



Fouling and process design in reverse electrodialysis

From 2018-2022 | Total budget € 80,000

A case study with real waters

Reverse electrodialysis (RED) is a technology for electrical energy harvesting by controlled mixing of fresh and sea water using a membrane stack with alternating anion and cation exchange membranes. It is a renewable source of energy, free of harmful emissions such as CO₂. Fouling is a severe problem for RED using natural waters. Fouling decreases the effective power density output. This project aims to obtain a better understanding and control of fouling, by understanding the behaviour of the main foulants found in natural water. The overall goal is to implement economically attractive pre-treatments and a process design that enables a sustainable energy production. This technology could be relevant in the Brazilian context as an alternative to hydropower sources, by taking advantage of the great potential for controlled mixing of fresh and sea water available in Brazil's coastal area and river mouths.

More information:

<https://www.wetsus.nl/app/uploads/2019/12/44-blue-en-BVital-web.pdf>

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