



同濟大學
TONGJI UNIVERSITY

Primary Program



The IWA Biofilms 2024 Conference

Biofilms for nutrient removal and carbon neutrality

October 23-26, 2024 Shanghai · China

PROGRAM OVERVIEW

IWA Biofilms 2024 Conference

October 22-26, 2024, Shanghai, China

Time	Oct 22, 2024 Tuesday	Oct 23, 2024 Wednesday	Oct 24, 2025 Thursday	Oct 25, 2024 Friday	Oct 26, 2024 Saturday
08:00-09:00	Registration & Poster Presentation			Poster Presentation	—
09:00-12:00	Registration Workshop 1 N ₂ O	Opening Ceremony	Session 5 Biofouling Session 6 Membrane-Aerated Biofilm Reactor Workshop 4 Moving Bed Biofilm Reactor Session 13 Aerobic Granular Sludge	Session 10 Drinking Water Biofilms Session 11 Biofilm Ecology Session 12 Moving Bed Biofilm Reactor Workshop 5 High Particle Bioreactor	
		Plenary Speech 1 Prof. Bruce E. Rittmann			
		Plenary Speech 2 Prof. Li'an Hou			
		Plenary Speech 3 Prof. Zuxin Xu			
		Plenary Speech 4 Prof. Hanqing Yu			
12:00-13:30	Lunch & Poster Presentation				Technical Tour
13:30-17:00	Registration Workshop 2 Membrane-Aerated Biofilm Reactor	Session 1 Extracellular Polymeric Substances Session 2 Membrane Biofilm Reactor Session 3 Novel Biofilm Reactors Session 4 Young Water Professionals Workshop 3 Biofilter	Session 7 Anammox Session 8 Graduate Student Session Session 9 Bio-electrochemical Biofilms	Plenary Speech 5 Prof. Glen Daigger	
				Plenary Speech 6 Prof. Susanne Lackner	
				Plenary Speech 7 Prof. Weiguang Lan	
				Plenary Speech 8 Prof. Zhiwei Wang	
				Closing Ceremony	
17:00-18:30	Poster Presentation			—	—
18:30-21:00	Welcome Reception	MC meeting	Gala Dinner	—	—

Day 1: Wednesday October 23, 2024

OPENING CEREMONY

Chair: Prof. Zhiwei Wang
Tongji University

9:00-9:20	Welcome address by President of Tongji University
	Welcome address by the Director of Strategy and Development at the IWA Tao Li
	Welcome address by Chairman of the IWA Biofilm Specialist Group Prof. Robert Nerenberg
9:20-9:30	Group Photo

Chair: Prof. Hongqiang Ren
Member of Chinese Academy of Engineering, Nanjing University

9:30-10:00	Plenary Speech 1 Making the Biofilm Do More by Depositing Catalytic Nanoparticles Prof. Bruce E. Rittmann Member of National Academy of Engineering of the USA Professor, Arizona State University, USA
10:00-10:30	Coffee Break
10:30-11:00	Plenary Speech 2 Prof. Li'an Hou Member of Chinese Academy of Engineering Professor, Rocket Force University of Engineering, China
11:00-11:30	Plenary Speech 3 Prof. Zuxin Xu Member of Chinese Academy of Engineering Professor, Tongji University, China
11:30-12:00	Plenary Speech 4 Prof. Hanqing Yu Member of Chinese Academy of Engineering Professor, University of Science and Technology of China, China

Day 3: Friday October 25, 2024 CLOSING CEREMONY

**Chair: Prof. Ying Wang
Tongji University**

13:30-14:00	<p>Plenary Speech 5</p> <p>Prof. Glen Daigger Member of National Academy of Engineering of the USA Professor, University of Michigan, USA</p>
14:00-14:30	<p>Plenary Speech 6</p> <p>Prof. Susanne Lackner Professor, Technical University of Darmstadt, Germany</p>
14:30-15:00	<p>Plenary Speech 7</p> <p>Story of biofilm, membrane and Membrane Bioreactor</p> <p>Prof. Weiguang Lan Professor, Dean of College of Future Technology, Fuzhou University, China</p>
15:00-15:30	<p>Coffee Break</p>

**Chair: Prof. Wenhai Chu
Tongji University**

15:30-16:00	<p>Plenary Speech 8</p> <p>Prof. Zhiwei Wang Professor, Tongji University, China</p>
16:00-16:20	<p>Best Poster Award Guests for granting awards: Prof. Glen Daigger, Prof. Robert Nerenberg</p>
16:20-16:30	<p>Summary of Workshops at the IWA Biofilms 2024 Prof. Rongchang Wang</p>
16:30-16:45	<p>Closing remarks by Chairman of the IWA Biofilm Specialist Group Prof. Robert Nerenberg</p>
16:45-17:00	<p>Closing remarks by Dean of CESE, Tongji University Prof. Zhiwei Wang</p>
17:00-17:10	<p>Group Photo</p>

