
Biopolymer production and recovery by activated sludge at pilot scale

Field: Environmental technology, water technology, chemical engineering, biotechnology, material sciences

Type of project: Internship / thesis

Duration: 5-6 months, starting in October 2020

Location: Wetsus, European Centre of Excellence for Sustainable Water Technology, Leeuwarden (The Netherlands)

Allowance: 175 €/month. If you get an Erasmus grand: 0 €/month.

1. Project description

Activated sludge (AS) is normally produced as a waste by-product in biological wastewater treatment plants. Within the circular economy concept, AS can be a raw material and a resource for the production of renewable products. AS can, for instance, produce significant quantities of polyhydroxyalkanoates (PHAs). PHAs are polyesters with attractive properties for the chemical and bioplastic industries as well as being biobased and biodegradable. However, there is a need for fundamental understanding and the development of novel principles in methods that will ensure reliable production in yields, quantity and quality for PHAs with real feedstocks that a regional circular economy can really be built upon. At Wetsus, under the theme "Biopolymers from water" (www.wetsus.nl/biopolymers-from-water) we develop robust and optimal bioprocess and polymer recovery engineering principles for the mixed culture PHA production methods and in support of ongoing technology scale-up developments.

2. Your tasks

- Operation of pilot production and recovery of PHAs
- Monitoring and evaluation of process performance
- Quality characterization of the produced PHAs
- Interaction and collaboration within a dynamic multidisciplinary and multinational research team

3. Your profile

- Study: environmental/water technology, chemical engineering, biotechnology or material sciences
- Actively enrolled in undergraduate (BSc) or graduate (MSc) studies
- Preferable EU citizen or non-EU citizen registered at a Dutch university or technical high school
- An aptitude and interest for practical laboratory experience and analytical work
- Fluent in English language (speaking, writing and communication skills)
- Highly motivated, enthusiastic and independent thinker and doer who also like to work in a team

4. How to apply

Interested students are invited to send a motivation letter (max. 1 page) and a CV (max. 2 pages) to Erik de Vries (erik.devries@wetsus.nl). In the email, please indicate when and how long you are available.