**Norwegian University of Life Sciences – NMBU**

NMBU is one of the ten universities in Norway, with 64 study programs, 6400 students and 1900 staff. It was established in 1859 and located in a 600 ha area, about 30 km south of Oslo. NMBU has a long tradition for international collaboration especially with EU Horizon 2020, Horizon Europe, Erasmus+ (over 100 projects) as well as various projects funded by the Norwegian grants.

In the SmartWB project, the Research Group on Smart Water which focuses on Water Treatment and Analytics will be involved. The group is leading the conventional water treatment processes and digitalization aspects, with about 7-10 large international projects at any given time. These projects has created the [Water Harmony](http://www.waterharmony.net) Global Educational and Research Network, with over 100 universities from 54 countries, giving unique opportunities our partners.

The Smart Water group found its niche of analytics in water treatment, combining data science with environmental and process research. It is essential to keep and advance it by:

* Acquiring excellent "high risk – high gain" research projects to develop and attract new talents to the group
* Leading and contributing to global capacity building initiatives both in education and reserach
* Outstanding publication to improve the group's research reputation, productivity, and influence, thus also contributing to the faculty's and NMBU's ambitions
* Developing research infrastructure with analytical and experimental equipment
* Keeping the research activity going through collaborations, prioritising partnerships that extend knowledge and expertise
* Increasing visibility and collaboration with leading international researchers and their groups

The Smart Water group at NMBU specially focuses at present on:

1. Data-driven water quality monitoring
	1. Monitoring of CECs, including DBPs in water and wastewater
	2. Monitoring of nutrients and aggregate organics in wastewater
	3. Qualitative NOM composition of surface water
2. Data-driven process surveillance & control
	1. Data-driven models for process surveillance with hybrid sensors
	2. Optimization of coagulation & flocculation and membrane processes
	3. Image analysis in process control and phenotyping
3. Enabling technologies: coagulation & flocculation, membranes and electrochemical methods
	1. Nature-derived reagents
	2. Hybrid coagulants and processes
	3. Nanofiltration of NOM in surface water
	4. Electrooxidation of organic pollutants

The Smart Water group has initiated and coordinated an International Summer School on Water at NMBU since 2012, with over 300 students from over 35 countries.

**Team members:**

**Harsha Ratnaweera** **harsha.ratnaweera@nmbu.no**

 Dr Harsha Ratnaweera is a Professor of Water and Environmental Engineering at the

Research Group on Smart Water (Water Treatment and Analytics, Faculty of Science and Technology, Norwegian University of Life Sciences -NMBU since 2012 and was the Director of International Projects and Innovation for 20 years at the Norwegian Institute for Water Research. He has an MSC in Chemical Engineering (1987, Ukraine) and a PhD in Environmental Engineering (1992, Norway). He is a Fellow and Director of the Boards of the International Water Association (IWA) and the European Water Association (EWA). Dr Ratnaweera initiated the Global Educational and Research Network, Water Harmony, in 2012, which has grown to over 100 universities from 54 countries.

His research areas are surveillance, modelling, control and optimization of treatment processes, especially focusing on digital tools. He has about 90 peer-reviewed research publications and h-index of 22. He has worked in all five continents and has a broad international network and project management experience.

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Dr Zakhar Maletskyi is an Associate Professor of Water and Environmental Engineering at the Smart Water research group (Water Treatment and Analytics), Faculty of Science and Technology, Norwegian University of Life Sciences (NMBU). He has an MSc (2009, National Technical University of Ukraine) and a PhD (2012, National Technical University of Ukraine) in Chemical Engineering.

His research interests are within data-driven membrane design and characterization, membrane process engineering with data analytics and electromembrane processes. His teaching speciality is Water and Wastewater Treatment Technology and Engineering.

Zakhar Maletskyi is a co-facilitator of the Water Harmony network in Europe, North and South America, East Africa, Central and South Asia.

In addition to scholarly and teaching activities, Zakhar Maletskyi is a representative of the institute in the research board of the faculty. He is a board chair of the Forum for technology and development cooperation (FTU) at the Norwegian society of graduate technical and scientific professionals (Tekna). He is also a co-leader of the working group Water Human Capital of Water Europe.

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Dr Agnieszka Cuprys is a Researcher in Water and Environmental Engineering at the Research Group on Smart Water (Water Treatment and Analytics), Faculty of Science and Technology, Norwegian University of Life Sciences -NMBU. She has an MSc in Pharmaceutical biotechnology (2016, Poland) and a PhD in Water Science (2019, Canada).

She was an EU-MSCA Post-doctoral fellow at the NMBU since 2021 before joining the research group as a Researcher and Project Management Specialist in 2023. Her research started with environmental biotechnology at the Institut National de la Recherche Scientifique (Quebec, Canada), with focus on the occurrence, fate and removal of emerging contaminants (pharmaceuticals and personal care products, PFAS, DBPs etc), which continues to this day.

Dr Cuprys contributing to the growth and management of the Water Harmony network, and is involved in several international projects funded by EU, Erasmus+ and the Norwegian Research Council.

**Natalia Ilieva** **natalia.ilieva0@nmbu.no**

****Natalia Ilieva is a Project Coordinator at the Research Group on Smart Water (Water Treatment and Analytics), Faculty of Science and Technology, Norwegian University of Life Sciences -NMBU. She has an MSC in Chemical Engineering “Pharmaceutical and cosmetic products” (2021, Romania) and MSC in Business Administration, study of program “Company Management” (2021, Moldova).

Natalia joined the Smart Water group at NMBU in 2021, and since then heavily involved in the logistics of the group’s international projects. She has a coordinating role in the NMBU’s International Summer School on Water, and contributes with communication between the partners, communication and dissemination of project results, etc.