Electronic Supplementary Information

**One-pot synthesis of yolk–shell mesoporous carbon spheres with high magnetisation**

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**Fig. S1** The composition of solvent’s affection to Fe\(_3\)O\(_4\)@polymer : ethanol: water = 0:1 (a), 1:1 (b), 2:1 (c), 2.5:1 (d), 3:1 (e), 4:1 (f), 7:1 (g), 1:0 (h).
Fig. S2 The content of TEOS’s affection to Fe$_3$O$_4$@viod@C: HCHO:TEOS = 1:0 (a); 1:0.2 (b); 1:0.6 (c); 1:1 (d); 1:1.5 (e); 1:1.8 (f); 1:5 (g); 0:1 (h).

Fig. S3 The dosage of precursor material’ affection to Shell thickness of Fe$_3$O$_4$@polymer spheres: 40 nm (a); 60 nm (b); 80 nm (c).
Fig. S4 The EDS of Fe$_3$O$_4$@polymer.

Fig. S5 Thermogravimetric (TG) analysis curves of mesoporous Fe$_3$O$_4$@void@C and Fe$_3$O$_4$@polymer.
Fig. S6  N₂ sorption and adsorption curve of Fe₃O₄@void@C with 40 nm, 60 nm, 80 nm and Fe₃O₄@SiO₂·C (a), pore diameter distribution curve (b).