NRR24 Preliminary Program (subject to change)

Sunday						
12:30	Registration					
13:00-15:00	**Workshop 1** **Engineering meets Microbiology for optimisation of full-scale processes – BNR myths-facts-reality**			**Workshop 2** **Towards net zero: Connected thinking on minimising NRR process emissions**		
16:00-18:00	**Welcome Function**					
Monday						
8:30	Registration Opens					
09:00-10:30	**Session 1– Opening Ceremony and Keynote**					
10:30-11:00	**Morning Tea**					
11:00-12:30	**2**	**Anammox**	**3**	**Pilot/Full Scale Nitrogen Removal**	**4**	**N2O Monitoring and Mitigation 1**
	1	Temperature-resilient superior performances by coupling partial nitritation/anammox and iron-based denitrification with granular formation Jia Meng Harbin Institute of Technology China	1	Selected lab- and pilot-scale insights advancing shortcut nitrogen removal for sewage treatment Siegfried Vlaeminck University of Antwerp Belgium	1	Dynamic prediction of nitrous oxide emissions in full-scale industrial activated sludge reactors Tianyu Lei Technical University of Denmark Denmark
	2	Developing granular sludge and maintaining high nitrite accumulation for anammox to treat municipal wastewater high-efficiently in a flexible two-stage process Zhihao Peng Beijing University of Technology China	2	Guidance for the operational transition from conventional high DO to suboxic process operation in Biological Nutrient Removal facilities Tanja Rauch-Williams Metro Water Recovery USA	2	Understanding and mitigating nitrous oxide emission from a pilot-scale hybrid membrane aerated biofilm reactor (MABR) Ziping Wu The University Of Queensland Australia
	3	Maximizing nitrite-oxidizing bacteria suppression for mainstream partial nitritation/anammox: optimization of a multi-parameter return-sludge treatment Michiel Van Tendeloo University of Antwerp, Belgium	3	Long-term robustness and tunability of electrochemical ammonia stripping William Tarpeh Stanford University USA	3	N2O mitigation and GHG cost-efficiency-analysis in two advanced full-scale WWTPs Kati Blomberg Helsinki Region Environmental Services HSY Finland
	4	Mechanistic Insights into Microbial Communities in The Partial Nitritation/Anammox-Ion Exchange (IX-PN/A) Process For Mainstream Wastewater Treatment Leiyu He Penn State University USA	4	Total ammoniacal nitrogen removal from real reject water via a combination of electrodialysis reversal and bipolar membrane electrodialysis Iosif Kaniadakis Technical University of Delft Netherlands	4	Modeling-based development of N2O mitigation strategies in two full-scale wastewater treatment plants Ewa Zaborowska Gdańsk University of Technology Poland
Pitch	***5***	Feasibility of simultaneous optimization of Anammox start-up and nitrogen removal performance by intermittent dosing of nanoscale zero-valent iron Zongshuo Han Hohai University China	*5*	Evaluation of side impacts of using primary sludge fermentate for shortcut N removal in chemical P removal plants Shafkat Islam George Washington University USA	*5*	From theory to Tier 3 – Insights from N2O measurement across 14 WRRFs Emma Shen Jacobs Australia
Pitch	***6***	Integrated anoxic biological phosphorus removal with anammox under high organic carbon loadings in a hybrid single-stage bioprocess Zhen Jia Northwestern University USA	*6*	The impact of operational variables on the performance and mechanism of the SULFAMMOX process in wastewater treatment Yang Liu University of Alberta; Queensland University of Technology Canada		
12:30-13:30	**Lunch**					
13:30-15:00	**5**	**MABR**	**6**	**Nitrogen Removal Novel N/P**	**7**	**N2O Monitoring and Mitigation 2**
	1	"Full-Scale implementation of an MABR for Sidestream PN/A: a deeper look into the significance of aeration management" Oliver Das TU Darmstadt, Germany	1	Ultra-rapid achievement of denitrifying nitrite accumulation using anoxic starvation treatment Ji Zhao Qingdao University China	1	Sidestream treatment with ANITA Mox as a tool to mitigate N2O emissions Magnus Christensson Veolia Water Technologies, AnoxKaldnes Sweden
	2	MABR-DAS – Coupling MABR & densification for enhanced biological selection	2	Stable partial-nitrification and co-existence of nitrite-resistant phosphorus accumulating organisms	2	Reduction of N2O emissions by nitrification-promoted operation of activated sludge in municipal

		Nadine Oschman Veolia Water Technologies & Solutions		activity in treating high-strength manure digestate April Gu Cornell University United States		wastewater treatment processes Yoshihiro Ishii National Institute for Land and Infrastructure Management Japan
