

10th IWA Microbial Ecology and Water
Engineering Specialist Conference



MEWE23: TOWARDS A RESILIENT FUTURE

HOSTED BY



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CONFERENCE PROGRAM

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10-14 SEPTEMBER 2023

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MICROBIOME SERVICES



Microbial Fluorescence-activated Cell Sorting (FACS)

- Dedicated BD FACS Aria Fusion with expert operator

Single cell genomics

- Automated pipeline for sample processing, amplification and sequencing

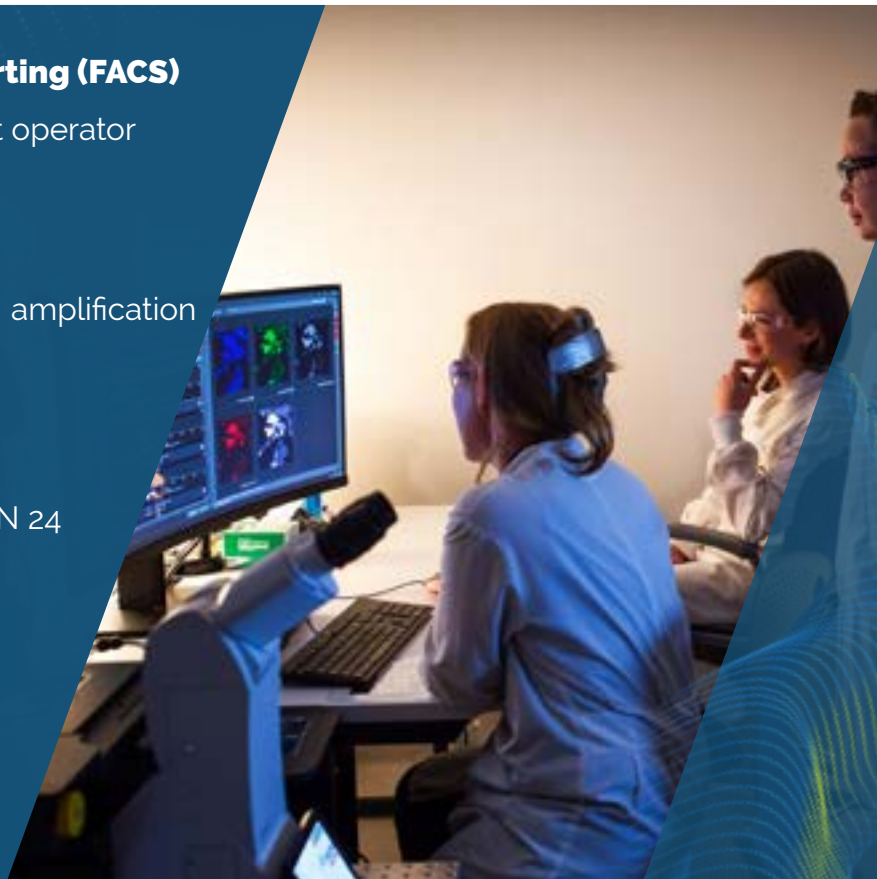
Long-read sequencing technologies

- Oxford Nanopore Technologies PromethION 24

Fluorescence *In Situ* Hybridization (FISH)

- Probe design and imaging

Developing and optimising tools for your research



Welcome from the Conference Chairs

It is with great pleasure we welcome all delegates, committee members, and sponsors to Meanjin (Brisbane), the traditional lands of the Turrbal and Jagera peoples, on which our conference is held and where we will meet and learn together about microbial ecology and water engineering.

MEWE23 builds on a long series of successful IWA MEWE conferences. The University of Queensland had the pleasure to host this conference in 2005, when it was called the IWA ASPD (Activated Sludge Population Dynamics) conference. This year we also celebrate the 35th Anniversary of the establishment of the IWA Specialist Group on ASPD/MEWE. Much has changed since the 1st ASPD in Paris in 1993, the 10th IWA Microbial Ecology and Water Engineering Specialist Conference of MEWE23 comes with a significant and timely theme: Towards a resilient future. Resilience speaks towards ensuring the environmental sustainability of the planet in the face of challenges that impact the health of all living things, as well as how we can manage our resources and infrastructure in a responsible and cost-effective way.

Fostering a resilient and sustainable future is about the adoption of new ideas, advanced methodologies, and innovative technologies to address the major challenges we are facing in the water industry, including the impacts of climate change and water shortages. MEWE23 focuses on the application of microbial ecology knowledge and tools to advance water engineering processes. We aim to promote the rational and effective engineering of open microbial systems in the water cycle using emerging technologies and concepts in microbial ecology. We believe that MEWE23 provides a great opportunity to exchange new findings and progress in our fields, and stimulate synergies, collaborations, and networking among MEWE specialists, researchers, and practitioners.

MEWE23 is made possible through the enthusiastic efforts and support of the IWA MEWE Specialist Group, The University of Queensland and the Australian Centre for Water and Environmental Biotechnology. We thank these organisations and the people involved for their valuable contributions to the organisation of MEWE23. We also gratefully acknowledge the support of our sponsors, and the scientific and local organising committees. We look forward to an exciting and thought provoking MEWE23.

Co-Chairs Professor Jianhua Guo & Associate Professor Adrian Oehmen



Conference Committees

International Program Committee

Adeline Seak May Chua
University of Malaya, Malaysia

Adey Desta
Addis Ababa University, Ethiopia

Ana Lanham
Instituto Superior Técnico in Lisbon, Portugal

Ameet Pinto
Georgia Institute of Technology, United States of America

Barth Smets
Technical University of Denmark, Denmark

Cindy Smith
University of Glasgow, United Kingdom

Claudia Etchebehere
Clemente Estable Biological Research Institute, Uruguay

David Weissbrodt
Norwegian University of Science and Technology, Norway

George Well
Northwestern University, United States of America

Jane Fowler
Simon Fraser University, Canada

Jorge Rodriguez
Khalifa University of Science and Technology, United Arab Emirates

Katherine McMahon
University of Wisconsin—Madison, United States of America

Leonardo Erijman
University of Buenos Aires, Argentina

Mark van Loosdrecht
TU Delft, The Netherlands

Mohammed Mahmoud
National Research Centre, Egypt

Peiyong Hong
King Abdullah University, Saudi Arabia

Per Halkjær Nielsen
Aalborg University, Denmark

Simona Rosseti
IRSA-CNR, Italy

Terada Akihiko
Tokyo University of Agriculture & Technology, Japan

Tom Curtis
Newcastle University, United Kingdom

Tong Zhang
The University of Hong Kong, China

Xianghua Wen
Tsinghua University, China

Zia Ahammad
IIT Delhi, India

Local Organising Committee - Australia

Jianhua Guo, (Co-Chair)
The University of Queensland

Adrian Oehman, (Co-Chair)
The University of Queensland

Sharon James, (Conference Secretariat)
The University of Queensland

Terra Yang, (Conference Administration Assistant)
The University of Queensland

Gilda Carvalho
The University of Queensland

Jason Dwyer
Urban Utilities

Jeremy Barr
Monash University

Monita Naicker
Aquatec Maxcon

Sandra Hall
The University of Queensland

Simon McIlroy
Queensland University of Technology

Simon Toze
Urban Water Futures

Tao Liu
The University of Queensland

Important Information

Information for oral presenters

Length of Presentations: Each presentation will be 20 minutes in length including time for questions. Please meet your Chairperson in your session room 15 minutes before the start of your session.

