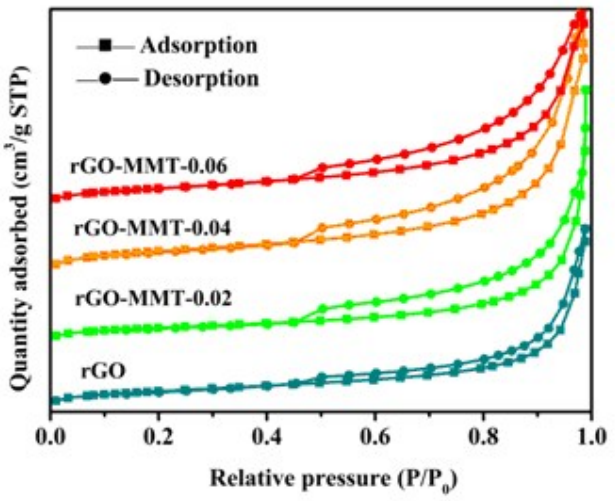

Fig. S1 Nitrogen adsorption-desorption isotherms (measured at 77 K) of rGO, rGO-MMT-0.02, rGO-MMT-0.04 and rGO-MMT-0.06.

Table S1 The nitrogen adsorption-desorption results for rGO, rGO-MMT-0.02, rGO-MMT-0.04 and rGO-MMT-0.06.

Sample	BSA[a] (m^2/g)	PMA[b] (m^2/g)	PEA[c] (m^2/g)	PV[d] (cm^3/g)	APD[e] (nm)
rGO	33.51	1.49	32.02	0.082	97.78
rGO-MMT-0.02	27.69	0.98	26.71	0.085	119.83
rGO-MMT-0.04	43.17	0.83	42.33	0.13	123.28
rGO-MMT-0.06	36.24	0.42	35.82	0.11	125.24

a. BSA was BET surface area.

b. PMA was t-plot micropore area.

c. PEA was t-plot external surface area.

d. PV was pore volume.

e. APD was average adsorption pore.

The N_2 adsorption-desorption isotherms of rGO, rGO-MMT-0.02, rGO-MMT-0.04 and rGO-MMT-0.06 aerogels (Fig. S1) exhibited type IV isotherms, according to the IUPAC classification.[33] The increase of the nitrogen adsorption at a high relative pressure of above 0.9 was associated with the macro pore or intergranular void. According to (Table S1), The BET surface areas of rGO, rGO-MMT-0.02, rGO-MMT-0.04 and rGO-MMT-0.06 aerogels were 33.51, 27.69, 43.17 and 36.24 m^2/g, respectively. Moreover, the average pore diameters were calculated to be 97.78, 119.83, 123.28 and 125.25 nm, suggesting again the formation of macro pore or intergranular void. In particular, rGO-MMT-0.04 had a relatively large surface area with a relatively high pore volume and loose structure compared to rGO. In other words, the application of 0.04 wt.% MMT was beneficial for the dispersion of rGO and the enhanced adsorption capability.

