

# Newsletter

## How to make membranes “intelligent”

Ion-exchange membrane technologies have been applied for advanced food processing, e.g. aiming separation of various ions from dairy industrial effluents, including the separations of citrate and phosphate. Laura Paltrinieri and co-workers developed a method to prepare functional membranes based on covalent incorporation of a functionalized monomer. Such membrane was shown to facilitate selective electro-driven transport of phosphate or citrate from model dairy waste-water. The work was published in the prestigious ES&T journal and highlighted on the front cover. The paper is available via [this link](#). This multidisciplinary research was only possible thanks to the intensive collaboration in the Wetsus Desalination theme between TU Delft, Wageningen University and the R&D departments of Friesland Campina and Fujifilm. On February 22, 2019, Laura Paltrinieri successfully defended her PhD thesis on *Phosphate Recovery: From Nanoparticles to Membrane Technology*.

## Wetsus organizes international workshop on "Novel Batteries for Electric Energy Storage"

On the 9th of April in Utrecht, Wetsus will organize a one-day workshop on "Novel Batteries for Electric Energy Storage". The aim of this workshop is to discuss the latest developments on the energy transition in Europe and novel technologies to meet the future demand of electric energy storage. The program of the workshop includes talks from renowned international experts in the field of energy storage, redox flow batteries, and applied electrochemistry. The workshop is organized in the framework of the EU-funded project BAoBaB (Blue Acid/Base Battery: Storage and recovery of renewable electrical energy by reversible salt water dissociation). In the BAoBaB project, Wetsus and other European partners collaborate to upscale the acid-base flow battery technology. The participation to the workshop is free of charge, with a limited number of seats available (100).

For registration and more info: [www.baobabproject.eu](http://www.baobabproject.eu)



## WaterCampus Business Challenge already benefits 125 start-ups

ViviMag, represented by Wokke Wijdeveld, is the winner of this year's WaterCampus Business Challenge, the 10<sup>th</sup> edition. ViviMag develops a separation technology to recover the iron-phosphate mineral vivianite from digested sewage sludge. The WCBC is a 5-day training for talented entrepreneurs where they learn how to build good innovative technologies and services into a successful international business.

In the past 10 editions, we welcomed about 125 participants from 15 countries. Their results varied: next to starting new businesses, some participants also used the WCBC to adjust their strategy, or even to recognize that running the intended business is not a good idea. The WCBC has improved the entrepreneurial climate and employment in the water technology sector.

Some examples from over the years are Metal Membranes, now a SME company with 10 employees, and Magpie Polymers, recently sold to Italmatch Chemicals. Aquarobur, one of the former winners of WaterCampus Business Challenge has recently won a 2 million euro European prize, more information [here](#).

The WCBC is part of a broader WaterCampus program for entrepreneurship in water tech. The business accelerator program of [Bestart](#) is available, there are dedicated programs within the European Institute of Technology and several options for financial support, for example [Bison](#).

## New high voltage lab

Both Wetsus and NHL Stenden are active in research involving high voltage and water. In order to increase synergy in this field, it has been decided to combine these research activities and create a joint lab. The lab is located in the Water Application Centre (WAC) on WaterCampus Leeuwarden. In this lab researchers from both Wetsus (PhD candidates, master students and interns) and NHL Stenden (vocational, applied research and master students) as well as senior researchers from both institutes can do their research. To start with, there will be set-ups involving electrospray, the floating water bridge, and dielectric break-down (under water lightning). The lab will be inaugurated on April 18th 2019 by Wetsus Executive Board member Cees Buisman and Erica Schaper, chair of the board of NHL Stenden.



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