

NORDIWA

NORDIWA wastewater conference online

28 September – 1 October 2021



Leading Nordic event for water professionals

FIWA, DANVA, Norsk Vann, Samorka and Svenskt Vatten invite all water professionals with an interest in wastewater, sewerage and climate change mitigation and adaptation to join us at NORDIWA 2021.

We and 200 presenters engaged in five parallel tracks, welcome experts and practitioners, managers and operators, city planners, researchers, engineers, advisors and others with an interest in wastewater management, urban drainage and climate adaptation in the Nordic region.

All presentations will be recorded and also available during October and November for the participants at NORDIWA 2021.

www.nordiwa.org #nordiwa2021





Welcome to NORDIWA 2021

We look forward to welcoming all of you to the online format of the Nordic Wastewater Conference 2021. The interest among practitioners, experts and researchers to present and share their latest results, knowledge and experiences, has this pandemic year just been overwhelming. Among all the abstracts we accepted 200 exciting presentations and five workshops. The eagerness to share with others has never been so obvious.

The Nordic Wastewater Conference is now being arranged for the seventeenth time. While longing to meet physically again - we hope to maintain NORDIWA 2021 as a venue for exchanging practical knowledge and the latest information, where participants have the opportunity to network and learn from each other's experiences and practices.

Good news for those who do not have enough split vision to watch five parallel tracks simultaneously - all presentations will be recorded and available to also watch during October and November for participants at NORDIWA 2021.

On behalf of the Programme Committee
Anna Norström, Magnus Bäckström and Anders Finnson
www.svensktvatten.se/om-oss/kontakt/

Svenskt Vatten



Anna Norström



Magnus Bäckström



Anders Finnson



Keynote speakers



Opening of NORDIWA 2021.
Pär Dalhielm, CEO Svenskt Vatten



Future of Water, a climate perspective.
Kala Vairavamoorthy, Executive Director
International Water Association



The European Green Deal, the water policy and how it will shape the water industry for the coming decades.

Veronica Manfredi, Director, Quality of Life, Directorate General for Environment, European Commission



Wastewater-based surveillance of SARS-CoV-2 supports national COVID-19 pandemic response in Finland

Tarja Pitkänen, Chief Specialist, Department of Health Security, the Finnish Institute for Health and Welfare; and Associate Professor, Department of Food Hygiene and Environmental Health, University of Helsinki



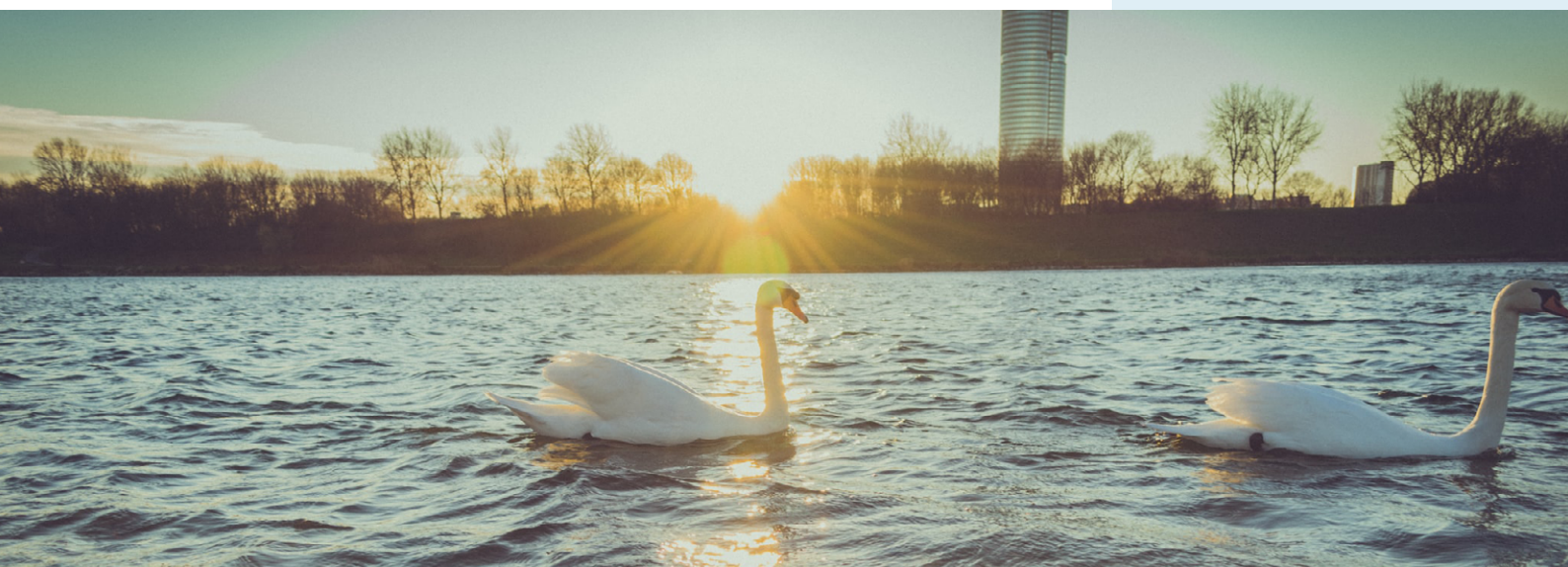
A holistic approach to develop a sustainable concept for a New Sjölund WWTP in a regional system

