Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Figures:

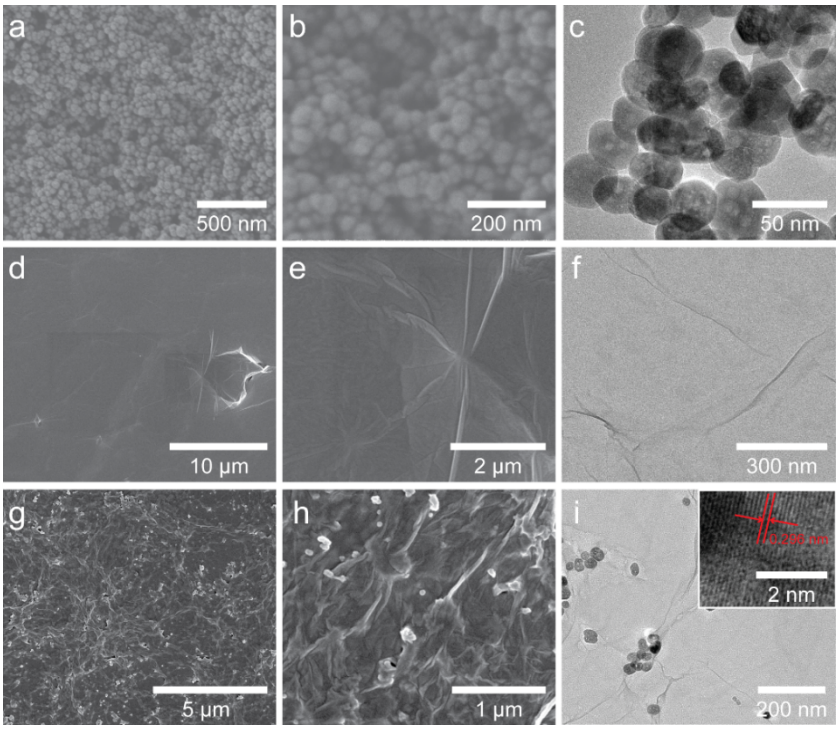

Fig. S1 The SEM (a, b, d, e, g and h) and TEM (c, f, i) images of the Fe_3O_4 (a-c), Graphene oxide (d-f) and magnetic graphene composites (denoted as MG) (g-i).

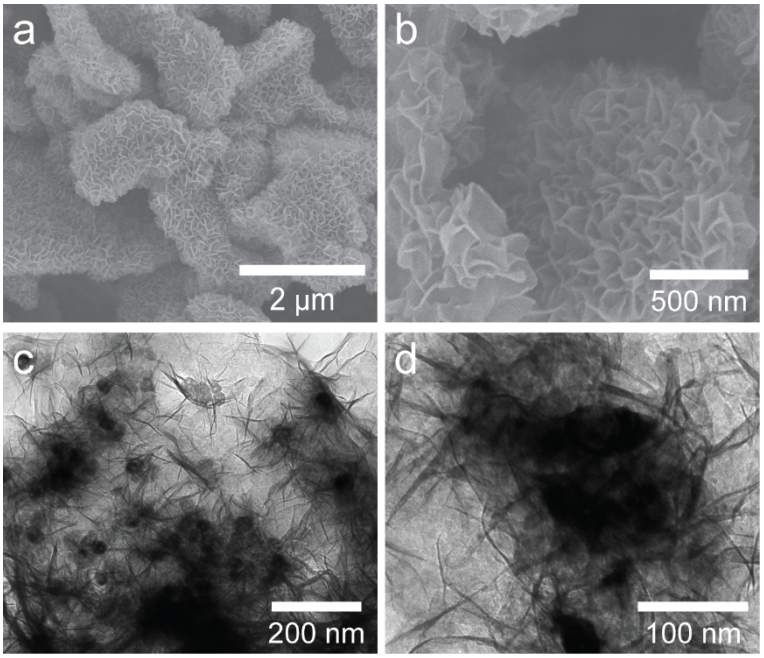

Fig. S2 The SEM (a and b) and TEM (c and d) images of the MGTP precursor composites.

