IWA Particle Separation Specialist Group Conference 2026

2026. June 21 Sun ~ 24 Wed

Hokkaido University
Sapporo, Japan

Program Book

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Contents

Welcome Message from the Chairman

It is my great pleasure to extend a warm welcome to all of you to Sapporo.

It has been 12 long years since this conference was last held here in Sapporo. Our "Particle Separation" Specialist Group (SG) is the oldest within the International Water Association (IWA), with roots tracing back to the era before the merger of IAWQ and IWSA. While our initial focus was on traditional technologies such as coagulation, sedimentation, and media filtration, we have since evolved to encompass a cutting-edge and comprehensive scope. Today, our discussions lead the field, ranging from advanced membrane technology to addressing emerging contaminants like microplastics and various viruses.

While we have overcome the challenges of the pandemic and are finally seeing the return of the vibrant energy inherent to international conferences, it is deeply regrettable that current global instabilities continue to cast a shadow over our world. Nevertheless, in the face of population growth, global warming, environmental pollution, and the continuous emergence of new contaminants, the vital importance of water resources only intensifies. Consequently, the social responsibility of our research field has never been greater.

This is precisely why we must now strengthen our networks and accelerate—rather than halt—our progress in water management and treatment innovation. There is no platform more powerful than an international conference like this for building robust networks among researchers and engineers. Let us engage in meaningful, exhaustive discussions to maximize the outcomes of this conference.

In June, at the beginning of summer, a clear and sunny Sapporo is perhaps one of the most beautiful places in the world. It is our immense joy and pride to welcome you to the beautiful, historic, and majestic campus of Hokkaido University during this wonderful season.

Beyond the deep academic deliberations during the sessions, I encourage you to explore the scenic attractions around Sapporo and savor the exquisite Hokkaido cuisine, which is renowned as some of the finest in Japan. I sincerely hope that this conference proves to be deeply memorable for each of you and serves as a launching pad for new innovations that will solve the water challenges of our future.

Katsuki Kimura (Chair)
Hokkaido University

Committee

Programme Committee

Katsuki Kimura (Chair)
(Hokkaido University, Japan)

Arjen van Nieuwenhuijzen (Vice-chair)
(Witteveen Bos, Netherlands)

Pascal Ginisty
(FTS, France)

Vitaly Gitis
(Ben-Gurion University, Israel)

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(Duke University, United States Of America)

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- **Katsuki Kimura (Chair),** Hokkaido University
- **Taku Fujiwara,** Kyoto University
- **Akira Hafuka,** Hokkaido University
- **Hiroyuki Katayama,** University of Tokyo
- **Taku Matsushita,** Hokkaido University
- **Kazuyuki Oshita,** Kyoto University
- **Daisuke Sano,** Tohoku University
- **Nobutaka Shirasaki,** Hokkaido University

Guideline

Date

June 21 - 24, 2026
*The times displayed in the program are in Japan Standard Time (JST, GMT+9).

Venue

Hokkaido University Conference Hall
(8-1, Nishi 5 chome, Kita 8 jo, Kita Ward, Sapporo, Hokkaido)

Registration

June 21(Sun) 13:00 – 18:00
June 22 (Mon) 8:00 – 16:00
June 23 (Tue) 8:00 – 16:00
June 24 (Wed) 8:30 – 15:00

Welcome Reception

- Date and time/ June 21(Sun) 18:30 – 20:30
- Venue/ Former Hokkaido Government Office Building(Red Brick Building)

(Kita 3 jo, Nishi 6 chome, Chuo Ward, Sapporo)

*Please make sure to complete your registration at Hokkaido University Conference Hall before attending the reception.

Gala Dinner

- Date and time/ June 23 (Tue) 18:00 – 20:00
- Venue/ Keio Plaza Hotel Sapporo

(2-1, Kita 5 jo, Nishi 7 chome, Chuo Ward, Sapporo)

Dining Arrangements

Date	Lunch		Dinner	
	Time	Place	Time	Place
June 21(Sun)	-	-	18:30-20:30	Red Brick Building
June 22 (Mon)	12:20-13:20	Ground Floor Hall	-	-
June 23 (Tue)	11:55-13:00	Ground Floor Hall	18:00-20:00	Keio Plaza Hotel Sapporo
June 24 (Wed)	11:55-13:00	Ground Floor Hall	-	-

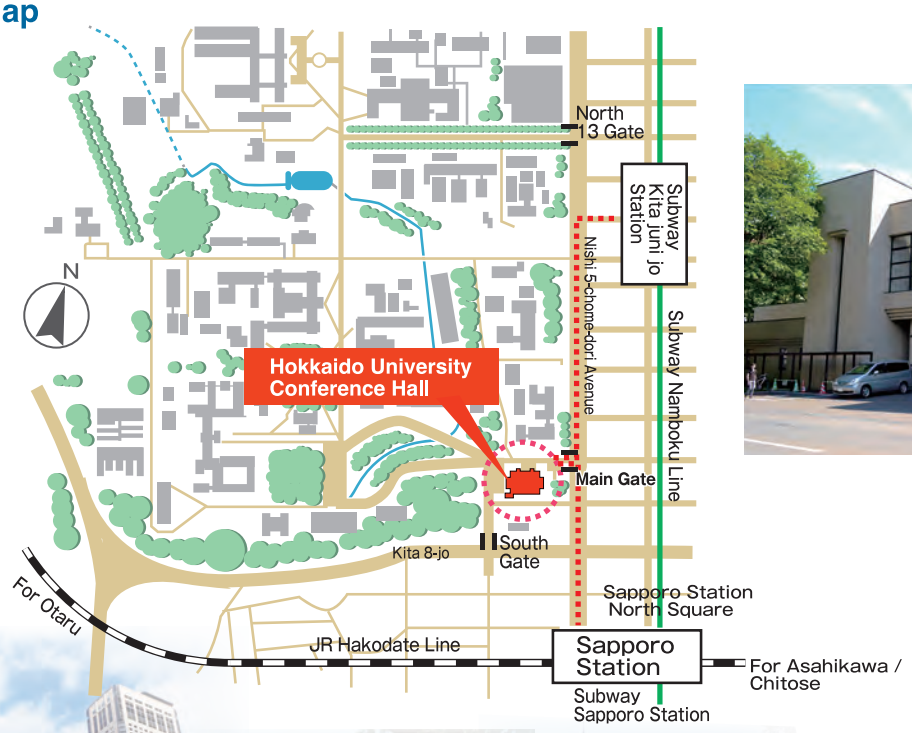
Access to the Venue

Travelling to Sapporo

Conference Venue

Hokkaido University Conference Hall
Nishi 5 chome, 8-1, Kita 8 jo, Kita Ward, Sapporo