Göran Johnsson, project manager VA SYD
Maria Jonstrup, R&D manager, EnviDan AB



Conference Elements

- Opening of the conference and plenary session with keynote speakers, who will illustrate challenges and new development in the water sector.
- Conference sessions with full presentations (15 minutes) and speed talks (5 minutes) highlighting key findings of projects and results. Possibilities for a broad digital interactivity between presenters, participants and moderators.
- All presentations will be recorded and being available during October and November for all the participants at NORDIWA 2021.
- Workshops facilitate knowledge sharing and discussion between the presenters and the participants of the conference.
- Every morning starts with 30 minutes summary of the highlights from the previous day.



Workshops

- Power of positivity - the road towards a Nordic carbon and energy positive future
- The "not so clear" crystal ball - the water resource Recovery Facility of the future must be adaptable
- Paradigm shift within stormwater and cloudburst management
- On-site and fast DNA-analyses of microbial communities for surveillance and control
- From online NORDIWA 2021 to IWA Copenhagen 2022

Young Water Professionals

A special session will be organised for Young Water Professionals in the Nordic region.

Digital technical tour

Gothenburg is celebrating 400 years as a city this year and since 1621 the city has developed into a modern industrialized city with a population of 600 000. In the middle of the 1800's the sewer systems began to be built to transport wastewater from the city center and into the Göta estuary that flows through the city towards the sea.

In 1972 The Rya WWTP was commissioned which included a 130 km tunnel system. Since then the plant has grown and today it serves a population equivalent of 800 000 from eight municipalities. Looking towards the future the population within the region is increasing and more stringent

discharge consents are also expected. To handle our future challenges Gryaab has started an expansion project called New Rya with the objective that new treatment processes will be ready for action in 2036.

Social program

- Welcoming digital reception on Tuesday, 28 September.
- Digital surprises

Digital Exhibition

Showcase of companies and solutions. To enable networking a digital area will be created for exhibitors.

Key dates

- 1 June, registration opens for the conference.
- 21 September, last date for registration.
- 28 September - 1 October, Conference take place.

