# OSMO – projects for the chemical industry

**Successes in Germany and Belgium**

In the spring of this year Osmo Membrane Systems succeeded in winning two orders from the chemical industry, including one from Lanxess, a leading chemicals group in the areas of chemicals, synthetic materials and rubber.

## Reverse osmosis plant at LANXESS in Germany:

OSMO received the order for the construction of a reverse osmosis plant for the treatment of a waste water flow. The waste water flow requiring treatment displays both high organic levels and also very high levels of chlorides, which present a high potential for corrosion due to the composition of the local water. For this reason the entire plant is being produced from chloride-resistant special steel (1.4539/1.4462) and is additionally being executed in a sanitary version, in other words where there is a high level of organic contamination the membrane elements contained can all be heated up to 80 °C so as to keep the biofouling[1] in check. The supply includes the complete reverse osmosis unit with CIP Station[2] and the plant control including visualization.

## High pressure reverse osmosis in Antwerp

Another project is being undertaken for a major company in the chemical industry in Antwerp. This involves high pressure reverse osmosis, which was also implemented a year ago at Südchemie AG in Bavaria.

Underlying the principle of high pressure technology is the separation of organic content by means of a very high operating pressure: The reverse osmosis purifies any process condensate that occurs before this is circulated into the further water treatment process, i.e. the organic contents are separated out and returned to the materials cycle. Because of the concentration of the contents, working pressures of 80 – 90 bar are required, so the plant is constructed for an operating pressure of 100 bar. The entire high pressure plant consists of 5 layers of membranes, which can be fitted with a total of 160 spiral elements, which must make it one of the largest high pressure reverse osmosis units in the chemical industry worldwide. The scope of supply for OSMO includes the reverse osmosis plant and all the aggregates necessary for assembly in the explosion hazard area, all the control engineering and the plant housing. Completion of the plant is planned for the end of 2008.

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1 Biofilm, Biofouling
Put simply, biofouling means a slime-like film of microorganisms. This film is found above all on the pipe walls of water systems, and more especially in places where the flow is less. Sometimes the microorganisms contained in the biofilm eliminate secretions which are very aggressive and can lead to substantial corrosion damage in the water systems. A further problem associated with the biofilm is that whole plates of the biofilm can become detached and be forced through the pipes. This layer can result in blockages of narrow sections of the system or of machinery.

2 CIP
is the abbreviation of "cleaning in place", a cleaning process which often takes place in the chemical industry regularly, automatically and at short intervals.