Supporting Information

A pH-Responsive Pickering Emulsion Stabilized Solely by Surface-Inactive Nanoparticles via an Unconventional Stabilization Mechanism

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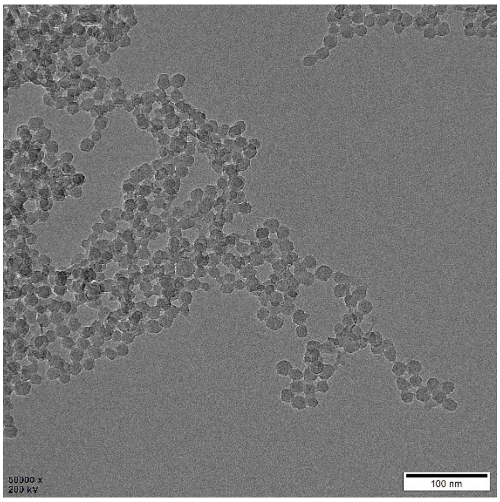

Figure S1 TEM image of Ludox CL nanoparticles with diameters of 15 nm.

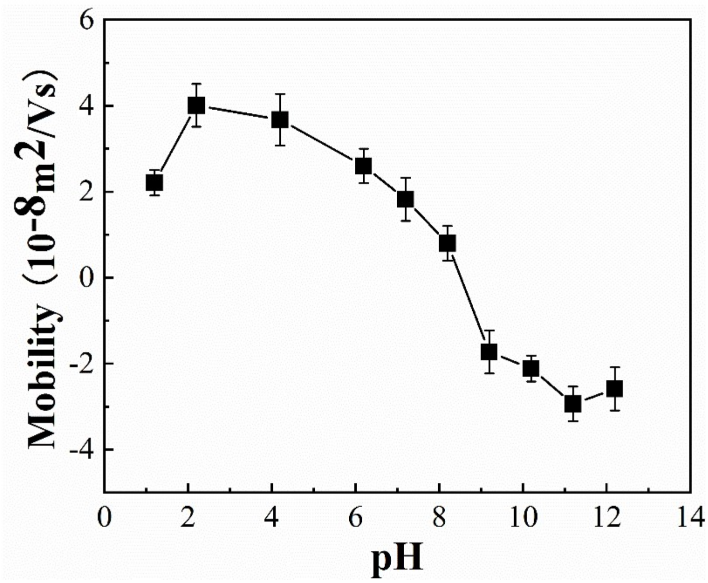

Figure S2 The electrophoretic mobility of 0.5 wt % Ludox CL dispersions in deionized water at different pH.

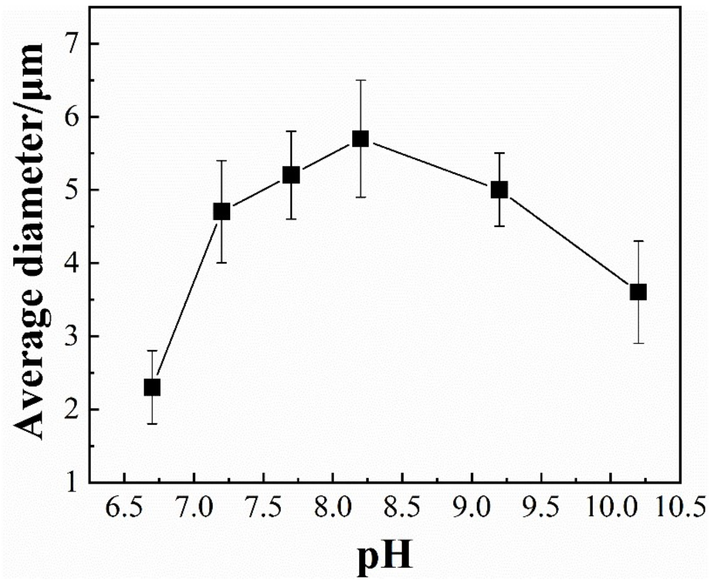

Figure S3 Variation of average diameter for 0.05 wt % Ludox CL dispersions in deionized water at different pH.

