

Water Towards Safety、 Sustainable Environment and Prosperity

水 與 安全、環境、發展

International Forum 2024



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About

The United Nations World Water Development Report 2024, entitled “Water for Prosperity and Peace” launched on World Water Day this year highlights how developing and maintaining a secure and equitable water future underpins prosperity and peace for all. For now, roughly half of the world's population is experiencing threatening water scarcity for at least part of the year, while climate change increases its intensity and reach, with more severe droughts and floods becoming regular occurrences in both hemispheres.

Taiwan is in the middle of this climate crisis in which such cycles of droughts and floods are gradually becoming the norm. The Water Resources Agency under the Ministry of Economic Affairs has gone out of its way implementing Taiwan's critical national policy - Forward-looking Infrastructure Development Program: Water Environments for the past eight years and has achieved some preliminary results in terms of water and development, water and safety, and water and environment. It helps not only to better address more severe challenges to come in the future, but also to create a high-quality water environment with stable water supply, flood resilience and environmental friendliness.

The international forum of 2024 Taiwan International Water Week on the theme of “Water Towards Safety, Sustainable Environment and Prosperity” will be joined by experts and scholars from home and abroad. In addition to sharing Taiwan's achievements in water resources management with the world, there will also be in-depth discussions on ‘AI-enabled Applications in Disaster Prevention’, ‘Nature-based Solutions and How to Create an Ecological Environment’, and ‘High-Tech Water Supply Strategies and Water Treatment Technology’. It is hoped that cross-field exchanges will spark much innovation that could be turned to new ways of thinking and strategic blueprints for the sustainable development of water resources in the future.

Program at a Glance

Taipei International Convention Center, TICC

Sep. 10-11

Topic

Water Towards Safety

Water Towards Sustainable Environment

Water Towards Prosperity

date	9/10 (Tue.)		9/11(Wed.)	
time	am 9:00 - 12:00	pm 2:00 - 5:00	am 9:00 - 12:00	pm 2:00 - 5:00
R101A	Water Leaders Summit - Water Towards Safety, Sustainable Environment, and Prosperity	Reservoir Safety Management and Technological Applications (Taiwan-America Dialogue)	Technical Exchange on Land Subsidence Monitoring and Groundwater Recharge	Application of AI Technology and IoT in Water Affairs
R101B		Climate Change in Progress -The young guardians of water sustainability	River Environment Investigation and Ecological Environment Creation (Taiwan-Japan Dialogue)	NbS, the Potentiality for Water and Environment (Taiwan-Netherlands Dialogue)
R101C		Water Supply Strategies and Water Treatment Technologies for High-Tech Industry	Emerging Technologies and Applications in Water, Energy, and Resource	Promoting ESG Economic Activities in Water Sustainability through Value-Creation Model

Water Towards Safety, Sustainable Environment and Prosperity

International Forum 2024

Summit

Water Leaders Summit - Water Towards Safety, Sustainable Environment, and Prosperity

Introducer



Chien-Hsin Lai
Director-General, Water Resources Agency, MOEA

Dr. Lai has been the Director-General of WRA since 2016. Responding to climate change, he accomplished legal works of Reclaimed Water Resources Development Act and Runoff Distribution and Outflow Control policy. He also promotes Forward-looking Infrastructure Development Program for water environment to establish industrial sustainability and water resilience in Taiwan.

Moderator



Ching-Chi Cheng
Digital Deputy Editor-in-Chief, Scientific American

With over 20 years of experience in interviewing and editing, I have previously worked for National Geographic magazine and Business Weekly. My focus has been particularly on environmental and natural ecology themes.

Keynote Speech



Koji Ikeuchi
President, Japan Foundation of River & Basin Integrated Communications

For many years, he has worked on policy planning and project implementation for natural disaster countermeasures such as flood countermeasures. He has experience in responding to many disasters in the field. His main career history is as follows. Joined the Ministry of Construction (The predecessor of MLIT (Ministry of Land, Infrastructure, Transport and Tourism)) in 1982. Director General, Water and Disaster Management Bureau, MLIT (2014 – 2015). Vice Minister for Engineering Affairs, MLIT (2015–2016). Professor, Department of Civil Engineering, The University of Tokyo (2016 – 2023). President, Foundation of River & Basin Integrated Communications / Emeritus Professor, The University of Tokyo (2023–present)



Sue-Ching Jou
Professor, Department of Geography, National Taiwan University

Member of the Ministry of Economic Affairs Water Resources Review Committee, Director of the National Science and Technology Center for Disaster Reduction, Member of the Disaster Prevention and Rescue Expert Advisory Committee of the Executive Yuan, Deputy Director of the Science and Technology Policy Advisory Office of the Executive Yuan's Science and Technology Advisory Group, Deputy Director of the Humanities and Social Sciences Development Center of the Ministry of Science and Technology, Vice Dean of the College of Science at National Taiwan University, Director of the International Program on Climate Change and Sustainable Development at National Taiwan University, Chairman of the Taiwan Intelligent Living Space Development Association.



Zoran Vojinovic
Associate Professor, IHE Delft, Netherlands

Zoran Vojinovic leads the Blue-Green-Grey infrastructure group for stormwater and wastewater management at IHE Delft. With over 25 years of global water sector experience, he worked closely with various international and national donors and development organisations such as the European Commission (EC), the Asian Development Bank, the World Bank and UN agencies, notably the United Nations Development Program (UNDP) and he has been advisor to governments on matters related to water and wastewater management, flood risk mitigation and climate change adaptation. In 2013, he has been awarded the Water Champion recognition by the Asian Development Bank for his achievements in Asia. He now leads the EC-funded RECONNECT project with 37 international partners aiming to develop and demonstrate innovative large-scale Nature Based Solutions for hydro-meteorological risk reduction across Europe, Asia, Central and South America and the Caribbean (<http://www.reconnect.eu/>). Zoran organized and chaired the recent conference on Nature-Based Solutions (<https://www.nbs4waterandclimate.eu/>).