PARALLEL SESSIONS PROGRAM

Day 1: Wednesday October 23, 2024	
Venue	Hall A
Session 1	Extracellular Polymeric Substances
	Chair: Prof. Siqing Xia, Prof. Sungwoo Bae
13:30-14:00	KEYNOTE: Unlocking the role of EPS and oxygen availability: metagenomic insights into nitrogen removal in hybrid MABR systems for aquaculture wastewater <u>Sungwoo Bae</u> Korea University, Korea
14:00-14:15	(0056) Construction and application of biomass and extracellular polymeric substances quantification methods in microalgal-bacteria symbiotic system <u>Y. Zhou</u> , R. Tian, X. C. Cui, B. B. Wu Huazhong Agricultural University, China
14:15-14:30	(0045) Biological barriers applied to landfill design: experimental apparatus and preliminary results. <u>A. K. Martins Morita</u> , M. Regadio Universidad Autónoma de Madrid, Spain
14:30-14:45	(0044) The viscoelastic properties of extracellular polymeric substances and their relation to anaerobic granule's mechanical strength <u>C. Gao</u> , M. Habibi, H. Rijnaarts, D. Sudmalis Wageningen University & Research, Netherlands
14:45-15:00	(0054) Biofilms on microplastics in WWTP effluent: an ideal dispersal route for antibiotic resistance pollution into aquatic environments <u>C. Bezuidenhout</u> , R. Bhikhoo, T. Magome, C. Mienie, L. Molale-Tom North-West University, South Africa
15:00-15:30	Coffee Break
Session 2	Membrane Biofilm Reactor
	Chair: Prof. Sungwoo Bae, Prof. Siqing Xia
15:30-16:00	(0127) KEYNOTE: Co-removal of perchlorate and nitrate in palladium-deposited hydrogenotrophic biofilm under salinity stress J. Z. Zhou, <u>Siqing Xia</u> Tongji University, China
16:00-16:15	(0112) Microbial synergy mechanism of hydrogen flux influence on hydrogen-based partial denitrification coupled with anammox in a membrane biofilm reactor <u>S. Pang</u> Shanghai Academy of Agricultural Science, China
16:15-16:30	(0115) Reduction and precipitation of chromium (VI) using a palladized membrane biofilm reactor <u>C. Y. Wu</u> , J. Z. Zhou, S. Pang, L. Yang, E. Lichtfouse, H. B. Liu, S. Q. Xia, B. Rittmann University of Shanghai for Science and Technology, China
16:30-16:45	(0117) Biogas-based membrane biofilm reactor feasibility study for simultaneous nitrogen removal and carbon reduction <u>R. Z. Sun</u> , H. X. Li Guilin University of technology, China
16:45-17:00	(0139) Study on the role of adsorption in enhancing the removal of diclofenac from water by Pd-MBfR <u>X. D. Li</u> Tongji University, China

Day 1: Wednesday October 23, 2024

Venue	Hall B
Session 3	Novel Biofilm Reactors
	Chair: Prof. Li Xie, Prof. Aijie Wang
13:30-14:00	<p>(0068) KEYNOTE: Enhanced biological filtration for wastewater treatment and its future development</p> <p>Hui Huang, H. Q. Ren Nanjing University, China</p>
14:00-14:15	<p>(0035) Anoxic/oxic treatment of wastewater without biomass recycle based on the vertical baffled biofilm reactor</p> <p>Y. M. Zhang, Q. Y. Lu, J. Q. Zhou, F. Liu, B. Rittmann Shanghai Normal University, China</p>
14:15-14:30	<p>(0043) Impact of residual ammonia on nitrite-oxidizing activity in gel-immobilized biofilms in low-strength wastewater treatment</p> <p>H. Choi, J. Park, D. Kim, C. Lee Ulsan National Institute of Science and Technology (UNIST), Korea</p>
14:30-14:45	<p>(0145) Insight into using multi-omics analysis to elucidate nitrogen removal mechanisms in a novel improved constructed rapid infiltration system</p> <p>Q. Y. Sun, L. Wang Tongji University, China</p>
14:45-15:00	<p>(0057) Microbiome diversity in full scale hybrid biofilm reactors - a case study</p> <p>E. J. Wakjera, R. P. Alagappan, T. Haugen, S. Wang University of South-Eastern Norway (USN), Norway</p>
15:00-15:30	Coffee Break
Session 3	Novel Biofilm Reactors
	Chair: Prof. Aijie Wang, Prof. Li Xie
15:30-15:45	<p>(0146) The role of dissolved methane in algae-bacterial granulation and microbial interactions during non-aerated partial nitrification of anaerobic effluent</p> <p>S. Q. Chen, Z. B. Zhou Southwest University, China</p>
15:45-16:00	<p>(0153) Effects of different biofilm carriers on fermentation performance and microbial communities in side-stream enhanced biological phosphorus removal reactors</p> <p>D. Q. Wang, R. Y. Wu, M. B. Huang, J. Y. Bi Xi'an University of Technology, China</p>
16:00-16:15	<p>(0075) Assessment of modified biofilm-enhanced activated sludge system for effective reduction of high ammonium nitrogen concentrations</p> <p>K. Marek, K. Pawęska, A. Bawiec Wrocław University of Environmental and Life Sciences, Poland</p>
16:15-16:30	<p>(0129) The removal of ammonia nitrogen via heterotrophic assimilation by a novel Paracoccus sp. FDN-02 under anoxic condition</p> <p>H. J. Li Fudan University, China</p>
16:30-16:45	<p>(0110) Biofilm formation control in bioreactors through regulating bacterial communication</p> <p>Y. C. Wang, C. Wang, Y. H. Lv Tianjin University, China</p>
16:45-17:00	<p>(0036) First Full-Scale Decentralized Hybrid Moving Bed Biofilm Clarifier Reactor in The Lowest Place on Earth</p> <p>K. Nof, G. Stamper, N. Assulin Aqwise, Israel</p>

