processes

MDPI

Supplementary Materials

Hydrothermally reduced graphene hydrogel intercalated with divalent ions for dye adsorption studies

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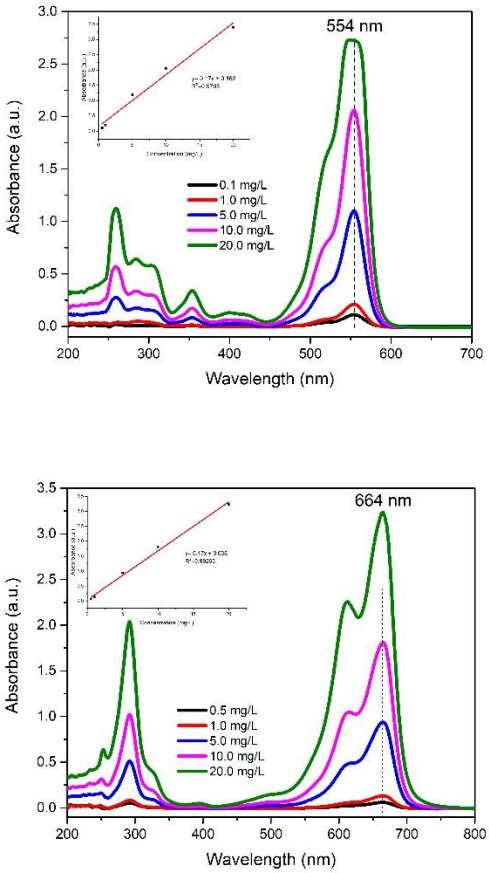

Figure S1. The absorption spectrum and linear concentration curve of (a) RhB and (b) MB under varying concentration

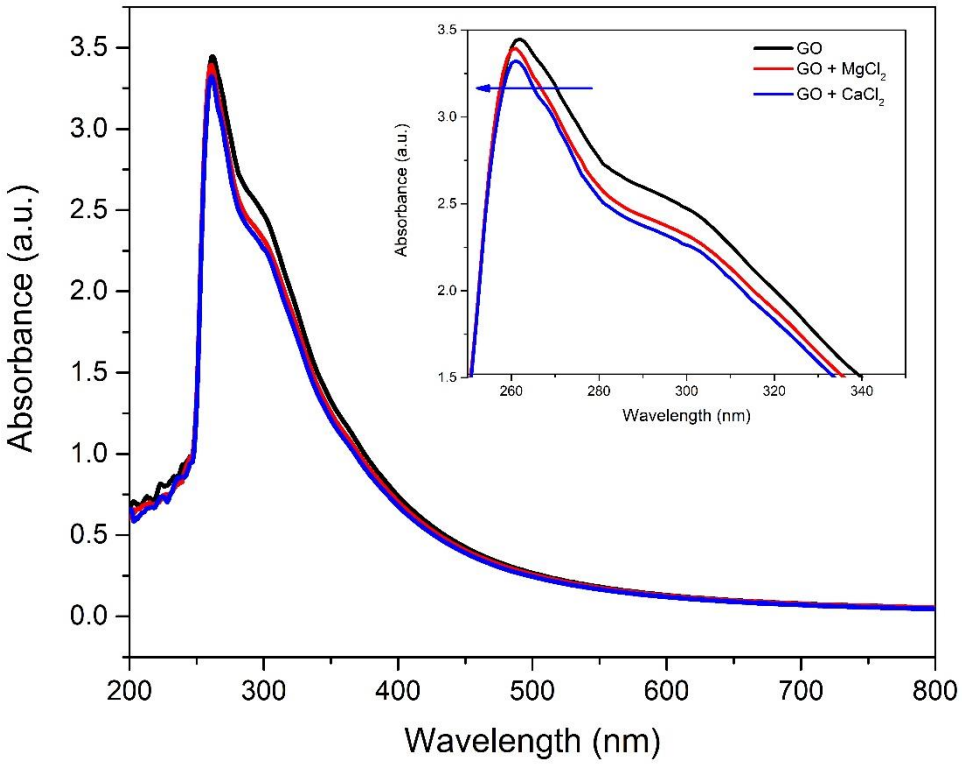

Figure S2. UV-vis spectrum of GO suspension in the presence of $MgCl_2$ and $CaCl_2$

