

水環境国際招聘賞（いであ招聘賞） (JSWE-IDEA Water Environment International Exchange Award) 授賞に関して

本会では、水環境分野の国際交流・国際協力の促進を目的として、いであ株式会社からのご出捐により、水環境国際招聘賞と水環境国際活動賞を設けております。水環境国際招聘賞は本会年会で研究発表を行う海外在住外国人会員に対して、来日費用等の助成を行う制度です。第58回年会では、中国2名および、韓国、オーストラリアから各1名の計4名を招聘し、年会会場（九州大学）にて研究発表を行っていただきました。そこで、受賞者に研究内容や抱負等についてご執筆いただきましたのでご紹介します。なお、今年度の水環境国際招聘賞の募集案内は秋頃に本誌会告に掲載する予定です。

(水環境国際活動賞・招聘賞選考委員会)

JSWE-IDEA Water Environment International Exchange Award

Associate Professor, Department of Civil and Environmental Engineering,
College of Engineering, Konkuk University
Sungjun Bae

It is my great pleasure to attend 58th Japan Society on Water Environment (JSWE) Annual Conference and receive the JSWE-IDEA Water Environment International Exchange Award. I would like to express my heartfelt thanks to the Award Committee of JSWE.

I am Associate Professor in the department of Civil and Environmental Engineering at Konkuk University in South Korea. I received a Bachelor's degree (2007) in Civil and Environmental Engineering at Sung Kyun Kwan University and an integrated Master's and Doctoral degree (2013) in Civil and Environmental Engineering at Korea Advanced Institute of Science and Technology (KAIST). I continued my research journey as a Postdoctoral Researcher at École Nationale Supérieure de Chimie de Rennes in France (2014) and Institute for Nuclear Waste Disposal (INE) at Karlsruhe Institute of Technology (KIT) in Germany (2015). Then, I moved back to Korea and worked as an Assistant/Associate Professor at Konkuk University.

My research interests revolve around mineralogy (mineral transformation), geo-biochemistry (interactions between microbes and soil minerals), environmental science (monitoring of contaminants in air, water, and soil systems and prediction of contaminant fate and transport) and engineering (development of novel catalysts and their use for advanced water treatment processes), and sustainable environmental chemistry (energy production from wastes/contaminants). I believe that these multidisciplinary researches can provide insights into the macro/microscopic reaction mechanisms in a variety of natural phenomena and the

development of Green-SMART technologies to treat the contaminated systems. I am particularly interested in spectroscopic identification of interfacial changes in mineral-water-contaminant systems and develop novel environmental remedial materials from various organic and inorganic solid wastes for wastewater treatment.

In this conference, I gave a talk about "Upcycling of solid wastes and their use for removal of contaminant in wastewater". Massive amount of various solid wastes has been produced worldwide from different industrial plants (e.g., coal fly ash from coal fired power plant, red mud from alumina production by Bayer process, and steel slag from steel plant). The solid wastes usually composed of various metal oxides which can be reutilized as sources of novel material synthesis. I provided my current research findings that many elements (i.e., Si, Al, Ca, and Fe) can be selectively extracted from various organic and inorganic solid wastes or be used them as support materials to effectively remove organic, inorganic, and radioactive pollutants in water environment. All the remedial materials developed from my study showed a great performance in each treatment process which shows the potential conversion of solid wastes into much value-added materials.

Throughout the conference, I had a great opportunity to connect with many experienced researchers not only from Japan but also other countries. It was very wonderful and meaningful experience for me. With this new research network, I would like to be much closer to JSWE for my further collaboration with JSWE committee and researchers.

