Session 9 15:45-17:15 Wednesday

Note that all times are approximate!

2.1.1-2 | OPTIMISATION AND CONTROL OF NUTRIENT REMOVAL Room C3 **Technical** **Chairs: Laurence Strubbe**, *Belgium* and **Thiago Bressani Ribeiro**, *Brazil* Cold climate biological nutrient removal with the hias process, Torgeir Saltnes, *Hias How2O, Norway* Predictive control of wastewater treatment aeration: experiences from full-scale tests on Nørre Snede WRRF, Peter Stentoft, *Krüger A|S, Veolia Water Technologies, Denmark* Sensor based dynamic control of aerobic granular sludge treating industrial wastewater, Jan Dries, *University of Antwerp, Belgium* Double-line anammox-mediated nitrogen removal system provide new insight into co-treatment of sidestream and mainstream, Xiangchen Li, *Beijing University of Technology, China* ---- POSTERS ---- Model-based verification of an aeration upgrade for the Tilburg WRRF (NL), Lorenzo Benedetti, *Waterways d.o.o, Croatia* New solution combines tertiary and stormwater treatment to minimize the phosphorus discharge from Skanderborg WWTP, Thomas Bugge, *SUEZ, Denmark*		Wednesday 15:45-17:15 Optimisation 16:05-16:25 16:25-16:45 17:05-17:10
2.2.2-2 | ENERGY EFFICIENCY AND RECOVERY — GROUP 2 Room B3 d **Technical** **Chairs: Norbert Jardin**, *Germany* and **Chris Hertle**, *Australia* SENTRY: Real time microbial performance monitoring for energy optimisation in wastewater treatment, Natalie Lamb, *QCL (QuadraChem Laboratories), United Kingdom* Investigating the feasibility of applying an integrated FO - UasB process for energy recovery from municipal wastewater, Stavroula Kappa, *National Technical University of Athens, Greece* Optimization of reactor start-up strategy for selecting hydrogen-producing microorganisms in cheese whey dark fermentation, Isabela Augusto, *São Carlos School of Engineering, São Paulo University (EESC|USP), Brazil* Commercial application of hydrothermal liquefaction for sewage sludge management with resource recovery, Ib Johannsen, *Circlia Nordic Aps, Denmark* ---- POSTERS ---- Thermophilic anaerobic digestion of whey in sequencing batch reactors: process optimization and comparison between single and two-stage systems, Giovanna Lovato, *São Carlos School of Engineering, São Paulo University (EESC|USP), Brazil*		Wednesday 15:45-17:15 Energy efficiency 15:45-16:05 16:25-16:45
4.4.11 | NATURE-BASED SOLUTIONS, SPONGE CITIES AND BLUE-GREEN INFRASTRUCTURE Room B3 b **Technical** **Chairs: Pedro Carvalho**, *Denmark* and **Deyvid Wavel Barreto Rosa**, *Brazil* Prioritising nature-based solutions in urban catchments, Jarrod Luxton, *Ramboll, Finland* Missing link — when the waters meet in the city suggesting catchment neighbourhood as a method for engaging diverse stakeholders in holistic waterwise climate adaptation and urban development, Katrina Wiberg, *Aarhus School of Architecture, Denmark* Using green and blue infrastructure to urban flood mitigation: simulating scenarios for GBI technologies and land policy, Nilo Nascimento, *Federal University of Minas Gerais, Brazil* The Green Valley Park in Tongzhou, making a sponge city more liveable, Jes Clauson-Kaas, *HOFOR, Copenhagen, Denmark* ---- POSTERS ---- Realising local green infrastructure opportunities: stormwater harvesting in public parks and open spaces in Delhi, Dhruv Pasricha, *Centre for Science and Environment (CSE), India* Modernisation of recreational park Enghaveparken helps mitigate flooding in Copenhagen, Annie Fuursted, *COWI A|S, Denmark*		Wednesday 15:45-17:15 Sponge cities and blue-green infra. 16:25-16:45

