Supporting Information

Optically active helical polyacetylene/Fe₃O₄ composite microspheres: prepared by precipitation polymerization and used for enantioselective crystallization

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**Figure S1.** $^1$H NMR spectra of the pure PSA (CDCl₃).

The microspheres were dissolved in tetrahydrofuran, the Fe₃O₄ NPs were excluded with a magnet, and then the residual tetrahydrofuran solution was added into n-hexane to obtain the pure PSA. Finally the pure PSA was dissolved in CDCl₃ to obtain the solution for NMR measurement.

$^1$H NMR (CDCl₃, 400MHz): $\delta$ 0.91–0.98 (C=OCC(CH₃)₂), 1.43–1.45 (CCH₂CH₂CH), 1.91–2.13 (CCH₂CH₂CH), 2.38–2.42 (C=OCH₃), 3.02–3.05 (O=S=OCH₂), 3.70–3.72 (CH=CCH₂), 5.58–5.70 (CH=C).
Figure S2. Typical Raman spectrum of pure PSA.

Figure S3. Energy dispersive X-ray (EDX) spectrum data of CMMSs-1.

Figure S4. XRD patterns of pure L-alanine (A) and L-alanine obtained via enantioselective crystallization by using S-PSA microspheres (CMMSs-1).