Day 1: Wednesday October 23, 2024

Venue	Hall C
Session 4	Young Water Professionals
	Chair: Prof. Zhiwei Wang, Prof. Xiaoyuan Zhang
13:00-13:35	Opening Remarks Zhiwei Wang Tongji University, China
13:35-13:40	Introduction of China IWA Young Water Professionals Xiaoyuan Zhang Chair of IWA Young Water Professionals China Chapter
13:40-14:00	KEYNOTE: Future trends for working in environmental biotechnology Bruce E. Rittmann Member of National Academy of Engineering (USA) Arizona State University, USA
14:00-14:20	KEYNOTE: TBC Glen Daigger Member of National Academy of Engineering (USA) University of Michigan, USA
14:20-14:40	KEYNOTE: TBC Eveline Volcke Ghent University, Belgium
14:40-15:00	KEYNOTE: A typical student's 20-year learning journey Zhen He Washington University in St. Louis, USA
15:00-15:20	KEYNOTE: TBC Zhiwei Wang Tongji University, China
15:20-15:30	Coffee Break
Session 4	Young Water Professionals
	Chair: Prof. Wenhai Chu, Dr. Nerea Uri Carreño
15:30-15:45	KEYNOTE: Anode design and reactor modulization of bioelectrochemical systems for high-efficient wastewater purification and resource recovery Xiaoyuan Zhang Tsinghua University, China
15:45-16:00	KEYNOTE: Nitrogen removal augmentation through partial denitrification-anammox in compact biofilm process Xiaoxin Cao China Water Environment Group Limited, China
16:00-16:10	(0090) Filamentous fungi dominate MABR biofilms under high-COD conditions A. Martin Linares University of Notre Dame, USA
16:10-16:20	(0126) Carbon nanotubes and NiFe-layered double oxide supported carbon felt as cathode materials to boost-up CO₂ reduction to acetate via microbial electrosynthesis G. X. Chen , R. C. Wang Tongji University, China
16:20-16:30	(0091) Enhancing granular sludge stability: insights from the superior performance of biofilms X. Wang , X. R. Feng, M. S. Wang, Z. B. Mu, X. Chen, C. J. Yang, Z. H. Li Xi'an University of Architecture and Technology, China
16:30-16:40	(0100) Effects of electron acceptors on sulfur-based autotrophic denitrification performances and microbial communities M. C. Zhou , A. Terada Tokyo University of Agriculture and Technology, Japan
16:40-16:50	(0081) Achieving stable partial nitrification and autotrophic denitrification biofilm in an mabr via sulfide dosing Y. L. Han , H. P. Zhao Zhejiang University, China
16:50-17:00	(0121) Novel waving-bed solution for efficient biofilm thickness control and enhanced nitrogen removal in sulfur-based denitrification J. M. Xu , A. J. Wang, H. Y. Cheng Harbin Institute of Technology Shenzhen, China

Day 2: Friday October 24, 2024

Venue	Hall A
Session 5	Biofouling
	Chair: Prof. Giorgio Mannina, Prof. Zhiwei Wang
9:00-9:30	<p>KEYNOTE: Quorum quenching in MBR for fouling retardation: complexity provides opportunities</p> <p>How Yong Ng Fellow, the Academy of Engineering Singapore Beijing Normal University (Zhuhai), China</p>
9:30-9:45	<p>(0078) Ferrate deconstructs microbial biofilms by humic substance decomposition and facilitates biofilm control in sewers</p> <p>J. Sun, X. F. Yan, Y. Z. Wang, J. Y. Xu, X. H. Dai Tongji University, China</p>
9:45-10:00	<p>(0084) Adsorption of phosphate and mitigation of biofouling using lanthanum-doped quorum quenching beads in MBR systems</p> <p>Y. J. Jung, H. W. Choi, H. K. OH University of Seoul, Korea</p>
10:00-10:15	<p>(0088) Robustness of a demo-scale anaerobic attached growth-membrane bioreactor for treating industrial and municipal mixed wastewater</p> <p>S. Zhang, S. Haleem Shah, J. Sanchez Medina, P. Y. Hong King Abdullah University of Science and Technology, Saudi Arabia</p>
10:15-10:35	Coffee Break
Session 5	Biofouling
	Chair: Prof. How Yong Ng, Prof. Zhiwei Wang
10:35-11:05	<p>KEYNOTE: Innovative membrane bioreactors for sustainable wastewater treatment: future perspectives and applications</p> <p>Giorgio Mannina Palermo University, Italy</p>
11:05-11:20	<p>(0105) Development of biofilms and opportunistic pathogens in domestic shower hoses: role of chlorine and stagnation</p> <p>I. Murrell-Thomas, F. Schiaffino Pereira, C. Proctor, R. Nerenberg University of Notre Dame, USA</p>
11:20-11:35	<p>(0113) New insights into membrane fouling induced by biofilm in anaerobic acidification membrane bioreactor: revealing a leading role of pH value</p> <p>X. H. Wang, M. F. Wu Jiangnan University, China</p>
11:35-11:50	<p>(0106) CAS and AGS UF-NF performance during municipal wastewater reuse: membrane fouling and microbial growth potential</p> <p>Z. Li, P. Desmond RWTH Aachen University, Germany</p>

