

The supporting information for

Reversible Stability of Colloids Switched by CO₂ Based on Polyhexamethylene Guanidine

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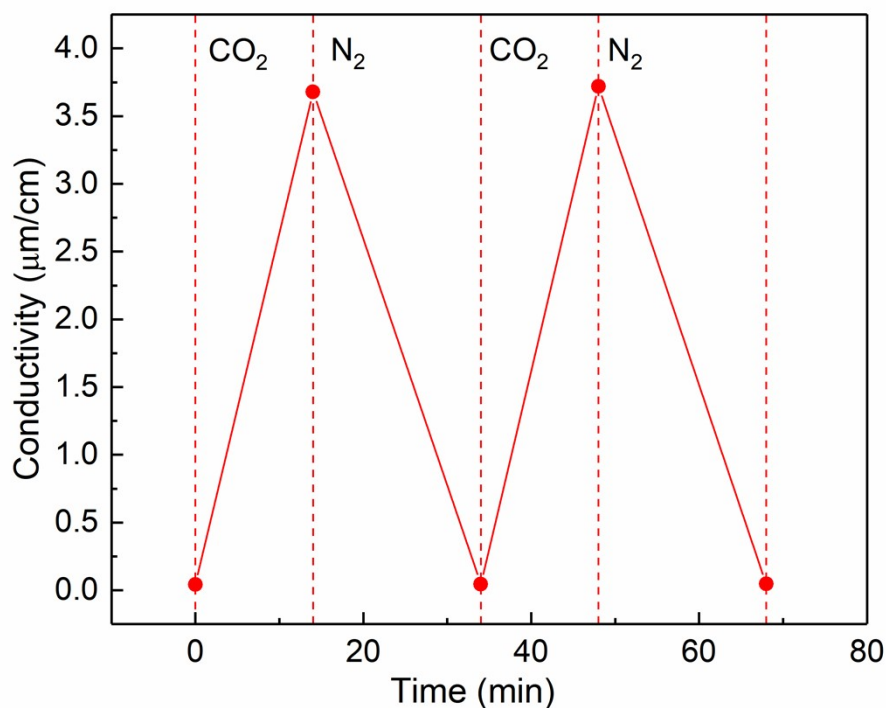


Figure S1. Variation of conductivity for deionized water while alternatively bubbling CO₂ and N₂ at 25±0.5 °C.

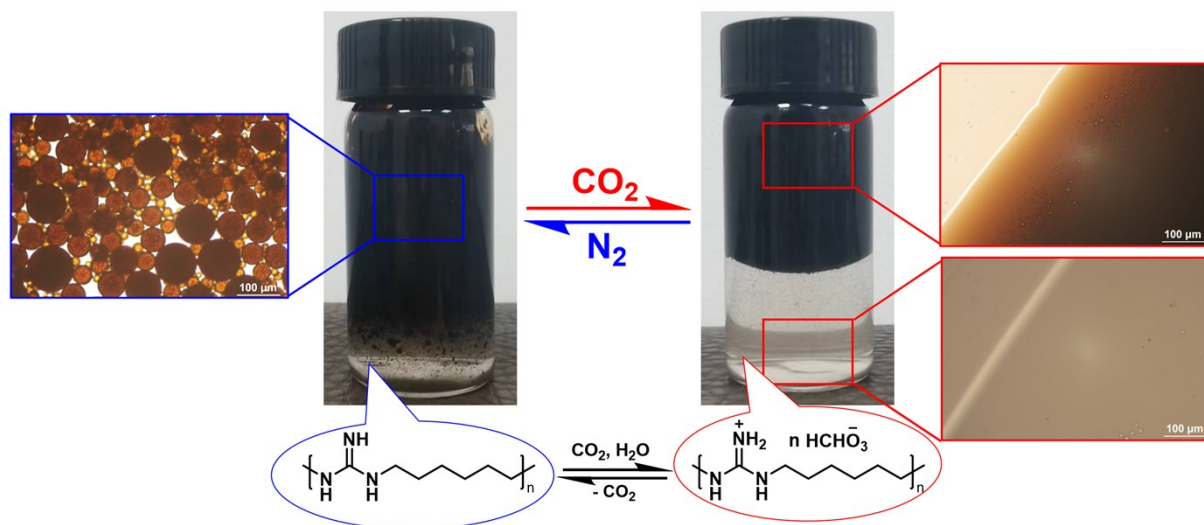


Figure S2. The images in microscopic view and different states of PHMG for crude oil emulsion in two situations (SDBS, 0.015mol/L; PHMG, 0.2 wt%) at 25 °C. The initial emulsion (left side) and the separated water/crude oil with CO₂-induced (right side).

Table S1. The moisture content in the upper crude oil layer after separation

	Amount of oil phase sample (mg)	water content (mg)	Moisture percentage
Test 1	13.5	0.734	5.44%
Test 2	13.9	0.744	5.35%
Test 3	12.7	0.686	5.40%
Average moisture percentage			5.40%

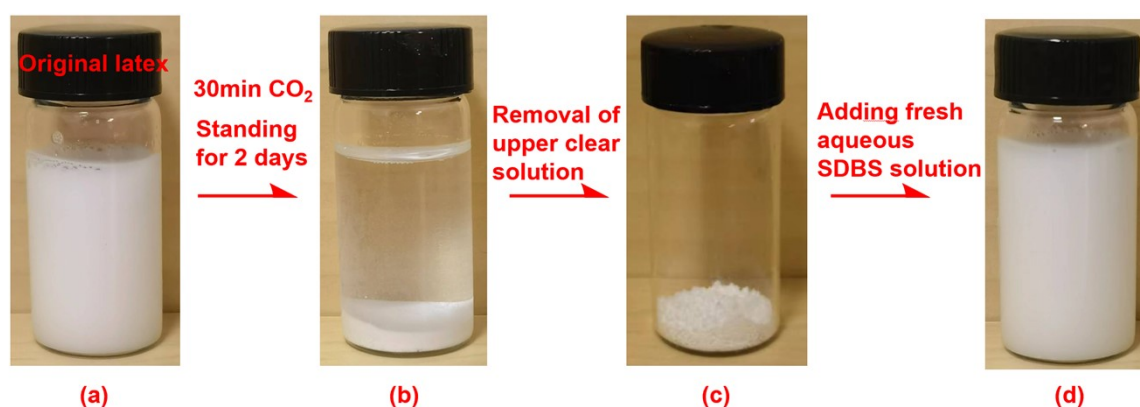


Figure S3. (a) The original PS latex after preparation with PHMG (concentration of PHMG is 0.2 wt.%, T=25 °C); (b) After sparging CO₂ for 30 min and standing for 2 days, the PS became white precipitation; (c) The upper clear layer is removed by filtration to obtain a white precipitate; (d) After adding 20 mL fresh SDBS solution (concentration of PHMG is 0.2 wt.%) and hand shaking, the PS latex was obtained at

25 °C.