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Supporting information

Thermo-stable hollow magnetic microspheres: Preparation, characterisation and recyclable catalytic applications

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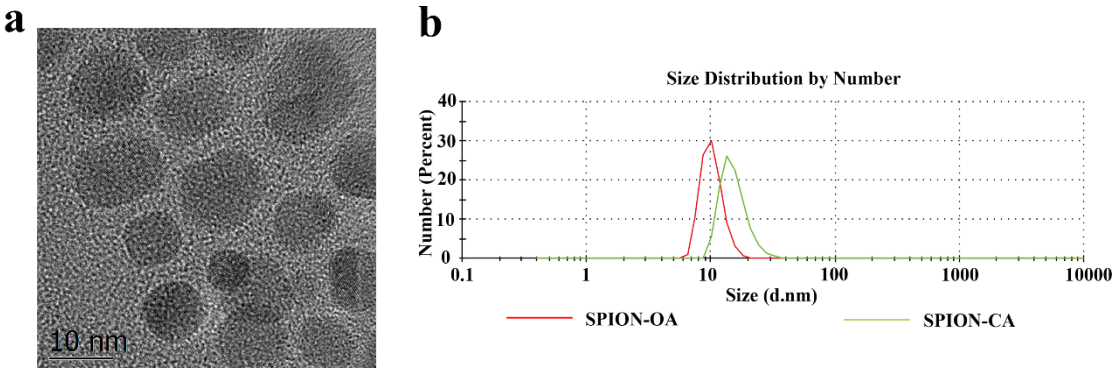

