Controlling the microbial drinking water community using a two-reactor system

Information:

Very short: Assembly and startup of two reactor system with the aim to control and modulate drinking water distribution system like conditions.

The Research:

Focus of this research is to study the drinking water microbial community response to changes in chemical composition of drinking water. The microbial community and the metabolic activity is investigated using Next-Generation Sequencing approaches. The aim is to be able to make predictions of the chemical composition of drinking water on the basis of the obtained information.

The Challenge

The distribution of drinking water is under strict control and legislation. These rules and regulations make it necessary to build testing systems that provide conditions that simulate the drinking water distribution system (dwds) conditions as good as possible. In this way research can be performed that studies the effects in whole community bacterial response in relation to changes of the chemical composition of the water investigated.

The Task

In this project, a two-reactor system will be assembled and started up in order to modulate drinking water distribution system like conditions. The first reactor will be used to increase microbial cell densities and define conditions to mimic dwds best. The second reactor will be used to generate very slow flow velocities that enable us to perform tests on the present community that originates from the drinking water distribution system.

Skills required

This project is at the interface of several disciplines. It combines knowledge from bio- / chemical engineering, biotechnology, drinking water microbiology and chemistry. What you need is enthusiasm to go to the lab. Perform hands on work on the experimental setup. Derive data and be curious about their interpretation.

Who can apply

A M.Sc. or a B.Sc. student with a background in Biotechnology, Microbiology or Bio-/ Chemical Engineering, Water Science, Wetsus Academy with an interest in the microbiology of drinking water.

Compensation The selected candidate will receive a compensation of 350€ / month.
Duration 3 – 9 month. Targets and volume of work will be discussed accordingly.
Location Wetsus - Leeuwarden, The Netherlands

Contact: Fabian Ruhnau - fabian.ruhnau@wetsus.nl
More information: www.wetsus.nl/fabian.ruhnau