

# Adsorption and degradation of micropollutants by biological activated carbon

Starting date : May—June 2021

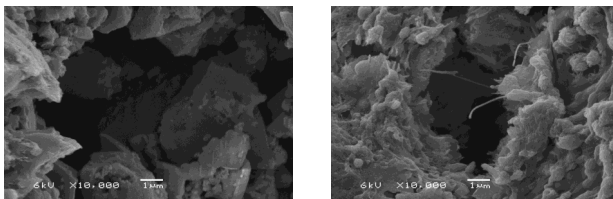
Duration : 6—9 months

## Motivation

In recent years, the presence of micropollutants (MPs) in water cycle has become a global concern, especially due to their insufficient removal in the current wastewater treatment plant.

Biological activated carbon is able to remove MPs from water to a high extent, but the removal mechanisms are unknown. The micropollutants can be adsorbed on the carbon surface, adsorbed in the biofilm, or converted into something else by the microbes in the biofilm. Removal of MPs may also be achieved by co-metabolism.

In this project, the fate of micropollutants in biological activated carbon system will be investigated by studying the adsorption / desorption and biodegradation processes.



(a)

(b)

**Figure 1** Activated carbon pores (a) clean without biofilm, (b) with biofilm

## Your responsibilities



Do sorption experiment on biological activated carbon



Do biodegradation experiments on biological activated carbon and the associated biofilms



DNA and RNA extraction, purification, PCR, and qPCR



Chemical analysis

## Your benefit

- Allowance 175 EUR per month
- Experience to work in an international environment
- Experience to work in a multidisciplinary project
- Contribution to the advancement of water technology

## Your profile

- Dutch / EU students / non-EU students studying in a Dutch university
- Have a valid driver's license in the Netherlands
- Strong background in (Bio)chemistry and Molecular Biology
- Experience in DNA and RNA extraction and purification is preferred
- Preferably have a valid driver's license in the Netherlands
- Responsible, accuracy and precision-oriented
- Willing to be actively involved in the project

## How to apply



Send your CV (max. 2 pages) and motivation letter (max. 1 page) to:

[olga.bernadet@wetsus.nl](mailto:olga.bernadet@wetsus.nl)