



REDstack (Sneek) wins Aquatech Innovation Award 2023

REDstack, the company in Sneek (The Netherlands) who produces and sells ElectroMembrane stacks for energy production and mineral recovery, won 3 Innovation Awards. They won in the categories Innovation Not To Market Yet (with Blue Energy) and in the category Wastewater Treatment (with ElectroMembrane Stacks). REDstack finally became Overall Winner of the Aquatech Innovation Award 2023!

Platform Technology

REDstack has developed a platform technology for industrially produced, leak-free and energy-efficient ElectroMembrane Stacks. Originating from the development of highly efficient stacks for the harvesting of Blue Energy out of a difference in salinity between freshwater and seawater, these stacks have now been modified to be suitable for nitrogen removal, carbon capture solutions, environmental batteries, but also to allow reuse of industrial wastewater. In the past year, the number of possible applications has skyrocketed.

Water technology applied in other sectors

ElectroMembrane Stacks can contribute to solving major environmental issues, by using water technologies to recover valuable resources. Already these stacks are being applied in the Paper Industry Water Hub by Industriewater Eerbeek for reuse of the production water of three paper mills. In a cooperation with Nijhuis Saur Industries and Pure Water Group, the ElectroMembrane Stacks are being used to extract excess salts from the water. At full scale the Paper Industry Water Hub will recondition over 500 m³ water per hour.

ElectroMembrane Stacks with bipolar membranes

In another cooperation with Pure Water Group, REDstack is piloting the use of ElectroMembrane Stacks with bipolar membranes, to recover nitrogen from municipal and agricultural waste water, as well as scrubber-liquids. This nitrogen is therefore not emitted and can be reused as fertilizer in the shape of ammonia.

At the same time, the REDstack ElectroMembrane Stacks with bipolar membranes for carbon capture are utilized in three different projects: extracting dissolved CO₂ from direct air capture, from sea water and from flue gas. The REDstack ElectroMembrane Stacks allow efficient and clean removal of CO₂.

Other sectors that REDstack has entered with the same ElectroMembrane Stacks with bipolar membranes, are environmental batteries and recovery of lithium and other elements.

Simon Grasman, CTO of REDstack:

“The market has accepted our ElectroMembrane Stacks as a revolutionary and very efficient solution to the challenges they face, when recovering valuable resources from watery flows. We are glad that the technology we have developed over the course of 20 years, now has resulted in widespread commercial recognition.”

About REDstack

REDstack was set up to develop a technology to generate salinity gradient energy (Blue Energy). The ElectroMembrane Stacks are a direct spin-off from this development, and are produced at the REDstack factory in Sneek, the Netherlands.

A development facility for Blue Energy: predictable, clean and sustainable energy, extracted from fresh and salt water, is running on the Afsluitdijk. The Blue Energy technology has proven itself in practice there. REDstack is also testing its desalination technology here. Because of the good results, REDstack is therefore bringing these techniques to the market.

After a period of preparation, the pilot plant in Breezanddijk on the Afsluitdijk was built in 2014 and officially inaugurated by King Willem-Alexander. The test stands set up there were developed by REDstack together with several project partners. REDstack controls both the housing of the stacks, application of ion-exchange membranes as well as the entire operation of this plant.

In this plant, CO2-free energy (Blue Energy) is generated from fresh and salt water, a new and highly promising technology.

In developing Blue Energy, special attention was paid to the ecological adaptability of the system in the vulnerable Wadden area. This as a precursor to global applications in areas where rivers flow into the sea.

=====

For more information:

REDstack B.V. || Graaf Adolfstraat 35-G || 8606 BT Sneek || 0515 - 745582
Yvonne den Burger || secretariaat@redstack.nl || www.redstack.nl