Water Leaders Summit - Water Towards Safety, Sustainable Environment, and Prosperity

Time	Topic	Moderator/Speaker
8:00-9:00	Registration	
9:00-9:10	Opening Remarks	
9:10-9:20	Welcome Remarks	
9:20-9:35	Introduction Water Towards Safety, Sustainable Environment, and Prosperity	Chien-Hsin Lai Director General, Water Resources Agency, MOEA
9:35-10:05	Keynote Speech Building a resilient society to cope with water-related disasters intensified by climate change	Koji Ikeuchi President, Japan Foundation of River & Basin Integrated Communications
10:05-10:35	Keynote Speech Integrating Blue and Green for Sustainable Environments	Sue-Ching Jou Professor, Department of Geography, National Taiwan University
10:35-10:50	Tea break	
10:50-11:20	Keynote Speech Nature-Based Solutions for water security and climate adaptation: findings from the EC RECONNECT project	Zoran Vojinovic Associate Professor, IHE Delft, Netherlands
11:20-12:00	Panel Discussion	
12:00	Lunch	

Water Towards Safety、 Sustainable Environment and Prosperity

International Forum 2024

Daily Program

Reservoir Safety Management and Technological Applications (Taiwan-America Dialogue)

Moderator



Yuan-Peng Lin

Deputy Director General, Water Resources Agency, MOEA

Lin becomes Deputy Director General of Water Resources Agency since 2023. He is dedicated to implementing projects of water resources development and management, construction of flood prevention, water work facility operation and management, rehabilitation and safety assessment of reservoir, water resources allocation during drought, and water supply.



Wei-Cheng, Lo

Chief Secretary, National Cheng-Kung University

Dr. Lo is currently Distinguished Professor of Hydraulic and Ocean Engineering, National Cheng Kung University, having joined the Department in 2005 after his PhD from the University of California, Berkeley. His research interests include inundation computation, subsidence modeling, and his specialty is theoretical and computational subsurface hydrology, geomechanics, and geosciences. Professor Lo's research has been recognized through prestigious appointments at numerous government advisory boards, such as convener of the Flooding Group of Disaster Prevention and Protection Expert Advisory Committee, the Executive Yuan. He serves as associate editor of two leading journals in his field, Journal of Hydrology and Advances in Water Resources.

Keynote Speech

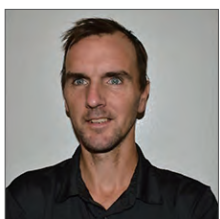


Matthew Klein

Civil Engineer, Concrete and Structural Laboratory, Bureau of Reclamation

Matthew Klein received his B.S.E. in Civil Engineering from Walla Walla University and M.S and Ph.D. also in Civil Engineering from Rutgers University. Klein's research focuses specifically on classification and detection of concrete deterioration mechanisms using state-of-the-art technology including Uncrewed Aircraft Systems (UAS), 3D modeling, artificial intelligence, virtual reality, and digital image correlation.

Klein holds testing and inspection certifications from the American Concrete Institute and Federal Highways Administration. He is also a Federal Aviation Administration certified commercial UAS pilot logging over 100 hours operating UAS for data collection at nearly 30 projects within the Bureau of Reclamation.



Brian Eick

Construction Engineering Research Laboratory

Dr. Brian Eick is the member of the Construction Engineering Research Laboratory. He is a subject-matter expert on behavior and lifecycle analysis of large-scale, water-resources infrastructure such as locks and dams, and is the author of dozens of scholarly articles, technical reports, and conference proceedings. In his current role, he leads a multidisciplinary team in the development and implementation of technologies to remotely inspect, assess the condition, and estimate the remaining life of large-scale infrastructure.



Chih-Ping Lin

Dean of the College of Engineering, National Yang Ming Chiao Tung University

Dr. Chih-Ping Lin is currently a Distinguished Professor of Civil Engineering, Dean of the Engineering College, and Director of the Disaster Prevention and Water Environment Research Center at National Yang Ming Chiao Tung University (NYCU), Taiwan. His primary research interests are engineering monitoring based on electromagnetic waveguide and developments and applications of near-surface geophysics for solving geotechnical, geo-environmental, and water resources-related problems, such as quality inspection of ground improvement, landslide monitoring, subsurface imaging of soil moisture, investigation of soil and groundwater contamination, non-destructive evaluation and monitoring of dam safety, and suspended sediment monitoring in rivers and reservoirs.



Hsuan-Mei Hsiao

Engineer, Southern Region Water Resources Branch, Water Resources Agency

Ms. Hsiao got her master degree of science from the National Taiwan University in 2009 and became a government employee of the Water Resources Agency in 2010. While she was in Northern Region Water Resources Branch, she had been working on water resources management and drought emergency response. She transferred to Southern Region Water Resources Branch in 2013, and now she focuses on reservoir safety assessment, reservoir risk analysis, modification of reservoir operation directions and gate operation rules.

Reservoir Safety Management and Technological Applications (Taiwan-America Dialogue)

Time	Topic	Moderator/Speaker
14:00-14:05	Introduction by Moderator	Yuan-Peng Lin Deputy Director General, Water Resources Agency, MOEA
14:05-14:35	Keynote Speech Unmanned Aircraft System (UAS) Non-Destructive Inspection of Hydraulic Concrete Structures	Matthew Klein Civil Engineer, Concrete and Structural Laboratory, Bureau of Reclamation
14:35-15:05	Keynote Speech Structural Health Monitoring of Water Resources Infrastructure	Brian Eick Construction Engineering Research Laboratory
15:05-15:25	Tea break	
15:25-15:30	Introduction by Moderator	Wei-Cheng Lo Chief Secretary, National Cheng-Kung University
15:30-16:00	Keynote Speech Dam Inspection/Monitoring & Fully Grout Piezometer Technique	Chih-Ping Lin Dean of the College of Engineering, National Yang Ming Chiao Tung University
16: 00-16:30	Keynote Speech Advances In Reservoir Safety Management	Hsuan-Mei Hsiao Engineer, Southern Region Water Resources Branch, Water Resources Agency
16:30-17:00	Panel Discussion	
17:00	Farewell	

Climate Change in Progress -The young guardians of water sustainability

Moderator



Chen-Yuan Chien

Chief Secretary, Water Resources Agency, MOEA

A Chief Secretary of Water Resources Agency with more than 28 years of experience in water resources planning, water resources construction, dam safety evaluation and water resources management.



Jhao-Yong Huang

Chief Editor of the CSR Channel, CommonWealth Magazine

Previously served as Director of CRM and Strategy Development at the United Daily News News Department, Head of the Economics Section at the United Daily News, Chief Editor at CommonWealth Magazine's Editorial Department, and Head of the Securities Section at the Economic Daily News. Additionally, a member of the Taiwan Social Enterprise Innovation and Entrepreneurship Society. Has been recognized with several awards, including the Cross-Strait News Reporting Award, the Modern Financial News Award, the Global Chinese Sustainability Reporting Award, and the United Daily News Group's Positive Change Award.

