

Electronic Supporting Materials:

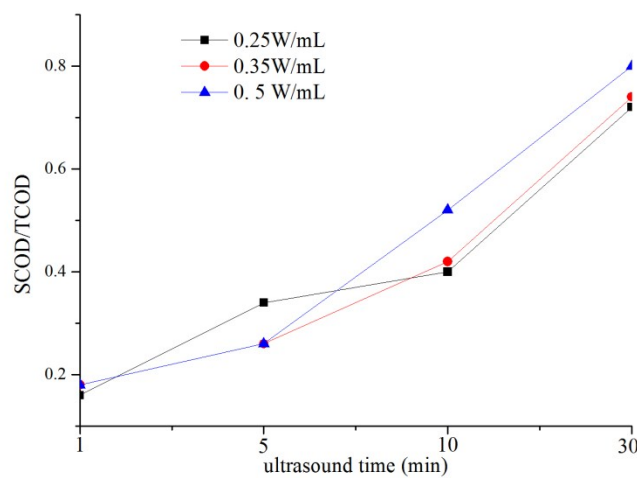


Fig.S1 The change of SCOD/TCOD with the ultrasonic time

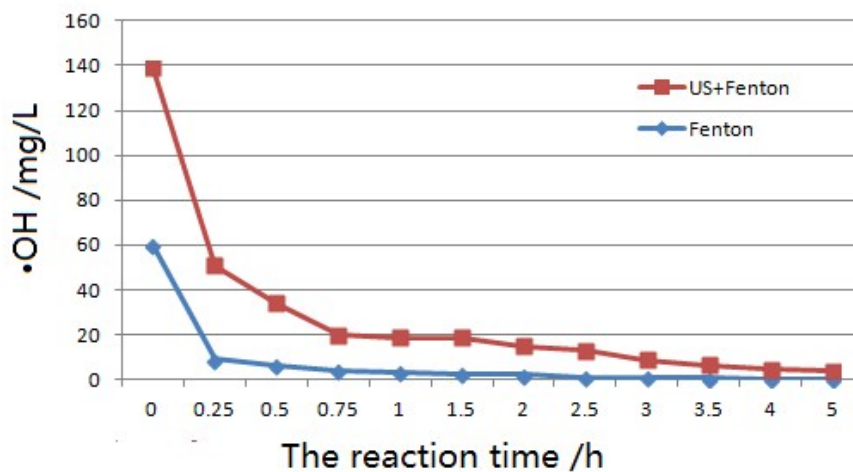


Fig.S2 The concentration change of $\cdot\text{OH}$ during the process of Fenton and US + Fenton treatment

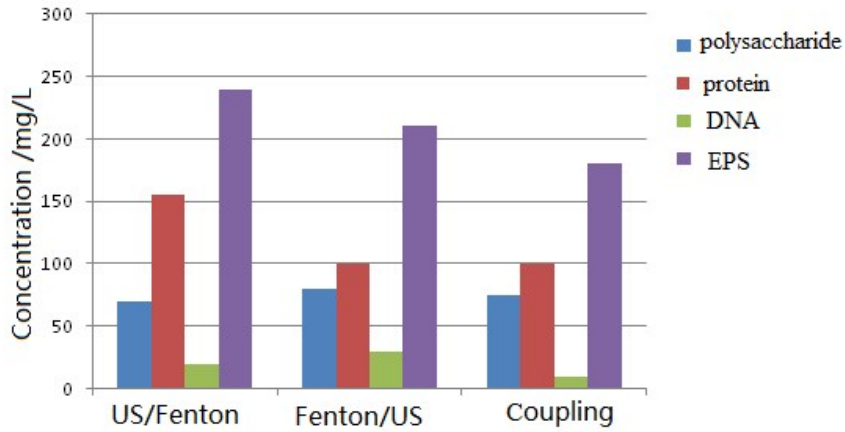


Fig.S3 The change of EPS concentration in the supernatant when the sludge is treated by different combination treatments

Table S1 The sludge particle size of the samples

Sample	[a] (μm)	d_{50} (μm)
Untreated	50.24	44.01
Fenton	44.77	41.53
Ultrasound	25.18	24.52
Us/Fenton	22.44	22.63

[a] The sludge particle size corresponds the largest volume percentage

Table S2 the effect of different pretreatments

treatment	d_{50} (μm)	SCOD	Soluble carbohydrate	Soluble protein	DD_{COD} (%)	VFA _s
Untreated	44.01	260	25	154	0	683
Fenton	41.53	1290	186	847	3.18	3485
Us	24.52	2005	203	1400	9.97	2700
US/Fenton	22.63	3461	441	2059	15.4	4594

Note: the unit of soluble organic matters is mg L^{-1} .