Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information

Synergistic effect of pH-responsive wormlike micelles based on a simple amphiphile

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Synthesis of CDIA:

CDIAB (4.37g, 10 mmol) was dissolved in 50 mL water followed by addition of NaOH (0.44g, 11mmol) aqueous solution. The solution was transferred to a separating funnel and was extracted with 25 mL ether three times. The upper clear layers were collected, evaporated to dryness in air, and kept in the desiccator to obtain the desired CDIA in solid state; yield 56%; ^{1}H NMR (400 MHz, DMSO-D6, 298K) δ: 4.35 (t, 4H), 3.60 (s, 2H), 2.50-2.20 (m, 6H), 1.36 (dt, J=14.1, 7.1 Hz, 2H), 1.30–1.12 (m, 26H), 0.99 (dd, J=6.1, 2.8 Hz, 6H), 0.84 (t, J=6.7 Hz, 3H). Elemental analysis results for $C_{22}H_{47}NO_2$ in mass %: C, 73.89; H, 13.29; Br, 3.52; N, 3.92; O, 8.95. Experment: C, 73.93; N, 3.59; H, 13.59.

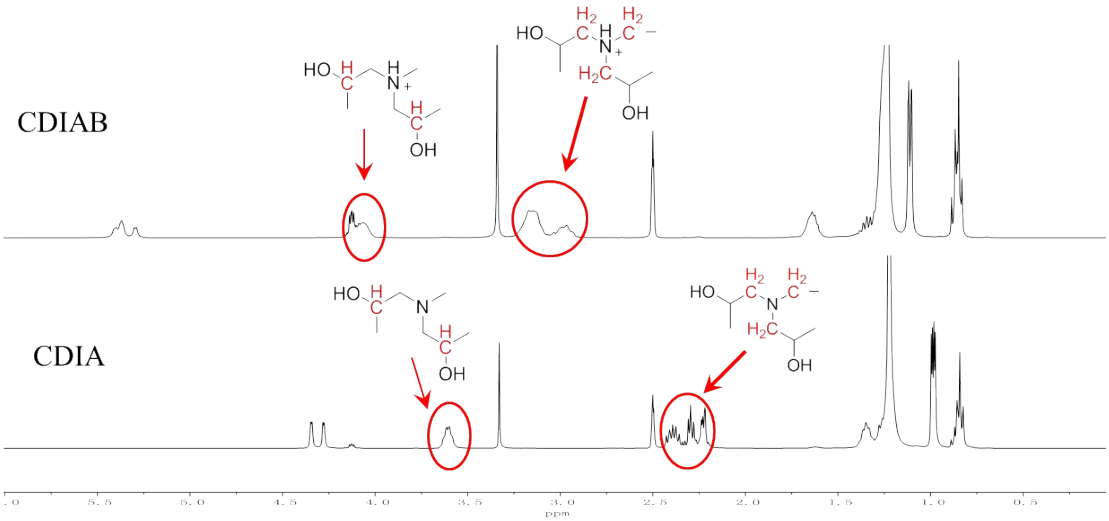

Fig. S1 ^{1}H NMR spectra of CDIAB and CDIA using DMSO-D6 as a solvent.