1.15 | MANAGEMENT OF EXTREME EVENTS

Room B3 a
Technical

Chairs: **Bruno Nguyen**, *France* and **Varsha Sivagurunathan**, *Australia*

Consideration of individual decision-making under uncertainty such as heavy rainfall when creating effective action strategies, Mirjam Lawens, *Mainz University of Applied Sciences, Germany*

Four measures to rebuild an ecologically liveable city, and the role of the integrated PGS in river environment improvement, Thomas Bille Bohn, *Grundfos Pumps (Shanghai) Co., Ltd, Denmark* and Mick Eriksen, *Grundfos Pumps (Shanghai) Co., Ltd, Denmark*

Extreme events — key lessons from recent events & recovery challenges, Alexandra Cristóvão, *EPAL, Portugal*

Integrated modelling of the clogging processes of plastic grid permeable pavement, Ziling Zang, *Cranfield University, United Kingdom*

---- POSTERS ----

Risk analysis of water-sanitation-public health nexus facing flood events in a Brazilian megacity, Maria Tereza Pepe Razzolini, *University of Sao Paulo, Brazil*

Renewal of the Nakagawa-Niijuku water pipe bridge with consideration for risks of storm and flood, Yoriko Doi, *Bureau of Waterworks, Tokyo Metropolitan Government, Japan*

Wednesday
15:45-17:15
Extreme events

16:45-17:05

6.12 | CIRCULAR ECONOMY 2

Room C2
Technical

Chairs: **Amit Chanan**, *Fiji* and **Chataigne Djuma**, *Congo DR*

Assessing circularity of multi-sectoral systems under the water-energy-food-ecosystems (WEFE) nexus, Elisa Nika, *Brunel University London, United Kingdom*

Holistic circularity assessment of a biorefinery process utilising an action-oriented approach, David Renfrew, *Brunel University London, United Kingdom*

An integrated approach to sustainable industrial water use, Eric Rosenblum, *Water Resource Consultant, United States*

Water circularity measurement in urban context, Pradip Kalbar, *Indian Institute of Technology Bombay, India*

---- POSTERS ----

Water reuse in northern Europe — a German perspective? Juliane Bräcker, *University of Duisburg-Essen, Germany*

Systematic review of low-cost waste material to eliminate pollutants in wastewater: technology and life cycle analysis perspective, Małgorzata Szlachta, *Geological Survey of Finland, Finland*

Wednesday
15:45-17:15
Circular economy

16:25-16:45

6.10 | HOLISTIC ASSESSMENTS AND APPROACHES

Room B3 f
Technical

Chairs: **Esther Shaylor**, *Denmark* and **Danish D R**, *India*

Embedding SDGs into water research agendas for contextualised understanding and impactful innovation, Doris van Halem, *Delft University of Technology, Netherlands*

Assessing impacts on all SDGs of water and sanitation projects and policies by using the Water4allSDGs Methodology, Gérard Payen, *French Water Partnership, France*

Setting SDG 6 in a national context by identifying policy relevant indicators and options for action for Austria, Verena Germann, *University of Natural Resources and Life Sciences, Vienna, Austria*

Private sector approaches to SDG #6; strategy development for social entrepreneurship in established companies, Pia Rask, *Grundfos Ltd, Denmark*

---- POSTERS ----

Using deep learning to combine satellite observations, topographic information and rainfall spatial data for large-scale flood predictions, Roland Loewe, *Technical University of Denmark, Denmark*

The Freshman Project: extraction of brackish groundwater in the coastal dunes of the Netherlands to secure drinking water supply, Gertjan Zwolsman, *Dunea, Netherlands*