JSWE-IDEA Water Environment International Exchange Award

Professor, Institute of Eco-environmental and Soil Science,
Guangdong Academy of Sciences, China

Bin HE

It's my great pleasure to be invited to attend the Japan Society on Water Environment (JSWE) 58th Annual Conference and a great honor for me to receive the JSWE-IDEA International Exchange Award. I very much appreciate and thank so many works which has been done by JSWE organization committees. I hope that through this conference we can further strengthen our collaborations with researchers in JSWE and make our contribution to the protection of the water environment in the world. In this conference, I have learned many new technologies and latest information from many outstanding researchers in water environment area. It is truly a priceless opportunity to connect with so many famous researchers in Japan and other countries.

I have obtained my Bachelor, Master and Doctor degree from Wuhan University in China, and completed my second Doctor degree at Ehime University in Japan in 2007. After that I worked as JSPS research fellow and assistant professor in the University of Tokyo, and an associate professor in Kyoto University. Then I moved back to China and worked as a full professor in Chinese Academy of Sciences. My research area is related to water environmental engineering and my research interests include watershed hydrology, water pollution, water treatment, water related disasters and so on.

As is widely known, in recent years, with the increase in public awareness and regulatory efforts, the point source pollution has gradually become under control. Non-point source pollution, especially Agricultural Non-point Source Pollution (ANSP), is increasingly becoming a major contributor to surface water pollution and environment deterioration. It is posing a global challenge that threatens water quality and

drinking water safety worldwide. ANSP is characterized by a wide scope, strong concealment, high randomness, poor traceability, and long latent periods, making it difficult to control. Due to the dual pressures of economic development and population growth, agricultural production in many countries has been forced to adopt high-input, high-energy consumption, and high-waste production methods, leading to significant pollution in soil and water environments. Thus, effectively assessing and predicting the pollution load and spatiotemporal distribution characteristics of ANSP is of great significance for implementing prevention and control measures and improving the ecological environment. My research aims at analyzing the spatiotemporal characteristics of ANSP loads, evaluating the environmental impact of agricultural non-point source pollution, and holds significant importance for the governance of ANSP and the construction of new rural areas. Our study aims to provide an insight of potential treatment technologies featuring some simpler, economic, and efficient approaches for ANSP protection. Our research results will clearly illustrate the need to identify and, more importantly, to quantify possible metabolites of ANSP in future agricultural waste water studies for different types of watersheds in the world.

Finally, I would like to express my gratitude to JSWE for organizing the conference and providing the opportunities to continue further collaboration. Let's share and exchange research experiences, and strengthen long-term collaborations and communication. Also, we are looking forward to make more research collaboration between China and other countries in the field of water environment in the future.

JSWE-IDEA Water Environment International Exchange Award

Associate Professor, Curtin University, Australia
Ranjan Sarukkalige

I am deeply honoured to receive the JSWE-IDEA Water Environmental International Exchange Award and grateful for the opportunity to participate in the 58th Annual Conference of the Japan Society on Water Environment (JSWE), held in Fukuoka, Japan from March 6-8, 2024. I would like to express my sincere thanks to the award selection committee for recognizing my contributions with this prestigious award. I also extend my appreciation to the organizing committee of 58th JSWE conference for organizing such a remarkable event, providing an invaluable platform for researchers in the water and environment field to convene, exchange ideas, and foster collaborations and networking.

This was my first experience in attending JSEW annual conference. I had the privilege to engage with numerous excellent researchers from Japan and different countries, spanning various multidisciplinary areas related to water and the environment. During the conference, I presented my research on the assessment of hydroponic plant capability for enhanced pollutant removal in constructed floating wetlands. This presentation facilitated fruitful discussions with fellow researchers sharing similar research interests, paving the way for potential future collaborations. The interactions and knowledge sharing throughout the conference concluded in the initiation of several promising research partnerships.

Allow me to briefly introduce myself; I currently work as an Associate Professor in the School of Civil and Mechanical Engineering at Curtin University in Perth, Australia. I obtained my BSc (Eng) degree in Civil Engineering from the University of Peradeniya, Sri Lanka, followed by my MEng degree in Water Supply, Drainage, and Sewerage Engineering from the Asian Institute of Technology (AIT), Thailand. I earned

my PhD in Civil Engineering from Tohoku University, Japan. Prior to joining Curtin University, I worked as a JSPS Postdoctoral Research Fellow at Tohoku University and served as a lecturer in Civil Engineering at the University of Ruhuna in Sri Lanka.