Figure S3. Digital image of freeze dried (a) rGH, (b) rGH-Mg and (c) rGH-Ca

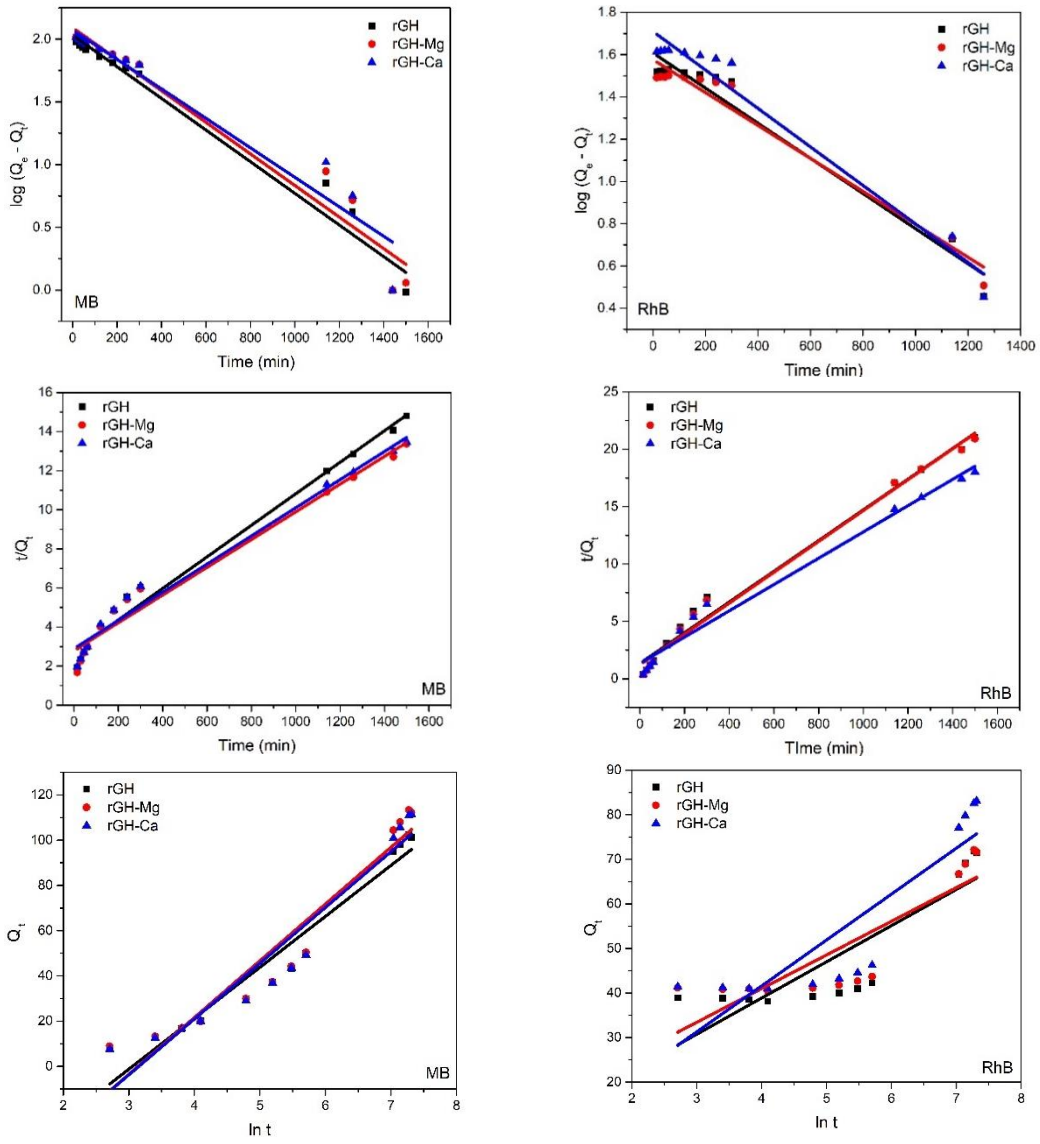

Figure S4. Pseudo first order (a,b), Pseudo-second order (c,d) and Elovich kinetic model (e,f) of MB and RhB adsorption on the hydrogels

Table S1. The parameters of the intraparticle diffusion model by the hydrogels

Sample	**Step 1**			**Step 2**	
	C (mg/g)	K_1	R_1^2	K2	R_2^2
			MB		
rGH	-34.30	13.98	0.95590	2.70	0.99942
rGH-Mg	-33.84	13.97	0.94378	3.22	0.99932
rGH-Ca	-34.41	13.94	0.95567	3.12	0.99325
			RhB		
rGH	37.06	0.2503	0.74803	1.48175	0.99998
rGH-Mg	39.69	0.18771	0.68891	1.39418	0.99991
rGH-Ca	38.90	0.36242	0.81394	1.85871	0.99955

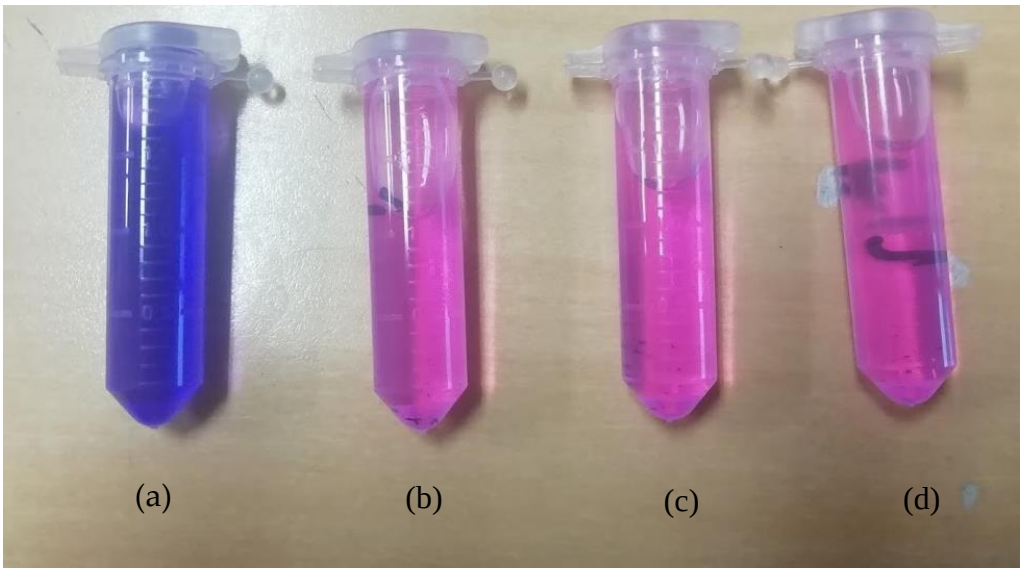

Figure S5: Digital image of the dye solution before (a) and after for (b) rGH, (c) rGH-Mg and (d) rGH-Ca in the simultaneous adsorption of MB and RhB