

Influence of surface modifications on micropollutants removal by biological activated carbon

Starting date : May—June 2021

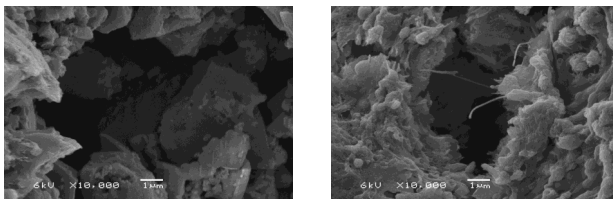
Duration : 6—12 months

Motivation

Activated carbon is a highly porous adsorbent that is used to remove organic pollutants and heavy metals. The primary removal mode is adsorption, but microbes can colonize the carbon surface overtime and use the adsorbed organics as nutrient source.

The grown microbes together can also alter the surface of activated carbon, influencing its adsorption behaviour towards micropollutants in the water.

In this project, the mechanisms of calcium phosphate and biofilm formation will be investigated. Adsorption behaviour of virgin GAC and GAC with modified surface will also be investigated



(a)

(b)

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

Your responsibilities



Surface / material analysis



Adsorption experiments



Precipitation experiments



Biofilm formation experiments

Your benefit

- Allowance 175 EUR per month
- Experience to work in an international environment
- Experience to work with various analytical techniques
- Contribution to the advancement of water technology

Your profile

- Dutch / EU student OR non-EU student studying in a Dutch university
- Allowed to relocate and do experimental work in Leeuwarden
- Strong background and experience in various physical and analytical (Bio) Chemistry techniques (e.g. microscopy, spectroscopy, spectrophotometry, etc.)
- 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



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

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