Day 2: Thursday October 24, 2024

Venue	Hall B
Session 6	Membrane-Aerated Biofilm Reactor
	Chair: Prof. Peiyong Hong, Prof. Rongchang Wang
9:00-9:20	<p>(0104) KEYNOTE: Size and morphology of detached biofilm from nitrifying membrane-aerated biofilms reactors (MABRs)</p> <p><u>Robert Nerenberg</u> University of Notre Dame, USA</p>
9:20-9:40	<p>KEYNOTE: Nitrogen removal via nitrite shunt in membrane-supported biofilm reactor</p> <p><u>Heping Zhao</u> Zhejiang University, China</p>
9:40-9:55	<p>(0070) Impact of oxygen partial pressure on nitrous oxide dynamics in MABR biofilms</p> <p><u>Q. Li</u>, S. Lackner Technical University Darmstadt, Germany</p>
9:55-10:10	<p>(0071) MABR fingerprint soft sensor: an open-source biofilm thickness monitoring method</p> <p><u>Y. Cao</u>, G. Daigger University of Michigan, USA</p>
10:15-10:35	Coffee Break
Session 6	Membrane-Aerated Biofilm Reactor
	Chair: Prof. Robert Nerenberg, Prof. Heping Zhao
10:35-10:55	<p>KEYNOTE: Membrane aerated biofilm reactor as tertiary treatment technology for the removal of emerging contaminants in wastewater</p> <p><u>Peiyong Hong</u> King Abdullah University of Science and Technology, Saudi Arabia</p>
10:55-11:15	<p>KEYNOTE: Interaction between simultaneous aerobic nitrification and antibiotic sulfamethoxazole removal in nitrifying membrane (aerated) biofilm reactors</p> <p><u>Rongchang Wang</u> Tongji University, China</p>
11:15-11:30	<p>(0099) Recovering ammonia removal performance by intensive biofilm scouring in a membrane-aerated biofilm reactor using high oxygen-transfer polyethylene membranes</p> <p><u>H. Miura</u>, Y. Kigo, A. Terada Tokyo University of Agriculture and Technology, Japan</p>
11:30-11:45	<p>(0134) Acidic partial nitritation - a potential solution to achieve the challenging NOB suppression in MABR</p> <p><u>T. Liu</u>, S. H. Hu, J. H. Guo The Hong Kong Polytechnic University, China</p>
11:45-12:00	<p>(0119) Performance of a pilot scale membrane aerated biofilm reactor: Experimental and theoretical studies</p> <p><u>R. Bhattacharva</u> Indian Institute of Technology Delhi, Indian</p>

Day 2: Thursday October 24, 2024

Venue	Hall A
Session 7	Anammox
	Chair: Prof. Akihiko Terada, Prof. Hui Gong
13:30-14:00	KEYNOTE: TBC <u>Yayi Wang</u> Tongji University, China
14:00-14:15	(0059) Partial nitrification marine anammox for saline wastewater treatment <u>J. Tobon-Gonzalez</u> , D. Rangel Shaw, P. Saikaly King Abdullah University of Science and Technology, Saudi Arabia
14:15-14:30	(0120) High ammonia loading rate and biofilm reattachment initiated partial nitrification and anammox in a membrane aerated biofilm reactor <u>J. F. Zhang</u> Nanjing University (Suzhou campus), China
14:30-14:45	(0066) Coupling anoxic biological phosphorus removal with anammox under high organic carbon loadings in a single-stage integrated fixed-film activated sludge (IFAS) bioprocess <u>J. Zhen</u> , M. Farmer, F. Sabba, S. Kalus, M. Bachmann, G. Wells Northwestern University, USA
14:45-15:00	(0069) Simultaneous hydroxyapatite-based phosphorus recovery and partial denitrification-anammox-based nitrogen removal during sludge leachate treatment <u>B. Dai</u> , S. Q. Xia Tongji University, China
15:00-15:30	Coffee Break
Session 7	Anammox
	Chair: Prof. Yayi Wang
15:30-16:00	KEYNOTE: Revealing ecophysiologicals of N₂O-reducing bacteria in anammox biofilms <u>Akihiko Terada</u> Tokyo University of Agriculture and Technology, Japan
16:00-16:15	(0089) Granular thermophilic anammox enables high-rate nitrogen removal from warm nitrogen rich wastewater: A proof of concept B. N. Ravikumar, M. S. Jia, J. M. Carvajal Arroyo, <u>R. Ganique</u> Ghent University, Belgium
16:15-16:30	(0123) Efficient nitrogen removal and substrate usage in ifas-anammox system under seasonal temperature variation <u>J. T. Hu</u> Nanjing University, China
16:30-16:45	(0131) Comparisons of nitrogen removal efficiencies and microbial communities of partial nitrification and anammox processes among laboratory-scale, pilot-scale, and full-scale <u>Pongsak (Lek) Noophan</u> , L. Cavanaugh, J. Munakata Marr, L. Ann Figueroa Kasetsart University, Thailand

