



Assignment internship Water Management / Chemistry / Chemical Engineering

Living Lab Biobased Brazil

The Living Lab Biobased Brazil is a transnational Living Lab in the field of Biobased Economy, created in 2014 by a consortium of Dutch Universities of Applied Sciences in collaboration with several Brazilian universities. The Living Lab helps students with internships and graduation projects in the Netherlands with the focus on Biobased Economy. We also help students finding accommodation, and offer buddy support and some events.

For more information please see www.biobasedbrazil.org and www.biobasedbrazil.org/student/the-netherlands/ or ask the International Office of your university.

University of Applied Sciences information:

The universities of applied sciences (in Dutch: 'hogescholen') offer programs that focus on the practical application of arts and sciences.

Getting practical work experience through internships is an important part of the professional study programs offered at these institutions. The largest universities of applied sciences enroll 20,000 to 40,000 students. Altogether some 446,000 students are enrolled on professional programs. University of Applied Sciences have also research groups. This groups do applied research and they are so called professorships. This internship assignment is within one of the associate professorships.

HZ University of Applied Sciences information:

HZ University of Applied Sciences is located in the South-West of the Netherlands. With a population of some 4,800 students (450 international) we are a small university with a personal approach. As university of applied sciences we focus on practice-based education and research opportunities. Our close cooperation with the business world, various research centres, and our global network of partner universities is of paramount importance.

Activities:

The position is at the Delta Applied Research Centre in the Water Technology group, which aims to enhance:

- Recycling of surface and process water for industry, agriculture and aquaculture. Examples are reuse of cooling tower blowdown water, rainwater runoff and industrial wastewater.
- Recovery of valuable content in waste water, like nutrients and humic acids.
- Monitoring and control, like smart sensors to monitor water quality.

Research Project:

The research aims to reduce the TOC (Total Organic Carbon) content of industrial condensate using IX (ion exchange) and adsorption. An IX lab setup consists of up to five different IX columns in series. The setup was made available to HZ by Evides Water Company, our main sponsor, with the aim to improve condensate polishing or industrial demineralized water production by testing various IX resins, flows and regeneration strategies.

**General background:**

Industrial condensate and cooling tower blowdown are water streams that are available in large quantities from industrial processes, but are difficult to treat before discharge or reuse. This project aims to find adequate solutions to reuse this water in order to produce demineralized water, which is used in various industrial processes, like power production.

Goal of internship:

Continuation of improving TOC removal efficiencies. The full project will be running for several years and each intern takes the project one (or more) step(s) further.

Activities:

The Project involves:

- Literature study into possibilities for improvement, picking up where the last student finished;
- Testing various combinations of techniques or parameter settings and their effect on water treatment;
- Reporting the findings in an internship report or article.

Final product

The student will write a report or scientific article that contains an overview of all activities and findings.

Starting date

September 2017. The length of the assignment is approximately 5 months (20 weeks). The intern will be part of a research team lead by the adviser and supervised by dr. Hans Cappon

Desirable skills/qualities of the student

Good knowledge of the English language is required. We have set minimum language requirements for foreign students. The minimum English language prerequisite is: an academic IELTS test (or equivalent*) with an overall band score of at least 6.0. As a foreign student you must provide evidence of your language competences in the form of an official certificate: IELTS, TOEFL, TOEIC or Cambridge ESOL. It is your responsibility to ensure that you meet these requirements.

The background of the student is Water Management, Chemistry or Chemical Engineering at undergraduate or graduate level.

Information of the company:

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Living Lab Biobased Brazil
Education Research Innovation

Interested?

To apply for a project or multiple projects, you need to complete the survey. The Living Lab Biobased Brazil strives to give you feedback within 05 days. Applications outside this survey will be not processed. Keep in mind the application deadlines. We need to receive your application before 01/04 or 01/09. If you do not meet the given deadlines we cannot offer you any guarantees.

**PLEASE BE AWARE THAT THE PROCES SUBSCRIBE AT
<https://www.biobasedbrazil.org/student/netherlands/> APPLIES!**