

Supplementary information

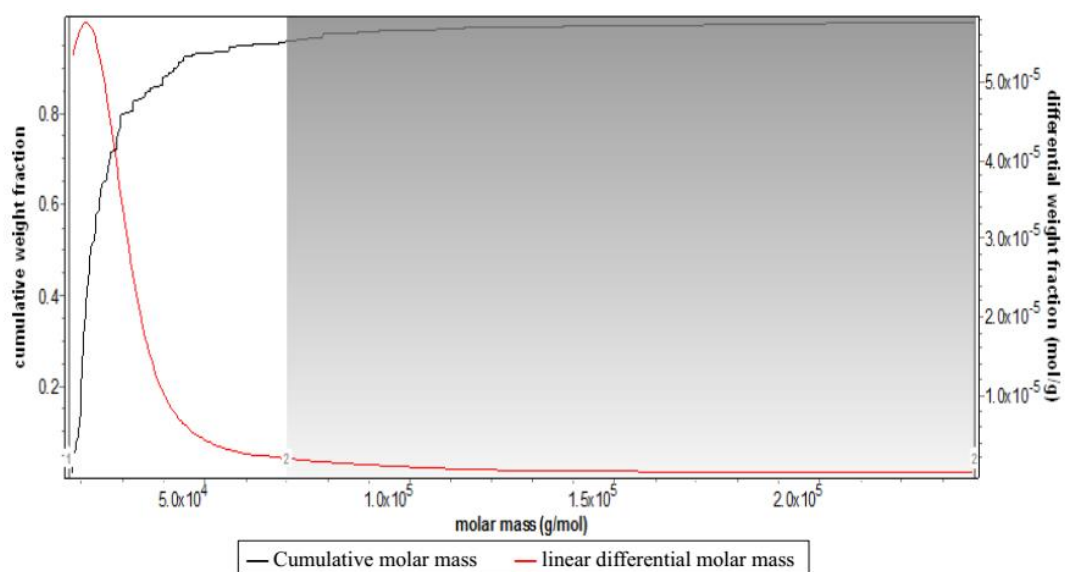


Figure S1. The distribution analysis of molecular weight of PET-TEG

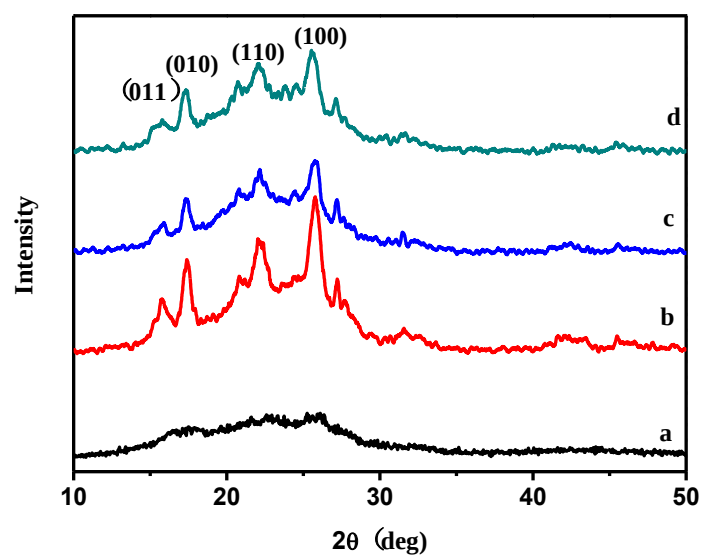


Figure S2. The XRD spectra of PET containing different content of $\text{SiO}_2@\text{Tb}^{3+}(\text{PET-TEG})_3\text{Phen}$ a: 0%, b: 1%, c: 2%, d: 3%

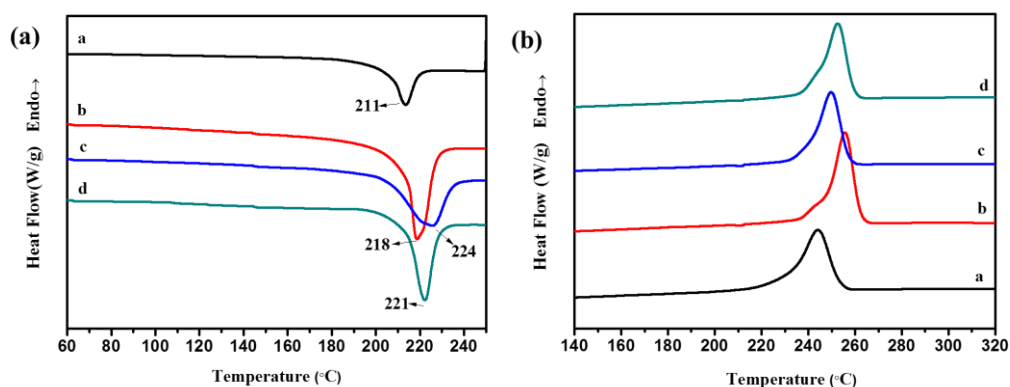


Figure S3. The DSC cooling Tc(a) and heating Tm(b) curves of different content of $\text{SiO}_2@\text{Tb}^{3+}(\text{PET-TEG})_3\text{Phen}$ a: 0%, b: 1%, c: 2%, d: 3%;

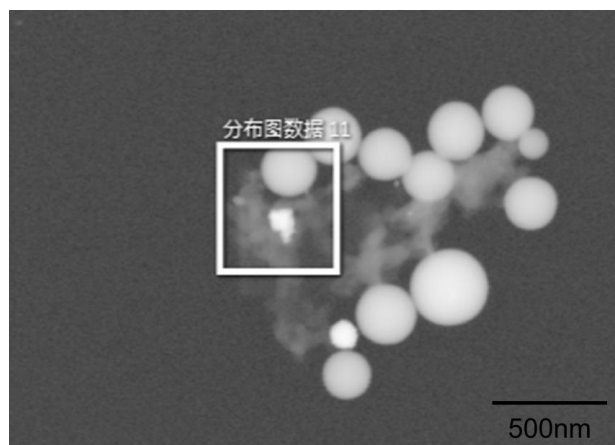


Figure S4. The SEM-EDS image of $\text{SiO}_2@\text{Tb}^{3+}(\text{PET-TEG})_3\text{Phen}$

Table S1 Thermodynamic performance of composites

W(%)	Tc(°C)	Tm(°C)	$\Delta H_c(\text{J/g})$	$\Delta H_m(\text{J/g})$	Xc(%)
0	211.15	244.32	44.38	43.01	30.72
1	218.49	255.93	45.02	44.23	31.93
2	224.01	249.86	45.73	44.87	32.70
3	221.24	252.47	45.36	43.89	32.32