Fig. S1 TEM images of SPION and its size distribution of SPION-OA and SPION-CA

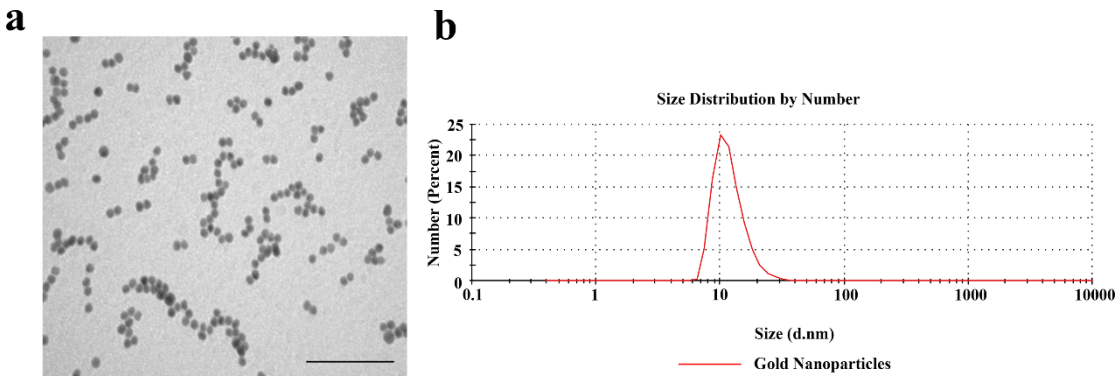

Fig. S2 TEM images of Au NPs and its size distribution

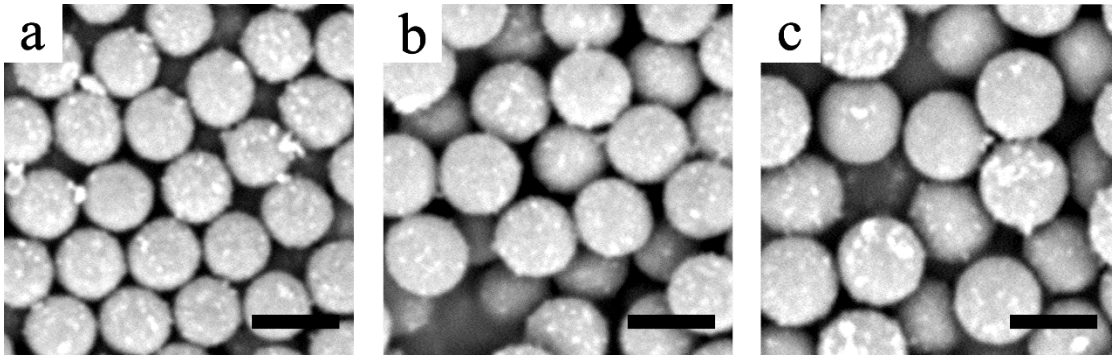

Fig.S3 SEM images of MF(1.5)@SiO_2, MF(1.8)@SiO_2, MF(2.0)@SiO_2

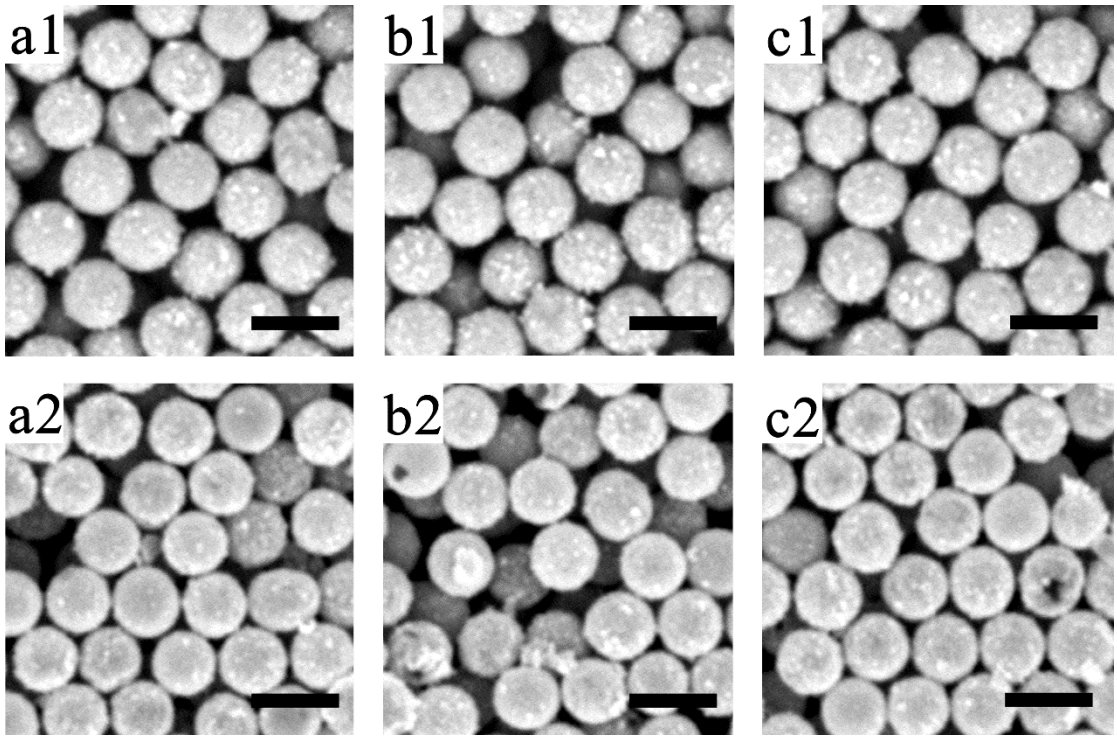

Fig.S4 SEM images of MS(1.5)-1 (a1) , MS(1.5)-2 (b1) and MS(1.5)-5 (c1) and CS(1.5)-1 (a2), CS(1.5)-2 (b2) and CS(1.5)-5 (c2). Scale bar in each image = 2 μm.