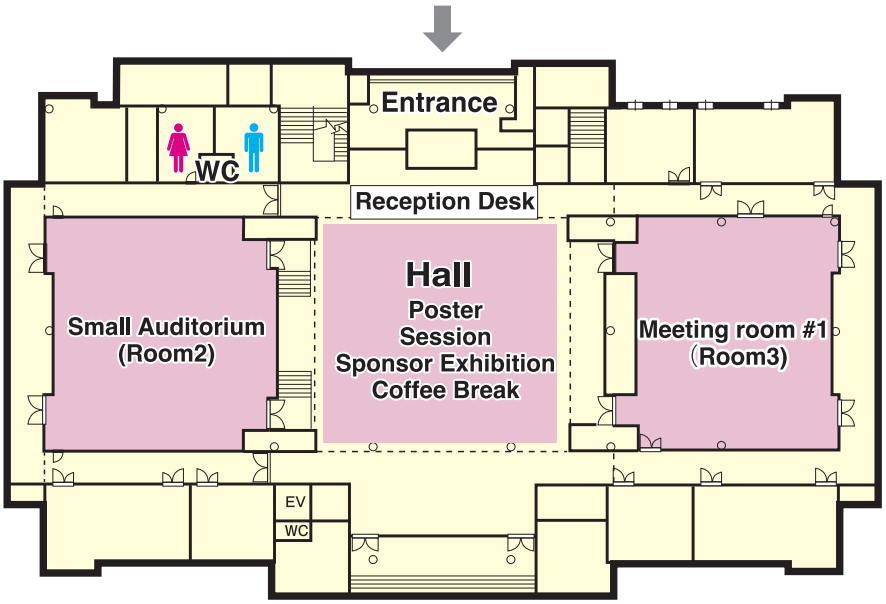
Map



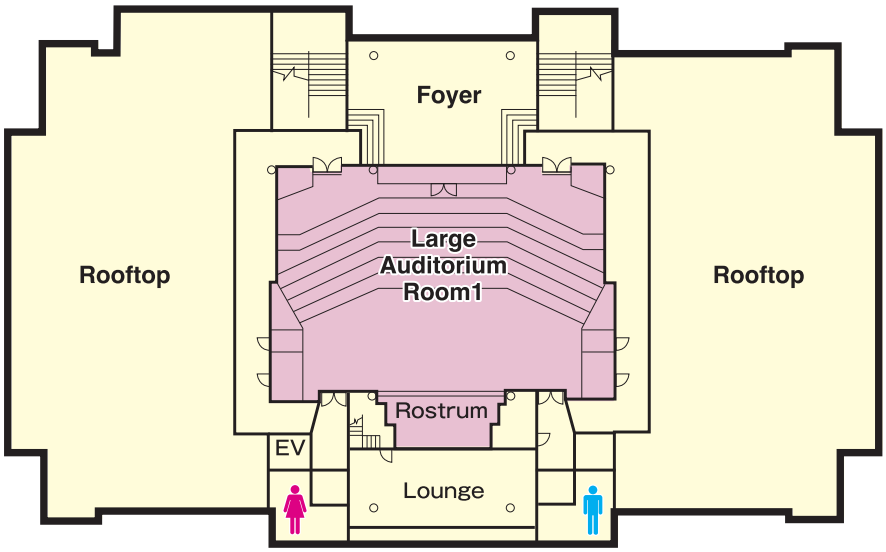
Hokkaido University
Conference Hall

Venue Layout

1st floor



2nd floor



Schedule

	June 21 (Sun)	June 22 (Mon)	June 23 (Tue)	June 24 (Wed)
8:00				
8:30				
9:00		Opening Ceremony	Parallel Session 4	
9:30		Plenary Talk 1		Parallel Session 6
10:00		Coffee Break		
10:30		Parallel Session 1	Coffee Break	Coffee Break
11:00				
11:30			Plenary Talk 2	Plenary Talk 3
12:00			Lunch	Lunch
12:30		Lunch		
13:00	Registration		Poster Session	Parallel Session 7
13:30		Parallel Session 2		
14:00			Coffee Break	
14:30			Parallel Session 5	
15:00		Coffee Break		
15:30		Parallel Session 3		Closing Ceremony
16:00				
16:30				
17:00				
17:30				
18:00			Gala Dinner	
18:30	Welcome Reception			
19:00				
19:30				
20:00				

Detailed Schedule ❶

June 21 (Sun)

13:00-18:00 Registration Open
(Hokkaido University Conference Hall)

15:20-18:00 Special Pre-seminar "Toward the Rapid Transfer of New Water and Wastewater Treatment Technologies"
(Hokkaido University Conference Hall)

Note: Please note that a separate registration is required for the seminar. For details, please visit the website below.

https://iwaps2026.com/pre-seminar_en.html

18:30-20:30 Welcome Reception
(Former Hokkaido Government Office (Red Brick Office))

Note: Conference attendees participating in the reception are required to complete their registration at the Conference Hall by 18:00 (6:00 PM) and collect their conference badges, which will serve as their admission tickets.

Detailed Schedule ❷

June 22 (Mon)

8:00 **Registration open**

9:00-9:30 **Opening ceremony**
(Room 1 (Main Auditorium))

Opening Address
Katsuki Kimura
(Chairman of the IWA Particle Separation Group, Hokkaido University)

Welcome Address
Yoshimasa Watanabe
(IWA Distinguished Fellow, Professor Emeritus, Hokkaido University)

The history of the IWA Particle Separation Group
Hallvard Ødegaard (IWA Distinguish Fellow, Professor Emeritus, Norwegian University of Science and Technology)

9:30-10:15 **Plenary Talk 1**
(Room 1, Chair: Katsuki Kimura (Hokkaido University))

Targeting microplastics and nanoplastics in treated waters
Nathalie Tufenkji (McGill University)

10:15-10:40 **Coffee Break**

10:40-12:20 **Parallel Session 1**
Room 1 / Technical Session 1, Microplastics
Chair: Nathalie Tufenkji (McGill University, Canada)
Room 2 / Technical Session 2, Membrane fouling 1
Chair: Vitaly Gitis (Ben-Gurion University of the Negev, Israel)
Room 3 / Technical Session 3, Industrial application
Chair: Pascal Guiraud (Institut National Des Sciences Appliquees, France)

12:20-13:20 **Lunch**

13:20-15:00 **Parallel Session 2**
Room 1 / Technical Session 4, Wastewater management
Chair: Arjen van Nieuwenhuijzen (Witteveen Bos, Netherlands)
Room 2 / Technical Session 5, Coagulation / Flocculation
Chair: Hiroshi Yamamura (Chuo University, Japan)

15:00-15:30 **Coffee Break**

15:30-17:10 **Parallel Session 3**
Room 1 / Technical Session 6, Nature based materials
Chair: Kazuyuki Oshita (Kyoto University, Japan)
Room 2 / Technical Session 7, Desalination
Chair: Bhekie Mamba (University of South Africa, South Africa)
Room 3 / Technical Session 8, Resource recovery 1
Chair: Taku Fujiwara (Kyoto University, Japan)

Detailed Schedule ❸

June 23 (Tue)

8:00 **Registration open**

9:00-10:40 **Parallel Session 4**

Room 1 / Technical Session 9, Emerging contaminants 1
Chair: Emile Cornelissen (KWR, Netherlands)
Room 2 / Technical Session 10, Energy-efficient separation
Chair: Akira Hafuka (Hokkaido University, Japan)
Room 3 / Technical Session 11, Membrane fouling 2
Chair: How Yong Ng (Beijing Normal University, China)

10:40-11:10 **Coffee Break**

11:10-11:55 **Plenary Talk 2**

(Room 1, Chair: Katsuki Kimura (Hokkaido University))
A status quo after a decade of digitialisation in particle separation
Ingmar Nopens (C-Biotech)

11:55-13:00 **Lunch**

13:00-14:00 **Poster Session supported by the Kurita Water and Environment Foundation**

14:00-14:30 **Coffee Break**

14:30-16:30 **Parallel Session 5**

Room 1 / Technical Session 12, Emerging contaminants 2
Chair: Nobutaka Shirasaki (Hokkaido University, Japan)
Room 2 / Technical Session 13, AI and machine learning
Chair: Ingmar Nopens (C-Biotech, Belgium)
Room 3 / Technical Session 14, Membrane bioreactor
Chair: Seoktae Kang (KAIST, Republic of Korea)

