

The 1st and 2nd WMCC conferences held in 2016 (Spitsbergen, Norway) and 2020 (Harbin, China) focused on water management in cold climates. Responding to the needs of the scientific community, from now on the WMCC will focus on Water Management in Changing Conditions. The conference will specifically cover three aspects (1) Changing temperatures – especially colder climates, (2) Changing climate – causing changing precipitations, (3) Changing populations – due to seasonal activities increasing populations to serve.

The conference will be hosted by IFAT-Munich – the world's leading trade fair for water, sewage, waste and raw materials management, giving a unique opportunity to learn about market-leading suppliers and technologies. The European Water Association (EWA) is organizing the WMCC 2024 with the support of the International Water Association (IWA).

Hall A21/A22



3RD INTERNATIONAL CONFERENCE ON WATER MANAGEMENT IN CHANGING CONDITIONS

Co-organizers:



14-15 May 2024 in Munich

<http://www.wmcc2024.net>

Sponsor:



Day 1: Tuesday 14th May 11:30-17:30

11:30-11:45	Opening Session: Chair: Prof Harsha Ratnaweera, Norwegian Unbiversity of Life Sciences, Norway
	Welcome, Harsha Ratnaweera, Chairman of the conference
	Opening address, Wendy Franken, President, European Water Association
	Welcome address, Johannes Lohaus, Secretray General, European Water Association

11:45-13:10 **Water resources and supply:** Chair: Prof Vlad Tarabara, Michigan State University, USA & Prof Ismail Koyuncu, Istanbul Technical University, Turkey

1	Effect of Global Warming on Temporal Availability of Water; A Case Study in Nyankpala, Ghana (short) _G. Kranjac-Berisavljevic, R. K. Dogbey, Ghana
2	Towards A Methodological Framework to Address Data Challenges in Lake Water Quality Predictions (short) _Bae, J., Cascone, C., Borzooei, S., Steinhauer, H.J., Helldin, T., Karlsson, A., Fridén, H., Strandberg, J., Sweden
3	Isotopic signatures ($\delta^{18}\text{O}$ and $\delta^2\text{H}$) as indicators of climate change effects in Sri Lanka's dry zone: Implications for water management of Tank Cascade Systems during the rainy season _K. Gliriska-Lewczuk, J Gunaratne, M K N Kumari, Poland
4	Drought Resiliency: Securing Drinking Water Supply in Northern Italy with Satellite Leak Detection _Boukai, A., Rabinovitch, J.J., Israel
5	Water-Energy Nexus in Gaza: Shortages and Prospective Solutions _Rantissi, T., Gitis, V., Israel

13:10-14:10 Lunch

14:10-15:50 **Water supply technologies:** Chairs: : Prof Gregory Korshin, University of Washington, USA and Prof Yovanka Perez, University of Brasilia, Brazil

6	Effects of Ambient Temperature and Other Parameters on the Variability of DBP Concentrations in a Large Drinking Water Distribution System _Sandaa, K., Ratnaweera, H., Korshin, G., USA
7	Increase of Natural Organic Matter in source water due to frequent and intense precipitation - signs of a changing climate _Mohiuddin, A.S.M., Loadsman, F., Blayney, B., Chia, K., Vigneswaran, S., Australia
8	Assessing the efficiency of the usage of Low Impact Development in rainwater management in a housing estate (short) _Widomski, M.K., Czerpak, J., Staniszewski, M., Kozłowska, A., Poland
9	Microbiological assessment of water consumed by residents in flood-prone communities in Accra (short) _Baffoe, A.A., Bawua, S.A., Seidu, R., Fobil, J.N., Arko-Mensah, J., Ghana
10	Potential risks of metals in major sources of water for domestic use in Kasoa (short) _Marful-Sau, F., Seidu, R., Bawua, S.A., Fobil, J.N., Arko-Mensah, J., Ghana
11	Evaluation of test kits for better water management in changing conditions (short) _Morosanova, M.A., Morosanova, E.I., Latvia
12	Application of relevant membrane treatment approaches for potable water supply in emergency and low resource context _Senavirathna, B., Wei, J., Beck, S., Finsrud, G., Maletskyi, Z., Bérubé, P., Canada

15:50-16:05 Coffee

16:05-17:30 **Wastewater treatment:** Chair: Prof Thomas Wintgens, RWTH Aachen University, Germany and Prof Katarzyna Glińska-Lewczuk, University of Warmia and Maszury, Poland

13	Temperature fluctuations and backwashing frequency impacting biological activity in granular activated carbon filters _L. Graß, D. Hillebrandt, B. M. Aumeier, L. Palmowski and T. Wintgens, Germany
14	Achieving simultaneous nitrification and endogenous denitrifying phosphorus removal in anaerobic/intermittently-aerated moving bed biofilm reactor for low carbon-to-nitrogen ratio wastewater treatment _Luan Yanan, Liu Changqing, Guo Zhonghong, China
15	Novel measurement device and application for aeration optimization in wastewater treatment _Ukkonen, P., Mulas, M., Mikola, A., Finland
16	Submerged aerated filter can offer high-rate robust nitrification at different temperatures _Sarosh, S., Ramaswami, S., India

