

Supplementary Information

for

Aerobic granular sludge-derived activated carbon: mineral acid modification and superior dye adsorption capacity

Ge Zhang^a, Li Shi^b, Yongfang Zhang^a, Dong Wei^{*b}, Tao Yan^a, Qin Wei^b,
and Bin Du^{*a}

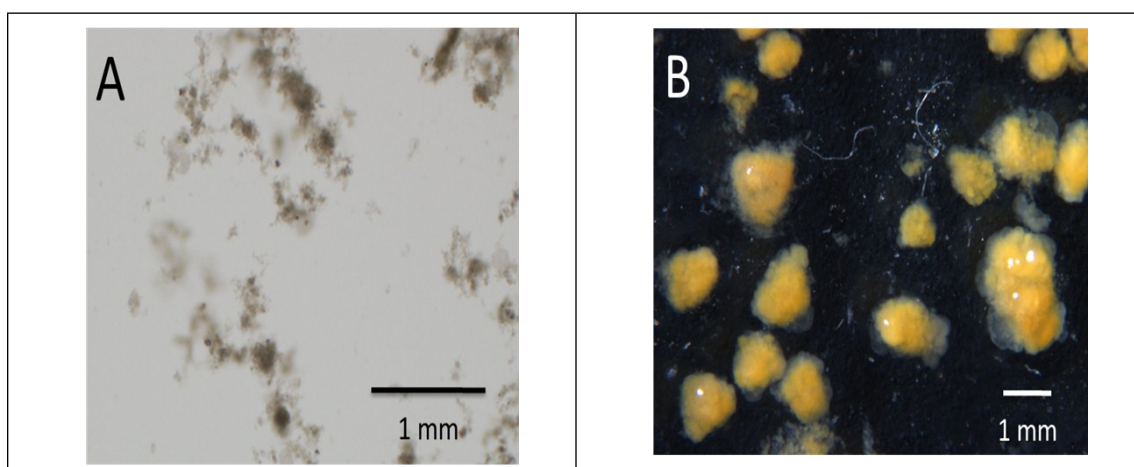


Fig.S1 Microscopic observation of activated sludge (A) and aerobic granular sludge (B)

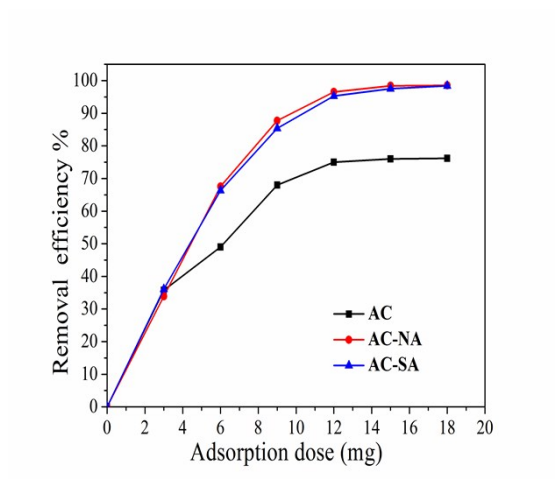


Fig.S2 Effect of adsorbent dose on the adsorption of MG by activated carbons

Table S1. Parameters of pseudo-first-order and pseudo-second-order models

samples	$q_{e,exp}$ (mg/g)	Pseudo-first-order			Pseudo-second-order		
		k_1 (min ⁻¹)	$q_{e,cal}$ (mg/g)	R^2	K_2 (min ⁻¹)	$q_{e,cal}$ (mg/g)	R^2
AC	75.64	0.0171	61.07	0.5959	0.00067	77.8	0.9967
AC-NA	98.02	0.0163	38.28	0.9147	0.0014	99.6	0.9998
AC-SA	97.34	0.0121	25.27	0.9843	0.0016	98.5	0.9997

Table S2. Parameters of intra-particle diffusion model for the adsorption of MG onto activated carbon

samples	$k_{int1}(\text{mg}/\text{h}^{1/2}/\text{g})$	C_1	R_1^2	$k_{int2}(\text{mg}/\text{h}^{1/2}/\text{g})$	C_2	R_2^2	$k_{int3}(\text{mg}/\text{h}^{1/2}/\text{g})$	C_3	R_3^2
AC	10.00	0	-	2.76	31.61	0.976	1.40	47.16	0.953
AC-NA	18.44	0	-	1.70	72.13	0.928	0.16	94.97	0.854
AC-SA	19.93	0	-	1.57	72.85	0.939	0.10	95.04	0.597