Wednesday
15:45-17:15
Holistic approaches

17:05-17:10

1.2 | SUSTAINABLE SMALL WASTEWATER TREATMENT PLANTS: PRESENT, FUTURE, OPPORTUNITIES AND CHALLENGES Room B3 g **Workshop** **Chairs: Zouhayr Arbib**, *Spain* and **Carlos Arias**, *Denmark* Economically and environmentally sustainable wastewater treatment (WWT) for small communities remains a challenge all over the world, especially in countries with significant numbers of small and scattered settlements. Water and resource recovery must be tackled efficiently to prevent water scarcity and avoid high operation and maintenance costs. Conventional WWT implies processes with high costs and energy demand. A change of paradigm at the small scale is essential, where low cost, simple maintenance, and efficiency are the major principles within a decentralised approach. The workshop will create a framework for scientists and practitioners to exchange knowledge about the different alternatives to WWT in small communities. The workshop will support sustainable water management, resource recovery and the mitigation of global climate change. Speakers: **Zouhayr Arbib**, *Aqualia (ES)*, **Carlos Arias**, *Aahrus University (DK)*, **Hans Brix**, **Mirko Hänel**, **Alain Petitjean**, **Laila Mandi**, **Katharine Cross**, *Australian Water Partnership (AU)*		Wednesday 15:45-17:15 Small plants
2.2.3-3 | RECOVERY OF NUTRIENT AND CHEMICALS — GROUP 3 Room B3 e **Technical** **Chairs: Jacek Makinia**, *Poland* and **Ashton Busani**, *South Africa* From urban biowaste to animal feed — production of single cell protein from biogas, Jacob Andersen, *EnviDan, Denmark* Study on ammonia generation from digested sludge by subcritical water treatment, Takahiro Kato, *SHIMIZU Corporation, Japan* Towards a sustainable biorefinery: integrated treatment of the liquid fraction of digestate from the organic fraction of municipal solid waste, Caroline Sielfeld, *Eurecat, Spain* Addressing the identity crisis for water biofilm exopolymers, Thomas Seviour, *Department of Biological and Chemical Engineering, Aarhus University, Denmark* ----POSTERS---- Influence of nitrogen supply on a microalgae-bacteria consortium treating wastewater, Julie Farinacci, *Université de Strasbourg, France* Microalgal-bacterial biofilm-based systems to recover nitrogen and optimize biomass production, Paula Peixoto Assemany, *Federal University of Lavras, Brazil*		Wednesday 15:45-17:15 Nutrient recovery
LATIN AMERICA & THE CARIBBEAN — LATIN AMERICA DAY AT THE 2022 IWA WORLD WATER CONGRESS Room A2 **LAC** The workshop will bring together key representatives from the Latin American water sector (led by the Inter-American Association of Sanitary and Environmental Engineering – AIDIS) to discuss how IWA can add value to Latin American water professionals (from young water professionals to seniors), and how they can engage in and contribute to IWA communities and programmes. Speakers: **José Luis Inglese** *(AR)*, **Daniel Nolasco** *(AR)*, **Pabel Cervantes** *(MX)*, **Claudia Pehn** *(BR / EC)*, **Daniela Bemfica** *(BR / UK)*		Wednesday 15:45-17:15 Latin America

REGULATORS FORUM III — COPING WITH CLIMATE CHANGE: CLIMATE SMART REGULATION TO BOOST UTILITIES UPTAKE OF CLIMATE ACTION AND CIRCULARITY Room A3 **Forum** **Chair: Itai Sagi**, *Israel* 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.		Wednesday 15:45-17:15 Climate change
NFSSM WORKSHOP: COLLABORATIVE APPROACH TO RESILIENT AND INCLUSIVE CITY SANITATION: BEST PRACTICES FOR A MULTI-STAKEHOLDER ECOSYSTEM Room C0 **NFSSM** Speakers: **Roshan Shrestha**, **Shri. G Mathi Vathanan**, **Tanvir Ahmed**, *BUET (BG)*, **Mahreen Matto**, *National Institute of Urban Affairs (IN)*, **Depinder Kapoor**, **Vedala Srinivas**, Chary, *Administrative Staff College of India (IN)*, **Anju Dwivedi**, *Centre for Policy Research (IN)*, **Drishti Bassi**, **Hasin Jahan**, *WaterAid Bangladesh (BG)*, **Ananya Ghosh**, *Athena Infonomics (IN)*		Wednesday 15:45-17:15 City sanitation
INNOVATORS PLATFORM III Room C1 **Innovators** Continuing from Session 2. 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.		Wednesday 15:45-17:15 Innovators

