12:00 Communities</p>
<p>5.9 GLOBAL MEGATRENDS AND WORKFORCE OF TOMORROW</p> <p>Chairs: Nerea Uri Carreño, Denmark and Ashton Mpofu, South Africa</p> <p>The Young Water Professional organisations of Denmark and South Africa have joined forces to highlight the importance of adapting to the challenges of tomorrow.</p> <p>In a world café setting, young and senior water professionals will discuss future challenges and how we should adapt to the future workforce requirements.</p> <p>Global megatrends will be the focus of the discussions.</p> <p>Speakers: Nerea Uri Carreño, VCS Denmark (DK) & Ashton Mpofu, YWP-ZA GreenCape (ZA), Anyá Eilers, Inês Breda, Sihorko-Eurowater A/S (DK), Nontando Vungwana, Dorottya Wágner-Zafirov, DTU Chemical Engineering (DK), Lee-Ann Modley, University of Johannesburg (ZA), Sibusiso Mhlongo, Rand Water (ZA) & Giulia Dottorini, Aalborg University (DK)</p>	<p>Room B4 c Workshop</p>	<p>Wednesday 10:30 -12:00 YWPs and megatrends</p>
<p>1.1 NON-REVENUE WATER — CASE STUDIES</p> <p>Chairs: Pradip Kalbar, India and Jacob Amengor, Ghana</p> <p>Water loss estimation and associated financial cost in water distribution networks: large scale application to the city of Patras in western Greece, Athanasios Serafeim, University of Patras, Greece</p> <p>From 54% to 15% of NRW — strategies and tools of an excellence program of Porto to increase efficiency & sustainability, Flávio Oliveira, Águas e Energia do Porto, Portugal</p> <p>Non-revenue water reduction with performance based contract — AdRA's case study, Marco Costa, AdRA-Águas da Região de Aveiro, SA, Portugal</p> <p>Application of leak detection techniques and the DMA approach to NRW management — a case study of Lilongwe City's water supply system, Kenneth Kuntambila, Lilongwe Water Board, Malawi</p> <p style="text-align: center;">--- POSTERS ---</p> <p>Adapting different measures for water loss reduction — a case study from Trondheim, Pranab Raj Dhakal, Trondheim kommune, Norway</p>	<p>Room B4 d Technical</p>	<p>Wednesday 10:30 -12:00 Non-revenue water</p>

4.10 | SYSTEMIC MANAGEMENT FOR WATER WISE CITIES — SCANDINAVIAN EXPERIENCES

Room B3 c
Workshop

Chairs: [Henrik Aspegren](#), *Sweden*

Water issues need to be better integrated into urban strategic management and planning. The purpose of this session is to highlight these issues by exploring progress and challenges in major cities in three neighbouring countries.

Speakers: **Henrik Aspegren**, *Sweden Water Research (SE)*, **Bent Christen Braskerud**, *City of Oslo Water and Sewerage Works (NO)*, **Lena Blom**, *City of Gothenburg (SE)*, **Lykke Leonardsen**, *City of Copenhagen (DK)* & **Rasmus Fredriksson**, *Environmental Dept, City of Malmö (SE)*

Wednesday
10:30 -12:00
Water wise in
Scandinavia