

## **Ultrasonication effects on ultrafiltration membrane cleaning and fouling mitigation**

### **ABSTRACT**

Mitigation of fouling on hollow fiber ultrafiltration membrane using ultrasonication has been carried out. The effects of different contact times, at constant frequency and power of 28 kHz and 60 Watt, respectively on membrane cleaning with and without chemical agents were studied. Results showed that the best optimal membrane cleaning achieved were sonicating in 15 minutes without any chemical agents, with 57% recoveries. It should be noted that the presence of the chemical agent increased the effectiveness of ultrasonic cleaning compared to using water. The best combination method recovered the initial flux to at 67% using 1M of NaOH and 10 min sonication. This is likely the consequence of expanded cavitations movement occurring in the more surface-dynamic result.

**Keyword:** Sonication; Sludge solution; Chemical cleanings; Fouling