Programme Committee NORDIWA 2021

Lise Hughes, Aarhus Vand A/S, (IWA) • Miriam Feilberg, DANVA • Marina Graan, Helsinki Region Environmental Services Authority, (IWA) • Mika Rontu, FIWA • Paula Lindell, FIWA • Fjóla Jóhannesdóttir, Veitur (IWA) • Magnar Sekse, Bergen (IWA) • Arne Haarr, Norsk Vann • Anna Norström, Svenskt Vatten (IWA) • Magnus Bäckström, Svenskt Vatten • Anders Finnson, Svenskt Vatten



Registration and participant fees

Registration

www.nordiwa.org

Category	Fee
Delegates	9 375 SEK (7 500 excl. VAT)
Speaker (Full presenter/Speak talk)	5 625 SEK (4 500 excl. VAT)
Moderator/Workshop	5 625 SEK (4 500 excl. VAT)
Exhibitor package incl 1 person	10 000 SEK (8 000 excl. VAT)
Extra exhibitor (not included in the package)	9 375 SEK (7 500 excl. VAT)
Student	4 994 SEK (3 995 excl. VAT)

Registration includes

- Admission to the digital program with presentations, exhibition and abstracts, available for two months after the conference has taken place.

Exhibitor package includes

- Infopage with text, image and/or film
- Contact information
- Links to the company's social media
- Live chat with the participants
- Live meeting in the exhibitor booth
- Notice of interest from the participants
- 1 registered company representative
- Access to the scientific sessions for 1 registered company representative

Themes at NORDIWA 2021

Main Topics

NORDIWA presents a diverse conference with five main topics

-  1. Climate challenges, mitigation and adaptation
-  2. Sewer systems, management, models and integrated approaches
-  3. Sustainable wastewater treatment and challenge of micropollutants
-  4. Circular economy, resources and reuse
-  5. Sustainable management and communication