18:00-20:00 **Gala Dinner**

(Keio Plaza Hotel Sapporo)

Detailed Schedule ④

June 24 (Wed)

8:30 **Registration open**

9:20-10:40 **Parallel Session 6**

Room 1 / Technical Session 15, Emerging contaminants 3
Chair: Taku Matsushita (Hokkaido University, Japan)
Room 2 / Technical Session 16, Model and simulation
Chair: Harsha Ratnaweera (Norwegian University of Life Sciences, Norway)

10:40-11:10 **Coffee Break**

11:10-11:55 **Plenary Talk 3**

(Room 1, Chair: Katsuki Kimura (Hokkaido University))

3D Printing Nanoporous and Responsive Separation Materials at Scale and Continuously
Ludovic Dumee (Curtin University)

11:55-13:00 **Lunch**

13:00-15:00 **Parallel Session 7**

Room 1 / Technical Session 17, Drinking water treatment
Chair: Pierre Bérubé (University of British Columbia, Canada)
Room 2 / Technical Session 18, Membrane modification
Chair: Ludovic Dumee (Curtin University, Australia)
Room 3 / Technical Session 19, Resource recovery 2
Chair: Hiroshi Yamamura (Chuo University, Japan)

15:15 **Closing Ceremony**

(Room 1)

Special Pre-Seminar

Toward the Rapid Transfer of New Water and Wastewater Treatment Technologies

Date: Sunday, June 21, 2026
Time: 15:20 – 18:00
Venue: Hokkaido University Conference Hall
Admission: Free (Pre-registration required)
Language: English (Simultaneous interpretation provided at the venue)
*Please bring your own smartphone/laptop and earphones.

Statement of Purpose

" The Future of Japanese Water Technology: Challenging the Status Quo"
Technological innovation in water and wastewater treatment is accelerating globally. However, compared to international benchmarks, the social implementation of new technologies in Japan remains significantly delayed. In an era of rapid population decline, can we afford to rely solely on legacy practices and established technologies? Without a strategic shift, Japan risks falling behind as a mere importer of foreign innovation.
What accounts for this profound disparity in implementation speed between Japan and the global community? This seminar will examine unique case studies of rapid social implementation from across the globe. We seek to share a sense of urgency—that "at this rate, the Japanese water industry will be sidelined from the global stage"—and provide a platform to analyze the barriers within Japan and the catalysts driving progress abroad.
Simultaneous interpretation is available, and admission is free. We look forward to your participation.

Program Summary

Time	Session	Speakers
15:20	Opening Remarks / Introduction	Katsuki Kimura (Hokkaido University)
15:30	Guest Address	Yasuhide Honda (Councillor, Minister's Secretariat, Ministry of Land, Infrastructure, Transport and Tourism)
15:45	Case Study 1：Development and Dissemination of Innovative Sewerage Technologies in Japan: A challenge through Industry-government-academia Collaboration	Taku Fujiwara (Kyoto University)
16:10	Case Study 2：Facile Shift of MBR from Lab- to Field-Scale: Case Study of Korea	Seoktae Kang (Korea Advanced Institute of Science and Technology)
16:35	(Break)	
16:50	Case Study 3：Passive Membrane Filtration – from concept to implementation at full-scale	Pierre Bérubé (University of British Columbia)
17:15	Case Study 4：Science and Practice: Accelerating Technology Transfer in Water and Membrane Treatment	Emile Cornelissen (KWR/Ghent University)
17:40	Panel Discussion	All Speakers
18:00	Closing	

Plenary Lectures ❶

Plenary talk 1：
Targeting microplastics and nanoplastics in treated waters

Nathalie Tufenkji
McGill University

Biography

Nathalie Tufenkji is a Professor in the Department of Chemical Engineering at McGill University where she holds the Tier I Canada Research Chair in Biocolloids and Surfaces. After completing a BEng in Chemical Engineering at McGill, she earned MSc and PhD degrees in Chemical and Environmental Engineering from Yale University. Her research is in the area of particle-surface interactions with applications in protection of water resources, plastic pollution as well as the discovery of natural antimicrobials. Professor Tufenkji was awarded the Killam Research Fellowship, the Engineers Canada Award for the Support of Women in the Engineering Profession, the Chemical Institute of Canada Environment Division Research & Development Dima Award, the YWCA Woman of Distinction Award in Science and Technology, and the Hatch Innovation Award of the Canadian Society for Chemical Engineers. She is a fellow of the Royal Society of Canada and the Canadian Academy of Engineering. Professor Tufenkji has served on the editorial advisory boards of the journals Environmental Science and Technology, npj Clean Water, Advances in Colloid and Interface Science, Water Research, and Environmental Science: Nano. At UNU-INWEH, Professor Tufenkji contributes to research in water quality and protection.

Plenary talk 2：
A status quo after a decade of digitialisation in particle separation

Ingmar Nopens
C-Biotech

Biography

Ingmar Nopens holds a MSc in Bio-science engineering in environmental technology and a PhD in Applied Biological Sciences. He is a former full professor at Ghent University leading research in mathematical modelling in the context of resource recovery from water streams. Here he worked on many particle separation systems, such as flocculation, sedimentation, membrane filtration, sand filtration. He used kinetic models, CFD and PBM as well as combinations thereof in order to build knowledge and optimize them. He is an expert in circular economy and digitalization and has a broad interest in system optimization and holistic solutions. He is an IWA fellow since 2011 and chaired the MIA specialist group and well as several Task groups and Working groups. In 2017 he co-founded AM-Team to bring complex modelling solutions to the broader market. End of 2022 he joined C-Biotech as managing director, leading the efforts to develop and industrialise sustainable, biobased materials for the construction sector using industrial hemp as biomass. Circularity is in his DNA.

Plenary Lectures ❷

Plenary talk 3：
3D Printing Nanoporous and Responsive Separation Materials at Scale and Continuously

Ludovic (ludo) Dumee
Curtin University

Biography

Dr. Ludovic (“Ludo”) Dumee joined Curtin University (Perth, Australia) in 2026, where he leads research in advanced water treatment and resource recovery from brines and industrial wastewaters. His work focuses on the development of next-generation separation materials and integrated process systems to enable low-carbon desalination, critical mineral recovery, and circular resource management. His research combines materials engineering, process intensification, and techno-economic assessment to accelerate the translation of laboratory innovations into scalable industrial solutions. Between 2025 and 2026, Ludo served as Chief Science Officer within a junior green metallurgy company (Perth, Australia) developing electrified, low-temperature extraction pathways for critical minerals. In this executive role, he led technology strategy, process validation, and early-stage scale-up activities aimed at reducing the environmental footprint of strategic metal production while strengthening commercial readiness. Prior to this, Ludo was an academic at Khalifa University (Abu Dhabi, UAE) (2020-2024), where he developed advanced separation materials derived from nanoscale architectures for environmental and energy applications. He led decarbonization initiatives within the Research and Innovation Center on 2D Nanomaterials (RIC2D) and coordinated industry-aligned projects across the USA, Europe, Australia, and the Middle East. He previously worked at Deakin University (Geelong, Australia) (2012-2020), where his team was focused on the design and engineering of advanced separation materials and hybrid functional systems, working closely with industry on applied research and technology development, and worked as a postdoctoral fellow at the University of Melbourne and the CO2CRC (2011-2012) dedicated to the recycling of solvents used in carbon capture. He completed his PhD in 2012 at Victoria University and with the CSIRO (Australia) on advanced desalination systems. Ludo currently serves as Co-Editor-in-Chief of the Journal of Water Process Engineering (Elsevier) and actively contributes to the global separation and membrane community through leadership, mentoring, and international collaboration.