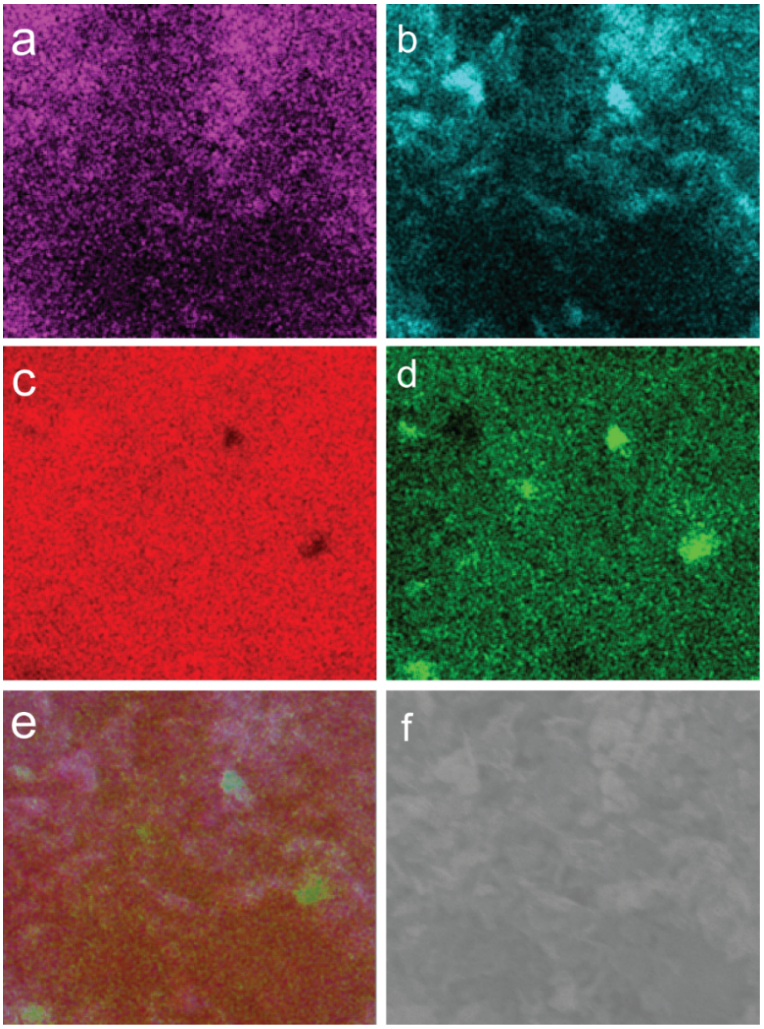

Fig. S3 Elemental mapping analysis of the MGT composites: (a, b, c and d) elemental mapping of carbon, oxygen, titanium and ferrum, respectively, (e) the overlay of all the elemental mappings and (f) bright field of elemental mapping.

