

Wastewater treatment plants of the future: carbon harvesting and energy recovery



Introduction

In the future, municipal wastewater treatment plants should become energy and carbon neutral. To meet this requirement, a process is required in which most of the organic pollution is converted into energy, instead of being oxidized and lost to the air. This can be achieved by using a digester producing energy, instead of an aerobic bioreactor oxidizing COD. This digester should be operated with a concentrated feed and therefore, the wastewater treatment plant of the future will start with the concentration or harvesting of COD for the digester.

A promising process for the first step in this wastewater treatment is a high loaded bioreactor. In this reactor, dissolved and colloidal COD are captured in the sludge flocs, instead of being oxidized. Ideally, this process is combined with biological phosphate removal.

Objective

The goal of this internship project is to define the main design parameters of this process. This will be done by combining a biological model with experimental data. With the design parameters the wastewater treatment process of the future should balance appropriate sludge stability, process stability and maximal carbon harvesting. During the internship you will combine modelling with experimental work in the laboratory.



#missionwater



Internship specifications

Type of education: BSc or MSc Chemical, (Bio)Process, Civil or Environmental Engineering

Supervisor: Geo Smith

Location: Doetinchem

Duration: 4 – 6 months

Application

If you are interested in this internship at Nijhuis Saur Industries please send the following to Iñigo De Eguren at

Internship.NWT@nijhuisindustries.com:

- your motivation and CV
- the period and duration of your internship

Or apply via: <https://eu.jobs.saur.com/nl/jobs>