Supplementary Material (ESI) for Chemical Communications

Supplementary Information

Magnetic-mesoporous Janus nanoparticles

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Figure S1. TEM image of the silica nanorods synthesized without Fe_3O_4 NP substrates, showing a relative large size-distribution.

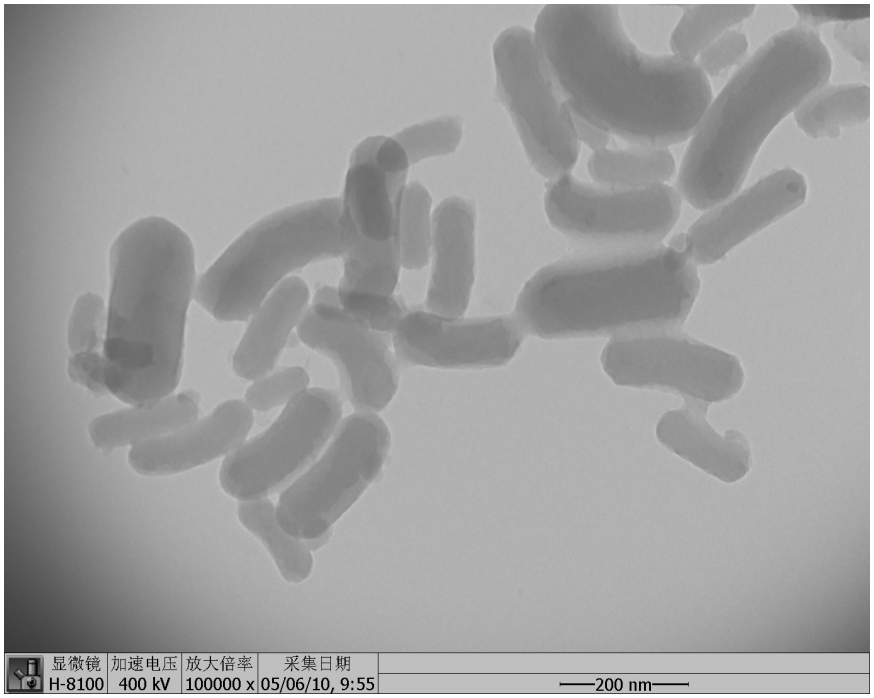
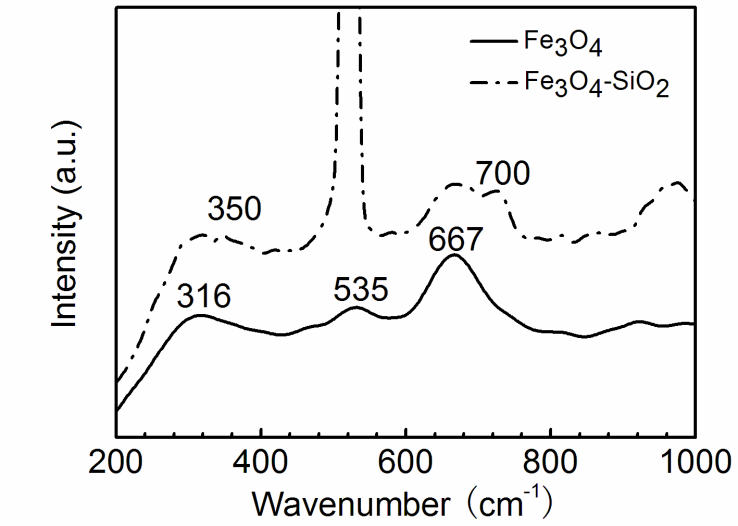


Figure S2. Raman spectra of Fe_3O_4 nanoparticles and Fe_3O_4-SiO_2 Janus particles.



Raman spectra were recorded by a OMATS89 Raman spectrometer (JY Company, France) with 514 nm argon ion laser as excitation source. The figure below is the Raman spectrum of initial magnetic iron oxide nanoparticles and Janus particles. In the Raman spectra of Fe_3O_4, there exhibit three clear peaks at 667, 535 and 316 cm^{-1}, which can be indexed to the A_{1g}, T_{2g} and E_g modes of Fe_3O_4, respectively. For Fe_3O_4-SiO_2 Janus particles, except the Raman shift of Fe_3O_4, two weak peaks appearing at 700 and 350 cm^{-1} are the characteristic bands of γ-Fe_2O_3. Because Fe_3O_4 particles can be partially oxidized into γ-Fe_2O_3 in the course of washing and preserving. The marked increase of Raman shift at about 500 nm^{-1} was due to the silicon substrate.