My research expertise lies in urban water management, including areas such as stormwater management, urban wastewater treatment, and hydro-environmental studies. Over the years, I have supervised numerous PhD and Masters students, fostering a prosperous research environment at Curtin University. Currently, I supervise 7 PhD students and lead my research team conducting innovative studies in urban water, employing advanced tools, modelling techniques, and laboratory facilities to address pertinent issues in urban water management. Our research activities include hydrological modelling, flood forecasting, stormwater management, and experimental studies aimed at enhancing water and wastewater treatment processes, specially improving the stormwater quality.

The research I presented at the JSWE conference focused on a crucial methodology for improving stormwater quality: constructed floating wetlands (CFWs). CFWs represent a highly efficient structural approach to pollutant removal from stormwater, characterized by their environmentally friendly, natural, simple and cost-effective design to remove pollutants in stormwater. Given the significant role of plants in CFWs, my presentation aimed to identify the most suitable hydroponic plant species grown in Western Australia for optimal performance in constructed floating wetlands.

I am truly privileged to have had the opportunity to share my research findings at the JSWE conference and look forward to further collaborations in the field of water environment.

JSWE-IDEA Water Environment International Exchange Award

Associate Professor, Shenzhen International Graduate School, Tsinghua University
Wenlong Wang

The 58th Annual Conference of the Japan Society on Water Environment (JSWE) took place in Fukuoka from March 6 to 8, 2024. It was a gathering of top professionals and experts in the field, providing a platform for knowledge sharing and collaboration. I am deeply honored and grateful to have been awarded the prestigious JSWE-IDEA Water Environment International Exchange Award at this esteemed conference. I would like to sincerely appreciate the organizing committee for their meticulous organization and thoughtful arrangements.

I obtained my Ph.D. degree in Environmental Science and Engineering from Tsinghua University in 2018. Prior to my Ph.D., I completed a Bachelor's degree in Environmental Engineering in 2012 from Beijing Normal University. Following my doctoral studies, I served as a Postdoctoral Fellow at the School of Environment, Tsinghua University, from 2018 to 2020. Subsequently, I held the position of Assistant Professor and Associate Professor at Shenzhen International Graduate School, Tsinghua University's.

Water reclamation is an important way to mitigate the problems of water shortage and water pollutants. However, reclaimed water needs further treatments, e.g., chemical oxidation, to eliminate the harmful pollutants, especially the recalcitrant trace organic contaminants. To achieve safe water reuse, my research primarily focuses on water pollution control and recycling. I have expertise in areas such as water quality

conversion theories and methods, water quality risk assessment, advanced physical and chemical treatment technologies (e.g., advanced oxidation processes), pollutant transformation and risk control, as well as wastewater recycling processes and regulatory techniques. In this conference, I shared our researches of novel advanced oxidation technologies in which the promotion of hydroxyl radical ($\cdot\text{OH}$) generation can be achieved. For example, the micro-bubble ozonation can enhance the oxidation performance via both O_3 -oxidation and $\cdot\text{OH}$ oxidation; the vacuum-UV (185 nm) can achieve chemical-free oxidation but remains better UV-light penetration in the water.

The JSWE Annual Conference was a truly enriching experience, and I am grateful for the recognition and opportunities it has afforded me. I am inspired by the wealth of knowledge shared and the innovative ideas exchanged among participants. The opportunity to engage with fellow researchers and industry professionals has been invaluable, and I look forward to incorporating these insights into my future work.

The pandemic has had a significant impact on international exchanges in the past few years. This conference was my first international exchange event after the pandemic, and it left a deep impression on me. As the pandemic is going away, I believe that international exchanges will become more active, bringing new opportunities for cooperation and development among countries.