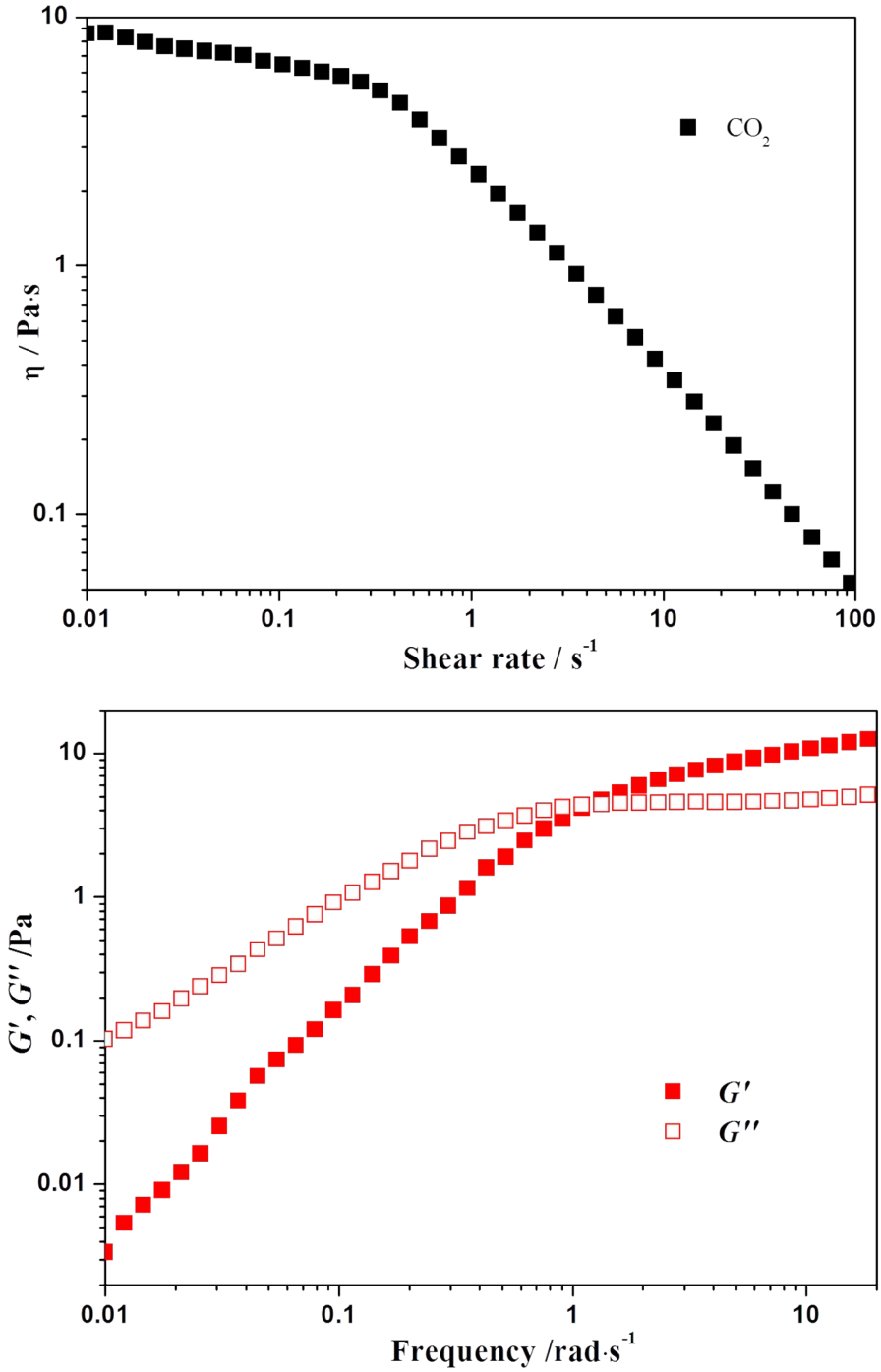

Fig. S2 The steady state shear viscosities for the 100 mM CDIAB-CO_2 solution (a); G' and G'' versus frequency for 100 mM CDIAB solutions at CO_2 (b).

