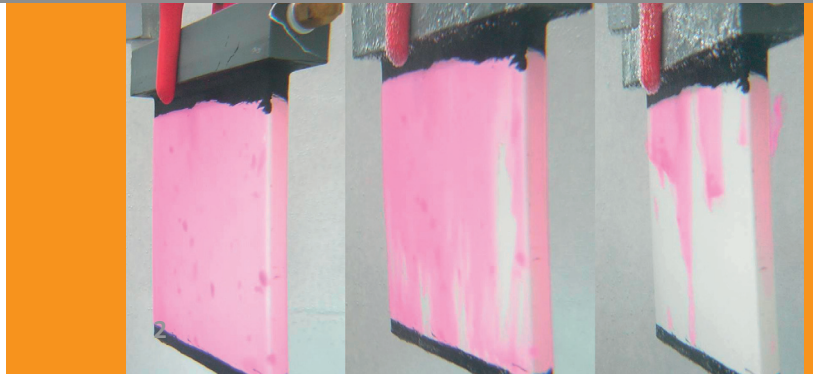
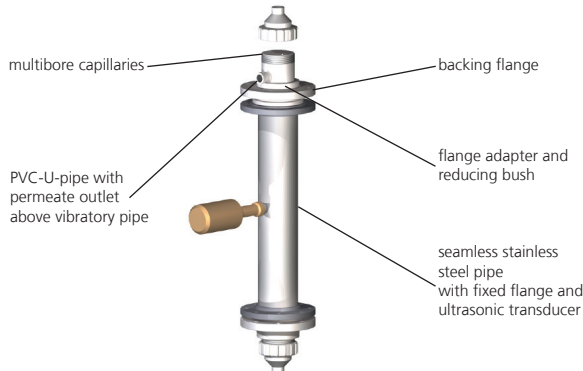




FRAUNHOFER WATER SYSTEMS ALLIANCE (SYSWASSER)



- 1 Ultrafiltration module (in-out capillary membranes) with stainless steel jacket tube for the coupling of ultrasonic.
- 2 Three phases of ultrasonic cleaning process on a ceramic membrane filters.

ULTRASONIC CLEANING OF MEMBRANES IN DECENTRALIZED WATER TREATMENT

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The demand for decentralized water treatment in rural areas is growing world wide. The Fraunhofer Institute for Solar Energy Systems ISE is developing new techniques for autonomous, locally operational plants powered by solar energy. Cleaning agents can be avoided by cleaning the filter membrane by ultrasound.

Further targets for the realization of such plants are:

- Low maintenance requirements,
- Long life time,
- Low energy input,
- Application for the filtration of surface water as well as for hygienically contaminated well and spring water,
- Reliable treatment of variable raw water qualities.

During the ISUS project (In-situ ultrasonic cleaning for small membrane systems in drinking water treatments) Fraunhofer Institute for Solar Energy Systems ISE analyzed the use of ultrasound for the cleaning of membranes in water treatment plants.

We could demonstrate that a combination of back flushing and exposure to ultrasonic sound with high frequencies shows advantages like high cleaning performance with low energy consumption.

These results were successfully assigned from laboratory scale membranes of 170 cm² area to standard capillary modules of 0,5 m² membrane area.