Day 2: Thursday October 24, 2024

Venue	Hall B
Session 8	Graduate Student Session
	Chair: Prof. George Wells
13:30-13:45	<p>(0133) Role of biofilm carriers on sulfamethoxazole removal in integrated fixed-film and activated sludge system</p> <p>B. L. Min, L. Xie, J. Xie, Y. Y. He, R. J. Lin Tongji University, China</p>
13:45-14:00	<p>(0141) Machine learning-assisted prediction and identification of key factors affecting nitrogen metabolism pathways for aerobic granular sludge</p> <p>H. P. Li, L. Xie, B. Q. Zhou, M. X. Hu, Y. Y. He, R. Y. Huang, K. L. Liu, H. S. Yang, D. H. Yang, W. H. Pang Tongji University, China</p>
14:00-14:15	<p>(0149) Sulfamethoxazole removal in membrane aerated algal-bacterial biofilm reactors: microbial community response analysis</p> <p>I. Eheneden, R. C. Wang, O. B. Adesina, G. X. Chen, H. J. Ren, J. Twizeyemungu Tongji University, China</p>
14:15-14:30	<p>(0136) Enhancing anaerobic digestion of pig manure: impact of heat pretreatment on microbial community and args reduction</p> <p>J. L. Wang, T. Li, M. Wang Tongji University, China</p>
14:30-14:45	<p>(0148) Microbiological characteristics and nutrient removal performance in a novel sidestream phosphorus recovery process</p> <p>X. Y. Chen, Y. M. Li Tongji University, China</p>
14:45-15:00	<p>(0152) Characteristics of nutrient removal in granular sludge systems with different denitrifying electron acceptor</p> <p>Z. B. Chen, Y. K. Luo, R. Y. Li, J. W. Song, Z. X. Wu, X. Cui, Y. Zhao, Y. T. Ma, G. W. Yu, Y. H. Liang South China Agricultural University, China</p>
15:00-15:20	Coffee Break
Session 8	Graduate Student Session
	Chair: Prof. David Weissbrodt
15:20-15:35	<p>(0142) Multiscale mechanisms of light wavelengths on Chlorella-based photo-fermentation of anaerobically digested swine wastewater: the role of intracellular flux variations in biomass yield and nutrient consumption</p> <p>Y. Y. Wang Tongji University, China</p>
15:35-15:50	<p>(0151) Impact of particle size on the performance of denitrifying granular sludge</p> <p>Y. H. Zeng, Y. L. Wei, Z. B. Chen, Q. Zhang, P. H. Zheng, G. W. Yu, Y. H. Liang South China Agricultural University, China</p>
15:50-16:05	<p>(0060) N-acyl-homoserine lactone-mediated quorum sensing in microalgae-bacteria membrane aerated biofilm reactor (MABR) for synergetic removal of nutrients and sulfonamides</p> <p>H. J. Ren Tongji University, China</p>
16:05-16:20	<p>(0137) Biodegradation of actual organosulfur wastewater by biofilm reactor: Insights into biofilm formation, sulfur transformation and bacterial metabolic processes</p> <p>W. Zhang, X. Zheng Tongji University, China</p>
16:20-16:35	<p>(0147) Enriching Denitrifying Microorganisms through Biofilm Selective Recovery in Activated Sludge Systems</p> <p>C. X. Wang, X. L. Chai, X. H. Dai Tongji University, China</p>
16:35-16:50	<p>(0086) Enhanced nitrogen removal in modular moving bed constructed wetland under low C/N ratio and temperature: Insights from microbial communities</p> <p>L. Zhou, S. P. Cheng Tongji University, China</p>
16:50-17:05	<p>(0114) Exogenous putrescine plays a switch-like influence on the pH stress adaptability of biofilm-based activated sludge</p> <p>G. Y. Jiang, C. Wang Tianjin University, China</p>

Day 2: Thursday October 24, 2024

Venue	Hall D
Session 9	Bio-electrochemical Biofilms
	Chair: Prof. Defeng Xing, Prof. Rongchang Wang
13:30-14:00	<p>KEYNOTE: Resource recovery from wastewater using microbial electrochemical systems</p> <p>Zhen He Washington University in St. Louis, USA</p>
14:00-14:30	<p>KEYNOTE: The fundamental of BOD sensor: understanding of the electroactive biofilm</p> <p>Xin Wang Nankai University, China</p>
14:30-14:45	<p>(0052) On-line in-situ monitoring of electroactive biofilms in bio-electrochemical systems by means of a heat-transfer biofilm sensor</p> <p>A. Netsch, I. Latussek, H. Horn, M. Wagner DVGW Research Center at the Engler-Bunte-Institute , Germany</p>
14:45-15:00	<p>(0038) A study on cathode biofilm integrity in nanoparticle exposed Sediment MFC</p> <p>D. S. Vempati, A. Kumar Indian Institute of Technology Delhi, India</p>
15:00-15:30	Coffee Break
Session 9	Bio-electrochemical Biofilms
	Chair: Prof. Zhen He
15:30-16:00	<p>KEYNOTE: TBC</p> <p>Defeng Xing Harbin Institute of Technology, China</p>
16:00-16:20	<p>KEYNOTE: Microbial electrosynthesis with NiFe-layered double oxide and rGO modified cathode</p> <p>Rongchang Wang Tongji University, China</p>
16:20-16:35	<p>(0041) Study on the performance for microbial electrosynthesis of ammonia based on Shewanella cathodic biofilm</p> <p>S. Qiao, Y. Li Dalian University of Technology, China</p>
16:35-16:50	<p>(0031) Domestic wastewater treatment towards reuse by “self-supplied” microbial electrochemical system assisted UV/H₂O₂ process</p> <p>K. C. Yang, I. Abu-Reesh, Z. He Washington University in St. Louis, USA</p>
16:50-17:05	<p>(0048) Utilizing electroactive granular sludge for high-rate anaerobic sewage treatment at low temperatures</p> <p>J. H. Park, J. S. Kim, H. Choi, C. Lee Ulsan National Institute of Science and Technology, Korea</p>

