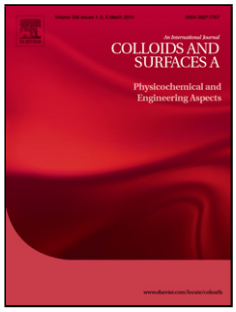

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Multi-responsive emulsion of stearic acid soap aqueous solution

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Research Highlights:

1. The phase behavior of stearic acid and alkali in water was observed.
2. Multi-responses of the emulsion stabilized by bilayers were achieved.
3. The ability of stabilizing the emulsion by the bilayers and micelles was compared.

ABSTRACT:

Stearic acid (SA) mixed with alkali in water can form different fascinating aggregates in solution. The phase behavior of SA and alkali in water was observed in this work, and the apparent viscosity was measured by rheological measurements. Fatty acid self-assembled into bilayers at pH ≈ pK_a and the structure was determined by cryogenic transmission microscopy (Cryo-TEM) observations. The ability of stabilizing the emulsion by the bilayers and micelles was compared. The