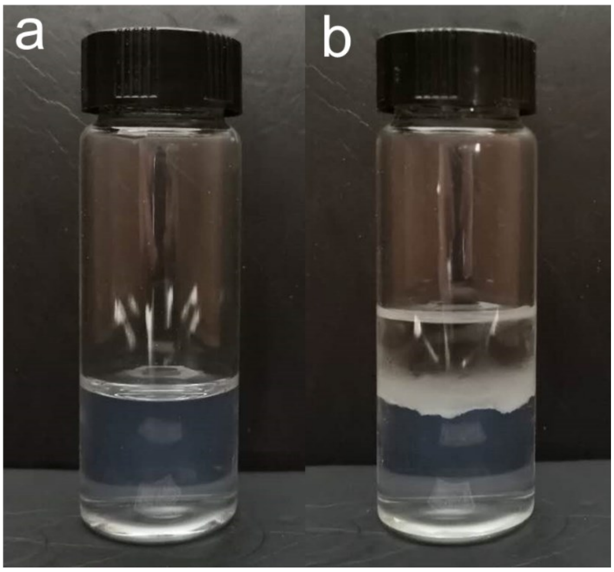

Figure S4 Appearance of 2 wt % SiO_2 nanoparticles (Ludox HS-30) dispersions in deionized water at pH 2.5 (a) and hexane-in-water VdW emulsion stabilized by 2 wt % SiO_2 nanoparticles at pH 2.5 after 24 h of standing.

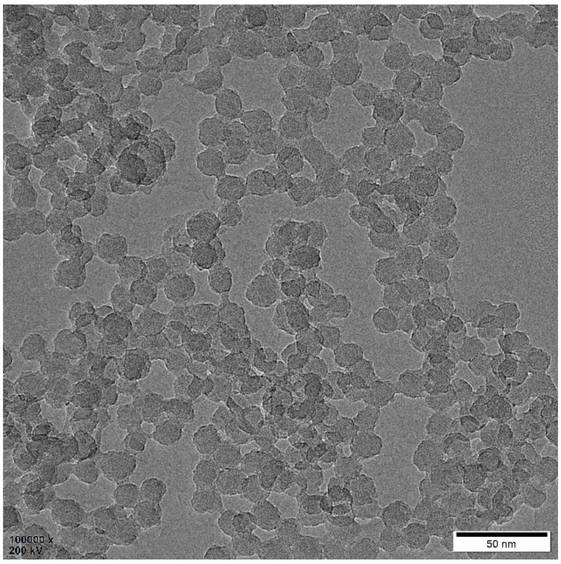

Figure S5 TEM image of aggregated Ludox CL nanoparticles

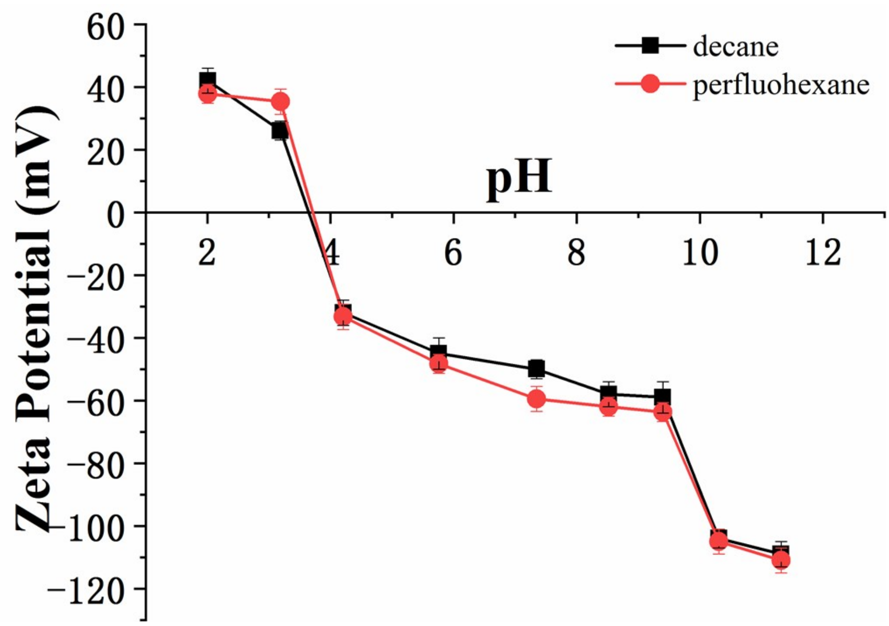

Figure S6 Zeta potential of pristine oil droplets in the deionized degassed water at different pH.

