

AlMalack, MH; Anderson, GK. 1997. Use of MnO<sub>2</sub> as a dynamic membrane with crossflow microfiltration: Slow membranizing technique. *DESALINATION* 109 (1):15-24.

**Abstract:** During crossflow microfiltration, dynamic membranes are formed from particles contained in the feed to be filtered. The formation of dynamic membrane was designed from MnO<sub>2</sub> particles by circulating KMnO<sub>4</sub> for 24 h. The primary membrane used in the investigation was made of a polyester woven fabric. Secondary effluent was used throughout the research. The dynamic membrane was formed under different conditions of pH and KMnO<sub>4</sub> concentration. The investigation showed encouraging results in terms of higher flux values and improved permeate quality. The optimum results were obtained when the dynamic membrane was formed at pH 5 and KMnO<sub>4</sub> concentration of 50 mg/l. A permeate flux of more than 40 l/m<sup>2</sup>.h was obtained after more than 50 h of running time, a value which was reached within 3-4 h without using the dynamic membrane. At optimum conditions, the permeate quality was seen to stabilize at about 0.2 NTU. Cleaning the membrane was found to be easy and efficient when using brushes on the outside surface of the membrane.