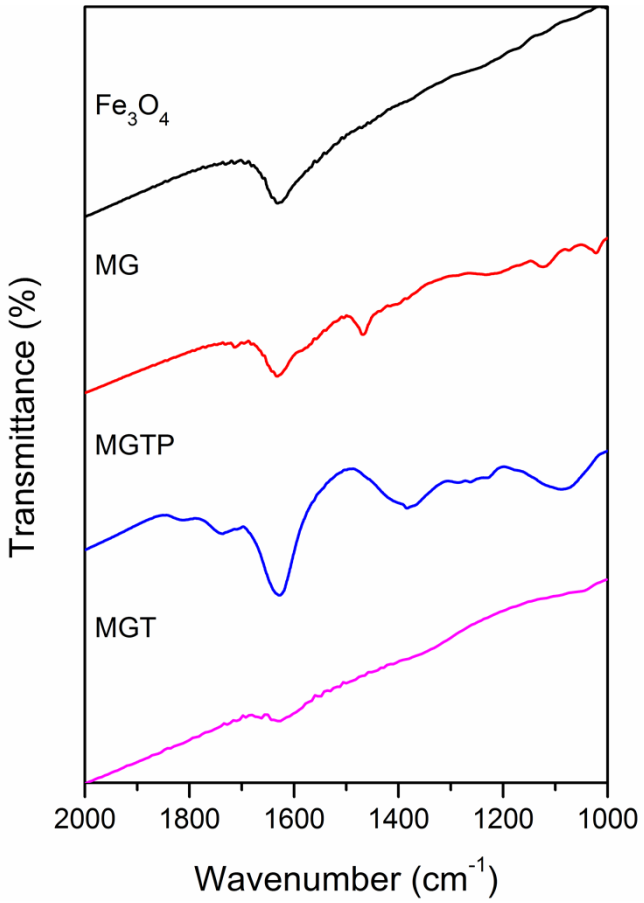

Fig. S4 The enlarged FTIR spectra between 2000-1000 cm^{-1} of the prepared Fe_3O_4, MG, MGTP and MGT composites.

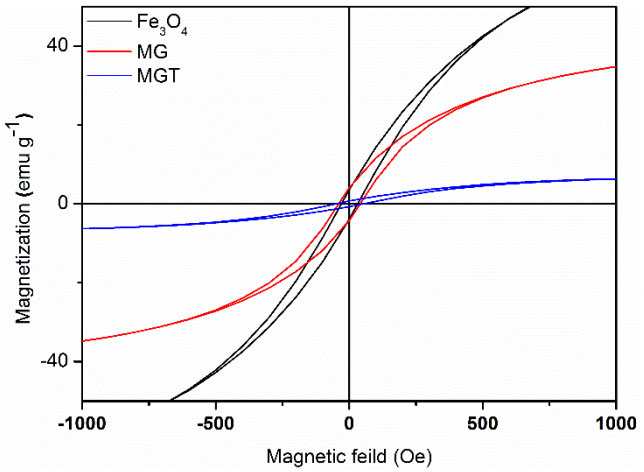

Fig. S5 Zoomed in magnetic hysteresis curves of the Fe_3O_4 nanoparticles, MG and the MGT composites at 300 K.