Keynote Speech



Liang-Yi Chang

Managing Director, 350.org Asia

His concern about Sustainability is for future generations. Starting in 2009, he has joined various international NGOs, including participating in UNFCCC's 15th Conference of the Parties or going for public speaking on different stages of his climate stories. He always believes that future generations can change the world and he even put himself to different countries for exploration from different perspectives, including the Across The Ocean project in South Pacific islands in 2010 for sea level raising witness or the 2041 project to Antarctica in 2013 for ice melting investigation tour. He thinks everyone will create infinite possibilities at the co-created learning space, so he continuously dares to put himself on new adventures and now is fully engaged with sustainable Development and climate movement builder.



Han-Wei Chang

Deputy Secretary-general, Taiwan Green Energy for Charity Association

- 2012-2014 Process Engineer, Taiwan Semiconductor Manufacturing Company Limited
- 2015-2016 Japanese Patent Engineer, JCIPGROUP.
- 2016-2019 Assistant Researcher, International Climate Development Institute
- 2018/07-2023/07 Chair, Taiwan Youth Climate Coalition (Current position: Board member)
- 2023/01-Present Deputy Secretary-General of Taiwan Green Energy for Charity Association
- Participated in COP24, COP25, COP26, COP28
- Currently holds various youth advocacy roles:
- Youth Advisory Council, Executive Yuan
- Climate Change and Energy Governance Platform Advisory Committee Member, Foundation for FutureGenerations
- Consultant, Taipei City Government Youth Bureau
- Consultant, New Taipei City Government Climate Change Response Steering group
- Consultant, Taoyuan City Government Sustainable Development and Climate Change Response Steering group
- NGO WG Committee Member, Future Earth Taipei



Wei-Qun Lai

Researcher Assistant in Basic Research Division, Department of Medical Research, Taipei Vet-erans General Hospital / Organizer , FRET Lab

- AI Server Firmware Engineer
- Storage Server Hardware Engineer
- Part-time Assistant, Medical Research Department, Taipei Veterans General Hospital

Climate Change in Progress - The young guardians of water sustainability

Time	Topic	Moderator/Speaker
14:00-14:10	Introduction	Chen-Yuan Chien Chief Secretary, Water Resources Agency, MOEA Jhao-Yong Huang Chief Editor of the CSR Channel, Commonwealth Magazine
14:10-14:30	Keynote Speech Towards COP30 in Brazil: Expanding the Climate Movement and Citizen Participation	Liang-Yi Chang Managing Director, 350.org Asia
14:30-14:50	Keynote Speech How can youth participate in climate actions	Han-Wei Chang Deputy Secretary-general, Taiwan Green Energy for Charity Association
14:50-15:10	Keynote Speech Lead water detection - the begin and continue.	Wei-Qun Lai Researcher Assistant in Basic Research Division, Department of Medical Research, Taipei Vet-erans General Hospital
15:10-15:30	Tea break	
15:30-15:50	Results Presentation The Environmental Sustainability Group of Water Youth	
15:50-16:10	Results Presentation The Social Prosperity Group of Water Youth	
16:10-17:00	Panel Discussion	
17:00	Farewell	

Water Supply Strategies and Water Treatment Technologies for High-Tech Industry

Moderator



Chien-Hsin Lai

Director-General, Water Resources Agency, MOEA

Dr. Lai has been the Director-General of WRA since 2016. Responding to climate change, he accomplished legal works of Reclaimed Water Resources Development Act and Runoff Distribution and Outflow Control policy. He also promotes Forward-looking Infrastructure Development Program for water environment to establish industrial sustainability and water resilience in Taiwan.



Tsair-Fuh Lin

Chair Professor, Department of Environmental Engineering, National Cheng Kung University

Tsair-Fuh Lin holds the position of Chair Professor in the Department of Environmental Engineering at National Cheng Kung University (NCKU), Taiwan. He is currently the President of the Chinese Institute of Environmental Engineering in Taiwan for the term 2023-2024. His research interests focus on the identification and treatment of cyanobacterial metabolites in drinking water, development of novel treatments for contaminated groundwater, and sustainable development. Dr. Lin has also been actively involved in various national and international professional societies. He has served as an editor for several international journals, including Water Supply, Sustainable Environment Research, and Chemosphere.

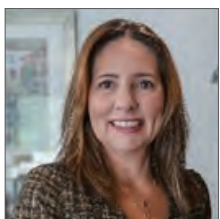
Keynote Speech



Qilin Li

Professor of Civil and Environmental Engineering; Co-Director, NEWT Center

Dr. Qilin Li is a Fellow of the International Water Association (IWA) and has held various editorial roles in prominent journals. As a Professor at Rice University, she focuses on Civil and Environmental Engineering, Chemical and Biomolecular Engineering, and Materials Science and Nanoengineering. Dr. Li also serves as the Associate Director for Research at the NSF Nanosystems Engineering Research Center for Nanotechnology Enabled Water Treatment (NEWT) and is a leader at the Rice University Water Institute. She received her degrees from Tsinghua University and the University of Illinois, with post-doctoral training at Yale. Dr. Li's research focuses on advanced materials for desalination, water treatment, and sustainable urban water systems.



Mara Ramos

Executive Assistant, SABESP - the water and sanitation utility, São Paulo – Brazil

Mara Ramos is the Co-Chair of the IWA Water Security Specialist Group and a member of the IWA Strategic Council. She has also lectured on Water and ESG. As a civil engineer with a Master's degree in water resources, Mara has over 30 years of experience in the sanitation sector, working on interdisciplinary projects related to sanitation, water resources, and sustainability. She previously served as the Superintendent of the water resources regulatory body of São Paulo State. Currently, she is the Executive Assistant to the President of SABESP, a major water utility in São Paulo State.



Ben-Li Huang

Senior Patent Officer, Semiconductor manufacturing, Patent Examination Division II, Intellectual Property, MOEA

- Senior Patent Officer 2016/01- Current
- Technical Examiner 2011/01-2013/12
- Patent Officer 2008/11-2016/01
- Assistant Patent Officer 2000/12-2008/11



Lian-Bin Zhong

VP, Micron Taiwan Frontend MFG OPERATIONS

26 years in semiconductor manufacturing and technology deployment in Micron. Global working experiences with 20 years in Singapore (TECH Semiconductor, Intel Micron Flash Singapore and Micron Singapore), 3.5 years in Micron Japan Hiroshima, and Micron Taiwan since Nov 2021. Take on roles with increasing responsibilities from Process & Equipment Engineer, Process Integration Engineer, Real-time Defects Analysis, Product Integration Engineering Director, ATE (Alpha Technology Engineering) Director, Senior Director of Advanced Technology Japan, High volume manufacturing (Micron Hiroshima), and currently VP of Taiwan Front End Manufacturing Operations.