Technical Sessions

***Affiliations and countries listed in this table are based on those of the first author.**

Technical Session 1 (Parallel Session 1 / Room 1)

Microplastics

No.	Title	Authors
1-A-1	Effect of Simulated River Abrasion on Microplastic Surface Characteristics and Sedimentation Rates.	Michael O'Callaghan, Annie Ockelford, John Bridgeman; University of Liverpool, United Kingdom
1-A-2	Effects of Fibrous Bridging Agents on Sewage Sludge Dewatering and Simultaneous Leaching of Contaminants	Masashi Kaneda, Anthony Aoun, Owen Armstrong, Mathieu Lapointe, Nathalie Tufenkji; McGill University, Canada
1-A-3	Performance of Conventional Water Treatment Processes for Microplastic Removal Using Sedimentation, Coagulation, and Sand Filtration	Swathi Priya P, Tanushree Parsai; Indian Institute of Technology Madras, India
1-A-4	Occurrence and Removal of Traffic-Related Pollutants, including Microplastics and Co-Contaminants, from Stormwater Runoff	Laijing Korush Maring, Swathi Priya P, Tanushree Parsai; Indian Institute of Technology Madras, India
1-A-5	Repurposing Water Treatment Residual for Effective Microplastic Removal	Jianfei Chen, Jinkai Xue; University of Regina, Canada

Technical Session 2 (Parallel Session 1 / Room 2)

Membrane fouling 1

No.	Title	Authors
1-B-1	Adaptive Membrane Cleaning Control via Solid-Phase Three-Dimensional Excitation Fluorescence Spectroscopy (SPF-EEM)	Hiroshi Yamamura, Ayaka Tomita, Yuki Nakaya, Shishir Md Nurul, Pierre Bérubé; Chuo University, Japan
1-B-2	Protein-Like NOM as a Driver of UF/MF Fouling, Cleaning Demand, and Long-Term Membrane Ageing	Md Nurul Shishir, Hiroshi Yamamura, Pierre Bérubé; University of British Columbia, Canada
1-B-3	Fouling Mitigation in a High-Rate Membrane Bioreactor Using a Mesh Rotating Biological Contactor as Pretreatment	Yumeka Sakurai, Kurumi Kagata, Takayuki Kakuda, Kentaro Namiki, Jinyang Hu, Takumi Obara, Kenji Kakinuma, Nobuhiro Otsuki, Yoshimasa Watanabe, Hiroshi Yamamura; Chuo University, Japan

No.	Title	Authors
1-B-4	Inline Coagulation for Fouling Control and Improved Backwashing in Ultrafiltration Systems	Lap-Cuong Hua, Abdul Rauf Khan, Irina Zaikina, Almohanad Abusultan, Maria D. Kennedy; IHE-Delft Institute for Water Education, Netherlands
1-B-5	Difference in Filterability of Sludge in MBR, High-Rate MBR, and Direct Membrane Filtration: Formation of a Network-like Gel Layer by Proteins and β-Polysaccharides	Daichi Matsumoto, Tatsumi Ikemoto, Hitoshi Makizuka, Akira Hafuka, Katsuki Kimura；Hokkaido University, Japan

Technical Session 3 (Parallel Session 1 / Room 3)

Industrial application

No.	Title	Authors
1-C-1	Highly Turbid Semiconductor Wastewater Reclamation With a Novel Dead-End Hollow-Fiber UF Membrane Module Characterized by Center-Distributor and End-Free Structures	Youhei Yabuno, Hiroki Nakanishi, Kensaku Komatsu; Kuraray Co., Ltd., Japan
1-C-2	Mechanistic Analysis of Nanoparticle Attachment in Ultrapure Water Piping Systems	Hyejoo Park, Sion Kim, Seoktae Kang; Korea Advanced Institute of Science & Technology (KAIST), Republic of Korea
1-C-3	Alumina–Zeolite Composite Membranes for Advanced Particle Separation	Nurit Gofman, Hen Shamir, Vitaly Gitis; Ben-Gurion University of the Negev, Israel
1-C-4	Effectiveness of Bottom Ash in Sedimentation Processes: A Study of Settling Velocity, Heavy Metals, and Organic Matter	Alfito Kresno, Sucipta Laksono, Sandyanto Adityosulindro, Djoko Mulyo Hartono; Universitas Indonesia, Indonesia

Technical Sessions

Technical Session 4 (Parallel Session 2 / Room 1)

Wastewater management

No.	Title	Authors
1-A-6	The Importance of Advanced Particle Separation for the Wastewater Treatment Plant of the Future - Separation, Sortation, Concentration	Arjen F. van Nieuwenhuijzen; Witteveen+Bos Consulting Engineers, Netherlands
1-A-7	Membrane Fouling Mechanisms in a Gravity-Driven Membrane-Coupled Anaerobic Baffled Reactor (ABR) for Decentralised Sanitation	Sudhir Pillay; Water Research Commission, South Africa
1-A-8	The Integration of Dynamic Membrane and High-Rate Contact Stabilization System for Efficient Wastewater Treatment	Seungwon Lee, Sung Il Yu, Hyokwan Bae; Ulsan National Institute of Science and Technology (UNIST), Republic of Korea
1-A-9	Scaling Aerobic Granular Sludge-Gravity Driven Membrane (AGS–GDM) Technology: From Pilot to 100 m3/d Demonstration for Low-Energy Wastewater Treatment and Reuse	Sarvajith Manjunath, Yogesh Singh, Muhammad Ali, Pascal E. Saikaly; King Abdullah University of Science and Technology (KAUST), Saudi Arabia
1-A-10	Comparative Assessment of the Integrated Decentralized Sewage Treatment Schemes	Pranit Prakash Yadav, Amritanshu Shriwastav, Anurag Garg; Indian Institute of Technology Bombay, India

Technical Session 5 (Parallel Session 2 / Room 2)

Coagulation / Flocculation

No.	Title	Authors
1-B-6	Groundwater Treatment with Biopolymer-based Flocculants	K. Kallies, A. Hackmann, R. Wickel, A. S. Ruhl; German Environment Agency, Germany
1-B-7	Flocculation Conditions Effects on Ultrafiltration Membrane Fouling in Water Resource Recovery from Industrial Wastewater	Ayako Sakamoto, Takahiro Kawakatsu, Keijiro Tada, Mizuki Suzuki; Kurita Water Industies Ltd., Japan
1-B-8	A Holistic Monetary Valuation of Digitalising Chemical Coagulation in Wastewater Treatment	Dino Ratnaweera；Norwegian University of Life Sciences, Norway

No.	Title	Authors
1-B-9	Fate and Size-Dependent Removal Pathways of Particulate, Colloidal, and Dissolved Organic Matter During Coagulation	Wanru Zhang, Yingjie Yang, M.D.M.E. Tamilki, Yue Yin, Harsha Ratnaweera; Qingdao University of Technology, China

Technical Session 6 (Parallel Session 3 / Room 1)