Presentation Upload: Presentations should be uploaded onto the conference computers the day before your presentation. Conference staff will be available in the conference preparation room on the ground floor

Sunday 10 September	15:00 - 16:00
Monday 11 September	08:30 - 16:00
Tuesday 12 September	08:30 - 16:00
Wednesday 13 September	09:00 - 13:00

MEWE23 Best Paper Award – This prize will be awarded by the program committee to the most outstanding presentation - selected from the ten highest scoring abstracts - and will be announced at the closing ceremony.

Information for poster presenters

Posters will be displayed for the entirety of the conference. Posters must be put on display by the author by 09:00 on Monday 10 September and need to be removed 15:30 on Wednesday 13 September.

MEWE23 Best Poster Award (Peoples Choice) – This poster prize will be awarded to the poster decided to be the most outstanding by the conference attendees. Judging of this will occur during the conference by conference participants, which will be announced at the closing ceremony.

General Information

Accompanying Person Program

There is no formal accompanying persons program organised. There are many wonderful things to do and places to visit around Brisbane. If you would like information or to arrange any tours, please see the hotel concierge desk.

Conference Registration Desk

Registration Desk Opening hours:

Sunday 10 September	12:00 - 16:00
Monday 11 September	08:30 - 16:00
Tuesday 12 September	08:30 - 16:00

Photography during technical sessions

Presentations will be uploaded to the website if approved by the presenter. Please refrain from taking photographs of the presentations unless approval has been granted.

Catering

Morning Tea, Lunch, and Afternoon Tea will be provided each day (included in the registration). This will be served in the Poster Display Room. All catering will be served buffet style. If you have special dietary requirements or allergies please check the dietary table for your food.

Admittance & Name Badges

Delegates are required to wear name badges throughout the conference and these can be collected from Registration Desk, located in front of the conference centre entry, upon arrival at the venue. Name badges must be worn at all times to gain entry to scientific and social sessions. For security purposes, the conference organizers reserve the right to ask venue security to escort from the venue any persons not wearing an official conference name badge.

Certificates of Attendance

A certificate of attendance will be available to all registered delegates. These will be available for collection on the last day of the conference - Wednesday 13 September.

Transport

Taxis: Can be hailed or booked by calling 131 008. They can also be arranged from the hotel, please visit the concierge desk.

Dress Code

The dress for the conference is smart casual. Speakers are asked to wear smart casual for their presentation.

Smoking

We would like to advise visitors to the Hotel Grand Chancellor that in accordance with Queensland State Government Legislation, smoking is not permitted anywhere within the building. In addition, smoking is not permitted within five metres of any building entry or door and is not permitted at any external catering area. No smoking within 5 metres of public transport waiting points such as bus stops, taxi ranks, and ferry terminals.

Language

English is spoken in Australia and is the official language of the conference. No translation services will be provided.

Electricity

The electrical supply in Australia is 240 Volts, 50 Hz. The connection for appliances is a flat 3-pin plug of unique design.

Emergency conference contacts:

Sharon James: +61 404 624 773

Ruoyun (Terra) Yang: +61 423 606 862

In the event of a medical emergency please dial 000

Throughout the course of the conference, there will be numerous staff members on hand to assist you and answer any questions. (Identifiable by 'staff' lanyards).

Disclaimer

In the event of unforeseen circumstances, the organisers do not accept responsibility for loss of monies incurred by delay in the program. The program is correct at the time of publishing and may change. The organisers accept no liability for any speakers' published material or presentations at the conference. In the event of industrial disruptions of service provider failures, neither the International Water Association, or The University of Queensland accept any responsibility for losses incurred by delegates and partners. The conference organisers and the Local Organising Committee will not be responsible for registrations and/or abstract submissions not received. It will be the submitter's responsibility to ensure that official confirmation of registration/abstract submission is received and that instructions have been followed from the conference organisers.

Conference Wifi Information

Username: HGCB_conf1

Password: banquets1



Venue details

Hotel Grand Chancellor Brisbane takes exceptional pride in offering the best accommodation at our Wickham Terrace Brisbane hotel. Should you have any questions or comments before, during or after your visit, please contact us, and a member of our staff will be happy to assist you.

Address: 23 Leichhardt St (Cnr Wickham Terrace) Brisbane, Queensland, 4000, Australia

Phone: +61 (7) 3831 4055

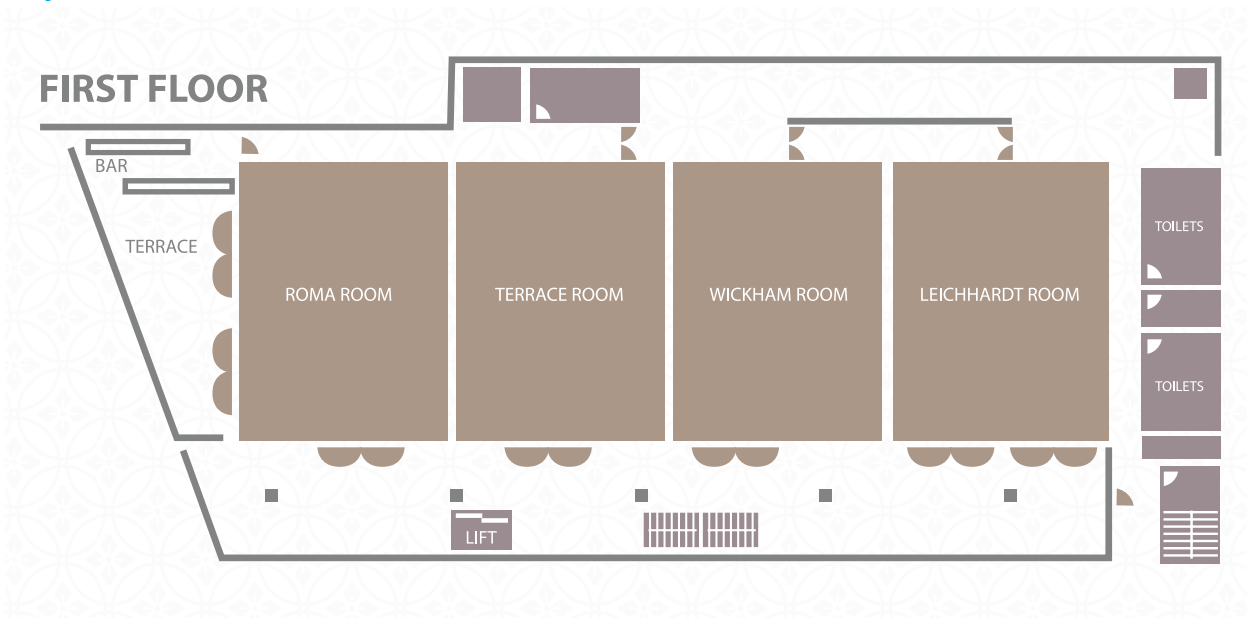
Facsimile: +61 (7) 3831 5031

Email: reservations@hgcb Brisbane.com.au

We invite you to take advantage of a wide range of facilities and services designed to enhance your stay in Brisbane.