Water Supply Strategies and Water Treatment Technologies for High-Tech Industry

Time	Topic	Moderator/Speaker
14:00-14:05	Introduction	Chien-Hsin Lai Director-General, Water Resources Agency, MOEA
14:05-14:35	Keynote Speech High-tech development driving international innovation in water resource adaptation	Qilin Li Co-Director, NEWT Center
14:35-15:05	Keynote Speech Cross-departmental Collaboration in Water Supply Policies and Strategic Planning in Response to High-Tech Development	Mara Ramos Executive Assistant, SABESP - the water and sanitation utility, São Paulo – Brazil
15:05-15:20	Tea break	
15:20-15:25	Introduction	Tsair-Fuh Lin Chair Professor, Department of Environmental Engineering, National Cheng Kung University
15:25-15:55	Keynote Speech Research on Patent Trends in Wastewater Treatment and Recycling Technologies for Semiconductor Manufacturing Equipment	Ben-Li Huang Senior Patent Officer, Semiconductor manufacturing, Patent Examination Division II, Intellectual Property, MOEA
15:55-16:25	Keynote Speech Water Resource Management Strategies and Case Studies in the High-Tech Industry	Lian-Bin Zhong VP, Micron Taiwan Frontend MFG OPERATIONS
16:25-17:00	Panel Discussion	
17:00	Farewell	

Technical Exchange on Land Subsidence Monitoring and Groundwater Recharge

Moderator



Hung-Pu Huang

Deputy Director, Water Resources Agency, MOEA

Mr. Huang was in charge of several important water resources engineering plans, such as constructions of Hushan Reservoir, Niazueitan Artificial Lake, and some reservoir renewal projects. He also developed the regulations and systems of emergency management during drought in Taiwan and involved in the Shihmen Reservoir Remediation Project.



Wei-Cheng Lo

Distinguished Professor, Department of Hydraulic and Ocean Engineering, National Cheng Kung University

Dr. Lo is currently Distinguished Professor of Hydraulic and Ocean Engineering, National Cheng Kung University, having joined the Department in 2005 after his PhD from the University of California, Berkeley. His research interests include inundation computation, subsidence modeling, and his specialty is theoretical and computational subsurface hydrology, geomechanics, and geosciences. Professor Lo's research has been recognized through prestigious appointments at numerous government advisory boards, such as convener of the Flooding Group of Disaster Prevention and Protection Expert Advisory Committee, the Executive Yuan. He serves as associate editor of two leading journals in his field, Journal of Hydrology and Advances in Water Resources.

Keynote Speech



Zhu-Ping Sheng

Professor, Graduate Program Director, Morgan State University

Dr. Zhuping Sheng is a professor in Civil Engineering and Graduate Program Director in CEE at Morgan State University, Maryland. He is a registered Professional Engineer, certified Professional Hydrologist, and Fellow of American Society of Civil Engineers (ASCE). Prior to his position at Morgan, Dr. Sheng has served as Director of Texas A&M AgriLife Research Center and professor. Dr. Sheng is recognized as an international leader in conjunctive management of water resources, transboundary aquifers, managed aquifer recharge (MAR), and aquifer mechanics. He is currently serving as the President of Chinese American Water Resources Association.



Pietro Teatini

Chair, UNESCO-IHP "Land Subsidence International Initiative - LaSII"

Pietro Teatini is associate professor in Hydrology and Hydraulic Engineering at the University of Padova, Italy. He is chair of the IAHS/UNESCO-IHP "Land Subsidence International Initiative - LaSII". His research interests concern modelling geomechanical issues related to fluid withdrawal/injection from/into the subsurface. He also works on modelling land subsidence due to peat oxidation and natural consolidation, which are typical processes on natural coastlands (deltas and wetlands). His current H-index is 53 (Google Scholar). Since 2000, he is listed in the top 2% among the most influential scientists globally according to a Stanford University "World Ranking Top 2% Scientists".



Chuen-Fa Ni

Distinguished Professor & Director, Center for Environmental Studies, Graduate Institute of Applied Geology, National Central University

Chuen-Fa Ni received his Ph.D. at the Department of Civil and Environmental Engineering, Michigan State University, MI, USA, in 2005. He joined the Graduate Institute of Applied Geology, National Central University (NCU), in 2007 and became a full professor at NCU in 2016. NCU awarded him the Distinguished Professor Award in 2020. His research interests include numerical modeling of flow and contaminant transport in porous media and fractured rocks, stochastic approaches for uncertainty analyses and inverse modeling, land subsidence monitoring and coupled hydro-mechanical modeling, and development of web platforms for groundwater modeling and data analysis.



Wei-Chia Hung

Chairman, Green Environmental Engineering Consultant Co. Ltd.

Professor Hung Wei-Chia previously worked at the Industrial Technology Research Institute and is currently a committee member of the United Nations Committee on Land Subsidence Prevention. He also holds positions as a board member in several professional organizations and owns multiple patents. He has primarily participated in nationwide land subsidence monitoring projects, including those of the Taiwan High-Speed Rail and the Water Resources Agency.

Technical Exchange on Land Subsidence Monitoring and Groundwater Recharge

Time	Topic	Moderator/Speaker
9:00-9:05	Introduction by Moderator	Hung-Pu Huang Deputy Director, Water Resources Agency, MOEA
9:05-9:35	Keynote Speech Managed Aquifer Recharge System: a powerful tool for adapting climate change with sustainable water resources	Zhu-Ping Sheng Professor, Graduate Program Director, Morgan State University
9:35-10:05	Keynote Speech Understanding and modelling land subsidence to develop proper early warning management	Pietro Teatini Chair, UNESCO-IHP "Land Subsidence International Initiative - LaSII"
10:05-10:20	Tea break	
10:20-10:25	Introduction by Moderator	Wei-Cheng Lo Distinguished Professor, Department of Hydraulic and Ocean Engineering
10:25-10:55	Keynote Speech Groundwater recharge under a changing environment in Taiwan	Chuen-Fa Ni Distinguished Professor & Director, Center for Environmental Studies, Graduate Institute of Applied Geology, National Central University
10:55-11:25	Keynote Speech Research and development of multi-sensor observation technology applications	Wei-Chia Hung Chairman, Green Environmental Engineering Consultant Co. Ltd.
11:25-12:00	Panel Discussion	
12:00	Farewell	

River Environment Investigation and Ecological Environment Creation (Taiwan-Japan Dialogue)

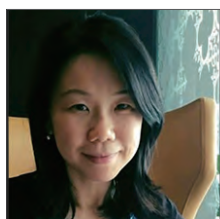
Moderator



Yi-Fung Wang

Deputy Director General, Water Resources Agency, MOEA

Deputy Director Yi-Fung Wang received his Ph.D. degree in Civil Engineering at National Taiwan University. He was awarded by the Water Resource Agency as Outstanding Personnel in 2001 and by the Ministry of Economic Affairs as Model Civil Servant in 2010. Dr. Wang's dedication in Water Resource Agency are respectable including development of science and technology in water resources, water conservation, water-saving policy, inundation warning system, and emergency response to drought.