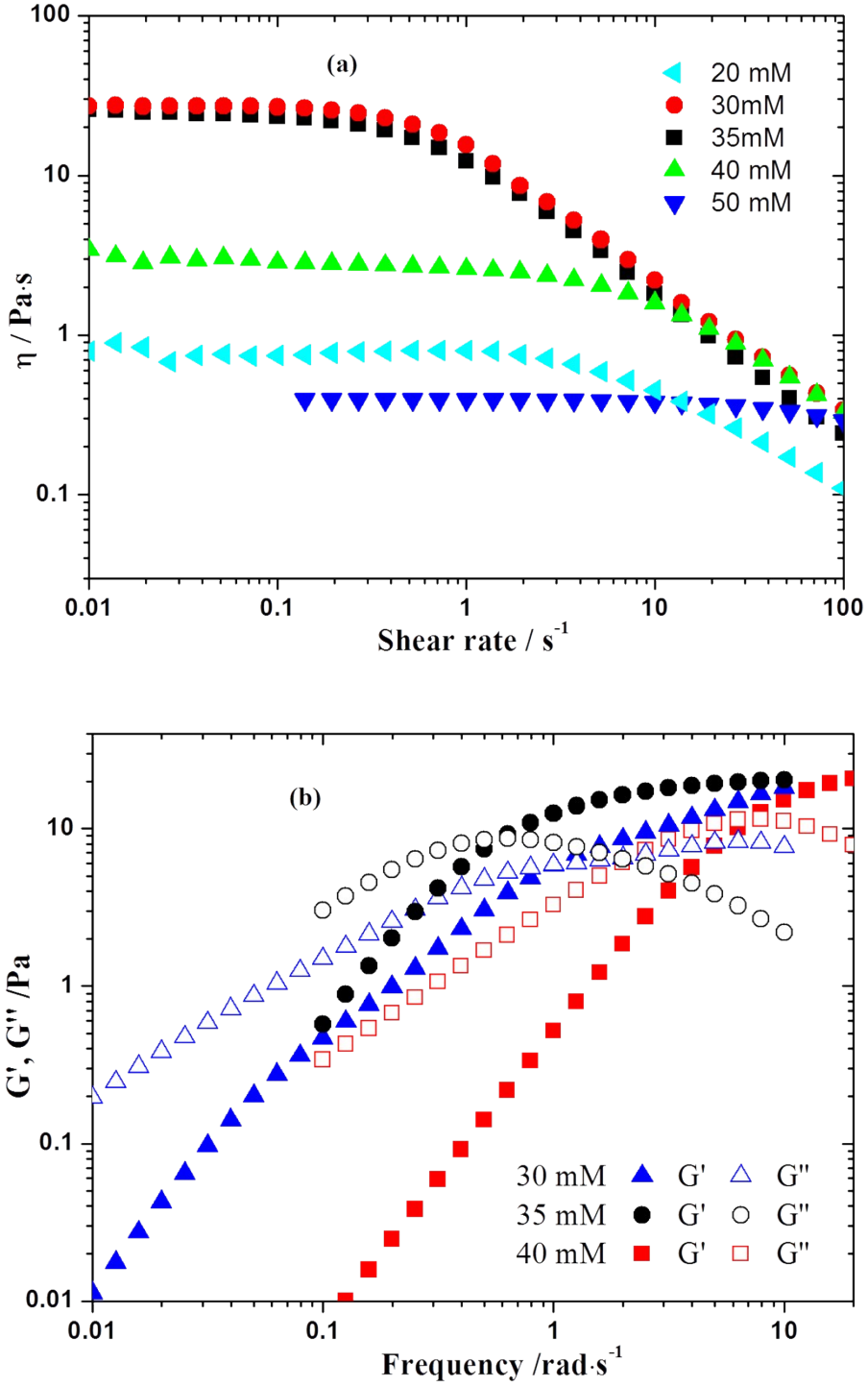

Fig. S3 (a) The steady state shear viscosities for the 100 mM CDIAB aqueous systems with different concentration of NaSal; (b) G' and G'' versus frequency for 100 mM CDIAB solutions at various concentration of NaSal.

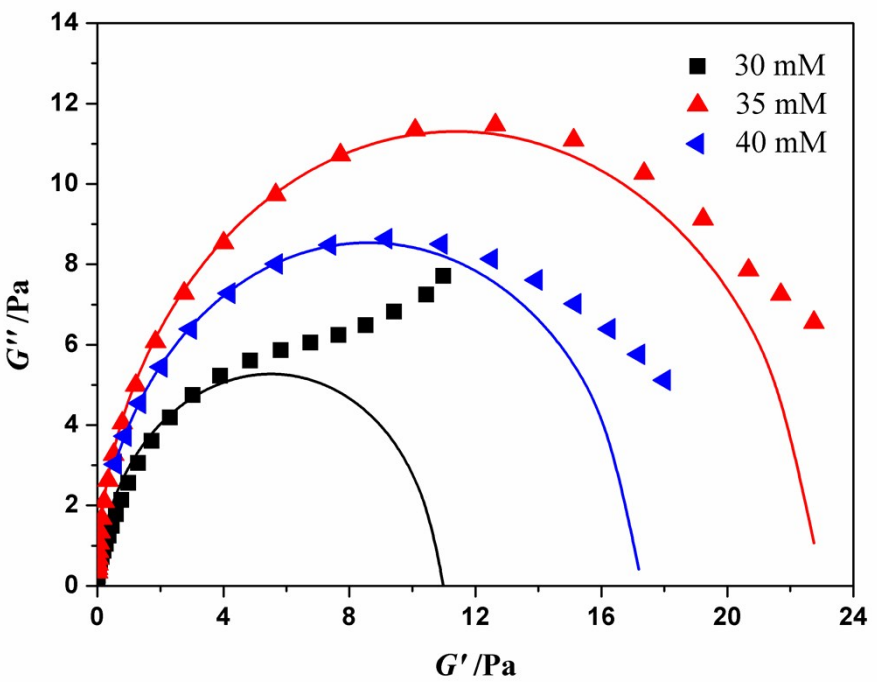

Fig. S4 Cole-Cole plots for the 100 mM CDIAB solutions with different concentrations of NaSal values at 25 ºC.”

