

# Supporting Information

## **Demulsification of oleic acid-coated magnetite nanoparticles for cyclohexane-in-water nanoemulsions**

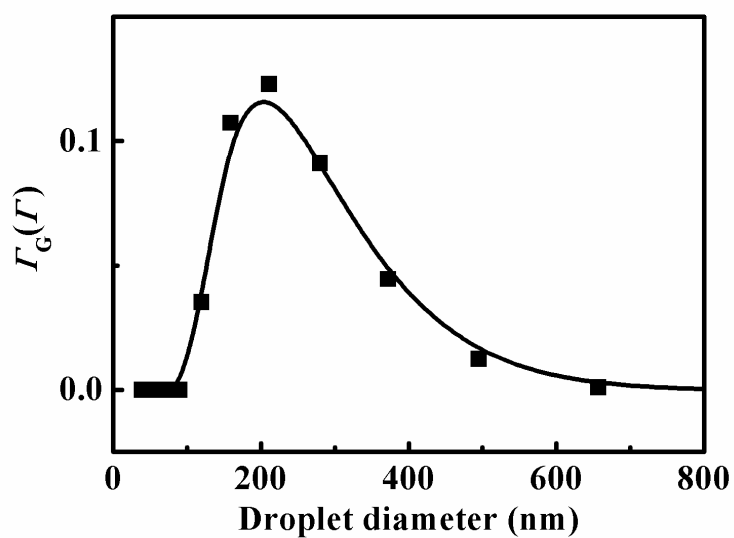
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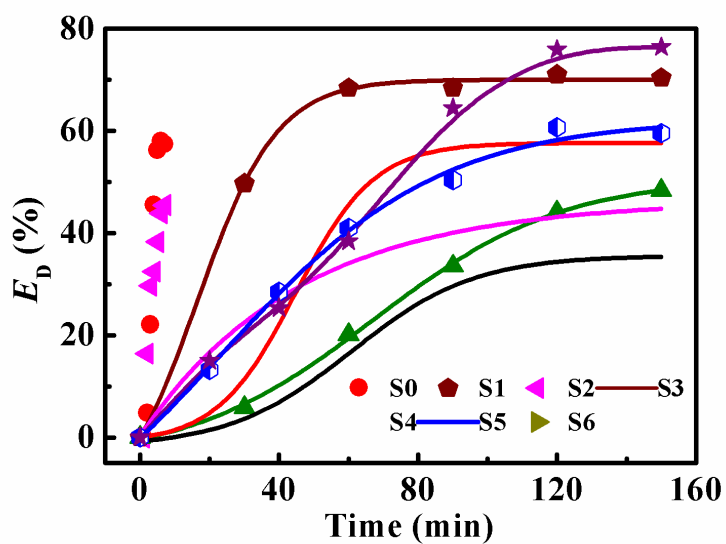
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**Fig. S1** Droplet size distributions of cyclohexane-in-water nanoemulsions. †

† The size distribution of nanoemulsions was determined by dynamic laser light scattering (DLS) at 25.0 °C using a BI-200SM laser light scattering instrument (Brookhaven Co., USA) with an argon laser of 488 nm at a scattering angle of 90 °. The data measured by DLS were analyzed through the Contin method.



