Supplementary material

Table S1
Part metals indicators of local drinking water quality

Index /mg·L^{-1}	**pH**	***TDS**	**Total hardness**	**Ca**	**Mg**	**As**	**Cu**	**Cr**	**Pb**	**Hg**	**Al**	**Fe**	**Zn**	***Free chlorine**	**Cl**	**F**	**NO_3^-**	**NH_4^+**
	7.62	170	80.7	<0.001	<0.05	<0.001	<0.05	<0.004	<0.005	<0.0004	0.032	<0.1	0.03	0.6	15.5	0.19	0.66	<0.02
Threshold	6.5 ~8.5	1000	450	0.005	0.1	0.01	1.0	0.05	0.01	0.001	0.2	0.3	1	≥0.05	250	1	10	0.5

*TDS: Total dissolved solids; Free chlorine: Disinfection

Table S2
Cu^{2+} concentration of Tap- drinking water and bottled drinking water

Sample	Lab TDW	Bottled DW /500ml			
		B1	B2	B3	B4
Cu^{2+}/ mg·L^{-1}	0.110	0.041	0.023	0.051	0.032
±CV	0.014	0.096	0.043	0.034	0.018

Table S3

Cu^{2+} concentration of water in municipal sewage treatment plants

Sample	P 1			P 2		
	Input	E 1	E 2	Input	E 1	E 2
Cu^{2+}/ mg·L^{-1}	0.618	0.547	0.531	0.545	0.495	0.477
±CV	0.029	0.001	0.003	0.010	0.002	0.030

*P, sewage treatment plant; E1, secondary sediment tank output; E2, eluent.

Table S4
Factors levels designed by General Full Factional Design

Factors	X1	X2	X3
	[a] MT/ ℃	[b] C_0/mg·L^{-1}	[c] dosage/g·L^{-1}
Levels	60	24.0	0.04
	80	12.0	0.02
	100	8.0	0.4
	200	4.0	0.8
	300	2.0	2
	400	1.0	/
	/	0.5	/

a, the temperature of Thermo-modification; b, the initial concentration; c, the dosage.

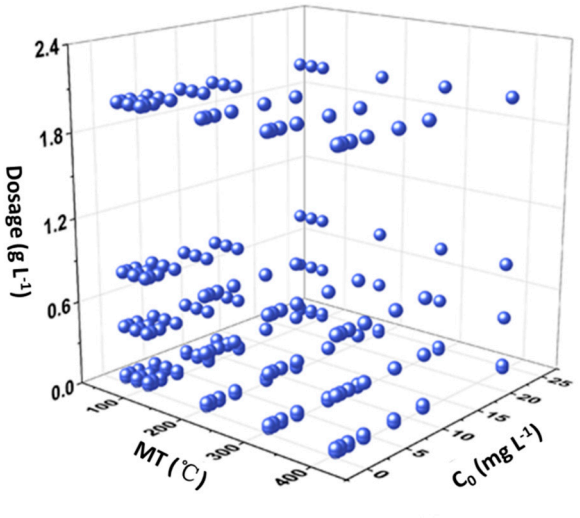

Figure S1
Matrix designed by General Full Factorial Design.

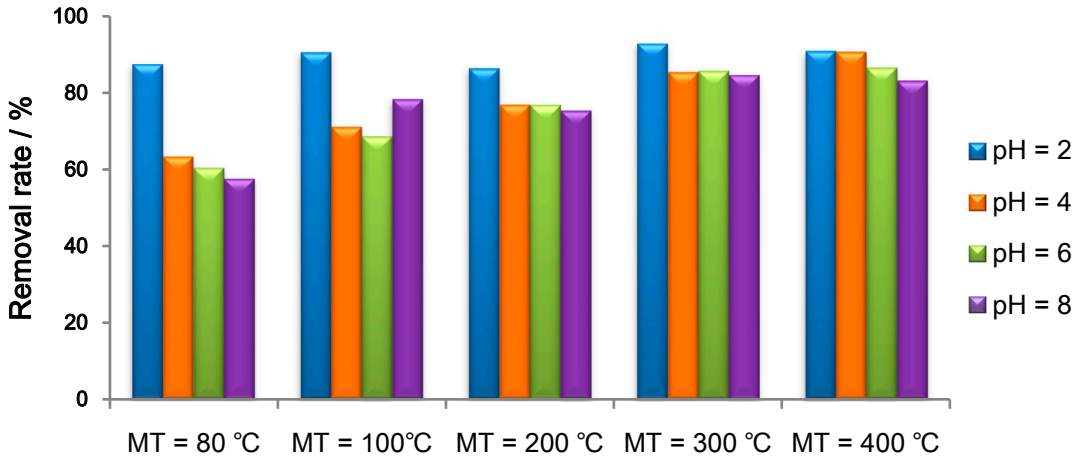

Figure S2
Effect of pH on the removal rate by MBC（contact time was 0.5h, C_0 = 2.0 mg·L^{-1}, AR = 0.4 mg·g^{-1} ）