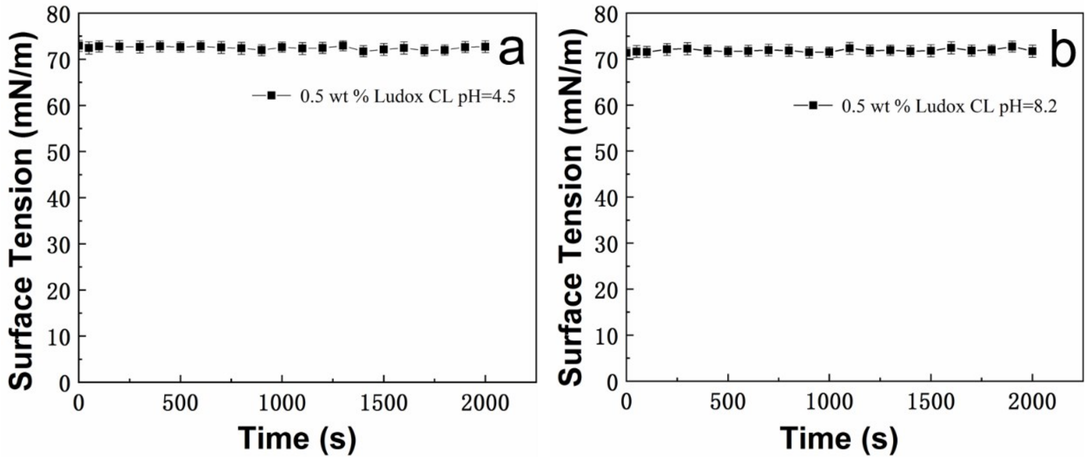

Figure S7 The surface tension of 0.5 wt % Ludox CL dispersion at pH = 4.5 (a) and pH = 8.2 (b)

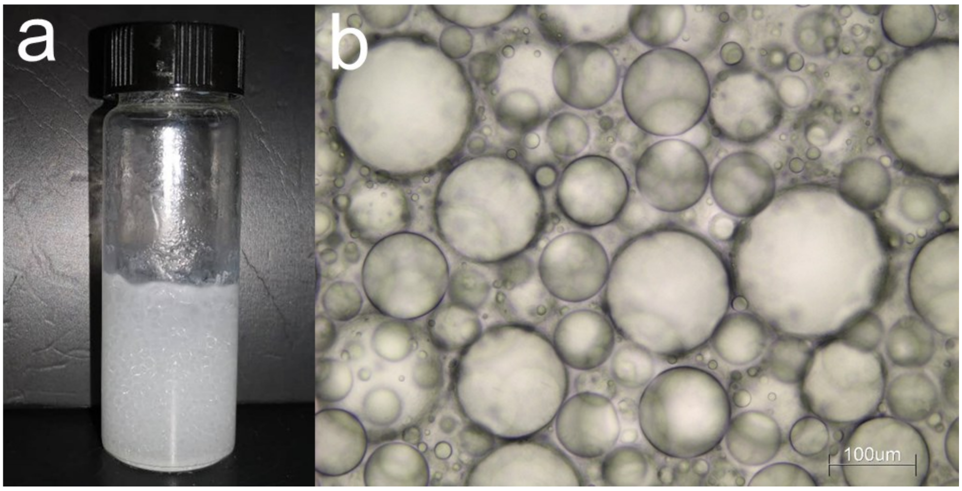

Figure S8 Appearance of decane-in-water Pickering emulsion with decane fraction (80 %) stabilized by 0.5 wt % Ludox CL nanoparticles at pH 8.2 after six months (a) and the micrograph of this VdW emulsion (b).