- Complimentary Wi-Fi access for hotel guests - 2GB per day 24-hour reception desk
- Room service
- All rooms non smoking
- Dry cleaning/laundry service (charges apply)
- Guest laundry facility (charges apply)
- Hotel airport/city transport booking facility
- Airport Shuttle booking service
- Air Train Tickets available for purchase
- Tesla Destination Charging facilities
- Secure, on-site car parking available
Hotel Guest \$30 per day (7 days per week)
Conference Guest \$20 per day

Room Layout



Social Program

Welcome Reception (Sunday 10 September 2023)

Drinks and canapés will be served in the Courtyard, ground level of the Hotel Grand Chancellor.
Time: 6.00pm – 8.00pm
Dress: Casual

Early Career Researcher Social (Monday 11 September 2023)

Venue: The Normanby Hotel, 1 Musgrave Rd, Red Hill, Brisbane
Time: 6:30pm - 11:00pm
Dress: Smart Casual.
Cost: At own expense

Join the ECR Social for a casual networking evening with other early career researchers and young water professionals attending the conference. The Normanby is a 10 minute walk along Leichardt St. A group led by the ECR Social organiser will leave the Grand Chancellor at 6:00pm and walk down to the Normanby. Meet in the hotel lobby if you wish to join the group.

MEWE23 Conference Dinner (Tuesday 12 September 2023)

Venue: Hotel Grand Chancellor Ballroom
Time: 7:00pm - 11:00pm
Dress: Smart Casual.
Sold Out

DNBSEQ-E25 Portable Genetic Sequencer Accessible for Versatile Applications



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10-14 September 2023, Brisbane, Australia

www.mewe23.com



Technical Program

Sunday 10 September			
11:30	Workshop Registration Opens		
12:00	Pre-Workshop Lunch		
	Roma Room		
	Terrace Room		
13:00-17:00	<table border="1"> <tr> <td> Workshop 1 Balancing public health surveillance with sewer services: Managing microbes as contaminants, catalysts, and data <i>Fangqiong Ling and Cresten Mansfeldt</i> </td> <td> Workshop 2 Application of the MiDAS database for microbial community analyses <i>Per Nielsen</i> </td> </tr> </table>	Workshop 1 Balancing public health surveillance with sewer services: Managing microbes as contaminants, catalysts, and data <i>Fangqiong Ling and Cresten Mansfeldt</i>	Workshop 2 Application of the MiDAS database for microbial community analyses <i>Per Nielsen</i>
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17:00-18:00	Pre-Conference Registration		
18:00-20:00	Welcome Function, Courtyard, Hotel Grand Chancellor		

Monday 11 September																													
08:30	Registration Opens																												
09:00	Session 1 Opening Plenary Chair: Jianhua Guo Keynote Speaker: Per Halkjær Nielsen, Aalborg University, Denmark <i>"Metagenomics: How to make that useful for wastewater treatment and resource recovery?"</i>																												
10:30	Morning Tea & Poster Pitches																												
	Roma Room																												
	Terrace Room																												
11:00	<table border="1"> <tr> <td colspan="2"> Session 2: Ecology and Diversity of Viruses Chair: Simon Toze </td> <td colspan="2"> Session 3: Microbial Ecology of Nitrogen Removal Chair: Akihiko Terada </td> </tr> <tr> <td>2.1</td> <td>Key role of virus – Microbe interactions in determining microbial community composition, activity, and functional efficiency in anaerobic digestion.</td> <td>Mathew Brown Newcastle University United Kingdom</td> <td>3.1</td> <td>Iron mediated microaerobic activated sludge system achieve high biological nutrient removal performance</td> <td>Jia Meng Harbin Institute of Technology China</td> </tr> <tr> <td>2.2</td> <td>Newly isolated bacteriophages' action against <i>P. aeruginosa</i> suspensions and biofilms</td> <td>Gilda Carvalho The University of Queensland Australia</td> <td>3.2</td> <td>Accelerated aerobic denitrification at acidic pH</td> <td>Nova Maulani The University of Queensland Australia</td> </tr> <tr> <td>2.3</td> <td>Freshwater Cyanophages contribute to the ecology of harmful Cyanobacterial blooms.</td> <td>Ramesh Goel University of Utah United States of America</td> <td>3.3</td> <td>Microbial ecophysiology underlying seasonal nitrous oxide emissions during wastewater treatment</td> <td>Nina Roothans Delft University of Technology The Netherlands</td> </tr> <tr> <td>2.4</td> <td>Potential auxiliary metabolic capabilities and activities reveal biochemical impacts of viruses in municipal wastewater treatment plants</td> <td>Ling Yuan Westlake University China</td> <td>3.4</td> <td>Metabolic interactions of a minimal bacterial consortium drive robust nitrification at acidic pH</td> <td>Gaofeng Ni Monash University Australia</td> </tr> </table>	Session 2: Ecology and Diversity of Viruses Chair: Simon Toze		Session 3: Microbial Ecology of Nitrogen Removal Chair: Akihiko Terada		2.1	Key role of virus – Microbe interactions in determining microbial community composition, activity, and functional efficiency in anaerobic digestion.	Mathew Brown Newcastle University United Kingdom	3.1	Iron mediated microaerobic activated sludge system achieve high biological nutrient removal performance	Jia Meng Harbin Institute of Technology China	2.2	Newly isolated bacteriophages' action against <i>P. aeruginosa</i> suspensions and biofilms	Gilda Carvalho The University of Queensland Australia	3.2	Accelerated aerobic denitrification at acidic pH	Nova Maulani The University of Queensland Australia	2.3	Freshwater Cyanophages contribute to the ecology of harmful Cyanobacterial blooms.	Ramesh Goel University of Utah United States of America	3.3	Microbial ecophysiology underlying seasonal nitrous oxide emissions during wastewater treatment	Nina Roothans Delft University of Technology The Netherlands	2.4	Potential auxiliary metabolic capabilities and activities reveal biochemical impacts of viruses in municipal wastewater treatment plants	Ling Yuan Westlake University China	3.4	Metabolic interactions of a minimal bacterial consortium drive robust nitrification at acidic pH	Gaofeng Ni Monash University Australia
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12:30	Lunch & Poster Pitches																												