Kuei-Hsien Liao

Professor, Graduate Institute of Urban Planning, National Taipei University

- Associate Professor, Graduate Institute of Urban Planning, National Taipei University. August 2017 ~ August 2022
- Visiting Fellow, Department of Architecture, National University of Singapore (NUS). January 2017 ~ May 2017.
- Assistant Professor, School of Architecture, Chinese University of Hong Kong (CUHK). December 2013 ~ January 2017.
- Other academic affiliations at CUHK: Urban Studies Programme; Center for Land Resources and Housing Policy, Institute of Future Cities
- Assistant Professor, Department of Architecture, National University of Singapore (NUS). July 2012 ~ December 2013.

Keynote Speech



Li-Chi Chiang

Associate Professor, Department of Bioenvironmental Systems Engineering, National Taiwan University

Li-Chi Chiang's research focuses on watershed management, GIS applications, non-point source pollution, ecohydrology, ecosystem service evaluation, hydrological modeling, land use change, climate change adaptation, and field/lab experiments. She uses the SWAT model to simulate watershed responses and evaluate the impacts of land use and climate changes on water quality. She has contributed to the USDA's CEAP to assess BMPs for water quality and the USEPA's ESRP to study Midwest landscape changes' effects on ecosystem services. She has been actively conducting projects funded by Water Resources Agency, Irrigation Agency, National Science and Technology Council, and Ministry of Environment in Taiwan.



Takayoshi Tsuzuki

Manager, Ecosystem Conservation Division, Japan Riverfront Research Center

Mr. Tsuzuki is the manager of the Ecosystem Conservation Division. He is dedicated to river ecological regeneration, river ecological surveys, and river environment construction.



Chia-Wei Wu

Section Chief, Fifth River Management Branch, Water Resources Agency, MOEA

- Junior Engineer
- Associate Engineer
- Engineer
- Section Chief



Yukio Miyagawa

Chief Researcher, Japan Riverfront Research Center

Dr. Miyagawa is currently the Chief Researcher at River Rehabilitation Research Institute. He was awarded the "Technical Development Award" by the Japan Society of Dam Engineers for the development of a riverbed environmental assessment method downstream of dams using a simplified prediction model for the exposure height of gravel.

River Environment Investigation and Ecological Environment Creation (Taiwan-Japan Dialogue)

Time	Topic	Moderator/Speaker
9:00-9:05	Introduction by Moderator	Yi-Fung Wang Deputy Director General, Water Resources Agency, MOEA
9:05-9:30	Keynote Speech Evaluation of the impacts of natural disturbances and anthropogenic activities on river ecohydrology and water quality in multiple watersheds	Li-Chi Chiang Associate Professor, Department of Bioenvironmental Systems Engineering, National Taiwan University
9:30-9:55	Keynote Speech Nature-oriented River creation underway in the Maruyama River	Takayoshi Tsuzuki Manager, Ecosystem Conservation Division, Japan Riverfront Research Center
9:55-10:15	Tea break	
10:15-10:20	Introduction by Moderator	Kuei-Hsien Liao Professor, Graduate Institute of Urban Planning, National Taipei University
10:20-10:45	Keynote Speech Environment Creation Case Studies -“Hoowave Resilient Township & Waterfront Landscape Project” &“Waisanding Sandbar Experiment Defense Project”	Chia-Wei Wu Section Chief, Fifth River Management Branch, Water Resources Agency, MOEA
10:45-11:10	Keynote Speech Initiatives for river environmental database in Japan	Yukio Miyagawa Chief Researcher, Japan Riverfront Research Center
11:10-12:00	Panel Discussion	
12:00	Farewell	

Emerging Technologies and Applications in Water, Energy, and Resource

Moderator



Jian-Cheng Chen

Chief Engineer, Water Resources Agency, MOEA

Mr. Chen, Chief Engineer of the Water Resources Department, has over 25 years of experience in hydraulic engineering. He has held various key positions in the Water Resources Bureau, including Director of Sixth River Management Branch, Deputy Chief Engineer, and Chief Secretary.

In 2024, he assumed the position of Chief Engineer, where he is responsible for advancing water resource and flood control projects, operational management of water facilities, reservoir modernization and safety assessments, as well as water source scheduling and domestic water supply. He has been involved in projects such as the construction of the Niaozeitan Artificial Lake, river management and disaster preparedness and response.



Chih-Pin Huang

Chair Professor, National Yang-Ming Chiao Tung University

Dr. Huang received the B.Sc. and M.S. degrees from National Chang Kung University in 1981 and 1983. He received his Ph.D. from the University of Delaware, and then joined the faculty at NYCU in 1990. From 2019, He became the President of Water Affairs Organization, Taiwan (WAOT). Dr. Huang's outstanding academic research and service achievements have been recognized through many awards and honors, eg, International Honorary Member of AAEE (2019) for his sustained leadership advancing the professional practice of water engineering and science in Taiwan.

Keynote Speech



Ming-Chun Lu

Distinguished Professor, Department of Environmental Engineering, National Chung Hsing University

Prof. Ming-Chun Lu received his PhD from National Chiao Tung University, Taiwan, in 1993. He subsequently worked at the Industrial Technology Research Institute, Taiwan, for two years before joining Chia Nan University of Pharmacy and Science, where he dedicated 25 years to teaching and research. Currently, he serves as a Distinguished Professor in the Department of Environmental Engineering at National Chung Hsing University, Taiwan. Prof. Lu's research focuses on advanced oxidation processes for wastewater treatment, fluidized-bed homogeneous crystallization process for metal and non-metal recovery, fuel desulfurization processes, and disinfection technology.