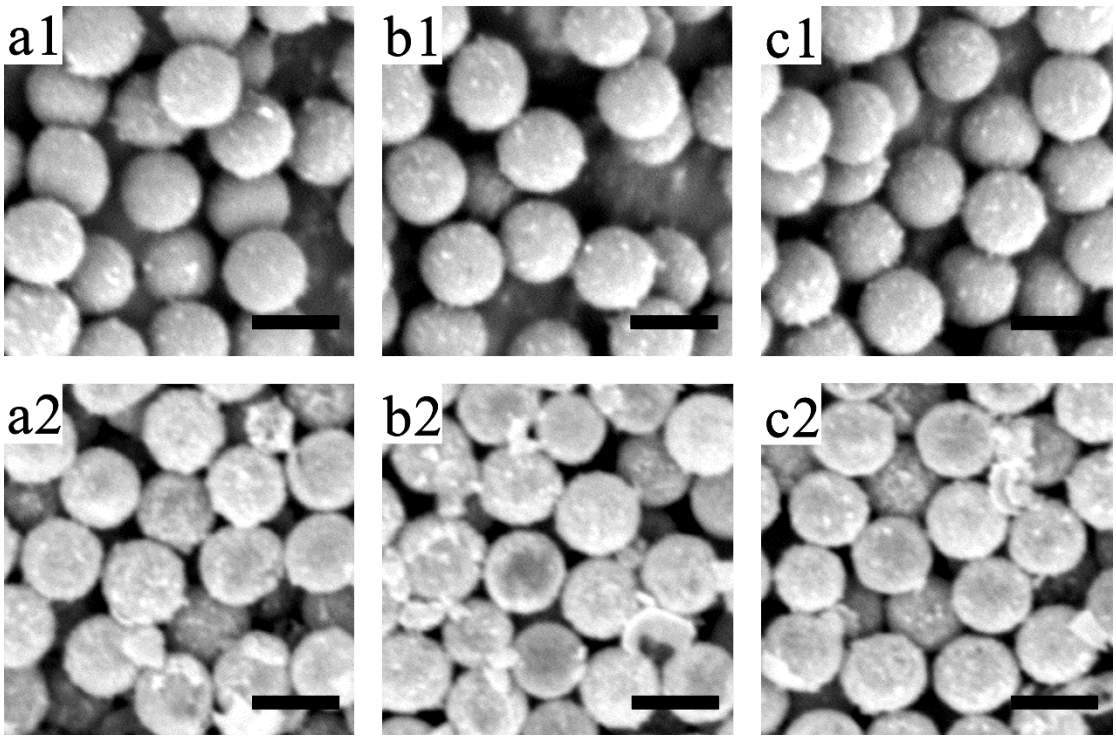

Fig.S5 SEM images of MS(1.8)-1 (a1) , MS(1.8)-2 (b1) and MS(1.8)-5 (c1) and CS(1.8)-1 (a2), CS(1.8)-2 (b2) and CS(1.8)-5 (c2). Scale bar in each image = 2 μm.

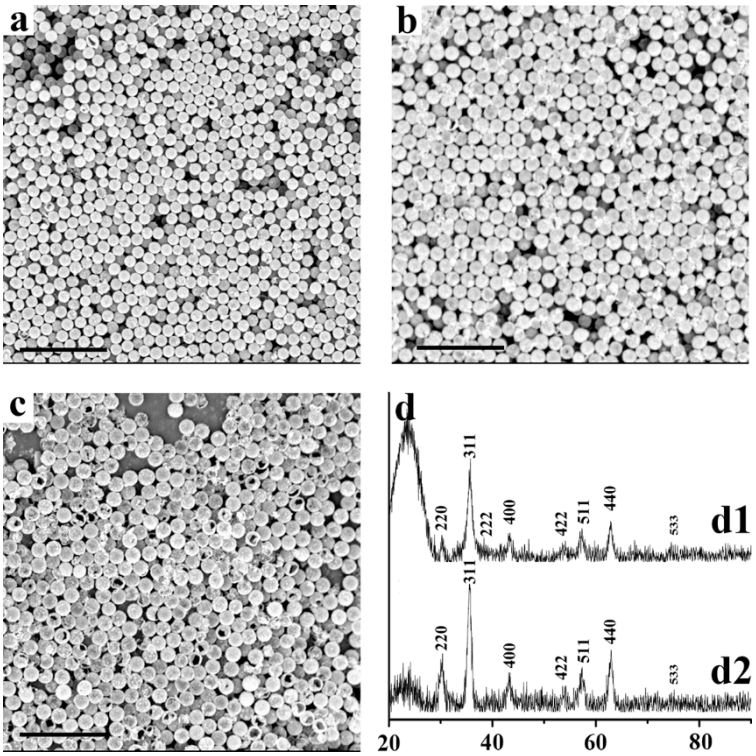

Fig. S6 SEM images of CS(1.5)-5 in (a), CS(1.8)-5 in (b) and CS(2.0)-5 in (c). The XRD patterns of MS(2.0)-5 (line d2) and CS(2.0)-5 (line d2) in (d). Scale bar in (a), (b) and (c) is 10 μm.