13:30	Session 4: Drinking Water Microbial Ecology Chair: Ameet Pinto		Session 5: Application of Microbial Ecology to Engineered Systems 1 Chair: Ana Lanham			
	4.1	Responses of drinking water bulk and biofilm microbiota to elevated water age in bench-scale simulated distribution systems	Hannah Greenwald Healy Yale University United States of America	5.1	Ecological mechanisms underlying the colonization and establishment of influent bacterial and micro-eukaryotic communities in bioreactors for microbial protein production from food-processing wastewaters	Ezequiel Santillan Nanyang Technological University Singapore
	4.2	Assessing biological stability of a chlorinated Austrian drinking water distribution network using <i>in-situ</i> bacterial community turnover times	Lena Camprostrini Medical University of Vienna Austria	5.2	Biodegradation of perfluorooctanesulfonate (PFOS) using bacterial consortium	Sovannlaksmy Sorn Kanazawa University Japan
	4.3	" <i>Candidatus Siderophilus nitratireducens</i> ": a psychrophilic, <i>nap</i> -dependent nitrate-reducing iron oxidizer within the new order Siderophiliales	Francesc Corbera-Rubio Delft University of Technology The Netherlands	5.3	Can we narrow the gap? Computational evaluation of energy trade-offs for existing (top-down) and conceivable (bottom-up) microbial pathways for microbiome engineering	Jorge Rodríguez Khalifa University United Arab Emirates
	4.4	Shower water microbiomes exhibit household-specific taxonomic compositions but similar functional potentials	Lin Zhang Washington University in St Louis United States of America	5.4	Primary settling changes the microbial community of influent wastewater to wastewater treatment plants	Marie Riisgaard-Jensen Aalborg University Denmark
15:00	Afternoon Tea & Poster Pitches					
15:30	Session 6: Biofilm Ecology Chair: David Weissbrodt			Session 7: EBPR Microbial Ecology Chair: Maite Pijuan		
	6.1	Synergistic Feammox-anammox niche in micro-oxygen granular sludge treating low-strength ammonia wastewater	Hui Xu Nanyang Technological University Singapore	7.1	Integration of EBPR with mainstream anammox process to treat real municipal wastewater: process performance and microbiology	Ramesh Goel University of Utah United States of America
	6.2	Insights into the microbial ecology of a carbon-based advanced treatment train intended for potable reuse	Matthew Blair Virginia Tech United States of America	7.2	Is <i>Candidatus Accumulibacter phosphatis</i> phototrophic?	Albie Zuo Meng Gan The University of Queensland Australia
	6.3	Metagenomic unravels the microbiome response of microbial electrochemical biofilter for manganese and ammonia removal	Sitong Liu Harbin Institute of Technology China	7.3	Transcriptome of <i>Candidatus Accumulibacter</i> along the phosphorus removal cycle	Pilar Natalia Rodilla Ramírez EPFL Switzerland
	6.4	MABR biofilm ecology targeting micropollutants removal in municipal wastewater	Claudia Lorena Sanchez Huerta KAUST Saudi Arabia	7.4	Quantitative DNA stable isotope probing to identify active PAOs within full-scale side-stream EBPR (S2EBPR) processes	Pranav Sampara The University of British Columbia Canada
17:00	End of Day 1 Conference Sessions					

Tuesday 12 September

09:00

Session 8 Plenary

Chair: Sandra Hall

Keynote Speaker: Dr Krista Rule Wigginton, University of Michigan

“Building predictive models of virus persistence in water environments”

Poster Pitch Showcase – Lightning Presentations

1. MiDAS 5: Global diversity of bacteria and archaea in anaerobic digesters
Morten Kam Dahl Dueholm, Aalborg University, Denmark
2. Role of extracellular adhesins in microbial aggregation: Reimagining the microbial structure
Hussain Aqeel Toronto Metropolitan University, Canada
3. Differential utilisation of dissolved organic matter (DOM) by GAC microbial communities from different depths of biofilters
Xiang Shi, University of Glasgow, United Kingdom
4. Selection of antimicrobial resistant bacteria by chlorine disinfection in wastewater treatment
Nguyen Nga, The University of Tokyo, Japan
5. Steps towards a microbially-mediated clay-based advanced oxidation process for micropollutant removal
Maggie White, Newcastle University, United Kingdom
6. Deciphering a novel chloramphenicol's resistance mechanism: oxidative inactivation of the propanediol pharmacophore
Bing Li, Tsinghua University, China
7. Effects of temperature reduction on microbial community during high-rate anaerobic digestion of dairy wastewater with long chain fatty acids
Yu-Chen Liu, University of Galway, Ireland
8. Microbiome analysis of a passive gravity-driven membrane filtration system providing drinking water for a first nation community
Leili Abkar, University of British Columbia, Canada
9. Endothermic metabolism of electrogenic bacteria: is it thermodynamically feasible yet impossible to measure
Liz Heidrich, Newcastle University, United Kingdom
10. Metabolic modelling of purple non-sulfur bacteria for resource recovery
Akhila Shon, The University of Queensland, Australia



10:30		Morning Tea & Poster Pitches				
		Roma Room		Terrace Room		
11:00	Session 9: Antimicrobial Resistance 1 Chair: Monita Naicker			Session 10: Application of Microbial Ecology to Engineered Systems 2 Chair: Linda Blackall		
	9.1	Antimicrobial resistome and mobilome in an urban river affected by combined sewer overflows and wastewater treatment effluent	Ryo Honda Kanazawa University Japan	10.1	Exploration of factors that affect microbial community assembly in engineered bioreactors	Savanna Smith North Carolina State University United States of America
	9.2	The role of extracellular free DNA in the transfer of antibiotic resistance determinants among wastewater microorganisms	David Weissbrodt Norwegian University of Science and Technology Norway	10.2	Development and testing of a quantitative PCR assay targeting coliform bacteria in drinking water systems	Claire Thom Scottish Water United Kingdom
	9.3	Triclosan promotes the spread of antibiotic resistance genes by triggering prophage induction	Ji Lu The University of Queensland Australia	10.3	A 24,000+ high-quality genome catalog of global activated sludge microbiomes by ultra-deep nanopore sequencing	Lei Liu Aalborg University Denmark
	9.4	Fate of antibiotic resistance genes and microplastics during anaerobic membrane bioreactor treatment of low-strength wastewater	Harmita Golwala University of Southern California United States of America	10.4	Metabolic understanding of the role of acid fermenters on enhanced biological phosphorus removal and polyhydroxyalkanoate production	Rhys Thomson The University of Queensland Australia
12:30		Lunch & Poster Pitches				



13:30	Session 11: Emerging Methodologies for Microbial Ecology Research 1 Chair: Simon McIlroy		Session 12: New Organisms and Mechanisms for Nitrogen Removal Chair: Jason Dwyer			
	11.1	New insights into the response of antibiotic-degrading bacteria to antibiotic using QCM-D and AFM	Sining Zhou Sun Yat-Sen University China	12.1	A novel ammonia oxidizer ' <i>Candidatus Nitrosoglobus</i> ' is characterised as an adversity-strategist in sewage treatment plants	Zhiyao Wang The University of Queensland Australia
	11.2	MAGnifying biogas production efficiency: high-quality metagenome-assembled genome recovery in anaerobic digesters reveals abundant novel populations with key functional roles	Caitlin Singleton Aalborg University Denmark	12.2	Growth of complete ammonia oxidizers on guanidine	Craig Herbold University of Vienna Austria
	11.3	A new approach for rapid high-throughput and accurate full-length 16S rRNA amplicon sequencing for profiling microbiomes in engineered water systems	Xuan Lin University of British Columbia Canada	12.3	Insights into microbial nitrogen metabolisms of microaerophilic activated sludge for retaining ammonia from high-strength nitrogenous wastewater: A metagenomic and meta transcriptomic approach	Akihiko Terada Tokyo University of Agriculture and Technology Japan
	11.4	BASALT refines binning from metagenomic data and increases resolution of genome-resolved metagenomic analysis	Ke Yu Peking University China	12.4	Stoichiometric and kinetic characterization of acidophilic <i>Nitrobacter</i>	Zicheng Su The University of Queensland Australia
15:00	Afternoon Tea & Poster Pitches					
15:30	Session 13: Methodologies for Wastewater Ecology Analysis Chair: Jianhua Guo			Session 14: Digestion and Phototrophic Processes Chair: Jorge Rodriguez		
	13.1	Nation-wide investigation of factors affecting community assembly of 79 Danish municipal wastewater treatment plants	Sofie Zacho Vestergaard Aalborg University Denmark	14.1	Aerobic digestibility of microbiome from waste aerobic granular sludge (AGS)	Cheikh Fall Universidad Autonoma del Estado de Mexico Mexico
	13.2	Active predatory bacteria in activated sludge identified using stable isotope probing combined with metagenomics	Lu Zhang Xi'an Jiaotong-Liverpool University China	14.2	A quantitative meta-analysis of hygienization during anaerobic digestion	Laura Álvarez-Fraga INRAE, Univ Montpellier France
	13.3	Beyond basic diversity estimates – How advanced analytical tools can discern ecological patterns from amplicon sequencing data	Anna Trego University of Galway Ireland	14.3	Effect of graphene oxide on an anaerobic microbial community from a mesophilic digester	Maite Pijuan Catalan Institute for Water Research Spain
	13.4	Deciphering chloramphenicol biotransformation mechanisms and microbial interactions via integrated multi-omics and cultivation-dependent approaches	Jiayu Zhang Tsinghua University China	14.4	Novel photoautotrophic approach to synthesizing polyhydroxyalkanoates (PHA) from formate using anaerobic purple bacteria.	Mohammad Adib Ghazali Abdul Rahman The University of Queensland Australia
17:00	End of Day 2 Conference Sessions					

