

# Which Specialist Groups should I join?

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IWA offers a range of [Specialist Groups \(SGs\)](#) for members to join, and participate in. Specialist Groups are IWA's central programme for encouraging interaction, debate and innovation on scientific, technical and governance topics. SGs allow like-minded specialists to build communities focused on specific water-related topics, connect with others in the sector and pool expertise.

See below for all 50 of our Specialist Groups:

## **Advanced Oxidation Processes**

The group is designed to bring forward the most recent advances in the fundamentals as well as the development and the application of the Advanced Oxidation Processes (AOPs). It will help to disseminate new achievements in these areas and to identify future research and development needs through strong cooperation between scientists, engineers, operators and decision makers.

## **Anaerobic Digestion**

The IWA SG on Anaerobic Digestion (AD) is an international forum for activities related to anaerobic conversion processes. The core issues this group is concerned with include Biogas (green energy) production, water treatment and reuse, solid organic waste treatment, recovery of resources, anaerobic microbiology, reactor technology development, new wastewater process technologies, etc.

## **Assessment and Control of Hazardous Substances in Water**

The core issues of this SG relate to all questions concerning natural and anthropogenic substances and their transformation products including nano particles that have negative impacts on human or environmental health. Specifically, the group focuses on novel analytical methods, bioassays, occurrence in water, sludge and contaminated soils/sediments, their fate and effects in the environment, removal in water treatment systems, risk assessment and regulatory aspects.

## **Benchmarking and Performance Assessment**

The SG is an international forum for discussing and improving the state of the art in all activities related to the performance assessment and improvement of water services. The group is responsible for the IWA frameworks of performance indicators and benchmarking and strongly linked to the AquaRating system. Group members include practitioners, academics, regulators and consultants.

## **Biofilms**

The Biofilms Specialist Group is an organizational unit of the International Water Association (IWA). It represents a forum for the exchange of scientific and technical information among researchers and practitioners involved in the field of biofilms. The scope of the Group includes on one hand all technical and natural aquatic systems, in which sessile bacteria are found, and on the other hand all biological, chemical and physical processes, which are relevant for biofilm behavior.

## **Chemical Industries**

The forum to address all aspects of the water and wastewater issues arising from industries, promote public education and innovative research on topics crucial to these industries. The group members work together for interdisciplinary water technology and advanced regulation to provide cost effective sustainable solutions to chemical industries.

## **Design, Operation and Costs of Large Wastewater Treatment Plants**

The objective of the Group is to contribute to a continuous improving of design, operation and economics of large wastewater treatment plants by sharing knowledge and experience. The group solves technical and economic problems of wastewater treatment in large agglomerations and covers a broad spectrum of questions from chemistry, microbiology, engineering and economics.

## **Design, Operation and Maintenance of Drinking Water Treatment Plants**

The SG is for the exchange of theoretical, practical and operational experience for those involved in the design and operation of drinking water treatment plants. Through this SG, members can enhance networking and exchange of practices and experience on operational issues in the design and operation of drinking water treatment plants, and can better understand the operational needs and solving operational problems.

## **Diffuse Pollution and Eutrophication**

The variety and complexity of processes generating and delivering diffuse pollution and eutrophication concern water professionals working together to identify new approaches and solutions that protect natural resources.

## **Disinfection**

This SG covers the topics of disinfection and inactivation principles to design facilities for disinfection in water, wastewater, sludge or excreta, especially new technologies in disinfection. The group encourages achievements in disinfection to include practical solutions for the low-income countries as well as leading-edge technologies and theories.

**Efficient Urban Water Management**

The forum to interchange knowledge, opinions and ideas about best practices and technological solutions in the efficient management and use of water in urban areas. Devoted to promoting practical solutions for utilities, the SG also seeks to involve broad stakeholder interests and knowledge.

**Environmental Engineering Education**

The forum for new and innovative concepts in environmental engineering education, including identification of drivers for E3, exchange of experiences regarding curricula, definition of learning objectives, innovative ways of delivery and training, discussion on the profile of 'the engineers of the future', links between the education and research, etc.

**Forest Industry**

The SG addresses environmental issues within the forest industry, particularly in the pulp and paper industry and the emerging biorefinery industry. The SG attempts to cover all important issues for the industry, including water use and system closure, effluent treatment technologies, receiving water effects and the challenges of wastewater treatment for new biorefinery technologies.

**Groundwater Management**

The SG aims to promote collaboration on groundwater restoration and management issues worldwide and to promote development of innovative technologies and solutions, and managerial strategies to ensure that sustainable use of the groundwater resource can be assured.

