

## Supporting Information

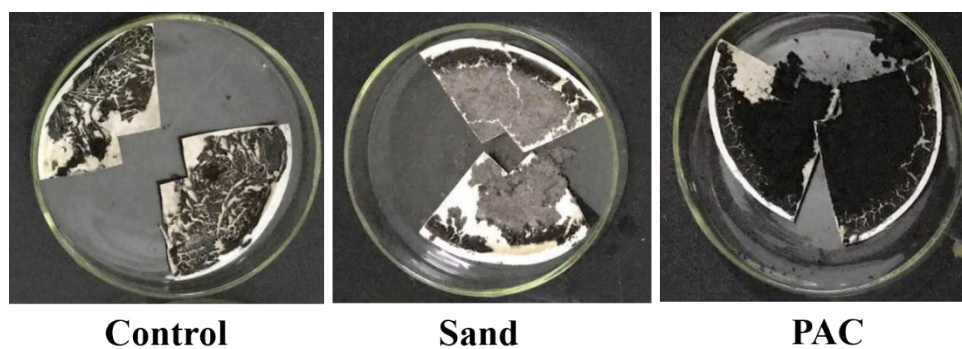


Figure S1 Direct observation of the fouled membrane surface in the three systems

**Table S1 Fluorescence spectral parameters of samples after adsorption**

Sample	Peak A		PeakB		Peak C	
	E <sub>x</sub> /E <sub>m</sub>	Intensity	E <sub>x</sub> /E <sub>m</sub>	Intensity	E <sub>x</sub> /E <sub>m</sub>	Intensity
Control	225/342	304	280/314	254.6	250/418	425.8
Sand	225/327	311.8	280/311	229.7	250/410	425.3
PAC	225/329	—	280/332	—	250/411	—

**Table S2 Fluorescence spectral parameters of different samples with time**

Sample	Peak A		PeakB		Peak C	
	E <sub>x</sub> /E <sub>m</sub>	Intensity	E <sub>x</sub> /E <sub>m</sub>	Intensity	E <sub>x</sub> /E <sub>m</sub>	Intensity
Day 14 Feeds	230/348	357.9	280/347	268.9	250/402	426.6
Day 14 Control	230/356	465.5	280/325	284.6	250/403	521.4
Day 14 Sand	230/346	513	280/331	297.1	250/402	528.6
Day 14 PAC	230/345	262.8	280/346	—	250/412	—
Day 27 Feeds	230/352	240.4	280/345	273.4	250/402	408.4
Day 27 Control	230/346	480.1	280/345	260.4	250/401	495.3
Day 27 Sand	230/344	427.3	280/328	—	250/401	482.4
Day 27 PAC	230/342	253.6	280/346	—	250/401	—
Day 54 Feed	225/363	300.1	280/336	272	250/404	374.5
Day 54 Control	230/342	313.9	280/342	177.7	250/404	422.9
Day 54 Sand	230/365	316.1	280/342	—	250/402	403.8
Day 54 PAC	230/366	—	280/346	—	255/405	—