

It's the combination that does it

- **LANXESS expertise and technologies for wastewater treatment**
- **Combination of ultrafiltration/reverse osmosis for removing suspended solids from refinery wastewater**
- **New and further development of software for the success of our customers**

Cologne – Membrane techniques have enormous potential for water treatment. “The removal of harmful or troublesome trace elements as completely as possible during water treatment is more important today than ever before – and is also indispensable for responsible wastewater management,” said Alexander Scheffler, head of Marketing in the Liquid Purification Technologies (LPT) business unit at specialty chemicals company LANXESS. For example, ultrafiltration (UF) and reverse osmosis (RO) can be combined perfectly to treat wastewater flows containing suspended solid matter. “After reverse osmosis, the water quality is almost equivalent to that of drinking water. Depending on the process used, the pH value still has to be adjusted or the ammonia has to be removed using ion exchangers,” explained Dr. Jens Lipnizki, head of Technical Marketing for Membranes in the LPT business unit.

From the slurry tank to the shop counter

One example of an RO-based process is the treatment of pig slurry, as has been successfully practiced in decentralized systems in the Benelux countries for years. In the first step, a physicochemical treatment is applied in which ferrous sulfate and a flocculating agent are added to the slurry. The solid matter is separated by means of a strainer and sold in granulate form as a natural organic garden fertilizer. The remaining liquid phase is concentrated further by reverse osmosis. In combination with an ion exchange process, the majority of ammonium ions can also be removed from the permeate.

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Slurry treatment results in a granulate and a concentrated liquid phase. In addition, clean water is produced, which can easily be fed into the water cycle.

Using a combined process to remove solids and borate content

Together with the French company Polymem SA, Toulouse, LANXESS recently completed a project for an Italian oil company as part of a sales partnership. In this project, a combination of UF/RO is used to remove suspended solids (total suspended solids, TSS) and borate from the wastewater of an oil refinery in Apulia, southern Italy, thus making it available for reuse within the process. The solids can be completely removed, while the borate content falls by around 97 percent. The low-pressure process also stands out due to the relatively low investment required as well as its equally low energy consumption. Discussions concerning a further expansion of the system are currently ongoing.

Since mid-2018, LANXESS has been selling Gigamem neophilic hollow fiber membranes from Polymem, one of the world's leading manufacturers of high-quality UF membranes and systems for drinking water and wastewater applications. This way, the German specialty chemicals company added ultrafiltration to its existing technology portfolio for water treatment.

Further development of software for the success of our customers

"The swift and reliable design of the UF/RO system in Italy also impressively demonstrates the performance of the new LewaPlus module for calculating ultrafiltration processes. This module is now an integral part of our LewaPlus design software, version 2.1 of which was released in March 2020," emphasized Lipnizki.

You can find more detailed information about products and services from the LPT business unit on the website at <http://lpt.lanxess.com>.

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News Release

LANXESS is a leading specialty chemicals company with sales of EUR 6.8 billion in 2019. The company currently has about 14,300 employees in 33 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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You can find further information concerning LANXESS chemistry in our WebMagazine at <http://webmagazine.lanxess.com>.

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Image



At its Bitterfeld site, specialty chemicals company LANXESS produces Lewabrane reverse osmosis membrane elements for the global market. Photo: LANXESS AG

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