**Health-Related Water Microbiology**

HRWM links water and health and includes environmental virology, bacteriology and parasitology, epidemiology, water quality, microbiome and QMRA, etc. Members in this group share transformational technologies such as new technologies for the cost-effective detection of pathogens and characterization of microbial populations using among others, metagenomics and NGS techniques.

**Hydroinformatics (Joint IWA/IAHR/IAHS SG)**

The SG is for issues related to water and ICT (including development, implementation and evaluation of hydroinformatics tools). Through events and publication, the SG disseminates and share experiences and new knowledge, and offer solutions, best practices, and roadmaps to hydroinformatics challenges faced in different parts of the world. The SG supports Journal of Hydroinformatics.

### **Institutional Governance and Regulation**

The IGR SG contributes to the understanding and appreciation of the importance of institutions, 'good governance' and effective regulation to the achievement of sustainable water use. Institutions, governance and regulation affect all aspects of water use and water management, including water resource management and the delivery of water services, including urban water supply, urban sanitation (both sewer and non-sewer sanitation), and sludge management.

### **Instrumentation, Control and Automation**

The SG provides an international forum to exchange knowledge, methodologies and experience on all aspects of instrumentation, control and automation for water and wastewater systems. Practical experience, case studies, management problems, operator challenges and integrated solutions of these systems are important parts of the activities.

### **Intermittent Water Supply**

This SG aims to generate and disseminate knowledge in the area of intermittent water supply to assist Water Utilities around the world to make the important transition from IWS to 24x7x365 in a sustainable manner or at least sustainably achieve more hours of water supply thus improving the quality of life for millions of people contributing towards achieving SDG 6 relating to water supply.

### **Lake and Reservoir Management**

The SG is a platform for sharing the development and application of a range of lake and reservoir management strategies so that water resources can be managed more sustainably.

### **Marine Outfall Systems (Joint IWA/IAHR)**

The SG aims to advance the science and technology of all aspects of coastal wastewater discharges from outfalls and their design, and to facilitate communication between the diverse groups of practitioners in the field. The Committee recognizes the considerable potential for integrated systems of wastewater treatment and disposal that consider the response of the receiving waters and their natural assimilative capacity.

### **Metals and Related Substances in Drinking Water**

The Group's objective is to educate professionals and public and to promote and exchange knowledge on the membrane technologies for water environment through the international/regional conferences and special workshops.

### **Membrane Technology**

The SG unites the best experts from around the world specialized in probably the most advanced water and wastewater treatment process – membrane technology, to solve a wide range of issues with health impact and economic implications, including arsenic, copper, chromium, iron, lead, manganese and nickel

### **Microbial Ecology and Water Engineering**

The scientific focus of the group comprehends identity, physiology, ecology, and population dynamics of relevant microbial populations, and specific populations involved in nutrient removal and recovery processes. The SG promotes the rational and effective engineering of open microbial systems in the water cycle using emerging technologies and concepts in microbial ecology.

### **Modelling and Integrated Assessment**

The SG aims to address and promote all aspects of modelling, simulation and the formal methods of applying systems analysis to managing and improving the quality of the aquatic environment. The MIA SG targets people from research, consulting companies, institutions and operators to consider and apply the use of models and computing tools to support the understanding, management and optimization of water systems.

### **Nano and Water - Application of Nanoparticles, Nanoengineered Materials and Nanotechnology**

The development and possible application of nanotechnology and nanomaterials for drinking water and wastewater, and also provides clear and objective knowledge and information about the risks associated to the specific technologies.

### **Non-Sewered Sanitation**

The SG aims to generate, collate and disseminate knowledge in the area of Faecal Sludge Management around the world. This knowledge aims to guide sanitation service provision in a sustainable way thus improving the quality of life for millions of people using on-site sanitation systems and therefore contributes towards achieving SDG target 6.2.

### **Nutrient Removal and Recovery**

The SG focuses on cutting edge fundamental and applied research in nutrient removal and recovery technologies, and applications of those technologies in the design, operation, and optimization of wastewater treatment systems. With the new demand for sustainable nutrient removal and recovery, there are many exciting research opportunities within this field.

**Odours and Volatile Emissions** The SG addresses sustainable management of all kinds of gaseous emissions into the atmosphere, especially odour emissions and emissions of volatile inorganic and organic compounds (VOCs), from wastewater collection, treatment and disposal systems

**Particle Separation** The SG is concerned with a wide range of aspects of science and technology in which aquatic particles are involved. This SG specializes in: (1) solids removal concepts in water and wastewater treatment; (2) particles removal processes including flocculation, sedimentation, flotation and membrane processes; (3) characterization of particles and suspensions in natural and treated waters; (4) particle transport and transformation processes.