Wednesday 13 September						
9:45	Session 15: Plenary Chair: Col Hester Keynote Speaker: Steven Robbins, UQ <i>"Making the most of your metagenome- beyond prokaryotic MAGs"</i>					
10:30	Morning Tea & Poster Pitches					
	Roma Room			Terrace Room		
11:00	Session 16: Antimicrobial Resistance 2 Chair: Xianghua Wen			Session 17: Diversity and Ecophysiology Chair: Per Nielsen		
	16.1	Metagenomic insights into the evolution of the microbiome and antibiotic resistome in commercial biogas plants operating at hyper-mesophilic temperature.	Mac-Anthony Nnorom University of Surrey United Kingdom	17.1	Diversity, drivers, and auxiliary metabolic capabilities of viral communities in Activated Sludge systems	Chenyang Xu Tsinghua University China
	16.2	Effect of nitrate on the resistome and mobilome of sewer biofilms	Oriol Gutierrez Catalan Institute for Water Research Spain	17.2	Multiheme cytochromes enable the extracellular electron transfer pathways of ' <i>Candidatus Methanoperedens</i> '	Xueqin Zhang The University of Queensland Australia
	16.3	Longitudinal metagenomics of wastewater relays signals of community and environmental health that are sensitive to seasonal weather patterns	Connor Brown Virginia Tech United States of America	17.3	Novel diversity and ecological insight of Patescibacteria from global wastewater treatment plants	Huifeng Hu University of Vienna Austria
	16.4	Non-antibiotic pharmaceuticals promote conjugative plasmid transfer in environmental microbiome	Yue Wang Tiangong University China	17.4	Bacterial community composition and geosmin production prediction in a Victorian drinking water reservoir	Linda Blackall The University of Melbourne Australia
12:30	Lunch & Poster Pitches					



13:30	Session 18: Emerging Methodologies for Microbial Ecology Research 2 Chair: Gilda Carvalho		Session 19: Ecology and Application of Anammox Chair: Tao Liu		
	18.1	Risk identification and occurrence of pathogenic microorganisms in engineered water systems	Shu-Hong Gao Harbin Institute of Technology China	19.1	Biomass architecture of single-stage granular Nitrification/Anammox: impact of aeration regimes on size-segregated microbial activity and community composition
	18.2	The relative importance of immigration on the bacterial assembly of different-sized aggregates in a full-scale aerobic granular sludge plant	Ahmed Mohamed Trinity College Dublin Ireland	19.2	Physiological and kinetic characterization of suspended cell thermophilic anammox culture
	18.3	The importance of complementary identification methods for profiling the microbial communities in wastewater treatment systems	Kylie Close The University of Queensland Australia	19.3	Anammox surface (S-) layer protein mediates extracellular matrix assembly in community biofilm
	18.4	3D construction and regulation of engineered living materials with extracellular electron transfer capability	Xiaoli Liu University of Science and Technology of China China	19.4	Co-occurrence and cooperation between comammox and anammox bacteria in a full-scale attached growth municipal wastewater treatment process
15:00	Afternoon Tea & Poster Pitches				
15:30	Session 20: Closing Ceremony Chair: Adrian Oehmen Biocluster Award Lecture: Dr Christopher Lawson, University of Toronto <i>"Mapping the ecophysiological traits of diverse anaerobic bacteria using high-throughput characterization and multi-omics"</i> MEWE Awards Ceremony Best Poster Award - Peoples Choice Best Paper Award – <i>Sponsored by City of Gold Coast</i> Early Career Award Mid-Career Award Ardern Lockett Award Ardern Lockett Award Lecture Conference Close				
17:00	End of Conference Sessions				

Thursday 14 September

8:30 - 17:00 Site Tour
Kingaroy NEREDA WWTP (Aquatex Maxcon)

9:00 - 15:00 Site Tour
Logan Biosolids Gasification Plant (Logan City Council)

9:00 - 13:00 Site Tour
Luggage Point Innovation Precinct (Urban Utilities)

10-14 September 2023, Brisbane, Australia

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A close-up photograph of a person's hands being washed under a chrome faucet. The water is running and splashing over the hands. The background is a blurred public restroom setting with other faucets and a soap dispenser.

Poster Program

Secondary Poster Pitch Schedule – during catering breaks Wickham and Leichardt Rooms

Monday 11 September - Morning Tea	10:40	P114 Activated sludge model no. 1 calibration for a paper mill wastewater treatment plant	Hussain Ahmed	Tampere University	Finland
	10:45	P004 Antimicrobial resistance mitigation and dissemination in livestock wastewater: A case study for summer and winter conditions	Xinyu Zhu	Westlake University	China
	10:50	P037 Cross-domain symbioses between <i>Candidatus</i> Patescibacteria/Candidate Phyla Radiation (CPR) and Archaea in methanogenic bioreactors	Kyohei Kuroda	National Institute of Advanced Industrial Science and Technology	Japan
Monday 11 September - Lunch	12:40	P030 What can metagenome-assembled genomes tell us about carbon transformation in slow sand filters?	Tage Rosenqvist	Lund University	Sweden
	12:45	P015 Genome-centric metagenomics resolves microbial diversity and metabolic pathways of volatile fatty acids production from fruit waste at different pH	Chen Yating	Sichuan University	China
	12:50	P003 Unravelling the temporal dynamics of antibiotic resistome and microbiome, and resistant pathogens in sludge anaerobic digestion system	Wei Liu	Tsinghua University	China
	12:55	P075 High pH and free ammonia resistant ammonia oxidizing bacteria	Xin Zou	University of Alberta	Canada
	13:00	P042 Silver-stabilized hydrogen peroxide for the control of planktonic <i>Legionella</i>	Stefania Conforti/ Nate Clark	Toronto Metropolitan University	Canada
Monday 11 September - Afternoon Tea	15:10	P060 Evaluating a metagenomic workflow for nontargeted detection and typing of disease agents in wastewater	Matthew Blair	Virginia Tech	United States of America
	15:15	P071 An integrated meta-omics approach reveals the response mechanism of anammox community towards trace fluoroquinolones in enhanced nitrogen removal	Ke Yu	Peking University	China
	15:20	P067 Rarity is the main biodiversity measure of the microbiome in Oosterhorn saline wastewater treatment plant that drives the functioning of the activated sludge reactor as revealed by cross-correlational analysis	Asala Mahajna	WETSUS	The Netherlands
Tuesday 12 September - Morning Tea	10:40	P044 Regulatory mechanisms of quorum sensing system of bacteria response to chlorine/ozone disinfection	Yang Liu	Harbin Institute of Technology	China
	10:45	P077 Novel tiling amplicon sequencing enables sensitivity quantification, delineation, and early warning SARS-CoV-2 virus in wastewater	Yu Wang	The University of Queensland	Australia
	10:50	P068 Identifying degraders and degradation pathways in bench-scale activated sludge bioreactors subjected to a press chemical disturbance	Hari Seshan	Tyr Group	Australia

