

CHARACTERISATION OF BIPOLAR MEMBRANES AND ACID-BASE FLOW BATTERY PERFORMANCE

POSITION	MSc research internship
FIELD	Electrochemistry, Chemical Engineering, Membrane Technology
DURATION	4 – 6 months
START DATE	January 2, 2019 (flexible)
LOCATION	Wetsus, European Centre of Excellence for Sustainable Water Technology (Leeuwarden, NL)

PROJECT

The development of novel electrical energy storage systems is a crucial factor for the near future, given the extensive use of intermittent renewable sources such as wind and solar power. In this regard, the EU-funded **BAoBaB project** aims to develop and upscale an **acid-base flow battery** (ABFB), i.e., an environmentally-friendly electrical energy storage device based on salinity and pH gradients. The ABFB uses only water and salt as active materials and a **bipolar membrane** (BPM) as its central component. Bipolar membranes are capable of dissociating water into H^+ and OH^- , thus generating acid and base solutions (during the battery charging step), but also to recombine acid and base into water (battery discharging step). Current research is focusing on new cell design, membrane characterisation, and operating conditions to enhance the battery performance.

More information on the BAoBaB project: www.baobabproject.eu

YOUR TASKS

Your task will be to operate an existing electrochemical system and/or to help design and build a new system with the aim to **characterise bipolar membranes and battery performance** under different operating conditions. A number of electrochemical techniques will be used for the study, including electrochemical impedance spectroscopy, (cyclic)voltammetry, etc.

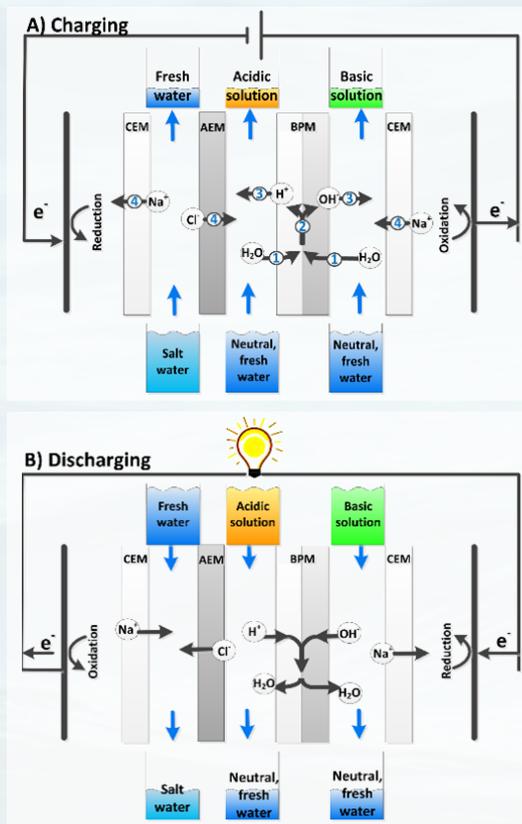
OUR OFFER

- A chance to contribute to a collaborative European project
- An excellent opportunity to develop your research skills in a cutting-edge water technology research institute
- A multidisciplinary international working environment
- Allowance of 350 €/month

ABOUT WETSUS



Wetsus, *European Centre of Excellence for Sustainable Water Technology*, is an international research institute located in Leeuwarden, The Netherlands. The aim of Wetsus is to create innovative and sustainable technologies for the water sector by coordinating a network of 105 companies and 16 European universities. More info: www.wetsus.eu



REQUIREMENTS

- Being enrolled as a MSc student in a relevant discipline (Electrochemistry, Chem Eng, Membrane science)*
- Basic knowledge of electrochemistry (previous experience with ion exchange membranes is an advantage)
- Good experimental and analytical skills
- Fluent English
- Willingness to learn and cooperate

HOW TO APPLY

Interested students are invited to send their applications or further questions about the project to Ragne Pärnamäe (ragne.parnamae@wetsus.nl). Please include your CV and motivational letter, and indicate preferred starting date with the duration of internship in your application.

* Non-EU citizens are eligible only if enrolled to a Dutch university