Supplementary Information

Bifunctional graphene oxide-cellulose nanofibril aerogel loaded with Fe(III) for removal of cationic dye via simultaneous adsorption and Fenton oxidation

Modification of GO

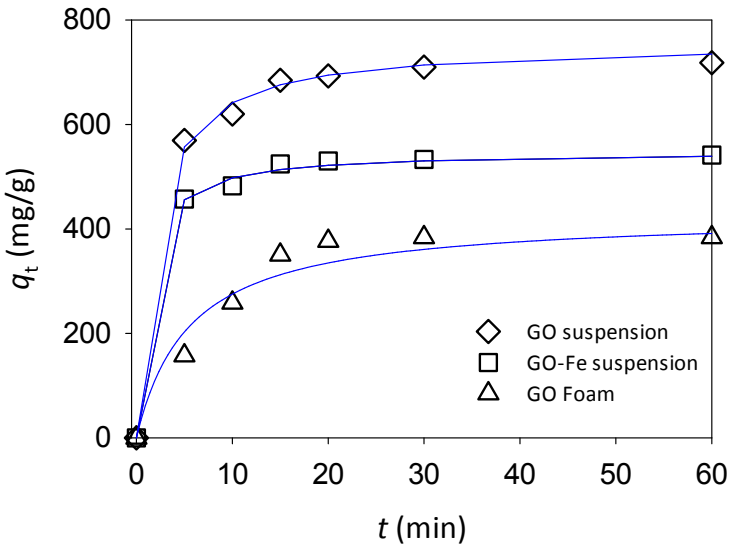

Fig. S1 Adsorption kinetics of modification of GO (suspension, Fe(III) loaded and freeze-dried foam).

Rapid adsorption

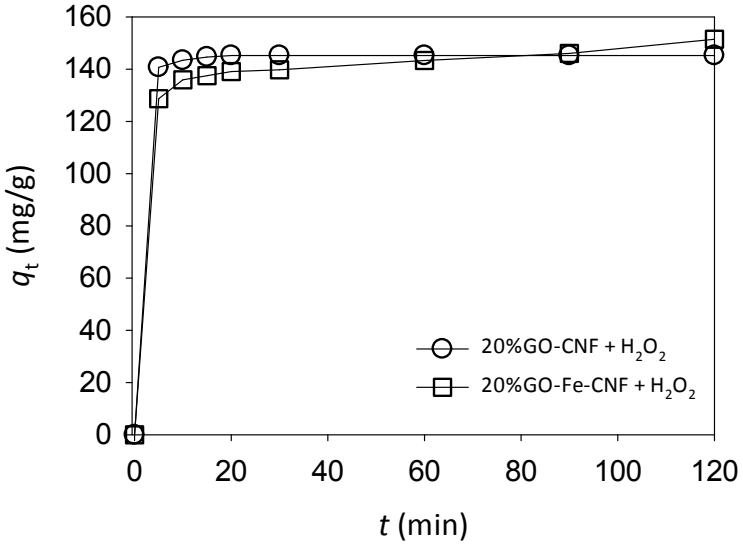

Fig. S2 Rapid adsorption kinetics equilibrium at initial stage of simultaneous adsorption and Fenton oxidation process.

Table S1 Adsorption kinetics data of nanocomposite aerogels (GO, CNF and GO-Fe-CNF)

Adsorbent		Pseudo-first-order			Pseudo-second-order		
	$q_{e\ exp}$ (mg/g)	$q_{e\ cal}$ (mg/g)	k_1 (1/min)	r^2	$q_{e\ cal}$ (mg/g)	k_2 (g/mg min)	r^2
GO	752.04	726.20	0.264	0.882	756.83	0.0007	0.998
CNF	100.63	99.14	0.545	0.964	100.63	0.0218	0.999
5%GO-Fe-CNF	87.50	86.18	0.237	0.960	87.96	0.0091	0.999
10%GO-Fe-CNF	100.74	99.20	0.240	0.933	101.43	0.0075	0.984
15%GO-Fe-CNF	112.17	110.57	0.267	0.962	112.47	0.0090	0.992
20%GO-Fe-CNF	123.01	121.28	0.267	0.947	123.53	0.0078	0.996
30%GO-Fe-CNF	142.96	141.78	0.182	0.995	145.65	0.0036	0.999

Table S2 Supplement Table: Initial and final concentration of MB from adsorption isotherm in a series of concentration (50, 100, 200, 300, 400, 500 and 600 mg/L)

MB initial concentration, C_0 (mg/L)	MB final concentration, C_e (mg/L)	MB removal (%)
50	2.6	94.8
100	19.2	80.8
200	78.4	60.8
300	183.4	38.9
400	290.6	27.4
500	387.7	22.5
600	472.9	21.2