Nature based materials

No.	Title	Authors
1-A-11	Optimisation of the Separation Process in Gravel Wash Water Treatment Using Natural Flocculants, Dual Flocculation, and Artificial Intelligence	Sofía Andrés-Zapata, Martin Pfaff, Benny Botsch; RWTH Aachen University, Germany
1-A-12	Towards Nature-Based Solutions in Waste Water Treatment: Role of Biopolymer Properties in Coagulation-Flocculation and Removal of Suspended Mineral Matter	Danielle Slomberg, Wala Zoghlami, Jérôme Labille, Pascal Ginisty, Nicolas Roche; CEREGE, CNRS, Aix Marseille Univ, IRD, INRAE, France
1-A-13	Particle Removal With a Biopolymer Harvested From Aerobic Granular Sludge	Yingjie Yang, Wanru Zhang, Wedahitha Yapa, Haifeng Zhang, Harsha Ratnaweera; Qingdao University of Technology, China
1-A-14	Transforming Agri-food Waste into High-Performance Bio-adsorbents for Sustainable Water Remediation	Priya Pal, Mark Lynch, Kamrun Nahar, Peter Harris, Paulomi (Polly) Burey; University of Southern Queensland, Australia
1-A-15	Direct Ink Writing 3D Printing of Alginate-Mandarin Peel Biochar Structures for Efficient Metoprolol Removal From Aqueous Solutions	Gayeon Won, Soyeon Kim, Sung-sil Park, Bokseong Kim, Yuhoon Hwang; Seoul National University of Science and Technology, Republic of Korea

Technical Sessions

Technical Session 7 (Parallel Session 3 / Room 2)

Desalination

No.	Title	Authors
1-B-11	Synergistic Fouling Mitigation of Co-contaminants of Ultrafine Microplastics and Organic in Seawater Pretreatment Using Ferrous Iron/Peracetic Acid	How Yong Ng; Beijing Normal University, China
1-B-12	Brackish Water Desalination Using Electrodialysis: Influence of Operating Parameters on Energy Consumption and Scalability	Leo Gutierrez, Priscila Valverde; Ghent University, Belgium
1-B-13	High-Recovery Inland Desalination: Inter-stage Softening via Hybrid Ultrafiltration for Scaling Mitigation	Martin Futterlieb, Stefan Panglisch; University of Duisburg-Essen, Germany
1-B-14	Optimising Regeneration Efficiency of Ion Exchange Resins Using Ammonium Bicarbonate Under CO_2 and Air Pressurisation	Kamran Jalali, Adrian Garrido Sanchis; University of New South Wales Canberra, Australia
1-B-15	Translating Mechanistic Insight into Enhanced Silica Removal from Saline Brine via Electrocoagulation	Tyler A. Malkoske, Tiezheng Tong; Arizona State University, United States

Technical Session 8 (Parallel Session 3 / Room 3)

Resource recovery 1

No.	Title	Authors
1-C-11	Suppression of $CaCO_3$ Scaling From Membrane Contactors Operating at High pH for the Recovery of Ammonia in Semiconductor Wastewater	Junho Kim, Jaehyung Kim, Jaekeun Song, Daeseon Park, Dongseoung Shin, Seoktae Kang; Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea
1-C-12	A Basic Study of Membrane Fouling Control in the Reciprocating High-Rate MBR (RHR-MBR) system	Yuji Hashimoto, Yuko Takayama, Junhao Shen, Akira Hafuka, Katsuki Kimura, Tsuneo Yamato; Tsukishima JFE Aqua Solution Co., Ltd., Japan
1-C-13	Nanobubble Effects on Struvite Particle Harvesting in Wastewater	Dana Austin, James Earthman, Diego Rosso; University of California, Irvine, United States
1-C-14	Quantifying Ion-Membrane Equilibria to Guide Electrodialysis Design for Nutrient Recovery from Dilute Wastewater	Yan Tung Lo, Takashi Hashimoto, Satoshi Takizawa; The University of Tokyo, Japan

Technical Sessions

Technical Session 9 (Parallel Session 4 / Room 1)

Emerging contaminant 1

No.	Title	Authors
2-A-1	Chitosan-Grafted Carbon Nitride Quantum Dots for Synergistic Coagulation–Photocatalytic Removal of Trace Antibiotics and Pesticides in Water	Xilei Huang, Lina Zhao, Zhen Yang; Nanjing Normal University, China
2-A-2	Catalytic MOF-801@β-CD-MOF Mixed-Matrix Membranes for H_2O_2-Activated Degradation of Pharmaceutical Contaminants in Water	Minji Kim, Byungjun Cha, Hyeonjeong Kim, ChangMin Park; Kyungpook National University, Republic of Korea
2-A-3	Waste-Derived FeS Catalyst for Ciprofloxacin Oxidation: Batch Optimization and Continuous Column Evaluation	Jueun Lee, Soyeon Kim, Yuri Park, Bokseong Kim, Shindong Kim, Yuhoon Hwang; Seoul National University of Science and Technology, Republic of Korea
2-A-4	H_2O_2-Activated Degradation of Ciprofloxacin Using a β-Cyclodextrin@g-C3N5@MOF-808 Microcellulose Hydrogel: Synergistic Adsorption–Oxidation and Mechanistic Insights	Yeonji Yea, Chang Min Park; Kyungpook National University, Korea
2-A-5	Continuous Ciprofloxacin Exposure Reduces Anaerobic Digestibility of Waste Microalgal-Bacterial Aerobic Granular Sludge	Moein Besharati Fard, Jo De Vrieze, Di Wu; Ghent University, Belgium

Technical Session 10 (Parallel Session 4 / Room 2)

Energy-efficient separatiopn

No.	Title	Authors
2-B-1	Integrating Mixing and Magnetic Separation with 3D-Printed Devices	Marcel Cwienczek, Oliver Schmidt, Roland Ulber; RPTU Kaiserslautern-Landau, Germany
2-B-2	Comparative Performance of Continuous-Flow and Closed-Circuit Reverse Osmosis for Direct Potable Reuse of Domestic and Industrial Tertiary Effluents	Maarten Bossuyt, Ivaylo Plamenov Hitsov, Michel Caluwé, Louise Van De Ginste, Arnout Benoy, Gilles Broekaert, Marjolein Vanoppen; Ghent University, Belgium

No.	Title	Authors
2-B-3	IDevelopment of Energy-Saving MBR Membrane Units	Ayato Tsukida, Satoshi Okamoto, Takahiro Tokuyama, Satoshi Yahagi; Sumitomo Electric Industries, LTD., Japan
2-B-4	Leveraging Calcium-NOM Complexation Phenomenon as RO Fouling Mitigation Strategy During Treatment of Lake Water	Oranso T. Mahlangu, Samkeliso Ndzimandze, Mxolisi M. Motsa, Bhekie B. Mamba; University of South Africa, South Africa

Technical Session 11 (Parallel Session 4 / Room 3)

Membrane fouling 2

No.	Title	Authors
2-C-1	Effect of Pre-Coagulation on Fouling Control During Submerged Nanofiltration for Surface Water Treatment	Sandrine Boivin, Takahiro Fujioka; Nagasaki University, Japan
2-C-2	Cleaning of UF Membranes Using Specially Formulated Chemicals	Rina Nagai, Junichi Takahashi; Kurita Water Industries Ltd., Japan
2-C-3	MFI-UF and Biopolymer removal as indicators of particulate fouling reduction in coagulation pretreatment of NF/RO	Yiman Liu, Nirajan Dhakal, Lap-cuong Hua, Rinnert Schurer, Begüm Tanis, Jan C. Schippers, Maria D. Kennedy; IHE Delft Institute for Water Education, Netherlands
2-C-4	Using Fouling Indicators to Assess Particulate, Organic, and Biological Fouling Removal in Coagulation Pretreatment of Reverse Osmosis	Vanida Salgado-Ismodes, Sofia Peñafiel, Sergio Salinas-Rodriguez, Franca Kramer, Antoine Kemperman, Walter van der Meer, Maria Kennedy; IHE Delft Institute for Water Education, Netherlands
2-C-5	Upcycling End-of-Life Membranes into Quorum-Quenching Membranes for Enhanced Biofouling Control	Jinwoo Kim, Kwang-Ho Choo; Kyungpook National University, Republic of Korea

