Supporting Information

Control of membrane fouling by dissolved algal organic matter using pre-oxidation with coagulation as seawater pretreatment

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S1. Description of optical coherence tomography

The OCT was equipped with a 5 × telecentric scan lens (Thorlabs LSM03BB) which provides a maximum scan area of 100 mm^2. Low coherent light was emitted by a super luminescent diode (SLD) employed as the light source. The OCT was configured with a beam; the main function was to split the light into two parts: (i) sample i.e. fouled membrane, and (ii) reflect back to reference arm, ultimately converting to a signal which is a function of the depth and surface pattern of the

fouled membrane. High resolution images with a sensitivity of 100dB at 1.25 kHz were generated by OCT.

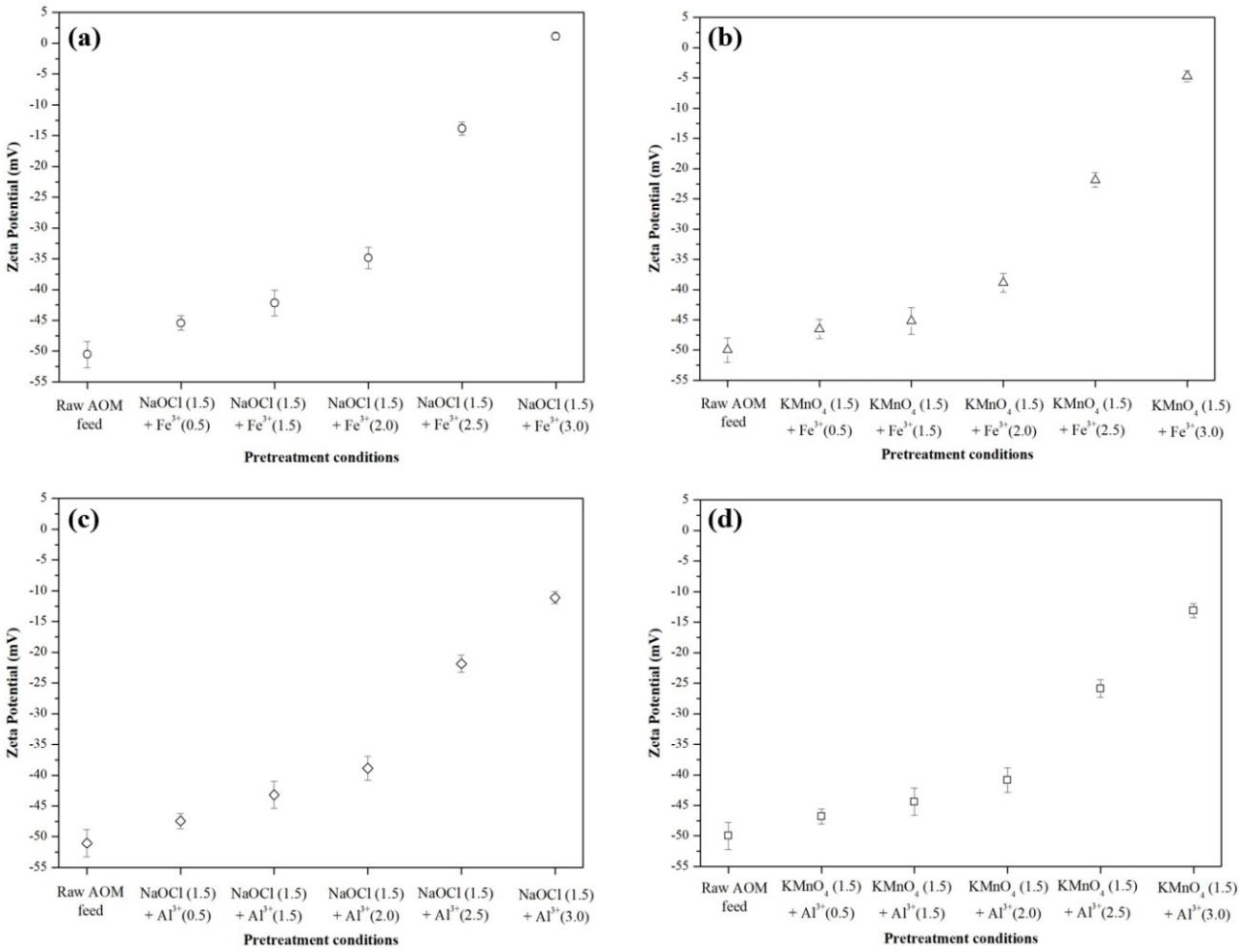

Fig. S1. Performance of zeta potential during different oxidation-coagulation pretreatment scenario for saline AOM water.

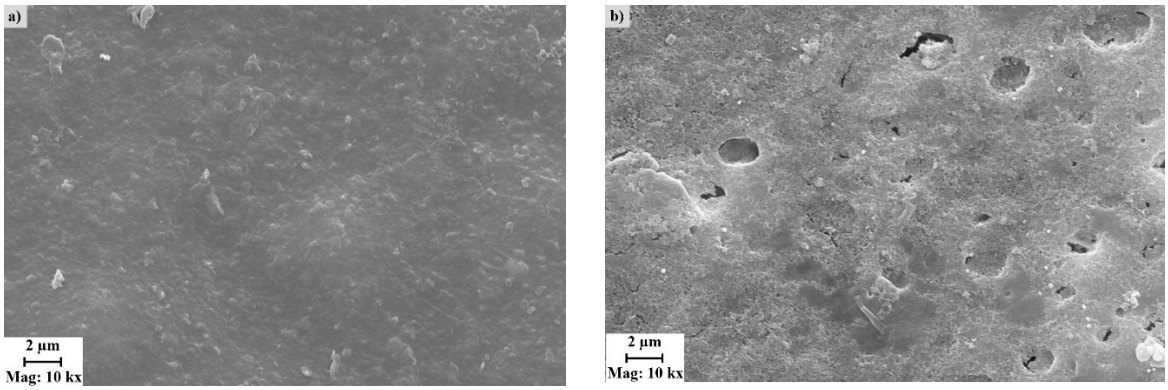

Fig. S2. SEM images for fouling development in MF membranes (a) without any pretreatment of AOM-seawater as feed, and (b) after DI water flushing for 10 minutes.

Table S1. Average seawater quality

Parameters	**Average value**
Temperature (°C)	22.54 ± 0.07
Conductivity (ms cm^{-1})	47.0 ± 0.49
pH	8.1± 0.85
Dissolved Oxygen (%)	77.1 ± 0.14
Salinity (ppt)	30.5 ± 0.14
Phosphate phosphorus (mg L^{-1})	0.04 ± 0.01
Ammonical nitrogen (mg L^{-1})	0.38 ± 0.04
BOD (mg L^{-1})	3.74 ± 0.14
DOC (mg L^{-1})	1.15± 0.15
E. coli (CFU/100 ml)	210 ± 4.23