For more information and updates
please visit us at nordiwa.org

09:00	<p>Plenary 09:00-10:30 Chair: Anders Finnson</p> <p>Opening of NORDIWA 2021. Pär Dalhielm, CEO Svenskt Vatten</p> <p>Future of Water, a climate perspective. Kala Vairavamoorthy, Executive Director International Water Association</p> <p>The European Green Deal, the water policy and how it will shape the water industry for the coming decades. Veronica Manfredi, Director, Director, Quality of Life, Directorate General for Environment, European Commission</p> <p>Wastewater-based surveillance of SARS-CoV-2 supports national COVID-19 pandemic response in Finland Tarja Pitkänen, Chief Specialist, Department of Health Security, the Finnish Institute for Health and Welfare; and Associate Professor, Department of Food Hygiene and Environmental Health, University of Helsinki</p> <p>A holistic approach to develop a sustainable concept for a New Sjölanda WWTP in a regional system Göran Johnsson, project manager VA SYD Maria Jonstrup, R&D manager, EnviDan AB</p>				
11:00	<p>Upstream diffuse sources 11:00-12:30 Chair: Per Henrik Nielsen</p> <p>New hazardous substances in Finnish wastewater treatment plants Niina Vieno</p> <p>Characteristics of household wastewater in Skarpnäck 2014-2019 Anders Ljung</p> <p>Mapping microplastics in urban waters - flows, solutions, and actor responsibility Emma Fältström</p> <p>Monitoring micropollutants in wet-weather discharges – what can we learn from the past? Lena Mutzner</p> <p>Photodegradation of macroplastics into microplastics – a laboratory study of four plastic debris Lisa Öborn</p>	<p>Communicating risks and opportunities 11:00-12:30 Chair: Fjóra Jóhannesdóttir</p> <p>Ecosystem service analysis - a tool for water planning Towe Holmborn</p> <p>Stormwater management – get citizens on board! Isabel Seifert-Dähnn</p> <p>Digitalization – communicating flood and pollution risks to stakeholders Hanna Rissanen</p> <p>Implementation of Sustainable Drainage Systems - How to change a mindset? Halldora Hreggvidsdottir</p>	<p>Reuse of wastewater 11:00-12:30 Chair: Maj Møller Sørensen</p> <p>Which Water Source Should be Used for Different Water Usages? Esmeralda Frihammar</p> <p>Possibilities of large-scale wastewater reclamation for potable use in Scania, Sweden Olivia Söderman Söderman</p> <p>Removal of pharmaceutical residues from RO-concentrates from water reuse facility on Gotland island Christian Baresel</p> <p>Tertiary treated wastewater effluent as a makeup water for cooling towers: an ecoefficiency study Venkata Krishna Kumar Upadhyayula</p> <p>Utilization of water from rainwater basins at industrial laundry applications Stinne Plesner Skårup</p>	<p>Sewer management to reduce overflow 11:00-12:30 Chair: Peter Underlin</p> <p>Experiences in rising main monitoring in wastewater pumping stations Perttu Saarinen</p> <p>Managing infiltration and inflow to wastewater systems – Key aspects in a risk-based approach Anna Ohlin Saletti</p> <p>Localizing Intruding Rainwater in Separated Sewer Systems Ørjan Heggdal</p> <p>Fractionation of Unwanted Water using Machine Learning and Time Series Analysis Christian Svensson</p> <p>The roles