2.3.1 | MEMBRANE APPLICATIONS IN WASTEWATER MANAGEMENT Room B5 a **Technical** **Chairs: Miklos Patziger**, *Hungary* and **Irina Pulyakhina**, *Netherlands* Development of an integrated urine collection and treatment process for fertilizer and water production, Caitlin Courtney, *University of Cape Town, South Africa* Pre-coagulation of UASB effluent for ultrafiltration membrane fouling mitigation: a comparative study of aluminum and tannin-based coagulants, Eduardo Lucas Subtil, *Federal University of ABC, Brazil* Pulse dosing of submicron-sized powdered activated carbon avoids irreversible fouling in submerged ceramic membranes while not in monolithic ones, Zhao Yuanjun, *Hokkaido University, Japan* Low-pressure nanofiltration coupled with ultrafiltration: an efficient solution for drinking water treatment, Philippe Sauvignet, *Veolia, France* ---- POSTERS ---- Removal of pharmaceuticals and wastewater pollutants with hybrid ceramic membranes, Henning Oeltze, *Hochschule Magdeburg-Stendal, Germany*		Wednesday 15:45-17:15 Membrane applications
3.9 | EMERGING PATHOGENS AND THEIR MANAGEMENT IN DRINKING WATER AND WATER REUSE Room B5 b **Technical** **Chairs: Palsiri Srirungruang**, *Thailand* and **Bhairavi Sawant**, *Ireland* Metagenomic analysis of RNA Viruses in wastewater for comprehensive detection of viral infectious diseases, Suntae Lee, *National Institute of Technology, Hachinohe College, Japan* Comparison of in-building disinfectants for the control of opportunistic pathogens in drinking water systems, Abraham Cullom, *Virginia Tech, United States* Triclosan promotes conjugative transfer of antibiotic resistance genes to opportunistic pathogens in activated sludge, Ji Lu, *University of Queensland-ACWEB, Australia* Early warning system for enhancing microbiological safety in drinking water treatment plants, Ester Aguilera, *Universitat de Girona, Spain* ---- POSTERS ---- Possible performance indicators for virus removal by membrane processes at a potable reuse facility, Midori Yasui, *The University of Tokyo, Japan* Microbiological risk management by continuous sampling and regular analysis of indicator organisms in large water volumes, Ann-Katrin Pedersen, *Hofor, Denmark*		Wednesday 15:45-17:15 Emerging pathogens
3.2 | GROUNDWATER AS A SUSTAINABLE SUPPLY RESOURCE Room B4 a **Workshop** **Chairs: Jens Dyrberg Niels**, *Denmark* and **Peter Henriksen**, *Denmark* We ask the question Why Groundwater? Fly the groundwater helicopter and get perspective on why and how groundwater-based water supply can contribute to the Sustainable Development Goals by providing a sustainable and affordable domestic water supply. We offer the participants an introduction to the key steps around groundwater detection, challenges, treatment, protection, and management. You will meet leading international experts, who will inspire and showcase examples of technologies, threats and solutions that make groundwater a favourable source for water supply. We land safely on the ground and open up for a sparkling panel discussion, involving additional leading experts and challenging questions from the audience. Speakers: **Jens Dyrberg Niels**, *Envidan(DK)*, **Peter Henriksen**, *Aarhus University (DK)*, **Mette Ryom**, *Ramboll (DK)*, **Torben Bach**, **Doris van Halem**, *TU Delft (NL)*, **Max Halkjær**, *Ramboll (DK)* & **Charles Niesen**, *TREFOR (DK)*		Wednesday 15:45-17:15 Groundwater