Day 3: Friday October 25, 2024

Venue	Hall A
Session 10	Drinking Water Biofilms
	Chair: Prof. Gang Liu, Prof. Xin Yu
9:00-9:30	<p>KEYNOTE: “From nothing to something”: Promotion of heterogeneous biofilm formation by AOB in simulated drinking water pipeline conditions</p> <p><u>Xin Yu</u> Xiamen University, China</p>
9:30-9:45	<p>(0032) Stagnation and indoor environment trigger the changes of tap water quality: Metabolic and DNA sequence model of microbial community</p> <p><u>H. H. Zhang</u>, X. Liu Xi'an University of Architecture and Technology, China</p>
9:45-10:00	<p>(0042) Effect of residual disinfection on microbial communities in a pilot-scale intermittent and continuous water supply system</p> <p><u>D. Cheng</u>, M. Leifels, J. W. Cai, N. Nadhirah, Y. Woo, Z. M. Li, E. Hill, S. Corimayo, A. Whittle, S. Wuertz Nanyang Technological University, Singapore</p>
10:00-10:15	<p>(0061) Effect of the presence of nitrogen on biofilm growth in different drinking water pipe materials</p> <p><u>Y. W. Li</u>, B. J. Fang, Y. Guo, L. Ma, Y. Y. Xiao Shantou University, China</p>
10:15-10:35	Coffee Break
Session 10	Drinking Water Biofilms
	Chair: Prof. Xin Yu, Prof. Gang Liu
10:35-11:05	<p>KEYNOTE: Biofilm in Drinking Water System</p> <p><u>Gang Liu</u> Research Center for Eco-Environmental Sciences Chinese Academy of Sciences, China</p>
11:05-11:20	<p>(0080) N-acyl-homoserine-lactones as a critical factor for biofilm formation during the initial adhesion stage in drinking water distribution systems</p> <p><u>R. S. Chen</u>, R. T. Xu, J. X. Huang, X. N. Zhu, Y. L. Tang, Y. J. Zhang Tongji University, China</p>
11:20-11:35	<p>(0064) The impact of residual-chlorine concentration on biofilm community composition, incorporation & release of health-related organisms and water quality response</p> <p><u>F. Pick</u>, K. Fish, C. Smith, J. Boxall The University of Sheffield, England</p>
11:35-11:50	<p>(0082) Seasonal variation affects the bacterial community function in biological activated carbon filters for drinking water production</p> <p><u>K. Y. Jiang</u>, S. Q. Xia, Y. X. Hu, S. H. Liu, W. L. Ren, H. Wang Tongji University, China</p>

Day 3: Friday October 25, 2024

Venue	Hall B
Session 11	Biofilm Ecology
	Chair: Prof. Donghui Wen, Prof. Can Wang
9:00-9:30	<p>KEYNOTE: Interaction and metabolic diversity of microbial communities performing anaerobic ammonium and methane oxidations in membrane biofilm reactors</p> <p><u>Jianhua Guo</u> University of Queensland, Australia</p>
9:30-9:45	<p>(0138) Enhancing mass transfer in fixed-bed biofilm systems for efficient biological sewage treatment: insights from experimental trials and industrial applications</p> <p><u>Y. Li</u>, J. R. Peng, G. G. Huang, J. J. Zhang, Q. D. Zhang, X. Liu, W. Z. Zhang, S. L. Lu, F. M. Chen, S. J. Liu Qingyan Environmental Technology Co. Ltd, China</p>
9:45-10:00	<p>(0046) Exploring the influence of ZnO powder on bacterial biofilm formation and conjugation frequency utilizing a wastewater influent isolate</p> <p><u>K. Dadeh Amirfard</u>, S. Suzuki, D. Sano Tohoku University, Japan</p>
10:00-10:15	<p>(0135) Phthalates boost dissemination of antibiotic resistance genes in aquatic environment</p> <p>J. Wu, D. F. Liu, <u>W. W. Li</u> University of Science and Technology of China, China</p>
10:15-10:35	Coffee Break
Session 11	Biofilm Ecology
	Chair: Prof. Jianhua Guo
10:35-11:05	<p>KEYNOTE: Accelerating microbial colonization and biofilm formation on bioreactor at low temperatures through functional bacteria enrichment</p> <p><u>Can Wang</u> Tianjin University, China</p>
11:05-11:20	<p>(0109) Periphytic biofilm as a key regulator unravels missed nitrogen fate in rice production</p> <p><u>Y. H. Wu</u> Institute of Soil Science Chinese Academy of Sciences, China</p>
11:20-11:35	<p>(0118) Enhanced AHL-mediated quorum sensing accelerates the planktonic-to-biofilm transition by elevating the fitness of fast-growing bacteria in biofilm reactors</p> <p><u>F. Z. Xiong</u>, D. H. Wen Peking University, China</p>
11:35-11:50	<p>(0116) Cooperation and competition between denitrification and chromate reduction in a hydrogen-based membrane biofilm reactor</p> <p><u>L. J. Zhou</u> Shenzhen University, China</p>
11:50-12:05	<p>(0144) Dynamic changes in biofilm structures under dynamic flow conditions</p> <p><u>F. Dong</u>, C. X. Liu, S. Wang Zhejiang Normal University, China</p>