of model-based simulation and direct flow measurements in CSO data-analytics Hannes Björninen</p> <p>Data driven detection of extraneous water using AI for intelligent investment planning Torben Bach</p> <p>Reykjavik- Covid-19 - operational problems due to wet wipes in the sewage system Páll Ragnar Pálsson</p> <p>Development of parametric tools for the evaluation of the physical integrity of sewage networks Axumawit Tesfamariam</p>	<p>Workshop Power of positivity – the road towards a Nordic carbon and energy positive future 11:00-12:30 Chair: Miriam Feilberg</p>
14:00	<p>Asset management tools 14:00-15:30 Chair: Niels Vinderslev Bjerregaard</p> <p>Rehab-IT: An Asset Management Tool for Renewal Planning Mads Uggerby</p> <p>7 years of experience with Asset Management and long-term operation and investment planning Benny Nielsen</p> <p>Asset Management in Swedish Water and Wastewater sector – results from a research project Magnus Montelius</p> <p>From key figures to key performance indicators with spatial data Jukka Heinonen</p> <p>From data to optimized asset management Kia Aksela</p>	<p>Enhanced nutrient removal 14:00-15:30 Chair: Dines Thornberg</p> <p>Full scale study – Sludge capacity test on sand filter for polishing of municipal wastewater Sofia Bramstedt</p> <p>Where did the phosphorus go? Sofia Andersson</p> <p>Densadeg XRC technology to reduce phosphorus discharge from Skanderborg wastewater treatment plant Clara Barret</p> <p>Effect of coagulants agent on sewage water treatment and sludge production: A pilot study Annaliza Cainglet</p> <p>Effect of VFA rich hydrolysates from different substrates in the denitrification process Andrea Carranza Muñoz</p> <p>Design approach for Moving Bed Biofilm Reactor to achieving low effluent nutrient concentrations Stefan Erikstam</p> <p>Preparing wastewater for resource efficient treatment: pre-filtration and carbon source production Elin Ossiansson</p>	<p>Upstream point sources 14:00-15:30 Chair: Ann Mattsson</p> <p>Results from testing program for pharmaceuticals at Egaa WWTP and at the hospital of Aarhus, Denmark Laura Bailón Allegue</p> <p>Treatment of landfill leachate from PFAS: process selection based on pilot-scale tests Andriy Malovanyy</p> <p>Innovative technology concept removes and destructs perfluorinated-acids from water Maria Nymann</p> <p>Tire and road wear particles in roadside snow banks: Quantities and dynamics of release Arya Vijayan</p>	<p>Stormwater pollutants 14:00-15:30 Chair: Asbjørn Haaning Nielsen</p> <p>Removal of particles, heavy metals and detergents from tunnel wash water Hanne Vistnes</p> <p>Occurrence and treatment of microplastics and car tire rubber in stormwater Steen Petersen</p> <p>An overview of continuous stormwater quality monitoring technologies Nikita Razguliaev</p> <p>A large-scale mapping of stormwater runoff from heavily trafficked areas. Case study Gothenburg Helen Galfi</p> <p>Removal of dissolved metals from road runoff – Initial observations and implications for operation Magnus Hallberg</p>	<p>Workshop On-site and fast DNA-analyses of microbial communities for surveillance and control 14:00 - 15.30 Chair: Per Halkær</p>