	3	upgrading an advanced step-feed membrane bioreactor plant with gravimetric separation and membrane aerated biofilm reactor (MABR) for process intensification Yangshuo Gu Pub Singapore	3	Barriers in phosphorus recovery from manure via vivianite formation Sophie Banke Wetsus/ TU Delft Netherlands	3	Full-Scale Demonstration of N2O abatement in exhaust gas from nutrient removal processes Anna Katrine Vangsgaard Envidan Denmark
	4	Subiaco MABR pilot trial outcomes – implications for full-scale design Julia Bailey Water Corporation Australia	4	Removal of phosphate through Feammox-driven crystallization of vivianite Kangning Xu Beijing Forestry University China	4	Understanding the seasonal variation of N2O emissions from a full-scale wastewater treatment plant Kaili Li, The University of Queensland, Australia
Pitch	***5***	Bipolar membrane electrodialysis for citric acid and ammonia regeneration from ammonium citrate scrubber effluents Gladys Mutahi TU Delft Netherlands	*5*	Nutrient removal from slaughterhouse wastewater using aerobic granules in pilot scale sequencing batch reactor. Farrukh Basheer Aligarh Muslim University India	*5*	Investigation of ammonium-based aeration control and microbial community dynamics on nitrous oxide emissions from a full-scale Modified Ludzack-Ettinger wastewater treatment plant Ngai Ning Cheng SA Water Australia
Pitch	***6***	Evaluation of ethanol addition on rice-washing wastewater treatment in single-chamber air-cathode microbial fuel cell Kharisrama Trihatmoko Nagaoka University of Technology Japan	*6*	TBC	*6*	TBC
15:00-15:30	**Afternoon Tea**					
15:30-17:00	**8**	**N/P Removal**	**9**	**Phosphorus Removal**	**10**	**Contaminants of Emerging Concern**
	1	HRSD's Journey from pilot to full-scale implementation of mainstream partial denitrification/Anammox (PdNA) IFAS Megan Bachmann Virginia Polytechnic Institute and State University USA	1	Insights on biological phosphorus removal and short-cut nitrogen cycling in a single sludge via free ammonia and free nitrous acid dosing Xuanyu Lu City University Of Hong Kong Hong Kong	1	Using zeolite to improve the removal of Ibuprofen and Diclofenac in a nitrifying sequencing batch reactor: Insights on bioreactor performance and microbial community. Cesar Huiliñir Universidad De Los Andes, Chile
	2	Integrating efficient anammox with enhanced biological phosphorus removal process through flocs management for sustainable ultra-deep nutrients removal from municipal wastewater Qiongpeng Dan Beijing University of Technology China	2	Performance of a novel cellulose-based anion exchange hydrogel for nitrate and phosphate removal from wastewater Sepideh Ansari University of Canterbury New Zealand	2	The fate of PFAS in pilot plant scale pyrolysis of Victorian biosolids to produce Biochar. David Bergmann. South East Water, Australia
	3	Efficient granular sludge bioreactor treatment for ammonia and organic nitrogen removal in leachate wastewater Yang Liu University of Alberta; Queesland University of Technology Canada	3	Elucidating the impact of low DO on enhanced biological phosphorus removal under aerobic and anoxic conditions at full-scale Riley Doyle HRSD USA	3	Highly sensitive passive sampling of emerging pollutants in urban reclaimed water using hydrophilic-lipophilic balance sorbent-embedded cellulose acetate membrane Xiaozhong Gao, Beijing Forestry University, China
	4	Investigating biological selection in low-energy biological nutrient removal through low dissolved oxygen operation Jose Jimenez, Brown and Caldwell, United States	4	Extreme P removal using the BioPhree® adsorption technology. Pim De Jager Aquacare Netherlands	4	Foams – a potential PFAS removal route in the biological nutrient removal process Angel Chyi En We, The University Of Melbourne, Australia
Pitch	***5***	An innovative technology for the simultaneous removal of dissolved methane and nitrogen in anaerobically treated mainstream wastewater Yan Lu The University of Queensland Australia	*5*	Biomineralization of phosphorus during anaerobic treatment of distillery wastewaters Lei Zhang Queensland University of Technology Australia	*5*	Fate of antibiotics and hormones during hydrothermal carbonization of poultry litter: degradation kinetics and toxicity assessment of filtrates and hydrochars Keke Xiao, Guangdong-Israel Institute of Technology, China