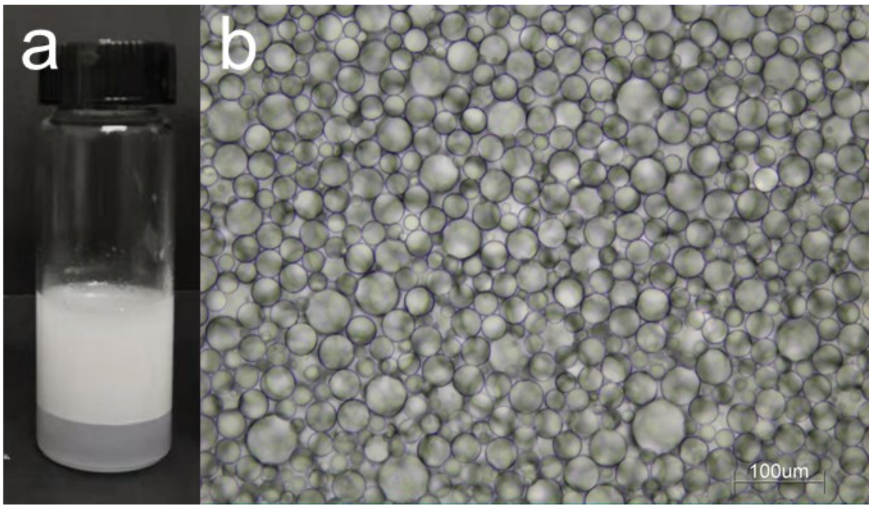

Figure S9 Appearance of monomers-in-water Pickering emulsion stabilized by 0.5 wt % Ludox CL nanoparticles at pH 8.2 after 24 h of standing (a) and the micrograph of this Pickering emulsion (b).

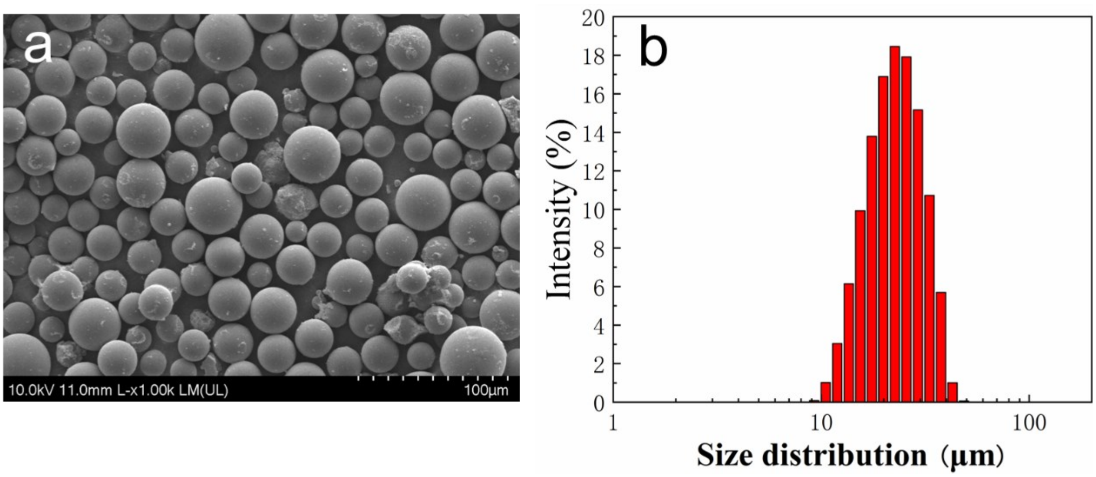

Figure S10 (a) SEM images of composite particles obtained by the template of monomers-in-water Pickering emulsion stabilized by 0.1 wt % Ludox CL nanoparticles at pH 8.2 and (b) the size distribution of composite particles ($D_{4,3}$ = 35μm)