Supporting Information

Switchable Pickering Emulsions Stabilized by Silica Nanoparticles Hydrophobized *in Situ* with a Conventional Cationic Surfactant

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Figure S1. (a) SEM image and (b) TEM image of powdered silica nanoparticles (HL-200) with a BET surface area of 200 ± 20 m^2 g^{-1}.

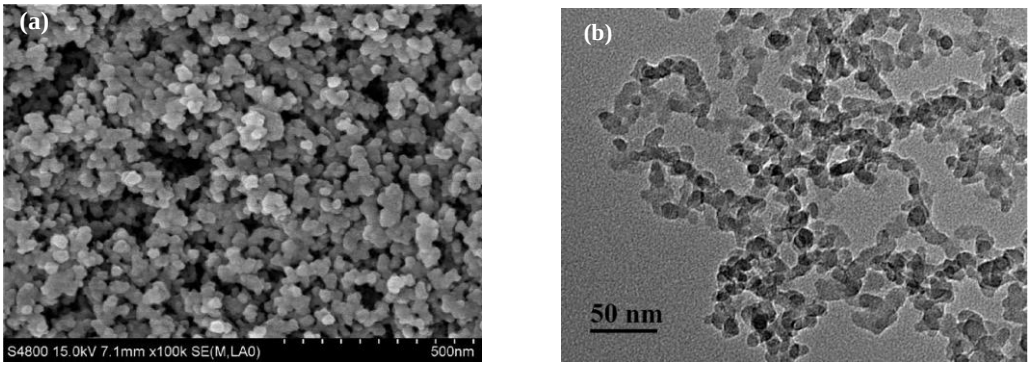

Figure S2. Zeta potential of the silica nanoparticles dispersed in aqueous solutions of different pH measured 24 hr. after dispersion at 25°C. The pH of pure water is 6.1.

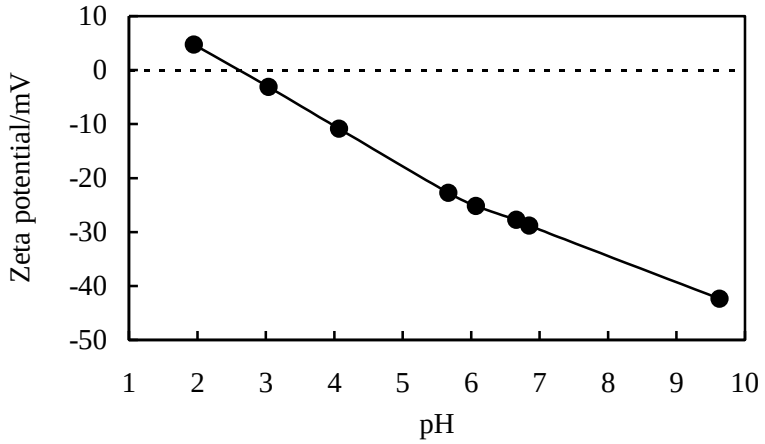

Figure S3. Surface tension of aqueous solutions of CTAB without and with 0.5 wt.% silica nanoparticles as a function of initial CTAB concentration (m) at 25 °C. The dashed line at c < cmc was calculated (c) using the Szyszkowski equation with $\Gamma^{\infty} = 3.0\times10^{-10}$ mol./cm^2 (a^{∞} = 0.55 nm^2/molec.) and K = 1.12×10^4 L/mol, obtained by fitting.

