

Shear thickening behavior in dense repulsive and attractive suspensions of hard spheres

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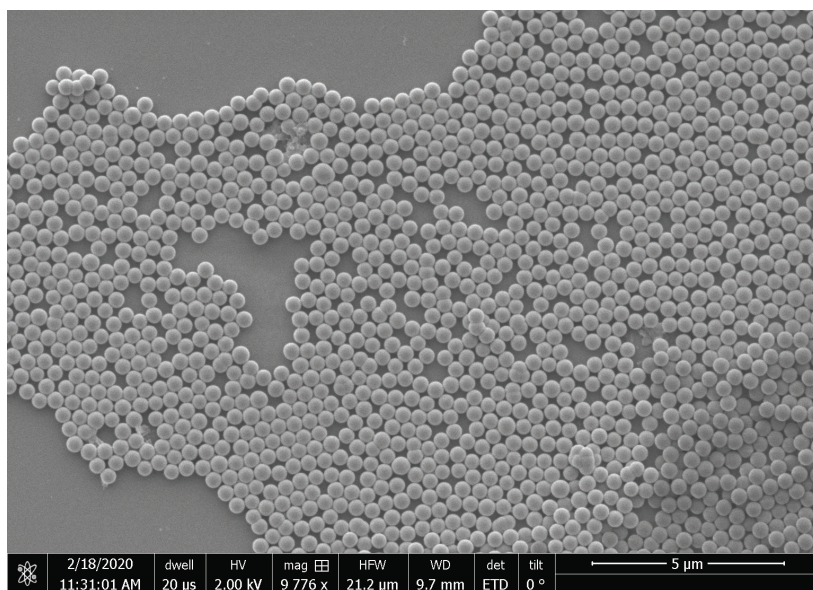


FIG. S1: SEM image of silica particles synthesized and used in our experiments. The average diameter of the particles is 415 ± 20 nm. SEM was performed on FEI Quanta 250 FEG (Thermo Fisher Scientific). The vacuum chamber pressure was maintained at 10^{-4} Pa.

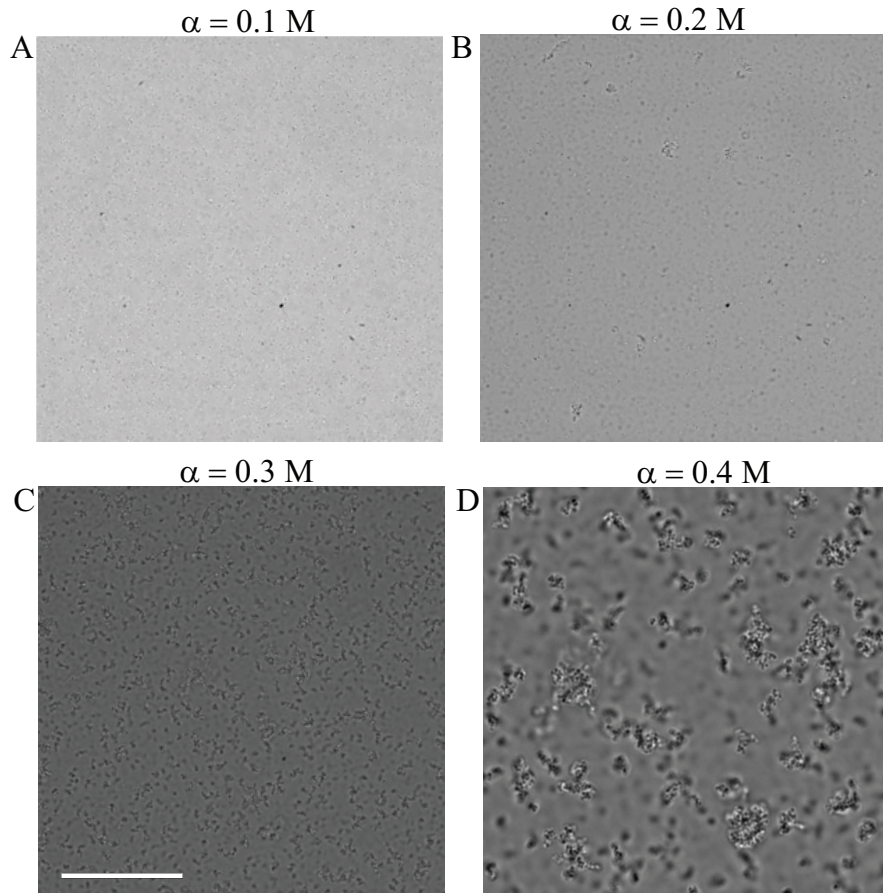


FIG. S2: Optical microscopic images of colloidal particle suspended in water at different sodium chloride concentrations (α): (A) $\alpha = 0.1$ M; (B) $\alpha = 0.2$ M; (C) $\alpha = 0.3$ M; (D) $\alpha = 0.4$ M. The volume fraction ϕ of the particles was fixed at 0.5%. The scale bar corresponds to $50\mu\text{m}$ for all images. The images were captured on Nikon Eclipse Ti optical microscope at 25°C .

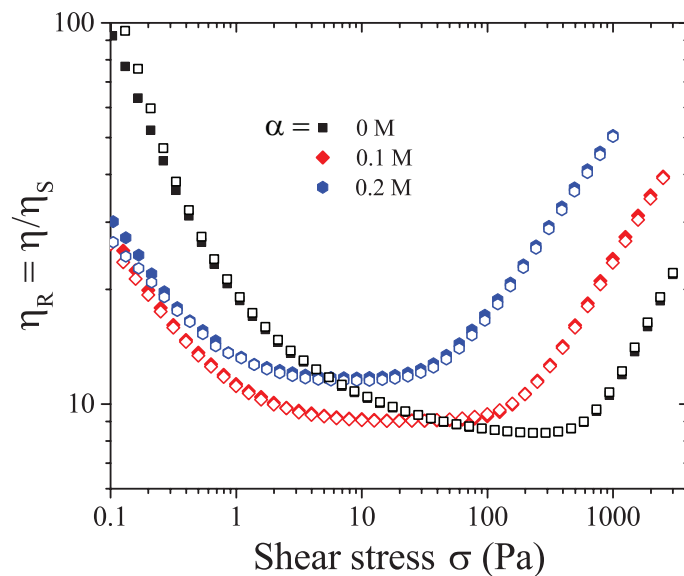


FIG. S3: Relative viscosity η_R versus shear stress σ at $\phi = 0.5$ and $\alpha = 0$ M (squares), $\alpha = 0.1$ M (diamonds), and $\alpha = 0.2$ M (hexagons). Forward and reverse flow curve measurements are shown by filled and open symbols, respectively. All flow curve measurements were performed after pre-shearing the sample for 10 s^{-1} for a minimum of 100 s. The waiting time 5 s was held at each stress value. The temperature was fixed at 10°C .