Day 3: Friday October 25, 2024

Venue	Hall C
Session 12	Moving Bed Biofilm Reactor
	Chair: Prof. Xianghua Wen, Prof. George Wells
9:00-9:30	KEYNOTE: Stronger together: Integrating flocs and biofilm for robust decarbonized nutrient removal processes <u>George Wells</u> Northwestern University, USA
9:30-9:45	(0037) Ecological mechanisms of biofilm development in the hybrid sludge-biofilm process <u>S. S. Yuan</u> , F. G. Meng Zhejiang Normal University, China
9:45-10:00	(0039) WWTP retrofit success story - Quadrupled s capacity increase by converting existing structures to MBBR and Media Clarifier <u>K. Nof</u> , G. Stamper Aqwise, Israel
10:00-10:15	(0093) Application and development of Hybrid MBBR in upgrading of WWTPs D. Wu, J. Z. Zhou, <u>Z. Q. Yang</u> , W. J. Han Qingdao SPRING Water Treatment Co. Ltd., China
10:15-10:35	Coffee Break
Session 12	Moving Bed Biofilm Reactor
	Chair: Prof. George Wells, Prof. Xianghua Wen
10:35-10:50	(0107) Simulating an anaerobic moving bed biofilm reactor treating high-strength wastewater <u>Y. H. Cai</u> , B. Rittmann, J. P. Boltz Northeast Normal University, China
10:50-11:05	(0092) Application of low carbon and high efficiency pure MBBR in municipal wastewater denitrification D. Wu, J. Z. Zhou, <u>W. J. Han</u> , Z. Q. Yang Qingdao SPRING Water Treatment Co. Ltd., China
11:05-11:20	(0063) COD and nitrogen removal study in a novel CFIC® biofilm reactors <u>S. Wang</u> Biowater Technology, China
11:20-11:35	(0095) Enhancement of lactic acid chain elongation using polyurethane carrier biofilms <u>B. B. Wang</u> , J. T. Zou, M. S. Jia, Á. Estevez Alonso, L. Vulart Bach, R. Ganigué Zhejiang University of Technology, China
11:35-11:50	The particulates in water mainly consist of colloids and suspended solids. Hach

Day 2: Thursday October 24, 2024

Venue	Hall C
Session 13	Aerobic Granular Sludge
	Chair: Prof. David Weissbrodt, Prof. Zhihua Li
9:00-9:30	<p>KEYNOTE: The role of aerobic granular sludge in reaching carbon-neutral wastewater treatment</p> <p><u>Eveline Volcke</u> Universiteit Gent, Belgium</p>
9:30-9:45	<p>(0034) Demonstration of world's first integrated aerobic granular sludge (AGS)- MBR</p> <p><u>L. Y. Tai</u> Public Utilities Board (PUB), Singapore, Singapore</p>
9:45-10:00	<p>(0072) Understanding the role of polyurethane sponges on rapid formation of aerobic granular sludge and enhanced nitrogen removal</p> <p><u>J. T. Zou</u>, J. Q. Yang Zhejiang University of Technology, China</p>
10:00-10:15	<p>(0065) Difference between flocs and granules in aerobic granular sludge system</p> <p><u>L. H. Li</u>, M. van Loosdrecht, M. Pronk Delft University of Technology, Netherlands</p>
10:15-10:30	Coffee Break
Session 13	Aerobic Granular Sludge
	Chair: Prof. Eveline Volcke
10:30-10:50	<p>KEYNOTE: Microbial ecosystem models to address functionalities in granular sludge</p> <p><u>David Weissbrodt</u> Norwegian University of Science and Technology (NTNU), Norway</p>
10:50-11:10	<p>KEYNOTE: From lab research to field applications: the development of aerobic granular sludge in China</p> <p><u>Zhihua Li</u> Xi'an University of Architecture and Technology, China</p>
11:10-11:25	<p>(0047) Antibiotic impact on microalgal-bacterial aerobic granular sludge: insights into reactor performance, microbial dynamics, and antibiotic transformation</p> <p><u>M. Besharati Fard</u>, D. Wu Ghent University, Belgium</p>
11:25-11:40	<p>(0101) Aerobic granular sludge coupled iron-carbon enhances nitrogen and phosphorus removal in real wastewater with low C/N ratio</p> <p><u>J. Li</u>, X. Y. Cheng, Y. J. Ni, L. Y. Jin, K. Pan, P. S. Zhu, M. H. Jin, Y. B. Yao Zhejiang University of Technology, China</p>
11:40-11:55	<p>Reproducibility of full-scale continuous flow aerobic granular sludge: a miracle of chance or an inevitable certainty?</p> <p><u>Y. Cheng</u>, K. J. Wang, K. Y. Zhang, R. Y. Liu, T. Y. Cao, P. P. Zheng Tsinghua University, China Beijing Huayide Environmental Technology Co. Ltd., China.</p>