08:30	Highlights from Day1 08:30-09:00				
09:00	Management for sustainability 09:00-10:30 Chair: Halldóra Hreggviðsdóttir Advanced Hydraulic Representation of Blue Green Infrastructure Jessica Jefferys Survey on Sustainability and the SDGs Niina Vieno Swedish utilities and their contributions to the SDG:s – status and recommendations for the future. Magnus Arnell Learning from a resource-recovery game for collaborative urban sanitation planning Jennifer R. McConville Benefits of water sector integration to energy systems Dominik Franjo Dominković	H2S 09:00-10:30 Chair: Per Henrik Nielsen Cost efficient and sustainable reduction of hydrogen sulphide Maria Jonstrup Novel sensor for hydrogen sulfide monitoring in sewers enables improved odor and corrosion control Søren Porsgaard Sewer Process Modelling as a Tool to Predict and Manage Odour and Corrosion in a Drainage System Esther Vollertsen Biological pre-treatment upstream the WWTP – using the sewers as a process volume Mark De Blois Advanced digital solution to control hydrogen sulfide in sewers Johan Egsgaard Thomsen Evaluating the effectiveness of lime-based filter-media on sewer air hydrogen sulphide Asbjørn Haaning Nielsen	Recycling and recovery of nutrients 09:00-10:30 Chair: Torgeir Saltnes Innovative technology to remove nitrogen and produce climate smart fertilizers Carl-Johan Högberg Comprehensive nutrient recovery at wastewater treatment plant by RAVITA process Sini Reuna Is it safe to use sewage sludge-based fertilizers in agriculture? Katri Senilä Recovering phosphorus from chemical phosphorus removal sludge: A techno-economic comparison Juho Uzurt Kaljunen Ash2®Phos: Closing the phosphorus cycle: Value added recycling from incinerated sewage sludge Yariv Cohen The Road to Full-Scale Biochar Production Per Henrik Nielsen	Strategies for digitalisation 09:00-10:30 Chair: Erik Lindblom Metadata and their role in the digital transformation of Water Resource Recovery Facility operations Oscar Samuelsson Catchment overview for cross-boundary corporation flood risks Peter Rasch Extreme Weather Layer as a tool towards climate resilient cities Ivar Annus VeVa – a Danish water utility association utilising weather radar data for watersector applications Malte Ahm Smart Stormwater systems aiding to retrofit urban areas for new climate conditions Nils Kändler Stormwater data management in the Helsinki Capital Region Maiju Happonen	Workshop Paradigm shift within stormwater and cloudburst management 09:00-10:30 Chair: Marinette Hagman
11:00	An overview of possibilities for resource recycling and recovery 11:00-12:30 Chair: Maj Møller Sørensen Experimental and desktop assessment of wastewater treatment solutions for resource recovery Herman Helness From Urban Biowaste to Animal Feed - Proteins from Biogas Jacob Kragh Andersen Recommendations for improved life cycle assessments of sewage sludge as fertilizer Magdalena Svanström Source-separation sanitation systems for Northern Finland – effects on regional nutrient balance Vuokko Laukka From WWTP to a WRRF with the Hias Process Torgeir Saltnes Assessing the potential for Skåne to close nutrient cycles in the region and beyond. Robin Harder	Anammox and Aerobic Granular Sludge 11:00-12:30 Chair: Sofia Andersson Supervising and observing the implementation of granular sludge technology, S::Select® Ditte Marie Hansen Stable operation of the first AGS application in the Nordic countries Mark de Blois Installation and Start-up of the first MABR Drop In solution in UK Josep Manzano Start-up of partial denitrification-anammox MBBR systems with a partial nitrification-anammox inoculum David J. I. Gustavsson	Dealing with uncertainty 11:00-12:30 Chair: Fjóra Jóhannesdóttir Vital climate change solutions integrated in major Norwegian infrastructure project Jan Scheel Planning Sustainable Infrastructure using BREEAM Communities Sigurdur Sigmarsson Drilling within Reykjavik's city limits – improving understanding of groundwater levels and shallow subsurface permeability Sigrún Tómasdóttir Citizen science can help solve climate-derived groundwater problems Anja Sloth Ziegler Monitoring of water runoff from construction sites and in the stormwater system Anton Jacobson Multi-objective assessment of nature-based climate adaptation considering future uncertainty Ida Linde Hansen Challenges of the coastal urban drainage system under climate change in Trelleborg, Sweden Salar Haghghatafshar	Digital tools 11:00-12:30 Chair: Hannes Björninen Protection and warning against faecal bacteria and toxic algae in bathing lakes Rikke Markfoged IoT as an enabler for Distributed Online Monitoring of the Urban Water Cycle Malte Ahm Model predictive control for the sewer system in Kolding, Denmark Nikolaj Mølby The Living Digital Twin of the urban drainage system in Odense, Denmark Agnethe Nedergaard Pedersen 3D Visualization, Cloudburst Modeling and Planning Bo Kempel The Digital Water Cities project Dines Thornberg Automatic Anomaly Detection for Sewage Network Sensors Peter Rasch	Workshop Young Water Professionals – Knowledge transfer in the Nordic Water Sector 11:00-12:30 Chair: Christoffer Wärf