5.4 | WATER ORIENTATED LIVING LABS AS A MEAN TO ENGAGE STAKEHOLDERS IN THE DEVELOPMENT AND DEMONSTRATION OF WATER TECHNOLOGIES Room B4 b **Workshop** **Chairs: Jens Prisum**, *Denmark* The workshop presents cases and discusses WOLL's as a means to engage stakeholders to co-develop water technologies and speed up the demonstration of innovation. Speakers: **Jens Prisum**, *DNNK, The Danish Climate Adaption Network (DK)*, **Durk Krol**, *Water Europe (BE)*, **Beatriz Medina**, *REWAISE (ES)*, **Ruth McNeil**, *Scottish Water (UK)* & **Henrik Aspegren**, *Sweden Water Research (SE)*		Wednesday 15:45-17:15 Water Oriented Living Labs (WOLLs)
1.22 | FOSTERING INNOVATION AND PARTNERSHIPS AT UTILITY LEVEL Room B4 c **Technical** **Chairs: Stanley Liphadzi**, *South Africa* and **Yang Villa**, *Philippines* Fostering partnerships — a collaboration between the municipality, the utility and local stakeholders on privately owned areas, Sara Kirstine Bastholm, *Hofor, Copenhagen, Denmark* Effect-based monitoring in global water safety planning, Stefab Kools, *KWR Water Research Institute, Netherlands* Successful field deployment of an arsenic treatment technology in a resource scarce region, Dana Hernandez, *UC Berkeley, United States* International exchange of knowledge between wastewater treatment plants in Buenos Aires and Copenhagen — partnerships for success, Nahuel Arce, *AySA S.A, Argentina* ---- POSTERS ---- Safe, smart systems; regulators and industry working together to unlock the first steps to a fully automated future, Fionn Boyle, *Anglian Water, United Kingdom* Great collaboration ensures high quality waterworks, Anders Refsgaard, *COWI A|S, Denmark*		Wednesday 15:45-17:15 Innovation in utilities
1.1 | NON-REVENUE WATER MANAGEMENT IN LOW AND MIDDLE INCOME COUNTRIES — B Room B4 d **Workshop** **Chairs: Roland Liemberger**, *Austria* This workshop will provide participants with an understanding of assessing Non-Revenue Water to reducing water losses in intermittent supply situations. Speakers: **Roland Liemberger**, *Water Loss Specialist Group (AT)* & **Stuart Hamilton**, *Water Loss Specialist Group Chair (UK)*		Wednesday 15:45-17:15 Non-revenue water

4.1 | ASSESSING PROJECT IMPACTS ON ALL SDGS WITH THE WATER4ALLSDGS APP Room B3 c **Training** **Chairs: Gerard Payen**, *France* and **Corinne Trommsdorf**, *France* Come with your laptop to learn how to use the digital app "Water4allSDGs"! Despite their concrete characteristics, SDGs are still very little used by water and sanitation professionals, who often lack the time to discover and analyse all the details of the 169 SDG targets. The easy-to-use digital app "Water4allSDGs" makes up for the complexity by using basic concepts well-known in the sector, thus creating a breakthrough in the operational use of the SDGs. In the first part of the session, participants will be updated on the 20 global targets related to water and sanitation and their precise operational content. In a second part, they will learn how to use the Water4allSDGs web application on their laptops. This practical training does not require any previous knowledge of the SDGs. Case studies will illustrate how the SDG targets are precise and concrete. At the end of the session, participants will understand the operational value of the SDGs to support planning and evaluation of water related projects. Speakers: **Gerard Payen**, *French Water Partnership (FR)* & **Corinne Trommsdorf**, *Water-cities (FR)*		Wednesday 15:45-17:15 Water4allSDGs