Water Structures & Membrane Systems
- Rising Performance with Catalytic Water Treatment -

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Abstract:

Nearly every chemical process involves at least one separation or purification step. The engineers have developed a wide range of separation technologies for facilitate recovery of the required products. Since the first scientific description of the membrane process 500 years ago, the membrane technologies are grown from laboratory to an important industrial process. Today at various places membrane systems are used for saving high quality water as well as providing potable water in challenging areas. This lecture will be focus on principle of the membrane process with showing possibilities for making these processes more efficient and economical. After a short theoretical introduction on membrane processes, the possibilities of increasing performance on industrial membrane systems, will be shown with industrial reference objects.

On membrane surfaces the filtration process is accompanied by changes of concentrations in water, which influences the chemical potential combined with precipitation reactions and scaling effects. In technical applications, the combination of conventional chemicals with a suitable heterogeneous catalyst is able in reducing the risk of performance decreasing deposits.

This results in a markedly raised efficiency of the used chemicals. In the end, the CIP intervals are enlarged. In the same time the difference pressure is decreased and facilities performance at normalized flow rate is increased more than 10 percent.

Benefits on customers facility:

- ✓ Rising life time of membrane
- ✓ Increasing performance of added chemicals
- ✓ Reducing energy consumption
- ✓ Minimizing maintenance costs