

Characterization of the Electrochlorination Process

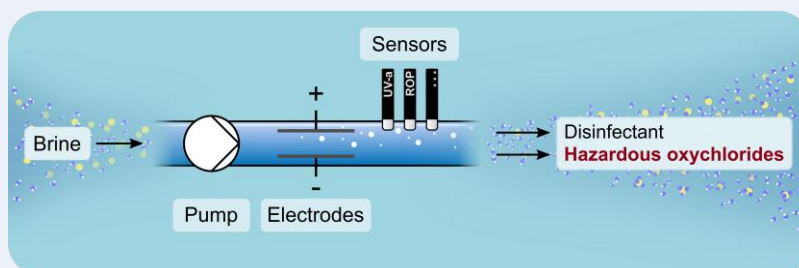
Starting from: Fall 2020

Duration: 4 – 6 months

Location: Wetsus Research Institute, Leeuwarden, the Netherlands

Project description

Electrochlorination is an increasingly important means of disinfecting water. In this process, salty water is electrolyzed to produce hypochlorite, an effective disinfectant. However, some byproducts, specifically chlorate and perchlorate, have been found to be detrimental to human and animal health.



The goal of this project is to increase our understanding of electrochlorination, specifically how process parameters impact sensor data. This information is imperative to improve the prediction of chlorate and perchlorate formation.

Challenge

It will be your task to make an assessment of the relation between the process parameters and sensor output, and to make an initial analysis of your findings. This will be used as a basis for a so-called software sensor: A virtual sensor that fuses the information provided by a set of sensors to obtain an estimate of the chlorate and perchlorate activities in real-time. Your tasks will include:

- Writing, preparing and executing a test plan that best covers the relevant parameters
- Perform sample analysis with prototype sensors
- Thoroughly analyze the data and explain the found relations

Your profile

- Highly motivated to learn about the assessment of electrochemical processes
- Currently enrolled in bachelor's or master's study in chemical science or related field
- Experienced with laboratory work
- Proficient in written and spoken English
- EU citizen or non-EU citizen already enrolled in a Dutch university and living in the Netherlands

Benefits

- Gain hands-on experience with a broad range of sensors
- Deepen your understanding of electrochemistry
- Contribute to reducing health risks related to the disinfection of water
- Work in an advanced laboratory with colleagues from around the world
- If you don't have an Erasmus grant, you will receive a €175 monthly allowance

How to apply

Interested? Send an email to edwin.ross@wetsus.nl to get in touch. Please supply an up-to-date CV and a short letter explaining your interest in this specific project.