POSTER SESSION

Paper Number	Paper Title
0050	Surface microbial inhibition by locally enhanced electric field treatment (LEEFT) X. P. Zhang, J. L. Dai , J. F. Zhou Georgia Tech Shenzhen Institute, Tianjin University, China
0051	Effects biofilm growth on biological stability within a full-scale drinking water distribution experimental facility J. Carneiro , K. Fish, P. Jarvis, J. Haley, J. Boxall, C. Bott University of Sheffield, England
0053	Integration of denitrification into a single chamber microbial fuel cell (MFC) – nitrate and oxygen competing for electrons A. Netsch , D. Chen, H. Horn, M. Wagner DVGW Research Center at the Engler-Bunte-Institute, German
0058	Comparing the diversity of microbiomes in conventional anammox vs extracellular electron transfer based anammox systems R. P. Alagappan , N. A. Al-Bedani, E. Janka University of South-Eastern Norway, Norway
0073	Enhanced phytoremediation of wetland plants by AMF: Efficient removal and stabilization combined heavy metal-antibiotic contaminants in sediments X. Q. Zhang , S. P. Cheng Tongji University, China
0079	Ecological response of phytoplankton community structure to the reception of reclaimed water in scenic waters S. M. Liu , S. P. Cheng Tongji University, China
0085	Subsurface flow constructed wetland for quality improvement of effluent from municipal sewage treatment plant L. Yang , H.T. Zhu Beijing Forestry University, China
0087	Practical application and mechanism of biofilm process in pharmaceutical wastewater treatment J. Zheng Tongji University, China
0094	Combing imaging and respirogram technology for monitoring and controlling intelligent operation of wastewater treatment X. J. Zhang, X. Wang, Z. H. Li Xi'an University of Architecture and Technology, China
0114	Exogenous putrescine plays a switch-like influence on the pH stress adaptability of biofilm-based activated sludge G. Y. Jiang , C. Wang Tianjin University, China
0124	Community structure changes in algal-bacterial membrane aerated biofilm reactors for antibiotic and nutrient removal from ammonium rich wastewater T. Juvins , R. C. Wang, A. Odunayo Blessing, H. J. Ren, E. Iyobosa Tongji University, China
0130	Biofilm characteristics of denitrification filter with construction waste as filtering material M. H. Huang , Y. Z. Bao, L. J. Bao Donghua University, China
0132	Quick installation and easy startup to increase TN removal C. F. Wang , L. Yi, Q. Zhang, Q. X. Cai, B. Heffernan, A. Gorenflo Zhejiang Omex Environmental Engineering Co., Ltd., China
0077	Shedding light on the complexities of internal carbon driven denitrifiers in biofilm & floc in PdN pilot system A. Gu , Y. Yan, M. Bachmann, M. Baldwin, S. Klaus, C. Bott Cornell University, America

0151	<p>Impact of particle size on the performance of denitrifying granular sludge</p> <p><u>Y. H. Zeng</u>, Y. L. Wei, Z. B. Chen, Q. Zhang, P. H. Zheng, G. W. Yu, Y. H. Liang South China Agricultural University, China</p>
0147	<p>Enriching denitrifying microorganisms through biofilm selective recovery in activated sludge systems</p> <p><u>C. X. Wang</u>, X. L. Chai, X. H. Dai Tongji University, China</p>
0149	<p>Sulfamethoxazole removal in membrane aerated algal-bacterial biofilm reactors: microbial community response analysis</p> <p><u>I. Eheneden</u>, R. C. Wang, O. B. Adesina, G. X. Chen, H. J. Ren, J. Twizeyemungu Tongji University, China</p>
0146	<p>The role of dissolved methane in algae-bacterial granulation and microbial interactions during non-aerated partial nitrification of anaerobic effluent</p> <p><u>S. Q. Chen</u>, Z. B. Zhou Southwest University, China</p>
0152	<p>Characteristics of nutrient removal in granular sludge systems with different denitrifying electron acceptor</p> <p><u>Z. B. Chen</u>, Y. K. Luo, R. Y. Li, J. W. Song, Z. X. Wu, X. Cui, Y. Zhao, Y. T. Ma, G. W. Yu, Y. H. Liang South China Agricultural University, China</p>
0060	<p>N-acyl-homoserine lactone-mediated quorum sensing in microalgae-bacteria membrane aerated biofilm reactor (MABR) for synergetic removal of nutrients and sulfonamides</p> <p><u>H. J. Ren</u> Tongji University, China</p>
0086	<p>Enhanced nitrogen removal in modular moving bed constructed wetland under low C/N ratio and temperature: Insights from microbial communities</p> <p><u>L. Zhou</u>, S. P. Cheng Tongji University, China</p>
0136	<p>Enhancing anaerobic digestion of pig manure: Impact of heat pretreatment on microbial community and ARGs reduction</p> <p><u>J. L. Wang</u>, T. Li, M. Wang Tongji University, China</p>
0137	<p>Biodegradation of actual organosulfur wastewater by biofilm reactor: Insights into biofilm formation, sulfur transformation and bacterial metabolic processes</p> <p><u>W. Zhang</u>, X. Zheng Tongji University, China</p>
0139	<p>Study on the role of adsorption in enhancing the removal of diclofenac from water by Pd-MBfR</p> <p><u>X. D. Li</u> Tongji University, China</p>
0141	<p>Machine learning-assisted prediction and identification of key factors affecting nitrogen metabolism pathways for aerobic granular sludge</p> <p><u>H. P. Li</u>, L. Xie, B. Q. Zhou, M. X. Hu, Y. Y. He, R. Y. Huang, K. L. Liu, H. S. Yang, D. H. Yang, W. H. Pang Tongji University, China</p>
0142	<p>Multiscale mechanisms of light wavelengths on Chlorella-based photo-fermentation of anaerobically digested swine wastewater: the role of intracellular flux variations in biomass yield and nutrient consumption</p> <p><u>Y. Y. Wang</u> Tongji University, China</p>
0148	<p>Microbiological characteristics and nutrient removal performance in a novel sidestream phosphorus recovery process</p> <p><u>X. Y. Chen</u>, Y. M. Li Tongji University, China</p>
0153	<p>Effects of different biofilm carriers on fermentation performance and microbial communities in side-stream enhanced biological phosphorus removal reactors</p> <p>D. Q. Wang, R. Y. Wu, M. B. Huang, <u>J. Y. Bi</u> Xi'an University of Technology, China</p>
0126	<p>Carbon nanotubes and NiFe-layered double oxide supported carbon felt as cathode materials to boost-up CO₂ reduction to acetate via microbial electrosynthesis</p> <p><u>G. X. Chen</u>, R. C. Wang Tongji University, China</p>