08:30 Highlights from Day 2 08:30-09:00				
09:00 09:00-10:30 Chair: Arne Harr	Micropollutants - an overview	CCTV and data for asset management 09:00-10:30 Chair: Hans Bäckman	Sludge management 09:00-10:30 Chair: Herman Helness	MBR and membrane based treatment 09:00-10:30 Chair: Marina Graan
	Full scale removal of Active Pharmaceutical Ingredients from wastewater treatment plants Sille Larsen	Digital materials and methods in water distribution and sewage network asset management in Finland Heini Postila	Semi full-scale study - High loaded mesophilic anaerobic digestion of primary sewage sludge Gustav Björk	Stockholm's Future Wastewater Treatment – long term pilot trials with an MBR process Sofia Lovisa Andersson
	Micropollutant contamination of soil and groundwater at two wastewater drainage fields Rasmus Klapp	Novel Sewer Surveys at HSY Jussi Kuikka	Post-digestion thermal hydrolysis for a more cost-efficient sludge drying and incineration Norman Weisz	Commissioning of Swedens first large scale MBR-process - setbacks and successes Sofia Andersson
	Selection of Process Design for Micropollutant Reduction – with Unclear Legal Requirements Jacob Kragh Andersen	In depth analysis of the features contributing to the performance of sewer deterioration models Bolette Hansen	Modelling of thermophilic digestion and experimental calibration in semi full-scale digestion Ted Lundwall	Testing Membrane-Aerated Biofilm Reactors under Nordic conditions Nerea Uri-Carreño
	Driving forces for implementation of organic micropollutant removal in Swedish wastewater Maja Ekblad	Input data induced uncertainty in sewer deterioration models Franz Tscheikner-Gratl	Comparison of sludge management alternatives and resource recovery Blanca Magdalena Gonzalez Silva Blanca Magdalena Gonzalez Silva	Investigating direct membrane filtration (DMF) as a treatment concept for municipal wastewater Eline Klaastad
		Wastewater Components Determine Renovation and Maintenance Plans Tomi Lukkarinen	Continuous solids measurements and an optimization control application enhance sludge drying Heli Karaila	Fouling mechanisms and mitigation during direct membrane filtration of primary municipal wastewater Selina Hube
		How low can we go? – mesophilic and thermophilic digestion of WWT sludge at short retention times Sofia Andersson		
		Circular Economy with Sludge - A Novel Solution Prem Verma		
11:00 11:00-12:30 Chair: Lena Blom	Stormwater planning	Micropollutants with a focus on microplastics and antibiotics 11:00-12:30 Chair: Peter Tychsen	Wastewater treatment 11:00-12:30 Chair: David l'Oons	
	New Tool Enables Early Integration of Nature Based Stormwater Solutions in Urban (re)Developments Sara Maria Lerer	Prevalence of Antibiotic Resistance in Full-Scale Sewage Sludge Treatment Processes Maria Valtari	Effect of cold climate conditions on municipal wastewater treatment in constructed wetlands Lina Büngener	
	Combined impacts of sustainable stormwater systems and climate change on runoff and pollutant loads Nora Sillanpää	Fate and removal efficiency of microplastics in a wastewater treatment plant Rupa Chand	Experiences of low pressure sewer (LPS) systems in Sweden Solveig Johannesdottir	
	Mapping land cover with Machine Learning provides new possibilities in surface water planning Morten Revsbæk	Micropollutants and Microplastics in a Membrane BioReactor (MBR) Katja Närhi	Continued operation of Copenhagens 40-year-old Wastewater Treatment Plants Dan Fredskov	
	Water and climate are carefully orchestrated in the construction of a new urban district Åsa Malmäng Pohl	Comparison of activated sludge processes for antibiotics removal from wastewater at cold temperature Antonina Kruglova	Bromma WWTP strikes back Hanna Gottås	
	Reducing the climate impact of wastewater treatment using real-time weather data and modelling Sandra McCarley	Minimization of plastic emissions from WWT plants through development of biodegradable flocculants Laura Agneessens	Characteristics of municipal wastewater in south-west Sweden Mark De Blois	
	Redefining boundaries – A Nordic collaboration for streamlined and accessible catchment modelling Hannes Björninen	Sundsvall's different wastewater management strategies, needs for and effects on advanced treatment Malin Tuveesson	Treatment efficiency of small-scale package plants in northern Sweden and Finland Brenda Vidal	
		Factors affecting effluent quality from on-site wastewater treatment systems in Nordic countries Juho Kinnunen		
		Joint Procurement of Ferrous Sulphate - Cooperation Between Water Management Utilities Marina Graan		