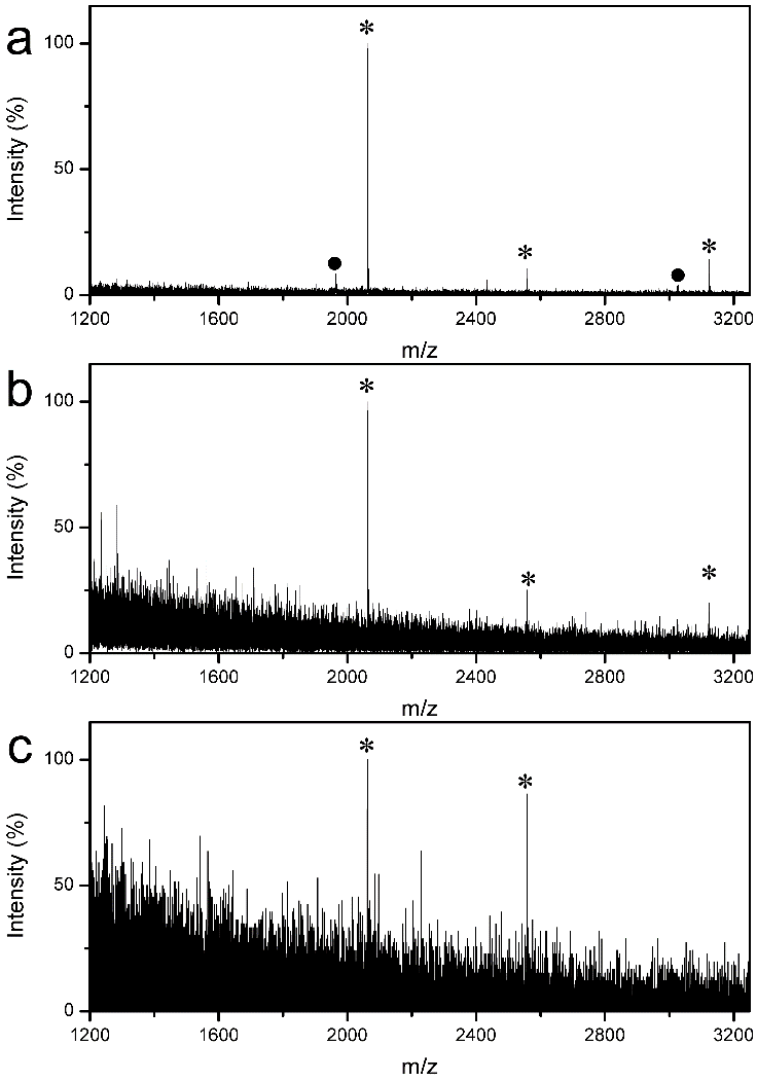

Fig. S6 MALDI-TOF mass spectra of the tryptic digest of β-casein with different concentrations after enrichment with the MGT composites. (a) 5×10^{-9} M, (b) 1×10^{-9} M and (c) 5×10^{-10} M.

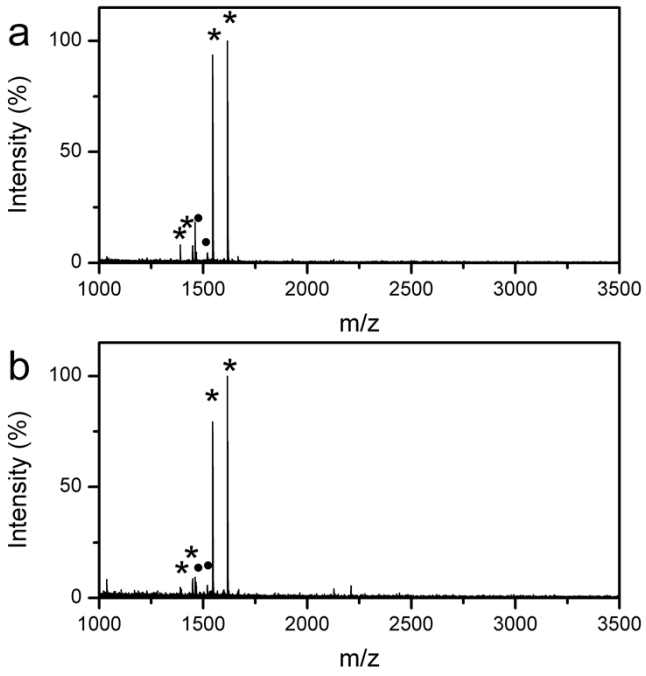

Fig. S7 MALDI-TOF mass spectra of the same human serum sample after enrichment with third times (a) and fifth times (b) reused MGT composites.

Tables:

Table S1. The phosphopeptides enriched from tryptic digest of β-casein by the MGT composites.

AA	Peptide sequences	Theoretical m/z	Phosphorylation site
33-48	FQ[pS]EEQQQTEDELQDK	2061.8	1
33-52	FQ[pS]EEQQQTEDELQDKIHPF	2556.0	1
1-25	RELEELNVPGEIVE[pS]L[pS][pS][pS]EESITR	3122.2	4

Table S2. The phosphopeptides enriched from the human serum solution by the MGT composites.

No.	Peptide sequences	Observed m/z	Phosphorylation site
1	D[pS]GEGDFLAEGGGV	1389.5	1
2	AD[pS]GEGDFLAEGGGV	1460.5	1
3	D[pS]GEGDFLAEGGGVR	1545.6	1
4	AD[pS]GEGDFLAEGGGVR	1616.7	1