Pitch	***6***	Interaction between sulfur and nitrogen cycle in denitrifying bioelectrochemical systems at low temperatures Francesco Savio Dtu Sustain, Technical University of Denmark Denmark	*6*	A long-term comparison between conventional biological nutrient removal processes and the return sludge side-stream process for P removal Hongmin Wang The University Of Queensland Australia	*6*	Aeration rate impact on nitrification and micropollutant removal: Using Natural zeolite to improve performance in a nitrifying sequencing batch reactor. Jorge Leiva-Gonzalez, Universidad Bernardo O'Higgins, Chile

Tuesday 12 September						
8:30	Registration Opens					
09:00-10:30	**Session 11 Day 2 Plenary**					
10:30-11:00	**Morning Tea**					
11:00-12:30	**12**	**Modeling and Control 1**	**13**	**Novel N Removal Technology**	**14**	**Utility Practice 1**
	1	Reduced-order modelling to tune ammonia-based aeration control at a full-scale WRRF Alexandria Gagnon HRSD United States	1	CANDAN process – A novel "4E" technology for nitrogen removal to advance carbon-neutral wastewater treatment Shenbin Cao Beijing University of Technology China	1	Beyond energy neutrality: a programmatic approach to energy independence and decarbonization at a large nutrient removal facility in Denmark Julian Sandino, Jacobs
	2	Short cut nitrogen removal – design for full scale implementation at Melbourne Water's Western Treatment Plant Aprilia Vellacott Jacobs Australia	2	Assessing the effectiveness of dual carbon source approaches in denitrification processes Chengpeng Lee Northwestern University USA	2	Fate and transport of microplastics through water recycling plants Li Gao South East Water Australia
	3	Refine liquid-based N2O monitoring in wastewater treatment Shuting Wang The University of Queensland Australia	3	Combining four-pass step-feed BNR with densification: improving process robustness through hydraulic super-intensification Kevan Brian Watercare Services Limited Australia	3	Nutrient Management: Measuring and driving performance at wastewater treatment plants Peter Donaghy Urban Utilities Australia
	4	Quantifying, predicting, and mitigating nitrous oxide emissions in a full-scale partial nitration/anammox reactor treating reject water. Xavier Flores-Alsina Danmarks Tekniske Universitet Denmark	4	Effect of different carrier fillers on wastewater treatment efficiency Hongyu Yu Tongji University China	4	Densification: Combining biological, chemical and physical selection approaches Richard Brice Cmp Group Australia
Pitch	***5***	Densification Index/SVI Model: A potential way to predict benefits of biomass densification in full-scale membrane systems Ronald Bean Veolia WTS Canada	*5*	Nutrients recovery from hydrolysed urine by Electrodialysis: Ammonium loss and water transport Yi Zhang The University of Melbourne Australia	*5*	Panel Discussion
Pitch	***6***	Reinvestigating thiele modulus in granule and carrier modelling Eugenio Giraldo Carbon Materials LLC USA	*6*	TBC	***6***	
12:30-13:30	**Lunch**					
13:30-15:00	**15**	**Modeling and Control 2**	**16**	**Resource Recovery 1**	**17**	**Utility Practice 2**
	1	Modelling byproduct generation during bio-electrochemical denitrification of groundwater Borja Valverde Pérez Technical University of Denmark Denmark	1	Pilot scale production of biopolymers from residual streams using mixed microbial cultures – How the substrate affects yield and chemical properties Cora Laumeyer University Kaiserslautern-Landau Germany	1	A "Benjamin Button" BNR Plant from full load to minimum load. Process modelling, civil and mechanical design issues Peter Griffiths Ph Water Consultants Pty Ltd Australia
	2	Hydrogen sulfide: a key factor negatively affecting sulfur disproportionation process Guijiao Zhang Harbin Institute of Technology China	2	Applying photogranules for simultaneous biogas upgrading and biogas slurry purification towards net-zero carbon emission Feixiang Zan Huazhong University of Science and Technology China	2	A foundation towards energy net zero - the Upper South Creek AWRC Damien Sharland Jacobs Australia
	3	Enhancing prediction and understanding of sulfur-driven autotrophic denitrification processes through a hybrid modeling approach Xu Zou The Hong Kong University of Science and Technology Hong Kong	3	Biogas conditioning via microalgal cultivation in anaerobic digestion effluent Dayoung Ko Ulsan National Institute of Science and Technology South Korea	3	Biological treatment shock events at a municipal resource recovery centre Thakshila Balasuriya Urban Utilities Australia
	4	Full-Scale applications of digital twins in nutrient management Bruce Johnson Jacobs United States	4	Photogranular technology for wastewater treatment with resource recovery Tania Vasconcelos Fernandes Ihe Delft - Institute for Water Education, Netherlands	4	Operating results of nutrient removal at Quakers Hill WRRF – Application of AGS (NEREDA) utilising sustainable principles Monita Naicker Aquatec Maxcon Australia