Technical Sessions

Technical Session 12 (Parallel Session 5 / Room 1)
Emerging comtaminant 2

No.	Title	Authors
2-A-6	Optimizing Ozonation for Nuisance and Harmful Algae Control: Impact of Bubble Size on Chlorella Vulgaris Cell Inactivation	Kanruethai Charoensook, Naras Rao, Fitri Widhiastuti, Xiaoran Chu, Greg Leslie, Rita Henderson; The University of New South Wales, Australia
2-A-7	Linking Experimental Virus Adsorption on Membranes with Extended DLVO Interactions	Midori Yasui, Xunhao Wang, Volodymyr Tarabara, Hiroyuki Katayama; Kyoto University, Japan
2-A-8	Effects of Brownian diffusion and interaction forces on the removal of virus particles by porous membranes	Takashi Hashimoto, Kotaro Shimazu, Midori Yasui, Hiroyuki Katayama; The University of Tokyo, Japan
2-A-9	Virus Removal under Fouling-Suppressed Conditions in MBRs: Decoupling Removal Efficiency from Permeability Loss	Shusei Komatsu, Masaaki Kitajima, Akira Hafuka, Katsuki Kimura；Hokkaido University, Japan
2-A-10	The Impact of Coagulants and Flocculants on Cyanobacterial Cell Viability and Integrity	Rao N.R.H., Chu X., Widhiastuti F., Courcier L., Henderson R.K.; University of New South Wales, Australia

Technical Session 13 (Parallel Session 5 / Room 2)
AI and machine learning

No.	Title	Authors
2-B-6	AI Particle Separation Technique Based on Different Machine Learning Models	Chien Hsing Lee, Po Sung Lai, Bo I Lai, Kai Lun Hsiao; Taiwan Water Corporation, Taiwan
2-B-7	Optimal Parameter-Based Image Texture Analysis and Automated Polymer Dosing in Fecal Sludge Treatment Plants	Atsuki Fukasawa, Tsuneo Yamato; TSUKISHIMA JFE AQUA SOLUTION CO., LTD., Japan
2-B-8	AI-Driven Hybrid Model for Accurate Prediction and Control of Membrane Fouling	Ana Lorena Ruiz Zorrilla Sanchez, Kwang-Ho Choo; Kyungpook National University, Republic of Korea
2-B-9	An Integrated AI Framework for Predicting Performance and Improving Efficiency in Reverse Osmosis Desalination	Najat A.Amin, Adnan Qamar, Henry Tanudjaja, Thomas Altmann, Ratul Das, Noreddine Ghaffour; King Abdullah University of Science and Technology (KAUST), Saudi Arabia
2-B-10	Application of Machine Learning for Coagulant Dosing Optimization in Full-Scale Water Treatment Plants	Po Sung Lai, Chao Kuo Tsui, Chia-Wei Hsu; Taiwan Water Corporation, Taiwan
2-B-11	Importance Analysis of Key Parameters for Coagulation Dosage Prediction Based on Machine Learning Models	Feng Xiao; North China Electric Power University, China

Technical Sessions

Technical Session 14 (Parallel Session 5 / Room 3)

Membrane bioreactor

No.	Title	Authors
2-C-6	Intermittent Media Fluidization and Voltage Cycle to Optimize Electrochemical-Assisted Anaerobic Fluidized Bed Membrane Bioreactor: Fouling Control and Energy Consumption in Greywater Treatment	Minseok Kim, Yue Chen, Gyeongjune Lee, Di Wu, Jeonghwan Kim; Inha University, Republic of Korea
2-C-7	Oxygen Transfer Characteristics for MBR Process	Erika Matsumoto, Yukako Morita, Nao Shimizu, Yasunobu Takikawa, Yasushi Terao, Larry Morris; KUBOTA Corporation, Japan
2-C-8	Evaluating Chrysin as a Quorum Sensing Inhibitor for Biofouling Mitigation in Membrane Bioreactors	Duyen Phuc-Hanh Tran, Ya-Fen Wang, Sheng-Jie You; Chung Yuan Christian University, Taiwan
2-C-9	Effect of Temperatures on Biopolymer Characteristics in Membrane Bioreactors	Takayuki Kakuda, Rin Naito, Akira Hafuka, Hiroshi Yamamura, Katsuki Kimura; Chuo University, Japan
2-C-10	High-Filtration Flux Operation of an External Submerged Anaerobic Membrane Bioreactor Treating Sewage Sludge	Akira Hafuka, Taichi Takagishi, Takanori Ambo, Kazuya Miki, Katsuki Kimura; Hokkaido University, Japan

Technical Session 15 (Parallel Session 6 / Room 1)

Emerging contaminants 3

No.	Title	Authors
3-A-1	Effects of Functional Groups of PFASs on Their Removal by Commercial and Modified Nanofiltration Membranes	Takahiro Fujioka, Sandrine Boivin; Nagasaki University, Japan
3-A-2	Micro-Adsorbents for Micropollutant and PFAS Removal: Coagulation and Flocculation – The Key for low Activated Carbon Residuals after Pile Cloth Media Filtration	Thomas Fundneider, Randy Schäfer, Luca Loreggian, Philipp Meier, Michael Thomann, Terence Reid; Mecana AG, Switzerland
3-A-3	Influence of PFAS Chain Length on Removal via Coagulation	Feng Li, Harsha Ratnaweera, Jan Ludvig Lyche; Norwegian University of Life Sciences, Norway
3-A-4	Bioinspired Flocculation for Trace Emerging Contaminant Removal from Water	Zhen Yang, Lina Zhao, Zhangzheng Wang, Yunyun Li, Fan Lu, Nigel J.D. Graham; Nanjing Normal University, China

Technical Sessions

Technical Session 16 (Parallel Session 6 / Room 2)

Model and simulation

No.	Title	Authors
3-B-1	Image-Based Analysis of the Relationship Between Floc Size Distribution and Agitation Intensity During Initial Flocculation	Mii Fukuda (Hayami), Satomi Ebihara, Tokusuke Hayami, Yutaka Chaen, Syuhei Noda, Michiaki Kanadani, Suguru Yokoyama; Toshiba Corporation, Japan
3-B-2	Effect of ALT Ratio on Fractal Dimension and Density of Coagulation Flocs	Marimo Kato, Takayuki Kakuda, Yoshimasa Watanabe, Hiroshi Yamamura, Kota Nakano, Daisuke Masuzaki; Chuo University, Japan
3-B-3	Predictive Modeling of Viral Aggregation Kinetics and Its Impact on Disinfection Efficacy	Ren Suzuki, Putri S. Kamila, Syun-suke Kadoya, Daisuke Sano, Wakana Oishi; Tohoku University, Japan
3-B-4	Continuous Monitoring and Detection of Settleability Deterioration in Activated Sludge Using Deep Learning and Microscopy	Suguru Hakoshima, Tomohiro Tobino, Fumiyuki Nakajima; The University of Tokyo, Japan

Technical Session 17 (Parallel Session 7 / Room 1)