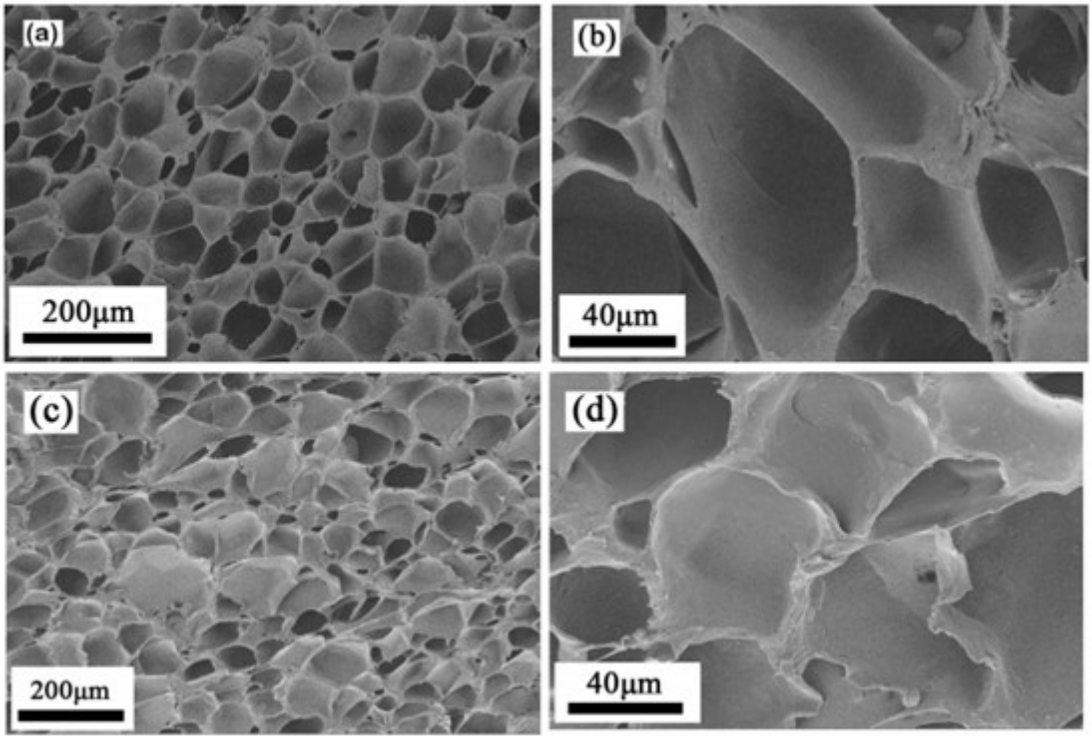

Fig. S2 SEM images of rGO-MMT-0.04 aerogel (a, b) and rGO-MMT-0.06 aerogel (c, d).

According to the Fig. S2, the pore volume of rGO-MMT-0.04 sample larger than the pore volume of the rGO-MMT-0.06 sample. In a word, the application of 0.04 wt.% MMT was beneficial for the dispersion of rGO and the enhanced adsorption capability.Thus, rGO-MMT-0.04 was selected in subsequent experiments.

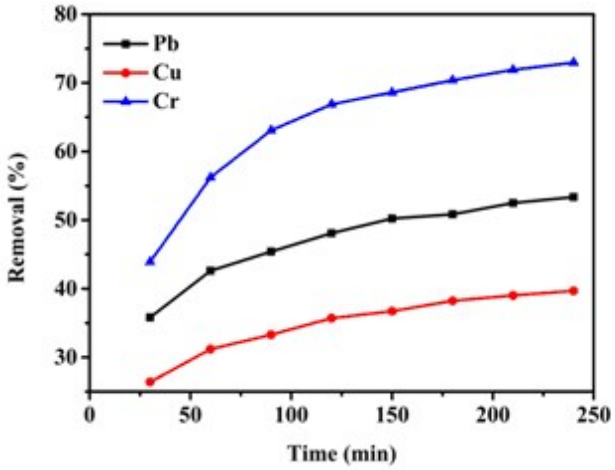

Fig. S3 Adsorption of Cr (VI), Cu (II) and Pb (II) on rGO-MMT at pH=6 and room temperature (concentrations of Cr (VI), Cu (II) and Pb (II) ions were 20 mg/L, 10 mg/L and10 mg/L).

To evaluate the multiple adsorption of rGO-MMT for heavy metal ions, 10 mg/L $Cu(NO_3)_2$, 10 mg/L $Pb(NO_3)_2$ and 20 mg/L $K_2Cr_2O_7$ were mixed together in the solution. As shown in Fig. S3, it was evident that rGO-MMT could not only adsorb Cr (VI), but also adsorb Cu (II) and Pb (II).