

## Organic solvent nanofiltration a new platform technology in process industry

**Dr. Goetz Baumgarten** □ Senior Manager Membrane Processes □ Process Technology & Engineering □ Telephone +49 2365 49-2775 □ Telefax +49 2365 49-802775 □ Mobile +49 151 15101708 □ [goetz.baumgarten@evonik.com](mailto:goetz.baumgarten@evonik.com)

**Evonik Degussa GmbH** □ Geb. 1266, PB 14 □ Paul-Baumann-Straße 1 □ 45772 Marl □ Germany □ [www.evonik.de](http://www.evonik.de)

With the recent development of polymeric solvent resistant nanofiltration membranes, a new application area has emerged, known as organic solvent nanofiltration (OSN). The new generation of solvent resistant membranes is capable of rejecting solutes from organic solvents as small as 200 g/mol. Generally speaking OSN is a pressure driven process in organic solvents, defined by a nominal molecular weight cut off (MWCO) between 200 and 1000 g/mol. The ability of separating on molecular scale makes OSN interesting for versatile industrial applications. One large scale OSN installation in petrochemical industry has already proven the significant cost savings through better purity, recovery, or throughput that this technology brings<sup>1</sup>. Though the industry is rather reluctant to utilize new technologies, OSN is capable of providing unique separation solutions also in chemical, pharmaceutical and polymer industry. The main reasons that despite the clear process advantages only a few large-scale applications of OSN are established today are the limited quality of the first generation of OSN membranes and the lack of process know how.. During the last years Evonik has explored the OSN technology in both laboratory and technical scale and helped to develop new generations of OSN membranes based on Evonik polymer know how. OSN is now about to become a platform technology within Evonik. Results of OSN membrane and OSN process development work, as well as future trends will be presented.

### Bio

DR. GOETZ BAUMGARTEN

Born in 1966

Goetz Baumgarten works as a senior manager in Evonik Degussa's Process Technology & Engineering Service Unit, where he is responsible for the membrane processes group. After studying chemistry at the University of Hanover, Baumgarten went on to earn his doctorate there in 1997, focusing on the treatment of landfill leachate using membrane processes. He then began his professional career at Amafilter Deutschland GmbH in Düsseldorf, where he initially headed the application technology laboratory for Membrane Engineering in Langenhagen. He became product manager in 2001, taking over responsibility for the entire Amafilter Membrane Group, before assuming his current position with Evonik Degussa in Marl on January 1, 2005.

Baumgarten is co-founder and a member of the advisory board of the German Society for Membrane Technology, and has participated in more than 30 publications and several patents and patent applications in the field of membrane technology. He had several invited talks at national and international membrane related conferences.