Drinking water treatment

No.	Title	Authors
3-A-5	Membrane Fractionation to Understand Biological Stability of Pre-Treated Surface Water at a Full-Scale Drinking Water Production Plant	Emile Cornelissen, Danny Harmsen, Esmee Joosten, Paul van der Wielen; Ghent University, Belgium
3-A-6	Influence of Seasonal Temperature Changes on Passive Gravity-Driven Membrane Filtration Systems	Pedro Carrilho, Md Nurul Afcher Shishir, Talia Lemieux, Sara Beck, Pierre Bérubé; University of British Columbia, Canada
3-A-7	Present Forms of Viruses in Raw and Filtered Waters in Full-Scale Rapid Sand Filtration Systems	Daiki Shirakawa, Takayuki Miura, Mayumi Tojo, Takanori Masuda, Mari Asami; National Institute for Environmental Studies, Japan
3-A-8	Innovative Metal Electro-Recovery From Drinking Water Treatment Sludge	Tiago A. E. Martins, Pradip Saha, Nadine Boelee, Merle de Kreuk, Raf Dewil; Nijhuis Water Technology B.V., Netherlands

Technical Sessions

Technical Session 16 (Parallel Session 6 / Room 2)

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3-B-1	Image-Based Analysis of the Relationship Between Floc Size Distribution and Agitation Intensity During Initial Flocculation	Mii Fukuda (Hayami), Satomi Ebihara, Tokusuke Hayami, Yutaka Chaen, Syuhei Noda, Michiaki Kanadani, Suguru Yokoyama; Toshiba Corporation, Japan
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No.	Title	Authors
3-A-9	Evaluation of Reduction Efficiencies of Human Sapovirus in Drinking Water Treatment Processes by Applying an In Vitro Cell-Culture System	N. Shirasaki, D. Shirakawa, Q. Hu, H. Takagi, T. Oka, T. Matsushita, Y. Matsui; Hokkaido University, Japan

Technical Session 18 (Parallel Session 7 / Room 2)

Membrane modification

No.	Title	Authors
3-B-5	Tailoring Antifouling Properties of Hollow Fiber Membranes via Controlled ZnO Nanoparticle Reinforcement	Jonathan C. Espíndola, Inalmar D. Barbosa Segundo, Benjamin Gabas, Antoine Roudiere, Giovana Boaventura de Oliveira, Karine Cappuccio de Castro, Daiana Kotra Deda, José C. Mierzwa; University of São Paulo (USP), Brazil
3-B-6	Surface Tuning of Polyamide Nanofiltration Membranes Via Controlled Solvent Activation and Graphene Oxide Grafting for Wastewater Treatment	Kaushalya Prabodhani Sisira Kumara, Zhen Hong Chang, Takahiro Fujioka; Nagasaki University, Japan
3-B-7	Enhancing PES Ultrafiltration with Multilayer Graphene Oxide: Conductivity, TDS, and COD Removal	Riva Khansa Tsabita, Nayla Amira Nasution, Sucipta Laksono, Alfian Ferdiansyah Madsuha, Sandiyanto Adityosulindro; Universitas Indonesia, Indonesia
3-B-8	Spray-Coated CHI, GO, and CHI/GO Layers for Improved Fouling Resistance and Organic Removal in PES UF Membranes	Futari Vania Sakanti, Sucipta Laksono, Alfian Ferdiansyah Madsuha; Universitas Indonesia, Indonesia
3-B-9	Modification of Ultrafiltration Membranes with Dopamine for Enhanced Pharmaceutical Rejection	Mariia Pasichnyk, Christian W. Schmitt, Patrick Théato, André Lerch; TUD Dresden University of Technology, Germany

Technical Sessions

Technical Session 19 (Parallel Session 7 / Room 3)

Resource recovery 2

No.	Title	Authors
3-C-5	Reforming Solid-Liquid Interfacial Chemical Compositions of Anaerobic Digestate Liquor Through Rapid Subcritical Hydrothermal Treatment With Implications for Enhanced Colloidal Solid Removal	Xinyuan Wang, Jieling Feng, Boran Wu; Tongji University, China
3-C-6	Performance Evaluation of an Anaerobic Forward Osmosis Bioreactor to Recover Methane Energy From Chemical Wastewater	Kanwal Anwar, Sher Jamal Khan; NUST, Pakistan
3-C-7	Evaluation of Polymer-Added Membrane Separation Using Constant-Pressure Filtration Tests for Microalgae, Primarily Chlorella	Masaaki Nomura, Akiho Yonezawa, Takashi Yamano, Kazuyuki Oshita; Kyoto University, Japan
3-C-8	Hollow Fiber Membrane Contactors for the Recovery of Ammonia from Municipal Process Waters	Daiki Motomatsu, Joel Cardona, Martin Ulbricht; Life Technologies Japan Ltd., Japan
3-C-9	Enhancement of Methane Production and Fouling Mitigation in Anaerobic Dynamic Membrane Bioreactors via Magnetite and Voltage Application	Gyucheol Choi, Changsoo Lee; Ulsan National Institute of Science and Technology (UNIST), Republic of Korea
3-C-10	Developing a Selective Flotation Process to Separate Microalgae From Yeast in a Coculture System Used for Biofuel Production	Simona Sebastiano, Pascal Guiraud, Cécile Formosa-Dague; TBI (Toulouse Biotechnology Institute), INSA Toulouse, France

Poster Session

No.	Title	Authors
P-1	IoT-Based Automation of a Dual-Stage Filtration System for Treatment of Nonpoint Source Pollution	Myeongho Kim, Dongyoung Choi, Youngil Won, Junho Lee; Korea National University of Transportation, Korea
P-2	Removal of Natural Organic Matter Through Modification of Hydrophilic and Hydrophobic Membranes Using Graphene Oxide	Kyoung Hoon Chu; Sungkyunkwan University, Republic of Korea

Technical Sessions

No.	Title	Authors
P-3	Mechanistic Insights Into Peroxymonosulfate Activation by Iron Hexacyanoferrate (Fe-HCF) for Acetaminophen Degradation: Impact of Iron Oxidation States	Yuna Jeong, Chaelin Kim, Jihee Song, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-4	Influence of Transition Metals on the Formation of Metal Hexacyanoferrate-Immobilized Alginate Beads for Radioactive Cesium (^{137}Cs) Removal From Seawater	Jihee Song, Chaelin Kim, Heeji Yoo, Jeong-Min Lee, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-5	Granulation of Copper Hexacyanoferrate via Polyethyleneimine-Modified Cellulose Nanofibril Aerogel for Radioactive Cesium Decontamination	Jeongmin Lee, Jihee Song, Yuna Jeong, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-6	Decolorization and Degradation of Indigo Dye Wastewater and COD Removal by Fenton Oxidation Process	Anurak Khrueakham; Kasetsart University , Thailand
P-7	Study on Emerging Contaminants Removal From Water by Modified Graphene Oxide Composite Membranes	Yuki Hatano, Yan Tung LO, Cecilia Burzio, Takashi Hashimoto, Hiroyuki Katayama; The University of Tokyo, Japan
P-8	Deep-Learning-Based Modeling of Fouling Development and Flux Reduction in NF/RO Filtration	Sang-Soo Baek, Daehee Choi, Changyoon Jeong; Yeungnam University, Republic of Korea
P-9	Impact of Pretreatment on Water Quality and Fouling Behavior in SWRO Processes	Namwoo Kim, Enjae Lee, Chungman Moon, Donghoon Kim, Duksoo Jang; Hanbat National University, Republic of Korea
P-10	Advantages for Japan of Water-Making Systems Using Membrane Filtration Units During Emergency Disaster Situations and Introduction of Their Deployment	So Maiyama, Minako Yamanaka, Hiroshi Sasaki; Suido Kiko Kaisha, Ltd., Japan
P-11	Supersaturated Carbon-Dioxide-Enhanced Backwash of Membranes Used for Recovery of Organic Matter From Municipal Wastewater	Tatsumi Ikemoto, Hitoshi Makizuka, Akira Hafuka, Katsuki Kimura; Hokkaido University, Japan
P-12	Direct Recovery of Ammonia in Mainstream Wastewater Treatment Using an Open-Loop Membrane Contactor	Katsumi Sato, Hitoshi Makizuka, Akira hafuka , Katsuki Kimura; Hokkaido University, Japan