**Pretreatment of Industrial Wastewaters** The SG tackles the strategic aspects of pretreatment programmes; impact of industrial discharges on municipal treatment works; characterisation and categorisation of industrial wastewaters; planning, development and management of industrial eco-parks; etc.

**Public and Customer Communications** The focus is on building a network of people who see that effective internal and external communications are the basis for good relations and understanding between a water organisation and its many different stakeholders, customers and other water users.

**Rainwater Harvesting and Management** RWHM SG promotes a new paradigm of decentralized, multi-purpose and proactive rainwater management for sustainable future cities by doing research and practice in the context of engineering, economic and social aspects

**Resources Oriented Sanitation** The SG focuses upon sanitation systems enabling nutrient reuse, mainly by source separation. The full range from high- over medium- to low-tech and from decentralised to centralised solutions is covered. "Resources-oriented sanitation" is understood in the same way as "sustainable sanitation" [such as defined by the Sustainable Sanitation Alliance (SuSanA, [www.susana.org](http://www.susana.org))] and "ecological sanitation", respectively.

**Sanitation and Water Management in Developing Countries** The SG encompasses water supply and sanitation services and their interrelation with river basin management. The Group has a bottom-up approach and identifies regional focal points

**Sludge Management**

The SG focuses on the scientific and technical aspects of sludge/residuals/biosolids management, including production, characterisation, stabilisation, digestion, thickening, dewatering, thermal processing, agricultural reuse, production of usable materials, and ultimate disposal

**Small Water and Wastewater Systems**

The SG deals with water and wastewater systems serving individual houses, a cluster of houses or a community. The group considers the use of localized systems will help in recycling and reuse of wastewater. This will also enhance and promote the closing of water and nutrient cycles.

**Statistics and Economics**

The SG is for all economic, financial and statistical topics in water industry. It provides a forum to debate how utilities are financed, their various water tariff structures and the measurement of performance.

**Strategic Asset Management**

The SG creates a platform for water professionals to work together and share knowledge in terms of infrastructural asset management of urban water services at the strategic, tactical and operational levels, aiming at achieving a balance between performance, risk and cost in the long term.

**Sustainability in the Water Sector**

The SG examines the environmental, economic, and social dimensions of water sustainability and seeks to promote advances in practice that are sustainable across multiple sectors, such as those of water, energy, and food.

**Tastes, Odours, and Algal Toxins in Drinking Water Resources and Aquaculture**

The SG focuses on the causes, origins, and human perception of off-flavours and off-odours in natural water, drinking water, wastewater, and fish, plus their mitigation and management through engineered and ecological strategies.

**Urban Drainage (Joint IWA/IAHR)**

The UDSG fosters and conducts fundamental and applied research on urban drainage, and promotes innovative approaches to urban drainage worldwide. urban rainfall in current and future climates; quantity and quality of urban storm water and combined sewer overflows; advanced management of storm water in urban areas; modelling of whole systems or their elements; and, applicability of these approaches in different regions

**Wastewater Pond Technology**

The SG focuses on the use of waste stabilisation ponds for wastewater treatment in both industrialised and developing countries, and coordinates studies and identifies future trends on the performance of waste stabilisation ponds for municipal, agricultural and industrial wastewater treatment.

**Water in Ancient Civilizations  
(Joint IWA/IWHA)**

The SG aims to reveal the cultural heritage, to describe and evaluate the old water, wastewater, and environmental technologies around the world, and to develop integrated and cost-effective future management systems in a sustainable manner based on the past.

**Water Loss**

This SG shares and promotes water loss reduction to all water industry, governance groups, utilities and employees, associated individuals and companies, and community representatives at all levels, in order to save water losses and reduce future water demand.

**Water Reuse**

The implementation of safe water reuse practice through the promotion of successful water reuse projects, innovative tools and sharing of relevant information via our international knowledge network, specialist conferences and web-site.

**Water Safety Planning**

The main objectives of the WSP SG are to disseminate practical knowledge in WSP implementation to the key stakeholders involved in delivering safe drinking water, including water suppliers, regulatory authorities, catchment management authorities, health organizations and the international water community at large.

**Water Security and Safety  
Management**

This group aims to share and promote knowledge and best practices on assessment and risk management systems, research, development and performance monitoring of emerging technology solutions for water safety management and post-disaster recovery with regard to terrorist attacks, and manmade and natural disasters.

**Watershed and River Basin  
Management**

This SG aims to promote the understanding, utilization, and values of integrated watershed management approaches for the beneficial and sustainable use of rivers and watersheds worldwide.

**Wetland Systems for Water  
Pollution Control**

The focus of the Cluster is the definition and development of diverse solutions in order to cope with emerging concerns in the water supply sector, which are mainly related to the increasing divergence between water resources and demands all over the world