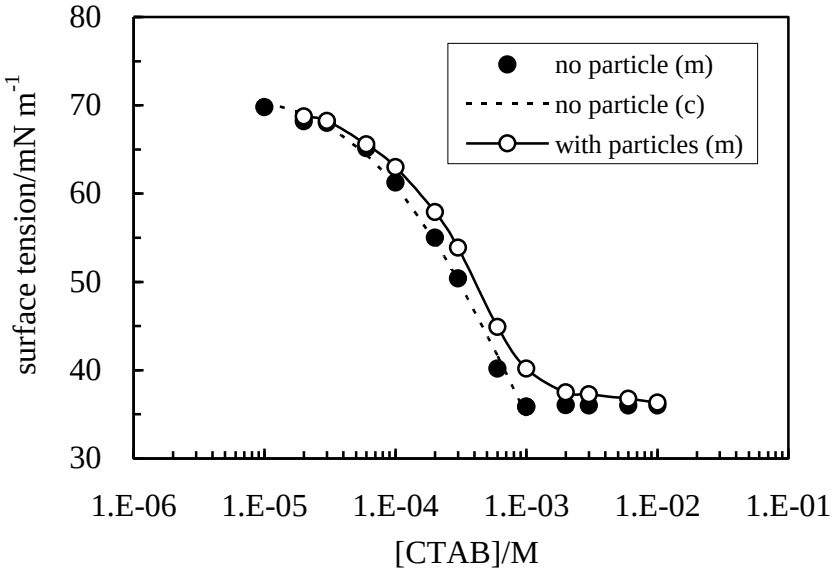

Figure S4. Photograph of dodecane (7 mL)-in-water (7 mL) emulsions stabilized by 0.5 wt.% silica nanoparticles in combination with dodecyltrimethylammonium bromide (DTAB) at different concentrations (given in mM) taken 24 hr. after homogenization.

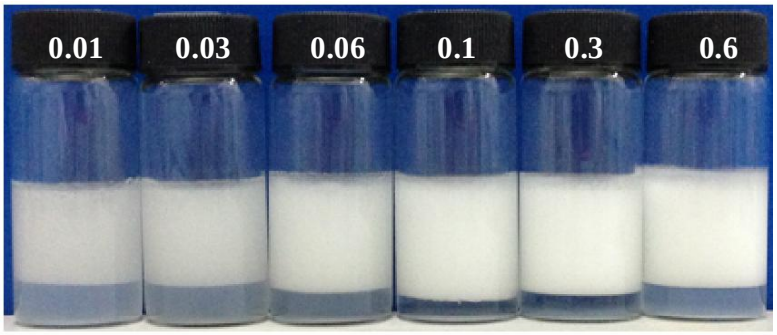

Figure S5. Photographs of dodecane (7 mL)-in-water (7 mL) emulsions stabilized by 0.5 wt.% silica nanoparticles in combination with 0.01 mM CTAB at different times (given) after adding 0.01 mM SDS (0.07 g of 1 mM aqueous SDS solution) followed by hand shaking (left) and homogenization at 7000 rpm for 2 min. (right) respectively.

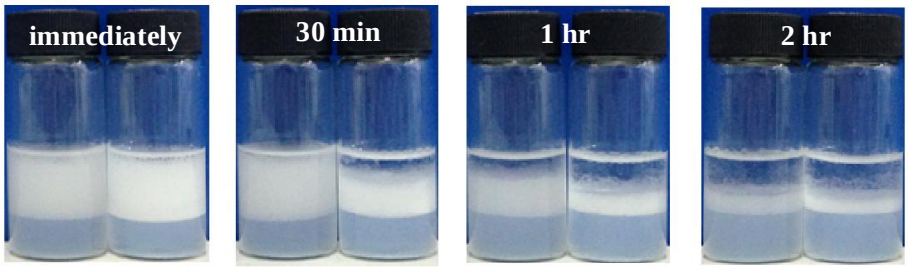

Figure S6. Photographs of dodecane (7 mL)-in-water (7 mL) emulsions stabilized by 0.5 wt.% silica nanoparticles in combination with 0.01 mM CTAB at different times (given) after adding 0.01 mM (left), 0.02 mM (middle) and 0.03 mM (right) SDS, followed by hand shaking.

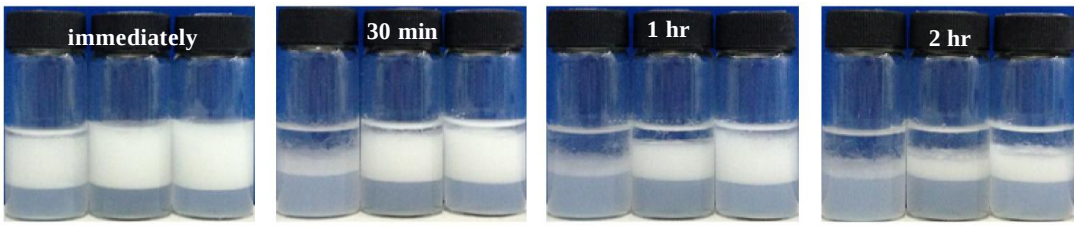

Figure S7. Photographs of dodecane (7 mL)-in-water (7 mL) emulsions stabilized by 0.5 wt.% silica nanoparticles in combination with free CTAB at different concentration (given in mM), taken 24 hr. after preparation (left), and that after adding equimolar SDS followed by mixing and sonication for 10 min., taken 2 hr. after sonication (right). Each emulsion already contained 0.3 mM CTAB-SDS equimolar mixture.