Pitch	***5***	A novel model of fermentative and conventional polyphosphate accumulating organisms: metabolic insights and synergy Adrian Oehman The University Of Queensland Australia	*5*	Integrated approach for nutrient recovery and wastewater treatment: anaerobic digestion-DHS system Pranshu Bhatia Soka University USA	*5*	Panel Discussion
Pitch	***6***	Nutrient removal performance in practice –does process configuration matter as much as process modelling indicates? Cameron Staib Stantec Australia	*6*	Impact of biochar as a soil amendment on crop growth and agricultural non-point source pollution control ChingJung Lin Department of Bioenvironmental Systems	***6***	

				Engineering, National Taiwan University Taiwan		
15:00-15:30	**Afternoon Tea**					
15:30-17:00	**18**	**Net Zero**	**19**	**Resource Recovery 2**	**20**	**Workshop 3**
	1	The carbon footprint of typical wastewater treatment plants in China and Europe: Towards carbon neutrality Hongtao Wang Tongji University China	1	Unlocking simultaneous nitrogen, phosphorus, and carbon recovery from wastewater: Leveraging the assimilatory power of microbial communities abundant in waste stabilisation ponds Dilani Jayathilaka CSIRO Australia	1	Workshop: Urine separation for a circular economy of nutrients Stefano Freguia The University of Melbourne Australia
	2	Digestate degassing: Is it financially feasible at Beenyup WRRF, Perth, Australia? Gokul Bharambe Jacobs Australia	2	Novel porous membrane with embedded zirconium hydroxide for recovery of high-purity phosphoric acid from wastewater Takayuki Kakuda Chuo University Japan	2	
	3	First laboratory-scale study demonstrating methane emission mitigation from open wastewater sludge lagoons Sarah Aucote SA Water Corporation Australia	3	Nutrient recovery from human urine using bioelectroconcentration: Up-scaling from laboratory to pilot scale Veera Koskue University of Melbourne Australia	3	
	4	Basic study on nutrients management and GHG emission reduction in the sewage treatment plant Toshiki Fukushima Metawater Co., Ltd. Japan	4	Cycle conversion of FeSx and ferric (hydr)oxides: a new opportunity for sulfur recovery from sulfide-bearing water Daheng Ren, Harbin Institute of Technology China	4	
Pitch	***5***	Ammonia to energy: a key decarbonisation strategy for the water sector Mark Powders Cranfield University United Kingdom	*5*	Rapid sludge reduction and stabilization through a Novel Biofilm-Based Acidic Aerobic Digestion System Xi Lu, The University of Queensland, Australia	*5*	
Pitch	***6***	Holistic assessment of management strategies and technological solutions handling reject water. Xavier Flores-Alsina Danmarks Tekniske Universitet Denmark	*6*	TBC	*6*	
18:30 – 23:30	Conference Dinner					
Wednesday 13 September						
9:45-10:30	**Session 21 Day 3 Plenary**					
10:30-11:00	**Morning Tea**					
11:00-12:30	**22**	**City and Precinct Outcomes**	**23**	**Microbiology and Biochemistry Advances 1**	**24**	**Pilot/Full Scale Phosphorus Recovery**
	1	Urine fertilizer production using a hybrid acidic strategy Zhiqiang Zuo, The University of Queensland, Australia	1	Enrichment and application of extracellular nonulosonic acids containing polymers of Accumulibacter as a value-added product Yuemei Lin, Delft University of Technology, Netherlands	1	Full-scale conversion from biological to chemical phosphorus removal and magnetic vivianite recovery technology integration Ha Nguyen Tu Delft/ Wetsus Netherlands
	2	Can 'Nutrient Net Zero' Halt Moreton Bay's Environmental Decline? Cameron Jackson, Urban Utilities, Australia	2	Propioniciclava accumulated in an EBPR process can be a novel potential polyphosphate accumulating organism Yongmei Li, Tongji University, China	2	Pilot-scale assessment of sidestream enhanced biological phosphorus removal and recovery: impacts on performance and economics Albie Zuo Meng Gan The University Of Queensland Australia
	3	Could we manage sewage overflow using biofilters? Prasanna Egodawatta, Queensland University of Technology, Australia	3	Nitrogen bioconcentration and recovery as the nitrogen-rich biopolymer cyanophycin in denitrifying phosphorus accumulating organisms McKenna Farmer, Northwestern University, United States	3	Taking the missing steps in promoting cost-effective and sustainable phosphorus recovery from sewage sludge ash via wet chemical leaching Andrea Turolla Politecnico Di Milano Italy