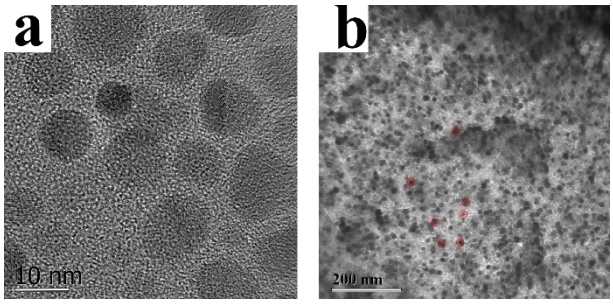

Fig. S7 TEM images of magnetic nanoparticles (a); TEM images of part of microspheres after assembly (b) and magnetic nanoparticles after assembly are signed by red circles.

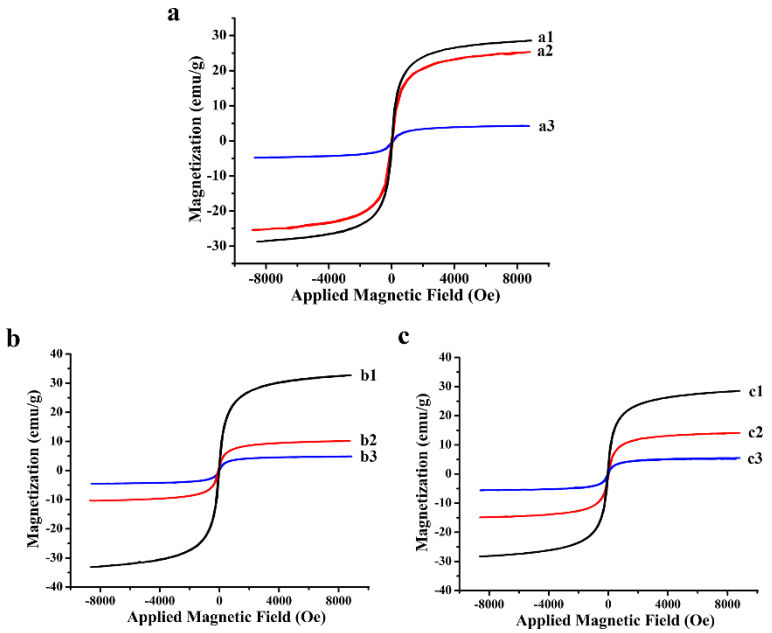

Fig.S8 Magnetic hystersis loop of CS(2.0)-5 calcined for second time (a1), CS(2.0)-5 (a2) and MS(2.0)-5 (a3) in (a). Magnetic hystersis loop of CS(1.5)-5 (b1), CS(1.5)-2 (b2) and CS(1.5)-1 (b3) in (b). Magnetic hystersis loop of CS(1.8)-5 (c1), CS(1.8)-2 (c2) and CS(1.8)-1 (c3) in (c).

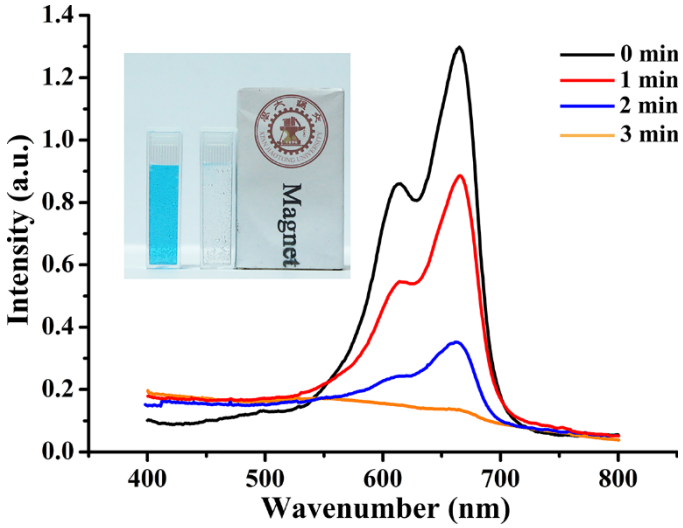

Fig.S9 The UV-vis spectrum of MB solution with 1 mL of NaBH4 mixture in the presence of 25 uL of 1 mg·mL^{-1} of CS(2.0)-5 at different time. The insert shows the photos of reactive system before and after catalysis with a magnet to separate the catalyst.