

Electrochemical capture of CO₂ from ambient air

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| Type of project: | Thesis / Internship |
| Duration: | 6-8 months, starting from September, 2019 |
| Location: | Wetsus, European centre of excellence for sustainable water technology, Leeuwarden |
| Allowance: | 350 € / month |

Project description

Climate change is one of the most critical global challenges. Increasing atmospheric CO₂ concentration brought by anthropogenic emissions is the primary driver of climate change. Capturing CO₂ from emission points and even directly from air provides a potential solution to mitigate the amount of CO₂ emissions and reduce the atmospheric CO₂ concentration.

At Wetsus, under the theme Sustainable Carbon Cycle (<https://www.wetsus.nl/sustainable-carbon-cycle>), we aim to develop novel CO₂ capture technologies that could be potentially energy efficient and environmentally benign ¹. Based on the extensive knowledge we have on water technologies, current studies focuses on the applying electrochemical systems for CO₂ capture.

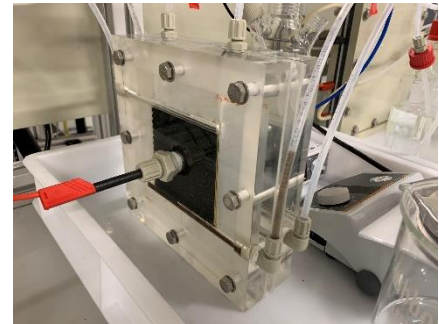


Figure 1 Electrochemical cell used in this study

Your tasks

- Operating an electrochemical system
- Characterizing the performance of the system based on several parameters
- Optimizing the operation conditions in terms of energy consumption and CO₂ capture efficiency

Requirements

- Specialized in environmental science, chemical engineering, or related fields, experience of working with electrochemical or carbon capture system will be a bonus
- Actively enrolled in undergraduate (BSc) or graduate (MSc) studies
- An interest for practical laboratory experience and analytical work
- Fluent in English (speaking, writing and communication skills)
- Highly motivated, enthusiastic and independent who also like to work in a team

How to apply

For application, please send a motivation letter (max. 1 page) and a CV (max. 2 pages) to Qingdian Shu (qingdian.shu@wetsus.nl). Suitable applicants will be invited for a Skype interview.

Please note that Wetsus can offer internships to EU citizens only. Non-EU citizens need to be enrolled at a Dutch university to be eligible for this project.

1. Legrand, L.; Schaetzle, O.; de Kler, R.; Hamelers, H. V., Solvent-Free CO₂ Capture Using Membrane Capacitive Deionization. *Environmental science & technology* **2018**, *52*, (16), 9478-9485.