Tuesday 12 September - Lunch	12:40	P058 Predicting the risks associated with the synbio revolution to wastewater	Cresten Mansfeldt	University of Colorado Boulder	United States of America
	12:45	P069 Evaluation of social behaviors and secondary metabolites gene clusters of phylum <i>Myxococcota</i> present in activated sludge systems through shotgun-metagenomic sequence analysis	Hazuki Kurashita	Nagaoka University of Technology	Japan
	12:50	P005 National scale resistome surveillance and dissemination potential assessment in Denmark	Yu Yang	Aalborg University	Denmark
	12:55	P041 Microbiome assembly in drinking water biofilters – a meta-analysis	Fabien Cholet	University of Glasgow	United Kingdom
	13:00	P074 Shift in assembly mechanism precedes the changes in diversity pattern in anaerobic digestion ecosystem under varying frequency of disturbance at constant incidence	Soheil Neshat	Nanyang Technological University	Singapore



Poster Display - Wickham and Leichardt Rooms

P001	Selection of antimicrobial resistant bacteria by chlorine disinfection in wastewater treatment	Nguyen Nga	The University of Tokyo	Japan
P002				
P003	Unravelling the temporal dynamics of antibiotic resistome and microbiome, and resistant pathogens in sludge anaerobic digestion system	Wei Liu	Tsinghua University	China
P004	Antimicrobial resistance mitigation and dissemination in livestock wastewater: A case study for summer and winter conditions	Xinyu Zhu	Westlake University	China
P005	National scale resistome surveillance and dissemination potential assessment in Denmark	Yu Yang	Aalborg University	Denmark
P006	Microplastic biofilms reduce the effects of nano-alumina and free nitrous acid on conjugative transfer of antibiotic resistance genes	Guosheng Zhang	Tongji University	China
P007	Investigating antibiotic resistance gene transfer in microbial flocs	Hari Sathasivam	Toronto Metropolitan University	Canada
P008	Fluoroquinolone residues in the environment rapidly induce heritable fluoroquinolone resistance in <i>Escherichia coli</i>	Hebin Liang	Tsinghua University	China
P009	The distribution and correlation between microplastics and antibiotic resistance genes (ARGs) in a water source of the metropolitan area in South Korea	Hongmok Jo	Dongguk University	South Korea
P010	Microbial risks triggered through oral administration of antibiotics in fish aquaculture far persist the legally regulated antibiotic withdrawal time	Jin Huang	Tsinghua University	China
P011	Microbial contaminants persistence and horizontal gene transfer analysis in aerobic and anaerobic membrane bioreactor	Julie -Medina	King Abdullah University of Science and Technology	Saudi Arabia
P012	Multi-omics investigation of ecophysiology of PAOs in full-scale EBPR plants	Zivile Kondrotaitė	Aalborg University	Denmark
P013	Determining the contribution of micro/nano plastics to antimicrobial resistance in engineered water systems: Mechanisms and risk assessment	Shu-hong Gao	Harbin Institute of Technology	China
P014	Synergistic effect of sludge-derived biochar and persulfate on removing antibiotic resistance genes: adsorption and oxidation mechanisms	Xuanyuan Pei	Wuhan Textile University	China
P015	Genome-centric metagenomics resolves microbial diversity and metabolic pathways of volatile fatty acids production from fruit waste at different pH	Chen Yating	Sichuan University	China
P016	Microbiome analysis of a passive gravity-driven membrane filtration system providing drinking water for a first nation community	Leili Abkar	University of British Columbia	Canada
P017	Steps towards a microbially-mediated clay-based advanced oxidation process for micropollutant removal	Maggie White	Newcastle University	United Kingdom
P018	Seeding advanced treated wastewater for purposes of direct potable reuse	Alma Bartholow	University of California, Berkeley	United States of America
P019	The roles of organic carbon and drinking water quality in <i>Legionella</i> cooling water ecology	Audrey Zarb	Wayne State University	United States of America

P020	Novel thermal hydrolysis and vacuum fermentation technology for enrichment of thermophilic fermenting bacteria and for recovery of volatile fatty acids	Hussain Aqeel	Toronto Metropolitan University	Canada
P021	Synthesis of bioplastic (polyhydroxyalkanoates) from volatile fatty acids produced from acidogenic fermentation of wastewater	Jian Yao	Sichuan University	China
P022	Calcium carbonate-nucleated anammox granulation to avoid sludge floatation	Jinghuan Luo	Tohoku University	Japan
P023	Electrical selection for microbial communities toward enhancing organic nitrogen wastewater treatments	Ke Shi	Harbin Institute of Technology	China
P024	Antibiotics significantly disturb a drinking water microbiome, while phage treatment has negligible effects	Madeleine Gundersen	Norwegian University of Science and Technology	Norway
P025	Development of simple assays for direct RNA quantification using oligonucleotide-modified gold nanoparticle probes	Meri Nakajima	Hokkaido University	Japan
P026	Microbial characterization of the biofilm intimately coupled with photocatalysts in performing antibiotics biodegradation	Yanping Mao	Shenzhen University	China
P027	Free nitrous acid inhibits atenolol removal during the sidestream partial nitrification process through regulating microbial-induced metabolic types	Yifeng Xu	Wuhan University of Technology	China
P028	The mitigation effect of free ammonia (FA) and free nitrous acid (FNA) on nitrous oxide production from the full-nitrification (FN) and partial-nitrification (PN) systems	Yifeng Xu	Wuhan University of Technology	China
P029	Electric-inducible microbial interactions in thermophilic anaerobic digester revealed by high throughput sequencing of micron-scale single clusters	Xia Yu	Southern University of Science and Technology	China
P030	What can metagenome-assembled genomes tell us about carbon transformation in slow sand filters?	Tage Rosenqvist	Lund University	Sweden
P031	Genomic analysis into the streamlining and toxin production of anatoxin-producing cyanobacteria: Tychonema	Abeer Sohrab	University of Utah	United States of America
P032	The ecological effects of treated wastewater stagnation: A quantitative meta proteomics approach	Fatimah Almulhim	King Abdullah University of Science and Technology	Saudi Arabia
P033	Optimised protocol for the extraction and analysis of drinking water treatment plant biofilter microbial communities.	Laura Cossu	University of Glasgow	United Kingdom
P034	Endothermic metabolism of electrogenic bacteria: Is it thermodynamically feasible yet impossible to measure	Liz Heidrich	Newcastle University	United Kingdom
P035	epsSMASH: A Tool for mining extracellular polymeric substance gene clusters in bacterial genomes reveals the true diversity of exopolysaccharide biosynthesis	Roberto Sanchez Navarro	Aalborg University	Denmark
P036	Self-shedding biofilm in HAP-enhanced SNADCO system treating AnMBR permeate	Wenzhao Zhao	Tohoku University	Japan
P037	Cross-domain symbioses between Candidatus Patescibacteria/Candidate Phyla Radiation (CPR) and Archaea in methanogenic bioreactors	Kyohei Kuroda	National Institute of Advanced Industrial Science and Technology (AIST)	Japan