	4	Onsite greywater and blackwater management: nature-based solutions for water and nutrient reuse Virginia Pinto, Federal University Of Mato Grosso Do Sul, Brazil	4	Adaptive resilience of a coculture system: harnessing high-level hydrogen sulfide stress for enhanced biogas utilization Baorui Zhang Nanyang Environment & Water Research Institute Singapore	4	Recycling by-products of wet-chemical phosphorus recovery from sewage sludge ash as a precipitant for wastewater treatment Sarah Müller Institute of Environmental Engineering Germany
Pitch	***5***	Absorbent hygiene products for incontinence are diverting nutrients to	*5*	The impact of long-term P starvation on the microbial	*5*	Sea urchin waste shells for phosphate removal in green wall systems

		landfill Emma Thompson Brewster, Southern Cross University, Australia		community selection and performance of S2EBPR configuration. Xinyu Shi, The University of Queensland, Australia		Moeen Gholami University of Canterbury New Zealand
Pitch	***6***	Solar-wind hybrid power drive reuse type of rural domestic sewage treatment system in northwest China Pengyu Li, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, China	*6*	Selective carbon sources influence the carbon transformation and metabolism of Purple phototrophic bacteria Siwei Yu Wuhan University of Technology China	*6*	Phosphorus Recovery from Sewage as Vivianite in an Fe-retrofitted UCT-MBR System Xiang Cheng Beijing Forestry University China
12:30-13:30	**Lunch**					
13:30-15:00	**25**	**Product Innovation**	**26**	**Microbiology and Biochemistry Advances 2**	**27**	**Resource Recovery 3**
	1	Vivianite as a novel strategy for phosphorus recovery: latest developments, bottlenecks, and future perspectives Thomas Prot Wetsus Netherlands	1	Understanding the negative effects of biofilm thickening in elemental sulfur-based denitrification process and the novel moving-bed technical solutions Jia-Min Xu Harbin Institute of Technology Shenzhen China	1	"Pilot-scale demonstration of reducing and upgrading anaerobically digested sludge in an acidic aerobic digester" Zhetai Hu, The University of Queensland, Australia
	2	Biogas valorization for nutrient recovery and resourceful microbial protein production Kashif Rasool, Hamad Bin Khalifa University (HBKU), Qatar	2	The genomic and physiological characterization of the novel acid-tolerant comammox Nitrospira found in the process of producing NH4NO3 from urine Tingting Zhang, Tsinghua University, China	2	Valorization of the organic content of sewage sludge from decentralized treatment via acidogenic fermentation Marco Pesenti, Politecnico Di Milano, Italy
	3	Investigating conditions for enhanced ammonium bicarbonate formation and precipitation via CO2 sequestration with hydrolyzed urine Joseph Lybik University of Michigan United States	3	Shedding light on the complexities of internal carbon driven denitrifiers in biofilm & floc April Gu, Cornell University, United States	3	Centralised solids management: unpacking the impacts to nutrient management Shannon Weaver, Urban Utilities, Australia
	4	Cu-Ni nanoparticle-coated carbon cloth electrodes: advancing urea degradation and hydrogen production in urea-enriched wastewater Padmavathy Bagavathi Indian Institute of Technology Palakkad India	4	Formate as an alternative electron donor for the anaerobic methanotrophic archaeon Candidatus 'Methanoperedens nitroreducens' performing denitrification Mengying Xie, The University Of Queensland, Australia	4	Tannin-Based Coagulants Success in the Food Processing Industry Lucas Moreno, Tanafloc Australia
Pitch	***5***	Single cell protein production from methane in a gas-delivery membrane bioreactor Yicheng Ma The University of Queensland Australia	*5*	Autotrophic and Heterotrophic Adaptation to Low Dissolved Oxygen Lilian McIntosh, Hampton Roads Sanitation District, United States	*5*	Integrated resource recovery system for resources (nutrient, water, and energy) mining from source separated urine. Sangeetha Vivekanandan Indian Institute of Technology Palakkad India
Pitch	***6***	Potential Roadmap to a Biorefinery; Lessons from Crude Oil Refining Callum Hickey Urban Utilities Australia	*6*	Exploring methanotrophs and methylotrophs for single-cell protein production in biomass enriched with oxygen and methane from paddy-rice rhizosphere Akihiko Terada Tokyo University of Agriculture and Technology Japan	*6*	Sludge pre-treatment can lead to pathogen regrowth in mesophilic AD Junfu Li The University of Queensland Australia
15:00-15:30	**Afternoon Tea**					
15:30-17:00	**Session 29 Closing Ceremony**					