Technical Sessions

No.	Title	Authors
P-13	Advanced Mechanistic Elucidation of Sustained Lanthanum (La) Recovery by Calcined Layered Double Hydroxide in Wastewater Systems	Chaelin Kim, Jihee Song, Hyeon-Woo Shim, Goeun Lee, Yuna Jeong, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-14	SiO_2-Based Granulated Hydrogen Manganese Oxide (HMO) Adsorbents for Lithium Recovery From Low-Grade Brine	Heeji Yoo, Chaelin Kim, Jihee Song, Yuna Jeong, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-15	Development of Alginate-Granulated Mg–Al LDH Biochar Adsorbent for Adsorption of Rare Earth Elements in Aqueous Systems	Hyeon-Woo Shim, Chaelin Kim, Goeun Lee, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-16	Effects of Biogas Sparging Velocity and Membrane Relaxation Ratio on Filtration Flux in an AnMBR	Taichi Takagishi, Akira Hafuka, Takanori Ambo, Kazuya Miki, Katsuki Kimura; Hokkaido University, Japan
P-17	Ex Situ Biological Biogas Upgrading Using a Fixed-Bed Bubble Column Reactor With an Ultrafiltration Membrane Unit	Kousuke Inamura, Akira Hafuka, Hayato Suzuki, Ryouta Kawakami, Katsuki Kimura; Hokkaido University, Japan
P-18	Adsorption Behavior and Mechanism of Rare Earth Elements (REEs) on MgO-Modified Granular Activated Carbon (GAC)	Goeun Lee, Heeji Yoo, Chaelin Kim, Hyeon-Woo Shim, Hye-Jin Hong; Chungbuk National University, Republic of Korea
P-19	Synergetic Water Demand and Wastewater Reuse for Sustainable Water Management	Saleh Al-Muzaini; Kuwait Water Association, Kuwait
P-20	Comparison of commercial microplastic filters and alternative ceramic filters for household washing machines	Soyoun Kim, Chanhyuk Park; Ewha Womans University, Republic of Korea
P-21	High purity methane production from organic wastewater using bioelectrochemical technology	Yena Kim, Dokyung Lee, Yeonhoo Lee, Ji-Hye Lee, Jinmo Park, Yong-Gi Mo, Joo-Young Nam; Hankyong National University, Republic of Korea

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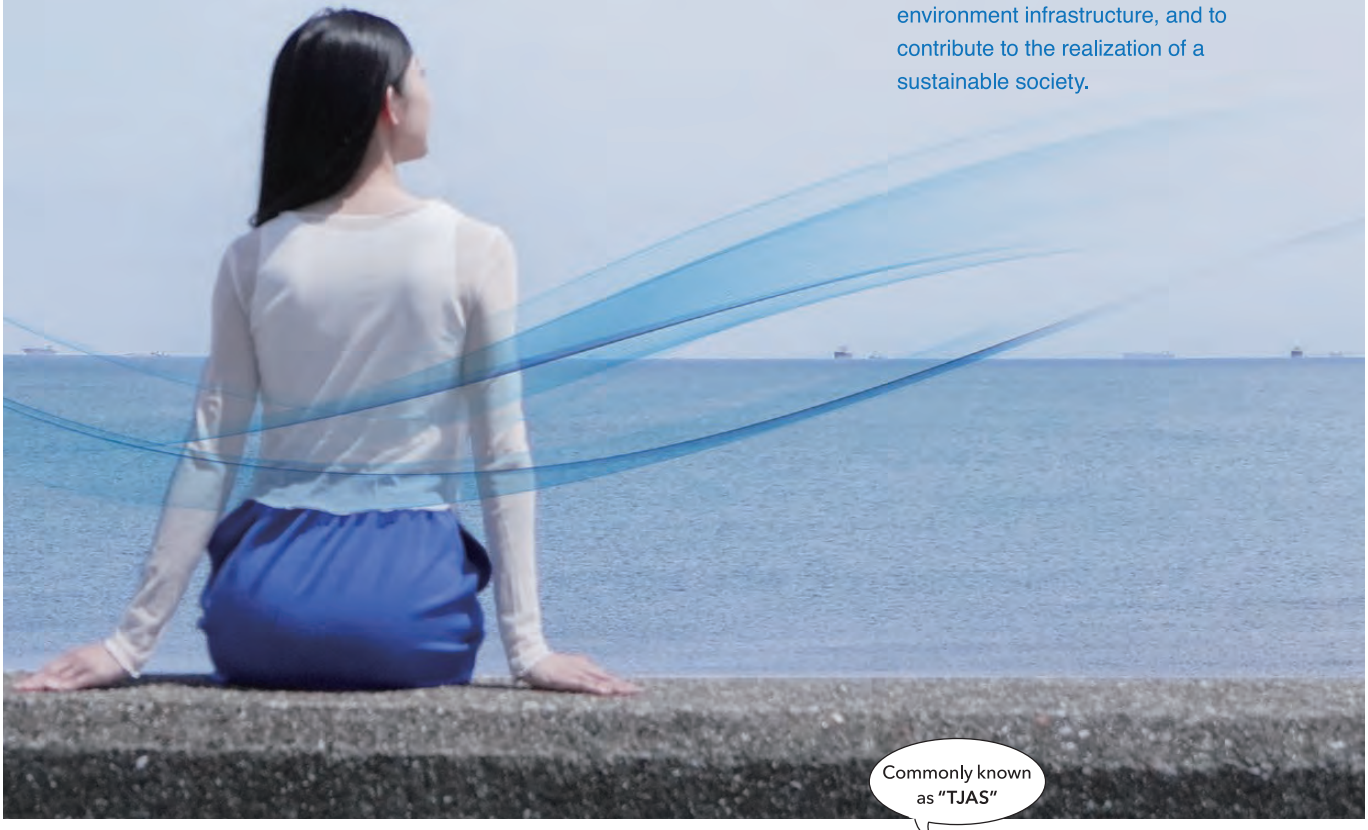

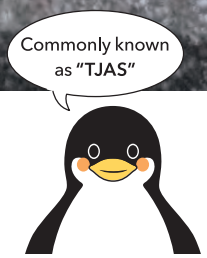

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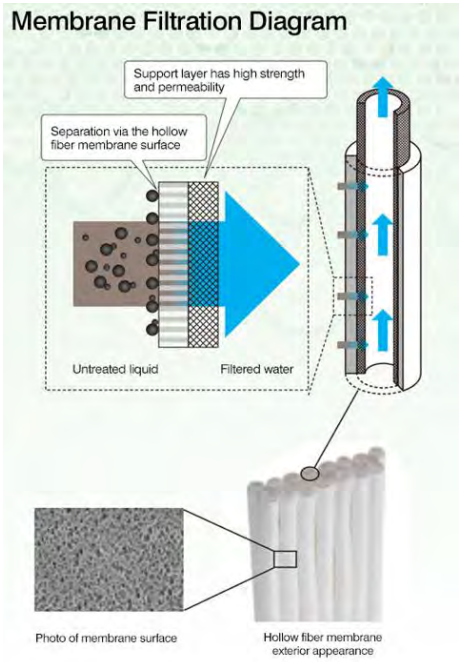

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