P038	Phylogenetic diversity, metabolic mechanism and gene expression of novel polyphosphate accumulating organisms (PAOs) of Dermatophilaceae in wastewater treatment systems	Hui Wang	Westlake University	China
P039	Enrichment and characterization of thermophilic anammox in the bioreactor	Xiao-Wei Wang	Harbin Institute of Technology	China
P040	Unravelling biosynthetic and biodegradative potentials of microbial dark matters in hypersaline lakes	Zhiguang Qiu	Peking University	China
P041	Microbiome assembly in drinking water biofilters – A meta-analysis	Fabien Cholet	University of Glasgow	United Kingdom
P042	Silver-stabilized hydrogen peroxide for the control of planktonic Legionella	Nate Clark	Toronto Metropolitan University	Canada
P043	Differential utilisation of dissolved organic matter (DOM) by GAC microbial communities from different depths of biofilters	Xiang Shi	University of Glasgow	United Kingdom
P044	Regulatory mechanisms of quorum sensing system of bacteria response to chlorine/ozone disinfection	Yang Liu	Harbin Institute of Technology	China
P045	Effect of filter column size on the performance and microbial communities of granular activated carbon biofilters over initial six months of operation	Dominic Quinn	University of Glasgow	United Kingdom
P046	Anaerobic oxidation of propane coupled to nitrate reduction by a lineage within the class Symbiobacteria	Mengxiong Wu	The University of Queensland	Australia
P047	Metabolic and kinetic assessment of halophilic polyhydroxyalkanoate (PHA) production from surplus feedstocks	Lisa Bai	The University of Queensland	Australia
P048	Culprits of taste and odour in drinking water	Jin Zhu	UNSW	Australia
P049				
P050	Identifying eukaryotes and factors influencing their biogeography in drinking water distribution systems metagenomes	Marco Gabrielli	EAWAG	Switzerland
P051	Is onsite monochloramine disinfection the solution to prevent growth of opportunistic drinking water pathogens in healthcare facilities?	Marianne Grimard-Conea	Polytechnique Montreal	Canada
P052	Advanced biomass formation potential method for drinking water distribution pipes and behavior of bacterial growth using an online flow cytometry	Sungkyu Maeng	Sejong University	South Korea
P053	Understanding the relationship between the sizes of dissolved organic carbon (DOC) and their bioavailability for the improvement of DOC removal in biofilters	Xiang Shi	University of Glasgow	United Kingdom
P054	Exploration and identification of biodegradable organic matters in tap water using high resolution mass spectrometry	Yuta Shinfuku	The University of Tokyo	Japan
P055	Characteristics of bacteriophages in drinking water treatment plants	Alejandro Palomo	Southern University of Science and Technology	China
P056	Isolation of Dechloromonas sp. phage from wastewater treatment processes	Ana Lanham	Instituto Superior Técnico	Portugal
P057	Acidogenic and haloalkaliphilic bacteria enriched from bauxite residue	Yuanying Ma	The University of Queensland	Australia

P058	Predicting the risks associated with the synbio revolution to wastewater	Cresten Mansfeldt	University of Colorado Boulder	United States of America
P059	Role of extracellular adhesins in microbial aggregation: Reimagining the microbial structure	Hussain Aqeel	Toronto Metropolitan University	Canada
P060	Evaluating a metagenomic workflow for nontargeted detection and typing of disease agents in wastewater	Katherine Scott	Virginia Tech	United States of America
P061	High-throughput acquisition of microfauna images by real-time and online microscopic data analysis	Yu Tao	Harbin Institute of Technology	China
P062	Bacterial imprinting as a mechanism for controlling biofilm ecology within emerging wastewater treatment systems	Jack Reeder	Newcastle University	United Kingdom
P063	The removal of antibiotic resistant bacteria and antibiotic resistance genes by sulfidated nanoscale zero-valent iron activating periodate	Li Liang	Tongji University	China
P064	Deciphering a novel chloramphenicol resistance mechanism: oxidative inactivation of the propanediol pharmacophore	Bing Li	Tsinghua University	China
P065	What supports Escherichia coli growth in urban river? A non-targeted screening and quantification by high resolution LC/MS	Yutaro Uehara	The University of Tokyo	Japan
P066	Metabolic modelling of purple non-sulfur bacteria for resource recovery	Akhila Shon	The University of Queensland	Australia
P067	Rarity is the main biodiversity measure of the microbiome in Oosterhorn saline wastewater treatment plant that drives the functioning of the activated sludge reactor as revealed by cross-correlational analysis	Asala Mahajna	WETSUS	The Netherlands
P068	Identifying degraders and degradation pathways in bench-scale activated sludge bioreactors subjected to a press chemical disturbance	Hari Seshan	Tyr Group Pty Ltd	Australia
P069	Evaluation of social behaviors and secondary metabolites gene clusters of phylum Myxococcota present in activated sludge systems through shotgun-metagenomic sequence analysis.	Hazuki Kurashita	Nagaoka University of Technology	Japan
P070	Co-occurrence and cooperation between comammox and anammox bacteria in a full-scale attached growth municipal wastewater treatment process	Katherine Vilaridi	Northeastern University	United States of America
P071	An integrated meta-omics approach reveals the response mechanism of anammox community towards trace fluoroquinolones in enhanced nitrogen removal	Ke Yu	Peking University	China
P072	MiDAS 5: Global diversity of bacteria and archaea in anaerobic digesters	Morten Kam Dahl Dueholm	Aalborg University	Denmark
P073				
P074	Shift in assembly mechanism precedes the changes in diversity pattern in anaerobic digestion ecosystem under varying frequency of disturbance at constant incidence	Soheil A. Neshat	Nanyang Technological University	Singapore
P075	High pH and free ammonia resistant ammonia oxidizing bacteria	Xin Zou	University of Alberta	Canada
P076	Microbiome mediating methane and nitrogen transformations in a subterranean estuary	Sebastian Euler	Southern Cross University	Australia

