



PhD fellowship/scholarship

## CLEANWATER - Biofilters



### Research area and project description

The research will be performed in the framework of the BONUS project CLEANWATER focusing on removal technologies of organic micropollutants from wastewater under precondition of final approval of the project. The PhD student will work on developing innovative biofilter systems with special focus on polishing effluent wastewater and/or treating stormwater.



Essentially further development and further optimization of removal processes based on biofilter systems will be studied. These systems are porous media biofilm reactors using natural, synthetic and coated carrier material. Within this project, the biofilm surface area, means to establish the right biomass, and operation stability will be developed and optimized. Additionally, degradation, mineralization, and (co-)metabolism processes will be studied.



After a brief phase of introduction the respective candidate is expected to run the analysis for organic micropollutants from wastewater on HPLC-MS and GC-MS, perform quality assurance and further develop the existing methods.



### Qualifications and specific competences

The respective candidates should hold a masters in environmental chemistry, environmental analytical chemistry, water science environmental engineering or similar. Experience in determining organic micropollutants, extraction procedures, environmental mass spectrometry, wastewater reactor optimization, operation of biofilm reactors and working in large projects is of advantage.



### Place of Employment and Place of Work

Place of Employment is Aarhus University, Department of Environmental Science, Frederiksborgvej 399, 4000 Roskilde. The work expands from laboratory work in the department to operating pilot reactors in the Copenhagen area or in southern Sweden.



### Contacts

Applicants should contact professor Kai Bester [kb@envs.au.dk](mailto:kb@envs.au.dk) or Ulla Bollmann [ueb@envs.au.dk](mailto:ueb@envs.au.dk) before 15<sup>th</sup> January 2017.





PhD fellowship/scholarship

## CLEANWATER - Membrane processes



### Research area and project description

The research will be performed in the framework of the BONUS project CLEANWATER focusing on removal technologies of organic micropollutants from wastewater under precondition of final approval of the project. The PhD student will work on developing innovative membrane processes for the removal and analysis of organic micropollutants.



Essentially, further development and further optimization of removal processes based on ceramic-based membrane bioreactors and biomimetic reverse and forward osmosis membranes will be conducted together with know-how holding engineering companies. Additionally, the PhD student will develop an online membrane-based semi-passive sampling method for monitoring micropollutants in wastewater and stormwater.



After a brief phase of introduction the respective candidate is expected to run the analysis for organic micropollutants from wastewater on HPLC-MS and GC-MS, perform quality assurance and further develop the existing methods.



### Qualifications and specific competences

The respective candidates should hold a masters in environmental chemistry, environmental analytical chemistry, water science environmental engineering or similar. Experience in determining organic micropollutants, extraction procedures, environmental mass spectrometry, wastewater reactor optimization, operation of biofilm reactors and working in large projects is of advantage.



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