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### Influence of hydrodynamic induced cavitation on water pollutants

Hydrodynamic induced cavitation generates imploding cavitation bubbles which can lead to degradation or even mineralisation of water constituents without addition of any chemicals. This technology overcomes the problems of ultrasound irradiation by the local production of a cavitation cloud close to the sonotrodes. Hydrodynamic cavitation can be stabilized downstream the nozzle depending on the ambient pressure conditions. If the pressure is kept low, the imploding cavitation bubbles generate new cavities, analogous to a chain reaction, and elevate the radical synthesis inside the apparatus. During pilot tests MTBE and ETBE were degraded and complete mineralisation started at a time delay of app. 30 minutes. The specific energy-demand for MTBE-degradation lies in the range of app. 200 Wh/ppm in the investigated concentration range of about 30 ppm. Considering the influence of cavitation impact on microbial degradation of e.g. glycol, it can be shown that the degradation characteristics changes significantly by the imposed time of cavitation exposure.

#### Biography

Andreas Schmid (Ph.D. in Biochemical Engineering - Environmental Engineering), now is Full Professor in water and wastewater treatment at the Faculty of Engineering at the University of Applied Sciences Hof, Germany. More than 20 years of working experiences in industry built the fundament to derive applied sciences at his current position. Prof.Schmid got several awards for his research in the water and wastewater sector and holds a couple of national and international patents in environmental techniques. At present his research focus concentrates on cavitation technologies and relating applications in environmental engineering - especially elimination of industrial- and micro-pollutants.

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