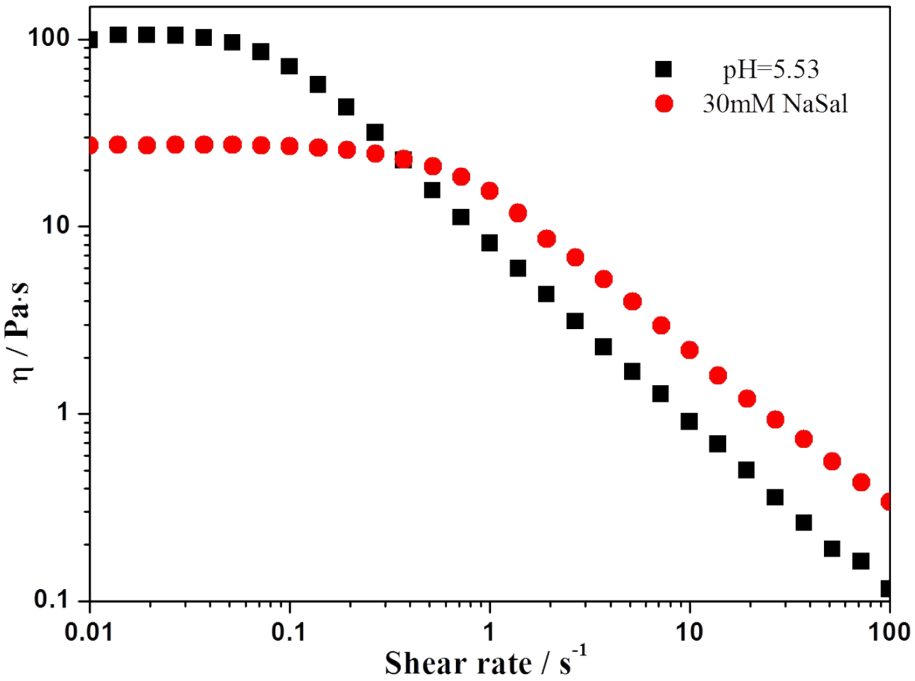

Fig. S5 The comparing of steady state shear viscosities for the 100 mM CDIAB aqueous systems with 30 mM NaSal and pH=5.53.

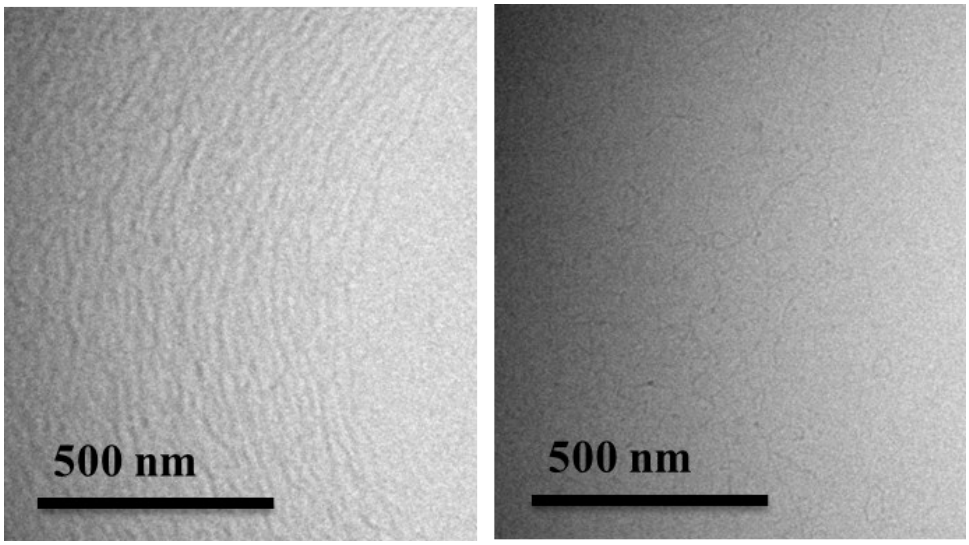

Fig. S6 Cryo-TEM images of 100 mM CDIAB with CDIA (left) and 35 mM NaSal (right).