17:30 Closure

Day 2: Wednesday 15th May 09:30-17:30

09:30-10:55 **Storm water, risks & resources:** Dr Vitaly Gitis, Ben Gurion University, Israel and Dr Jaya Kandasamy, University of Technology Sydney, Australia

17	Environmental forensics for ensuring microbial safety in critical settings _Tarabara, V., USA
18	Stormwater Pollutant Interrelationship in an Urban Catchment for Stormwater Harvesting _Ekanayake, D., Aryal, R., Kandasamy, J., Ratnaweera, H., Vigneswaran, S., Australia
19	Analysis of the Current Situation of Freshwater Supply and Recycling of Water Resources in the City (short) _Zhang, Z., Chen, F., Zhang, X., Yan, D., Zhang, Y., Li, Y., Ding, B., Zhang, X., China
20	Mobile treatment solution for the treatment of wash water from road tunnels _Rathnaweera, S.S., Manamperuma, L., Kjønne, O., Hoel, E., and Vik, E.A., Norway
21	Geo-spatial an temporal relations between flood incidence and water-borne disease (Short) _PS Sokpe, R Seidu, SA Bawua, JN Fobil & J Arko-Mensah, Ghana

10:55-11:15 Coffee

11:15-12:50 **Wastewater treatment and resources:** Chair: Prof Katsuki Kimura, Hokkaido University, Japan & Dr Joao Bassin, Federal University of Rio De Janeiro, Brazil

22	Membrane fouling in MBR induced by change in biopolymers under low temperatures _Kimura, K., Kakuda, K., Japan
23	Adsorptive recycle of phosphate by MgO-biochar from wastewater: evidence from batch and column experiments _Yin, Y., Liu, C., China
24	NPHarvest – economic recovery technology for nutrients in liquid waste streams _Kajunen, J. U., Mikola, A., Finland
25	Cyanobacteria in Stabilization Ponds: Risks and Challenges in Brazilian Environmental Legislation _Silva Brito, S., Moraes Soares, R., Brazil

13:00-14:00 Lunch

14:00-15:25 **Innovations:** Chair: Prof Rita Hilliges, Technical University of Applied Sciences Augsburg, Germany and Prof Francis Mutua. University of Nairobi, Kenya

26	Studies for an initial estimation of microplastic emissions by MBBRs _König, J., Montau, B., Leonhard, S., Hilliges, R., Germany
27	Modelling the Upgrade of Storm Tanks for Water Reuse through Proactive Real-time Control using Rainfall Forecast data _Kroll, S., Raes, B., Donckels, B., Verbeke, M., Raemdonc, M., A., Belgium
28	Development of a soft sensor for measurement of COD and phosphates in a sewer network in Norway (short) _Hykkerud, A., Mendis, D., Yavorska, V., Norway
29	A Novel Non-Destructive Defect Detection Approach for Urban Water Supply Tunnels Using Autonomous Inspection Robots and Deep Learning (short) _Yu, J., Chen, W., Zhao, Q., Wang, J., Li, P., Cai, S., Wang, W., Luo, D., China
30	The Digital Future of Water Management _M. E. Pasaoglu, I. Koyuncu., Turkey

15:25-15:40 Coffee

15:40-17:05 **Nexus and challenges:** Chair: Prof Pierre Berube, University of British Columbia, Canada & Prof Gordana Kranjac-Berisavljevic, University of Development Studies, Ghana

31	Challenges in Water Supply and Wastewater management in Greek islands _S. Tsitsifli, Th. Kyriakidis, V. Nielsen, H. Ratnaweera, M. Louta, Greece
32	Drinking water availability for the human settlements distributed along the Sulina Channel from the Danube Delta, Romania (short) _Cretescu, I., Soreanu, G., Romania
33	A Case Study of COVID-19's Impact on Inequality in Water, Sanitation, and Hygiene (WASH) Services among Informal settlements in Kampala, Uganda (short) _R Semyalo, D W Batega, Uganda
34	Global Pandemic Effect on Wastewater Treatment with Focus of Virus and Antiviral Drug Load _Eryildiz- Yesir, B., Yavuztürk-Gül, B., Koyuncu, I., Turkey
35	Transforming the Trade-offs in the Water-Food-Energy Nexus into Synergies in Developing countries _Mutua, F., Kenya

17:05-17:20 **Summary:** Dr Zakhar Maletskyi, Norwegian University of Life Sciences, Norway

17:20 **Closure:** Arthur Guischet, Deputy Secretary General, EWA