P077	Novel tiling amplicon sequencing enables sensitivity quantification, delineation, and early warning SARS-CoV-2 virus in wastewater	Yu Wang	The University of Queensland	Australia
P078	Effects of temperature reduction on microbial community during high-rate anaerobic digestion of dairy wastewater with long chain fatty acids	Yu-Chen Liu	University of Galway	Ireland
P079	Examining the correlation between solubilization and methane potential in anaerobic digestion of pre-treated waste activated sludge	Byung-Kyu Ahn	Chungbuk National University	South Korea
P080	Assessing the effects of variation in microbial community on the biodegradation of polymers in different aquatic environments	Edward Mitchell	Newcastle University	United Kingdom
P081				
P082	Understanding kinetic limitations and metabolic pathways of simple to complex substrate degradation in anaerobic systems	Hannah Bird	Newcastle University	United Kingdom
P083	Nitospira dominant pin-point flocs show granule-like settleability in continuously stirred tank reactors operated with oxic/anoxic/oxic conditions	Hussain Aqeel	Toronto Metropolitan University	Canada
P084	Effects of nanobubble technology on the microbial community structure of influent of domestic wastewater treatment plant	Jesmin Akter	University of Science and Technology	South Korea
P085	Investigation of microbial community and infectious pathogens in a wastewater treatment plant in South Korea	Jesmin Akter	University of Science and Technology	South Korea
P086	Meta-omics approaches to decipher Candidatus Accumulibacter metabolism under conditions of phosphate limitation	Laëtitia Cardona	EPFL	Switzerland
P087	A 24,000+ high-quality genome catalog of global activated sludge microbiomes by ultra-deep nanopore sequencing	Lei Liu	Aalborg University	Denmark
P088	Directional propionate recovery from food wastewater: Ecological insight and engineering practice	Menghan Wu	Tsinghua University	China
P089	Effect of exogenous N-acyl-homoserine lactones on the anammox process at 15C : Nitrogen removal performance, gene expression and metagenomics analysis	Min Ji	Tianjin University	China
P090				
P091	Quantitative sequencing based on 16S rRNA gene for comprehensive pathogen monitoring and tracking in a municipal wastewater treatment plant	Rasindu Galagoda	Kanazawa University	Japan
P092	Laboratory-scale study to elucidate greenhouse gas emission and microbial communities in open wastewater sludge lagoons	Sarah Aucote	The University of Queensland	Australia
P093	Enhancement of two-stage co-fermentation process combining H ₂ and CH ₄ production via addition of conductive materials	Tae-Hoon Kim	Chungbuk National University	South Korea
P094	The effect of tetracycline on the river bacterial community and their activities	Takeo Hama	University of Tsukuba	Japan

P095	Remediation of groundwater polluted by crude oil via enriched anaerobic consortium.	Claudia Lorena Sanchez Huerta	King Abdullah University of Science and Technology	Saudi Arabia
P096	Microbial extracellular metabolites: Biomethane booster for granular activated carbon amended anaerobic reactors	Yingdi Zhang	University of Alberta	Canada
P097	Synchronism and asynchronism of bacterial community for Hong Kong and global wastewater treatment plants	Yulin Zhang	The University of Hong Kong	Hong Kong, SAR of China
P098	Insight into the ecophysiology of newly discovered comammox bacteria	Chaoyu Li	The University of Queensland	Australia
P099	Constructed wetlands: a real solution or a hotspot for AMR selection in the environment?	Chiara Borsetto	University of Warwick	United Kingdom
P100	Occurrence of extended-spectrum beta-lactamase-producing Escherichia coli isolated from environmental samples	Iftita Rahmatika	Universitas Indonesia	Indonesia
P101	Nitrogen removal contribution, activity, and metabolic pathway of functional bacteria in a pilot-scale anammox-based process treating landfill leachate	Jing Wang	Westlake University	China
P102	Exploring the diversity and spatial distribution of marine bacterial communities in coastal seawater and sediments of Qatar	Kashif Rasool	Hamad Bin Khalifa University	Qatar
P103	Genome-centric metaproteomics reveals microbial functional activities and seasonal dynamics in a full-scale livestock wastewater treatment plant	Lingrong Jin	Westlake University	China
P104	Nitrite reduction to ammonium by anammox bacterial cell extracts	Mamoru Oshiki	Hokkaido University	Japan
P105	Long-term and low-dose chlorination (LLC) drives dissemination of antimicrobial resistance through bacterial membrane resilience and evolution	Peng Shi	Nanjing University	China
P106	Assessment of technical factors influencing DNA-based analysis of low-biomass tap water produced by reverse osmosis	Putri Ratna	King Abdullah University of Science and Technology	Saudi Arabia
P107	Investigating the impact of silver-stabilized hydrogen peroxide on host-pathogen interactions in drinking water systems	Stefania Conforti	Toronto Metropolitan University	Canada
P108	Floc-wise bacterial community composition and its relationship with floc morphological parameters in activated sludge	Tomohiro Tobino	University of Tokyo	Japan
P109	Deciphering the inhibition of ethane on anaerobic ammonium oxidation	Xin Tan	Harbin Institute of Technology	China
P110	Microbial community involved in the lactic acid production using mixed cultures and raw cheese whey as substrate	Ines Etchelet	Instituto De Investigaciones Biologicas Clemente Estable	Uruguay
P111	Hot spring distribution and survival mechanisms of thermophilic comammox Nitrospira	Yan Zhang	Foshan University	China
P112	Biotransformation of phenolic compounds under nitrate reducing conditions	Siyuan Zhai	Tianjin University	China
P113	Does Ethanol enhance propionate oxidising communities' ability to deal with stress?	Kris Anthony Silveira	University of Galway	Ireland

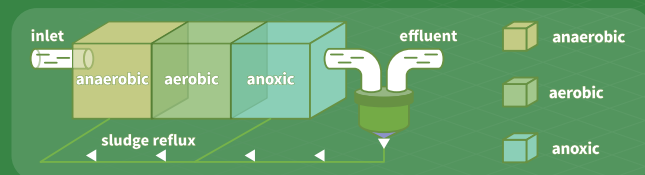
P114	Activated sludge model no. 1 calibration for a paper mill wastewater treatment plant	Hussain Ahmed	Tampere University	Finland
P115	Metagenomic analysis of novel fungi in sewage treatment processes	Kengo Kubota	Tohoku University	Japan
P116	Evaluation of microbial community in anaerobic N ₂ O reducing bioreactor	Ryota Maeda	Tohoku University	Japan
P117	Metagenomic analysis of metabolic potentials of complete ammonia oxidizers in biological drinking water treatment	Ikuro Kasuga	The University of Tokyo	Japan
P118				
P119	Establishment of and N ₂ O emissions from a thermophilic nitrification reactor	Mingsheng Jia	Ghent University	Belgium
P120				
P121	Moving-bed biofilm reactors in drinking water treatment: Learnings from three pilot systems	Gilda Carvalho	The University of Queensland	Australia

Solution for Deep Denitrification of Wastewater: AOA process

Obtained by Peng Yongzhen, an academician from the "National Engineering Laboratory for Advanced Treatment and Resource Utilization of Urban Wastewater" at Beijing University of Technology.

Technical Advantages

1. Fully utilize carbon sources in raw water
2. In theory, it can achieve nearly 100% nitrogen removal efficiency
3. Sludge production can be reduced by about 30%
4. Reduce aeration energy consumption by 25-50%
5. Carbon reduction



Classic Case: Qiting Industrial Park Wastewater Treatment Plant

The total nitrogen in the effluent is as low as 5mg/L, achieving deep denitrification.

Detect the microbial population on the biofilm, and the anammox bacteria are *Candidatus_Brocadia*, with an abundance of approximately 1%. Moreover, anammox reaction achieved a TN removal rate of 32% in the sewage treatment plant.





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