Sheh-Yi Sheu

Professor, Department of Life Sciences, National Yang Ming Chiao Tung University

Prof. Sheh-Yi Sheu obtained her PhD in the Department of Chemistry from Michigan State University, USA, in 1990. Her research interests are the development of nano-biomimetic materials, desalination and biomolecular transistors, molecular quantum computers, nano-battery, biophysics/structural biology, and computer-aided drug design.



Kwang-Ho Choo

Professor, Kyungpook National University

The global focus has shifted towards a carbon-neutral circular economy model, emphasizing the recovery and reuse of valuable resources such as nutrients, energy, and water from waste streams. This shift recognizes the finite nature of these resources, often overlooked in past consumption patterns. Membrane technology plays a vital role in this new approach to water and wastewater management despite challenges such as membrane fouling. This lecture will introduce the potential transition from aerobic to anaerobic membrane bioreactors to reduce energy consumption in wastewater treatment while simultaneously recovering nutrients. Membrane distillation offers a promising option to minimize wastage and maximize resource recovery. Additionally, electrochemical reactions and microbial quorum quenching techniques could help address the longstanding issue of membrane fouling, making membrane technology more popular and effective in the field.



Jorge Malfeito

Director of Innovation, Water Business, Acciona

Reverse osmosis (RO) desalination has become a leading method for providing fresh water from saline sources, particularly in areas where freshwater resources are scarce. Recent technological innovations are enhancing the efficiency, sustainability, and cost-effectiveness of this process. This work explores the state of the art of the technology and the cutting-edge developments and recent breakthroughs in innovation pertaining to RO seawater desalination, with a specific focus on process optimization and the minimization of energy consumption, advance materials, and the integration of artificial intelligence tools.

Emerging Technologies and Applications in Water, Energy, and Resource

Time	Topic	Moderator/Speaker
9:00-9:05	Introduction by Moderator	Jian-Cheng Chen Chief Engineer, Water Resources Agency, MOEA
9:05-9:35	Keynote Speech Application of Fluidized-Bed Homogeneous Crystallization Technology for Recovering Metal and Non-metal Resources from Wastewater	Ming-Chun Lu Distinguished Professor, Department of Environmental Engineering, National Chung Hsing University
9:35-10:05	Keynote Speech Sustainable, high-efficiency, energy-free desalination — biomimetic nanotubes	Sheh-Yi Sheu Professor, Department of Life Sciences, National Yang Ming Chiao Tung University
10:05-10:25	Tea break	
10:25-10:30	Introduction by Moderator	Chih-Pin Huang Chair Professor, National Yang-Ming Chiao Tung University
10:30-11:00	Keynote Speech Membrane Technology: Future Solutions for Nutrient, Energy, and Water Recovery	Kwang-Ho Choo Professor, Kyungpook National University
11:00-11:30	Keynote Speech Reverse osmosis desalination as an alternative water supply: cutting-edge technological innovations	Jorge Malfeito Director of Innovation, Water Business, Acciona
11:30-12:00	Panel Discussion	
12:00	Farewell	

Application of AI Technology and IoT in Water Affairs

Moderator



Yi-Fung Wang

Deputy Director General, Water Resources Agency, MOEA

Deputy Director Yi-Fung Wang received his Ph.D. degree in Civil Engineering at National Taiwan University. He was awarded by the Water Resource Agency as Outstanding Personnel in 2001 and by the Ministry of Economic Affairs as Model Civil Servant in 2010. Dr. Wang's dedication in Water Resource Agency are respectable including development of science and technology in water resources, water conservation, water-saving policy, inundation warning system, and emergency response to drought.



Tin-Lai Lee

President, Taiwan Water Corporation

Mr. Lee is currently the President of Taiwan Water Corporation with the experiences as Director of Water Supply Department, Director of Water Loss Management Department, Director of 6th Branch Office, Chief Engineer and Vice President of Taiwan Water Corporation. He works for Taiwan Water Corporation more than 36 years and is also a certified professional Environmental Engineer of Taiwan.

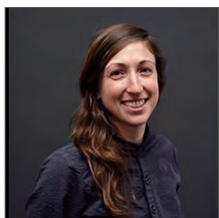
Keynote Speech



Ming-Che Hu

Professor, Department of Bioenvironmental Systems Engineering, National Taiwan University

- Research: Water resources management, machine learning and hydrological data analysis, optimization, uncertainty analysis
- Adjunct Professor, Master Program in Statistics, National Taiwan University
- Researcher, Hydrotech Research Institute, National Taiwan University
- Academic Committee, Taiwan Agricultural Engineers Society



Andrea Silverman

Associate Professor, New York University, Tandon School of Engineering

Dr. Andrea Silverman is an Associate Professor of environmental engineering at the New York University Tandon School of Engineering. Dr. Silverman's research focuses on water quality, wastewater treatment, and urban flooding, with an overarching goal to protect public health and environmental quality. In addition to laboratory-based research on disinfection of waterborne pathogens, wastewater-based epidemiology, and the design of natural wastewater treatment systems, Dr. Silverman works on applied urban projects, including FloodNet and a collaboration with New York City to develop and implement the City's wastewater surveillance program for COVID-19. Through these projects she has collaborated with local and federal government agencies, and community-based organizations in New York City.



Paul Chuo

Executive Deputy General Manager, Stantec Consulting Services Inc., Taiwan Branch

- PhD in Civil Engineering
- Stantec Consulting Services Inc.
- Sydney Water Corporation



Yao-Long Tsai

Manager, Industrial Technology Research Institute

1. Industrial Technology Research Institute Senior Engineer, since 2007 (Job responsibilities include pipeline leak monitoring and detection, acoustics and vibration engineering, assessment of pipeline and equipment integrity and suitability, artificial intelligence applications, and Welding engineering)
2. PhD in Mechanical Engineering from National Chiao Tung University, 2010

Application of AI Technology and IoT in Water Affairs

Time	Topic	Moderator/Speaker
14:00-14:05	Introduction by Moderator	Yi-Fung Wang Deputy Director General, Water Resources Agency, MOEA
14:05-14:35	Keynote Speech Spectrum network optimization for water resources management	Ming-Che Hu Professor, Department of Bioenvironmental Systems Engineering, National Taiwan University
14:35-15:05	Keynote Speech Applying IoT Sensors for Hyperlocal Urban Flood Monitoring in New York City	Andrea Silverman Associate Professor, New York University, Tandon School of Engineering
15:05-15:20	Tea break	
15:20-15:25	Introduction by Moderator	Tin-Lai Lee President, Taiwan Water Corporation
15:25-15:55	Keynote Speech Transforming for Smart and Resilient Water Systems	Paul Chuo Executive Deputy General Manager, Stantec Consulting Services Inc., Taiwan Branch
15:55-16:25	Keynote Speech Mobile Smart Leakage Rapid Screening and Early Warning System in Pipeline Networks	Yao-Long Tsai Manager, Industrial Technology Research Institute
16:25-17:00	Panel Discussion	
17:00	Farewell	