08:30 Highlights from Day 3 08:30-09:00					
09:00 09:00-10:30 Chair: Anna Mikola	Management of N2O 09:00-10:30 Chair: Anna Mikola	Micropollutants advanced treatment #1 09:00-10:30 Chair: Lise Karstenskov Hughes	Modelling and control #1 09:00-10:30 Chair: Maria Valtari	Performance of stormwater facilities 09:00-10:30 Chair: Nora Sillanpää	Workshop The "not so clear" crystal ball - the water resource Recovery Facility of the future must be adaptable 09:00-10:30 Chair: Dines Thornberg
	N2O Emissions from Danish WWTPs – National Emissions and Reduction Potential Anna Katrine Vangsgaard	Tracking the adsorption profiles of organic micropollutants in a granular activated carbon filter Ellen Edefell	Improving data quality with mass balances and data reconciliation Oscar Samuelsson	Mini-raingardens for managing stormwater from rooftops Johanne Grøndahl Klausen	
	Nitrous Oxide Emissions - Lessons Learned at Ejby Mølle Nerea Uri-Carreño	The challenge of simultaneous removal of pharmaceutical residues and PFAS at Uppsala WWTP Anna Maria Sundin	Integrating COD and SS for prediction of organic micropollutant removal in ozonation of wastewater Rubén Juárez	Roadside trees drink stormwater in innovative solution for urban climate adaptation Esben Ravn Iversen	
	Identifying Nitrous Oxide Emissions in different scenarios in Henriksdal Wastewater Treatment Plant Kristina Stark Fujii	Pilot trials with pulverized activated carbon in combination with Membrane BioReactor (PAC-MBR) Christian Baresel	Assessment of new sludge management strategies in the Cape Flats wastewater treatment works Xavier Flores-Alsina	Occurrence and concentrations of organic micropollutants in bioretention filter media Robert Furén	
	Update for the full-scale testing of N2O mitigation strategies at the Viikinmäki WWTP Kati Blomberg	Direct membrane filtration followed by granular activated carbon filtration for wastewater treatment Simon Gidstedt	Plant-wide dynamic WWTP modelling for sustainability evaluation of phosphorus removal techniques Magnus Rahmberg	Applicability of using sedimentation and membrane filtration for stormwater treatment Saida Kaykhai	
	Quantification and reduction of nitrous oxide emissions from Wastewater Treatment plants Anders Lynggaard-Jensen	Large-scale pilot tests using an MBR-GAC configuration for micropollutant removal at Syvab Ross Roberts		This carpark is also a retention basin for rainwater Esben Ravn Iversen	
	Nitrous oxide emissions and carbon harvesting by prefiltration. Case of Avedøre WWTP (VARGA project) Artur Tomasz Mielczarek	Comparison of UV-H2O2 and ozone oxidation for the removal of pharmaceutical residues Anneli Andersson Chan		Efficient dewatering of sediment from rainwater basins Simon Østergaard Jensen	
11:00 11:00-12:30 Chair: Peter Tychsen	Micropollutants advanced treatment #2 11:00-12:30 Chair: Lovisa Gelotte	Wastewater and the climate, our contribution to lowering global emissions 11:00-12:30 Chair: Lovisa Gelotte	Modelling and control #2 11:00-12:30 Chair: Oscar Samuelsson	Stormwater management in a challenging cold climate 11:00-12:30 Chair: Lena Blom	Workshop From online NORDIWA 2021 to IWA Copenhagen 2022 11:00-12:30 Chair: Miriam Feilberg
	Removal of micropollutants from wastewater effluent using a mobile pilot E-peroxone and ozonation Majid Mustafa	ARES Active Reduction of Emissions from wastewater Systems Per Henrik Nielsen	The AMOZONE O3 digital twin of the Linköping WWTP, Sweden: prediction of pharmaceuticals removal Giacomo Bellandi	Improving winter environmental practices: Urban snow management tool (SMT) Jiri Marsalek	
	Can bromate reduction in anoxic MBBRs enable ozonation of bromide rich-wastewater in coastal areas? Per Falås	Carbon footprint assessment of wastewater treatment plants: Case studies from Finland Alexis Awaitey	Digital twins enable virtual acceptance tests (VAT) of wastewater treatment plant control systems Erik U. Lindblom	Retention of snowmelt and rain from extensive green roofs during the snow-covered period Bent Braskerud	
	Tracking 14C-labeled micropollutants to separate degradation from adsorption in carbon filters Alexander Betsholtz	Greenhouse gases - How do we deal with them? Mikkel Algren Stokholm-Bjerregaard	Flexible Management of WRRF Objectives Using Nonlinear Model Predictive Aeration Control Peter Alexander Stenoft	Hydrological performance of grass swales during frequent freeze-thaw cycles Tarek Zaqout	
	Ozonation of xenobiotic compounds from wastewater containing bromide Sille Larsen	Greenhouse Gas Reduction through Holistic Approach to Sludge Digestion Jan Høgh	Continuous Optimization of an Industrial Symbiosis using real-time online measurements Sille Larsen	Variability of the hydrologic performance of green infrastructures due to Swedish climatic regimes Ivan Mantilla	
12:30 Closing remarks 12:30-12:45					