Supplementary Materials

Table S1. Parameters of pore structure of AA and MAA.

Table S2. Kinetic models of MAA on fluoride removal.

Table S3. Thermodynamic parameters on MAA.

Figure S1. The diagram of impregnation equipment.

Table S1. Parameters of pore structure of AA and MAA.

Sample	S_{BET} (m²/g)	V_{TOTAL} (cc²/g)	Pore Diameter (nm)
AA	287.259	6.310	0.434
MAA	295.599	5.821	0.377

Table S2. Kinetic models of MAA on fluoride removal.

Kinetic Models	Parameters	Initial Fluoride Concentration		
		3mg/L	6mg/L	12mg/L
	R^2	0.9803	0.9974	0.9992
Quasi-first-order model	Q_e(mg/g)	0.31	0.56	1.01
	K_1(1/min)	0.0087	0.0073	0.0055
	R^2	0.9993	0.9994	0.9998
Quasi-second-order model	Q_e(mg/g)	0.33	0.64	1.33
	K_2(g/mg·min)	0.0414	0.0173	0.0073
Film diffusion model	R^2	0.9620	0.9655	0.9757
	K_3(1/min)	0.00115	0.00133	0.00134
	A	7.25988	7.41156	7.55434
Boyd model	R^2	0.9877	0.9767	0.9756
Langmuir kinetics model	R^2	0.9623	0.9809	0.9918

Table S3. Thermodynamic parameters on MAA.

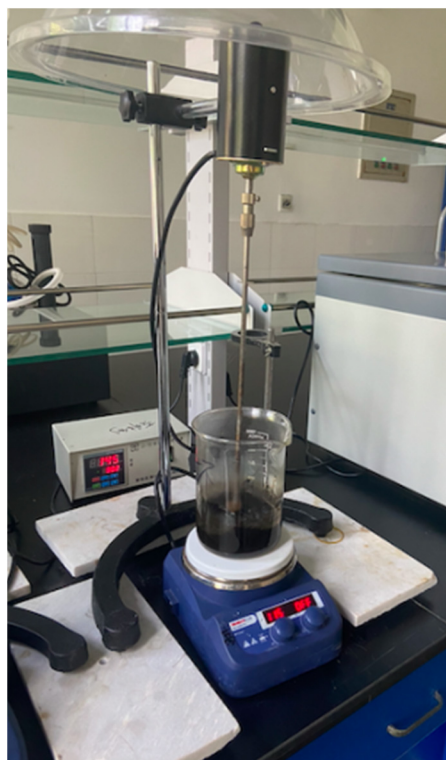| C0 /(mg·L-1)	ΔH /(J·mol-1)	ΔG/(kJ·mol-1)			ΔS/(J·(mol·K)-1)		
		298	308	318	298	308	318
5	20485.7	−23103.4	−23,878.6	−24,653.9	146.3	80.2	120.4
7	19989.4	−21892.6	−22,627.2	−23,361.9	140.5	76.0	101.5
10	17416.2	−17698.8	−18,292.7	−18,886.6	117.8	61.4	67.6
15	13902.7	−11928.3	−12,328.5	−12,728.8	86.7	41.4	43.1
20	11920.6	−7672.78	−7930.3	−8187.7	65.8	26.6	27.6

Figure S1. The diagram of impregnation equipment.