NbS, the Potentiality for Water and Environment (Taiwan-Netherlands Dialogue)

Moderator



Chien-Hsin Lai

Director-General, Water Resources Agency, MOEA

Dr. Lai has been the Director-General of WRA since 2016. Responding to climate change, he accomplished legal works of Reclaimed Water Resources Development Act and Runoff Distribution and Outflow Control policy. He also promotes Forward-looking Infrastructure Development Program for water environment to establish industrial sustainability and water resilience in Taiwan.



Guido Tielman

Representative, Netherlands Office Taipei

Before taking up his current assignment as the Representative of the Netherlands Office Taipei, Guido Tielman has worked with Dutch representations in Brussels, North-Macedonia, Chongqing and Mumbai and also for a few stints in The Hague. His expertise includes European Union related issues and promoting trade and investment in an Asian context. It is almost 30 years to the day that Guido returns to Taiwan. From 1991-1992, he obtained a one-year scholarship at the Political Science Faculty of the National Taiwan University, having finished his master's degree in Sinology at the University of Leiden prior to that.

Keynote Speech



Chia-Ning Yang

Engineer, Engineering Aesthetics Center, Sinotech Engineering Consultants

Dr. Yang specializes in fluvial geomorphology, ecological engineering and environmental planning. She has dedicated for over a decade in the multi-disciplinary integration for stream restoration. She obtained her PhD in landscape architecture and environmental planning from University of California, Berkeley and Master's degree in civil engineering from University of Tokyo.



Ir. Job Udo

Advisor flood management and partner, HKV & representative of NL 2120

Ir. Job Udo is a Senior Consultant in River and Delta Management at HKV lijn in water and a representative of NL 2120. This ten-year program focuses on integrating nature-based solutions into policy measures and design standards for spatial development and water management. NL 2120 aims to drive economic growth in the Netherlands and internationally by promoting innovative NbS concepts and designs.



Chyi-Rong Chiou

Associate Professor, School of Forestry and Resource Conservation, National Taiwan University

With over 30 years of experience in forest resource surveys, he annually assists the government in compiling national emission inventory reports for the forestry sector. He has long provided expert consultation on carbon rights to forest owners in Taiwan, establishing himself as a pioneer in the field of forest carbon rights measurement and trading, combining research and practical application. More recently, he has engaged in research on nature-based solutions and nature-related financial disclosures, offering professional consulting and implementation services to both government bodies and corporations. His work is actively advancing the application of biodiversity conservation strategies.



Gilles Erkens

Senior researcher, Deltares Research Institute / Associate Professor, Utrecht University

Dr Gilles Erkens is an expert on land subsidence and greenhouse gas emissions in peatlands. He works on land subsidence around the world, whereby he uses science to provide perspective on how to deal with today's challenges. He is the chair of the Dutch National Research program on Greenhouse Gas dynamics in organic soils and peatlands, and responsible for the Dutch national inventory reporting to the UNFCCC and EU regarding emissions from organic soils.



Yuh-Rong Guh

Engineer, Water Resources Planning Branch, Water Resources Agency, MOEA

Dr. Guh earned a PhD from National Cheng Kung University, specializing in hydraulic engineering with a minor in ecology. In addition to flood-prone areas planning and management, She is also dedicated to ecological conservation, public participation, and environmental governance in regional drainages. Lately, she's focused on natural solutions for inland peatland preservation.

NbS, the Potentiality for Water and Environment (Taiwan-Netherlands Dialogue)

Time	Topic	Moderator/Speaker
14:00-14:10	Opening Remarks	Chien-Hsin Lai Director-General, Water Resources Agency, MOEA Guido Tielman Representative, Netherlands Office Taipei
14:10-14:30	Keynote Speech Stream restoration as NbS: some examples in Taiwan	Chia-Ning Yang Engineer, Engineering Aesthetics Center, Sinotech Engineering Consultants
14:30-14:50	Keynote Speech The NL2120 Policy and Program	Ir. Job Udo Advisor flood management and partner, HKV & representative of NL 2120
14:50-15:10	Keynote Speech Biodiversity conservation challenges and opportunities - new opportunities for the integration of people, water and environment	Chyi-Rong Chiou Associate Professor, School of Forestry and Resource Conservation, National Taiwan University
15:10-15:25	Tea break	
15:25-15:45	Keynote Speech Monitoring measures to reduce greenhouse gas emissions and subsidence in peatlands	Gilles Erkens Senior researcher, Deltares Research Institute
15:45-16:05	Keynote Speech Trial and Implementation of Nature-based Solutions (NbS) in the Toushe Peatland	Yuh-Rong Guh Engineer, Water Resources Planning Branch, Water Resources Agency, MOEA
16:05-17:00	Panel Discussion \ Group Photo	
17:00	Farewell	

Promoting ESG Economic Activities in Water Sustainability through Value-Creation Model

Moderator



Yuan-Peng Lin

Deputy Director General, Water Resources Agency, MOEA

Lin becomes Deputy Director General of Water Resources Agency since 2023. He is dedicated to implementing projects of water resources development and management, construction of flood prevention, water work facility operation and management, rehabilitation and safety assessment of reservoir, water resources allocation during drought, and water supply.



Yi-Si Syong

Deputy Chief Editor of the Editorial Department, CommonWealth Magazine

Graduated from the Department of Journalism at National Chengchi University, and has worked at the CommonWealth Magazine Group for over ten years.

In 2015, assumed the position of Director of the CommonWealth Magazine Survey Center, integrating their accumulated industry knowledge and experience into various survey projects, continuously striving for a fair and better society. In 2021, responsible for establishing the CommonWealth Sustainability Association, dedicated to creating a platform to advocate for and act on sustainability issues in Taiwan, promoting collective good and action.