**Fig. S2** Plots of demulsification efficiency ( $E_D$ ) vs. time at  $C_S = 10.0 \text{ g}\cdot\text{L}^{-1}$ .

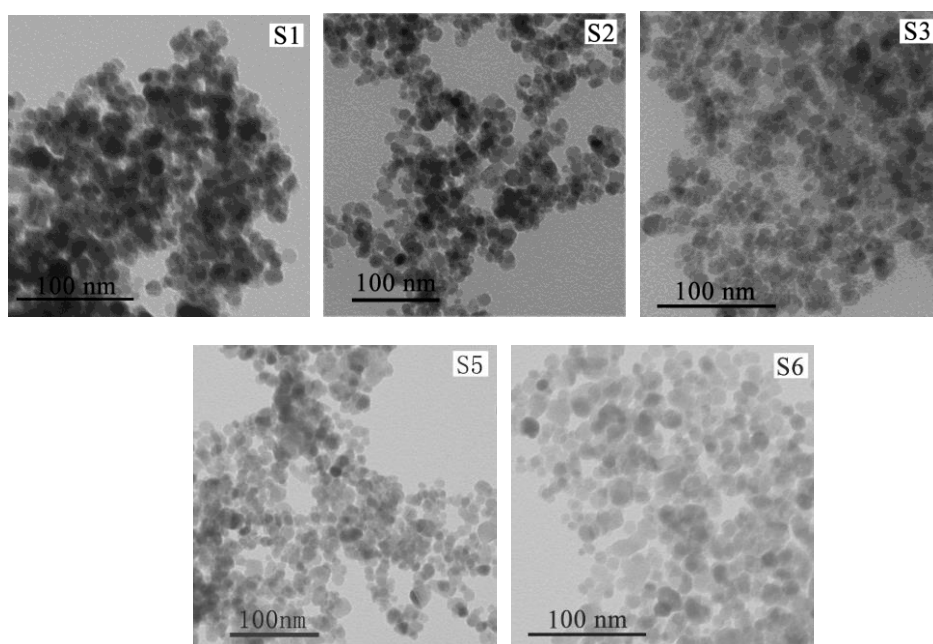
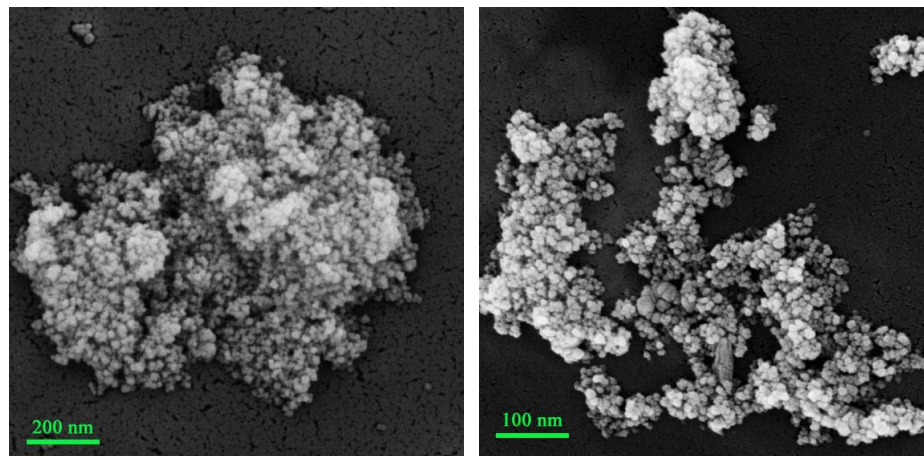
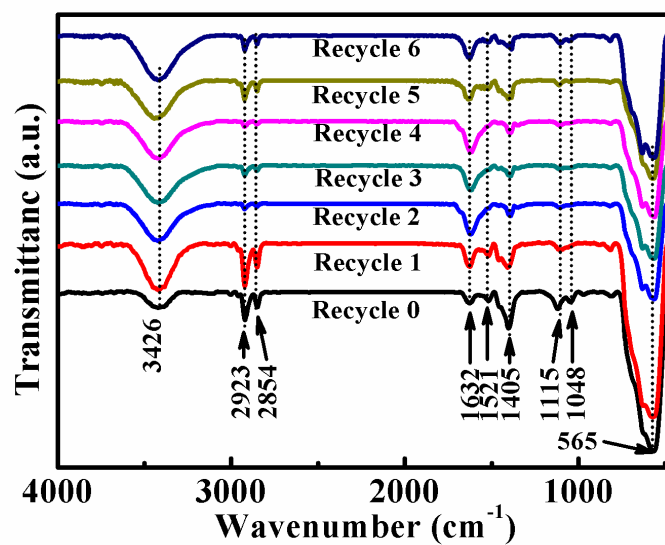


Fig. S3 TEM images of  $\text{Fe}_3\text{O}_4\text{@OA}$  nanoparticles.

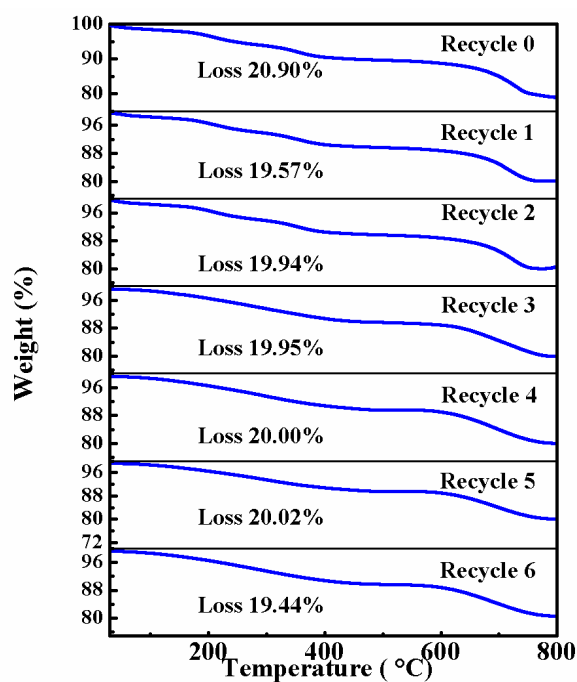


**Fig. S4** SEM images of magnetic  $\text{Fe}_3\text{O}_4\text{@OA}$  nanoparticles of sample S4. ††

†† The scanning electron microscopy (SEM) images were observed using a Supra55 FE-SEM (Carl Zeiss Co., Germany)



**Fig. S5** FT-IR spectra of S4 sample recovered in Recycling tests.



**Fig. S6** TG curves of S4 sample recovered in Recycling tests.

**Table S1** Dispersibility of magnetic nanoparticles in different solvents†††

Sample	Cyclohexane	Acid aqueous solution (pH=6.3)	Alkaline aqueous solution (pH=11.5)
Bare Fe <sub>3</sub> O <sub>4</sub>	Precipitation	Dispersion	Dispersion
S1	Precipitation	Dispersion	Dispersion
S2	Precipitation	Dispersion	Dispersion
S3	Dispersion	Precipitation	Precipitation
S4	Dispersion	Precipitation	Precipitation
S5	Dispersion	Precipitation	Precipitation
S6	Dispersion	Precipitation	Precipitation

††† The dispersibility of magnetic nanoparticles was qualitatively measured through dispersing them into cyclohexane, acid aqueous solution (pH =6.3) and alkaline aqueous solution (pH =11.5).