

Investigating removal of pharmaceutical residues from a WWTP effluent: Pilot-study

Type of project: Internship

Starting date: September – October 2022

Duration: 3 – 4 months

Location: Wetsus – European centre of excellence for sustainable water technology - Leeuwarden, Netherlands

Project description:

Pharmaceutical residues or other micro-pollutants have been categorized as a contaminant of concern in the Wastewater Treatment Plants (WWTPs) effluent. They are not effectively removed in the conventional WWTPs as the WWTPs were initially not designed to remove these micro-pollutants. Their presence can cause severe consequences in the natural water bodies ecosystem despite their low concentrations (ng/L to µg/L).

Biological oxygen dosed activated carbon (BODAC) filters are currently being tested as tertiary treatment to remove pharmaceutical residues from WWTPs secondary effluent. A pilot of the filter is built in the *Puurwaterfabriek*, Emmen. In this pilot study, the pharmaceutical concentrations, organic and nutrient content, and the biological and physicochemical state of BODAC filters are thoroughly investigated.



Fig. 1 Pilot installation of the BODAC filter

Requirements:

- Allowed to do experimental work in Leeuwarden, the Netherlands;
- Background in chemical/biological, environmental engineering or related fields;
- Experienced with practical laboratory work;
- Good communication and writing skills in English; and
- Having a valid driver's license in the Netherlands.

Your responsibilities and benefits:

- Performing regular sampling to the pilot in the *Puurwaterfabriek*, Emmen;
- Performing physical and chemical water quality analysis in the laboratory;
- Opportunity to contribute to the Netherlands' national innovation programme to remove micropollutants from WWTPs;
- You will work in a highly-skilled environment for water research and contact with different topics/people; and
- We offer a monthly allowance of 200 or 400 €, subject to the personal situation and if you have any European grant (Erasmus for instance).

How to apply:

If interested, please send your CV (max. 2 pg.) and a motivation letter (max. 1 pg.) via the application form provided at the end of webpage of this vacancy. If you have any further questions regarding this position, do not hesitate to reach out at amanda.larasati@wetsus.nl.