Keynote Speech



Niven Huang

Managing Director, KPMG Sustainability Consulting Co., Ltd

Dr. Niven Huang has worked on ESG and corporate sustainability for more than twenty-five years and was the former Head of ESG, KPMG Asia Pacific. Before joining KPMG, he was the Secretary General of the Business Council for Sustainable Development in Taiwan (BCSD-Taiwan, affiliated to WBCSD) for 16 years. During 2012-2015, he was the chairman of the Advisory Board of ASrIA, Association of Sustainable & Responsible Investment in Asia, which was based in Hong Kong and merged by UNPRI in October 2015. He is also an associate professor of MBA and EMBA programs and sits in the jury panel of Asia Responsible Enterprise Awards since 2015.



Jia-Lun Chang

Director of Business Solutions Dept BSI British Standards Institution

- Education: Master's Degree in International Business Management University of London
- Experience: Associate Director, Business Services Department, BSI British Standards Institution 2008 – Present Senior Manager, SE
- Expertise: Specializes in providing solutions centered around international standards tailored to the needs of corporate organizations. This expertise aims to enhance product quality, strengthen brand value, and improve corporate reputation, enabling organizations to better respond to future market changes and competitive challenges.
- Industry Experience: Metal Manufacturing, Electronic Components Industry, Semiconductors



Chun-Yi Wu

Executive Administrator, NANYA TECHNOLOGY CORP.

- NANYA Technology Executive Administrator
- Micron Director
- Inotera Director
- NANYA Technology Plant MGR



Joey Lin

Vice President, Operations Management LCY Chemical Corp

Joey Lin assumed the role of Vice President of Operations Management at LCY Chemical Corp. in June 2023, overseeing the formulation of operations planning for the production facilities. Joey has over 30 years of experience in the chemical industry. He previously served as Vice President of LCY's Corporate R&D Center and the Vice President of Elastomer Solutions Business. In his current role, he is responsible for formulating and driving LCY's mid-and long-term business strategies and planning, as well as adapting analyses and developing strategies based on global market trends. With his in-depth knowledge and seasoned industry experience, Joey has helped LCY gain a competitive edge in the marketplace by formulating effective business models and corporate strategies.

Promoting ESG Economic Activities in Water Sustainability through Value-Creation Model

Time	Topic	Moderator/Speaker
14:00-14:05	Introduction by Moderator	Yuan-Peng Lin Deputy Director General, Water Resources Agency, MOEA Yi-Si Syong Deputy Chief Editor of the Editorial Department, CommonWealth
14:05-14:15	Introduction to the Topic Promoting ESG economic activities in water sustainability through value-creation model	Chieh-Liang Yang Director, Conservation Division, Water Resources Agency, MOEA
14:15-14:20	Group Photo	
14:20-14:50	Keynote Speech New Opportunities for Creating Value in Water Sustainability ESG	Niven Huang Managing Director, KPMG Sustainability Consulting Co., Ltd
14:50-15:20	Keynote Speech Building Corporate Water Resilience Value	Jia-Lun Chang Director of Business Solutions Dept BSI British Standards Institution
15:20-15:35	Tea break	
15:35-15:55	Keynote Speech Corporate Synergy: Building a Water-Efficient Ecosystem	Chun-Yi Wu Executive Administrator, NANYA TECHNOLOGY CORP.
15:55-16:15	Keynote Speech Circular Economy: LCY catalyzes sustainable water solutions	Joey Lin Vice President, Operations Management LCY Chemical Corp
16:15-16:45	Panel Discussion	
16:45	Farewell	

Water Towards Safety、 Sustainable Environment and Prosperity

International Forum 2024

Taiwan International Water Week

Taiwan Water Industry Pavilion



Taiwan Water Industry Pavilion

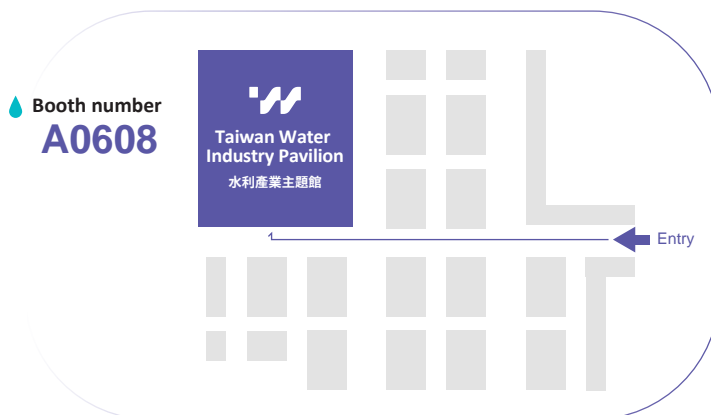
Venue: Area A, Taipei World Trade Center (TWTC) Exhibition Hall 1.

【Taiwan Water Industry Pavilion】 is organized by the Taiwan Water Resource Agency (WRA), Ministry of Economic Affairs and implemented by the Taiwan Commerce Development Research Institute (CDRI).

Taiwanese government initiated Forward-Looking Infrastructure Development Program, Water Leakage Improvement Plan, and Water Distribution System Improvement and Management Plan to enhance the overall water management system in Taiwan. Industries are thus encouraged to save water and use reclaimed water, allowing nature to recover and flourish in time.

In compliance with government strategy and global trends on water reuse and sustainability, this year, three main themes **【Intelligent Water Management】** **【Innovative Water Resources】** **【Net-Zero Water Sustainability】** will be presented at the **【Taiwan Water Industry Pavilion】** to showcase the latest solutions such as water treatment, hydraulics infrastructure, transport and storage system, water purification system, and smart water monitoring and management system, so as to build a comprehensive and foremost procurement platform for the global water industry and enable visitors to find business opportunities and strategic partners for the next era.

**Download Taiwan Water
Industry Pavilion Guide**



◆ Intelligent Water Management

Smart monitoring system

Predictive maintenance software

Data analysis tools

Booth number: A0807-A0905

Intelligent water management utilizes smart monitoring systems, predictive maintenance software, and data analytics tools to optimize water usage and minimize waste.

◆ Net-Zero Water Sustainability

Renewable energy

Small hydropower

Water purification & energy saving

Ocean energy

Booth number: A0814-A1017

Net-zero water sustainability aims to achieve a balance between water consumption and water generation through energy-efficient water treatment, small hydropower generation, low-carbon materials, and the utilization of geothermal water technologies, and the development of ocean energy.

◆ Innovative Water Resources

Wastewater treatment

Seawater desalination

Pump technology

Booth number: A1011-A1007

Innovative water resources focus on developing purification and desalination technologies to enhance the sustainability and reusability of water resources.



Conference Organization

Advisor



Organizer



Co-organizer



Implementer



