Supplementary Material

Efficient (Bio)emulsification/Degradation of Crude Oil Using Cellulose Nanocrystals

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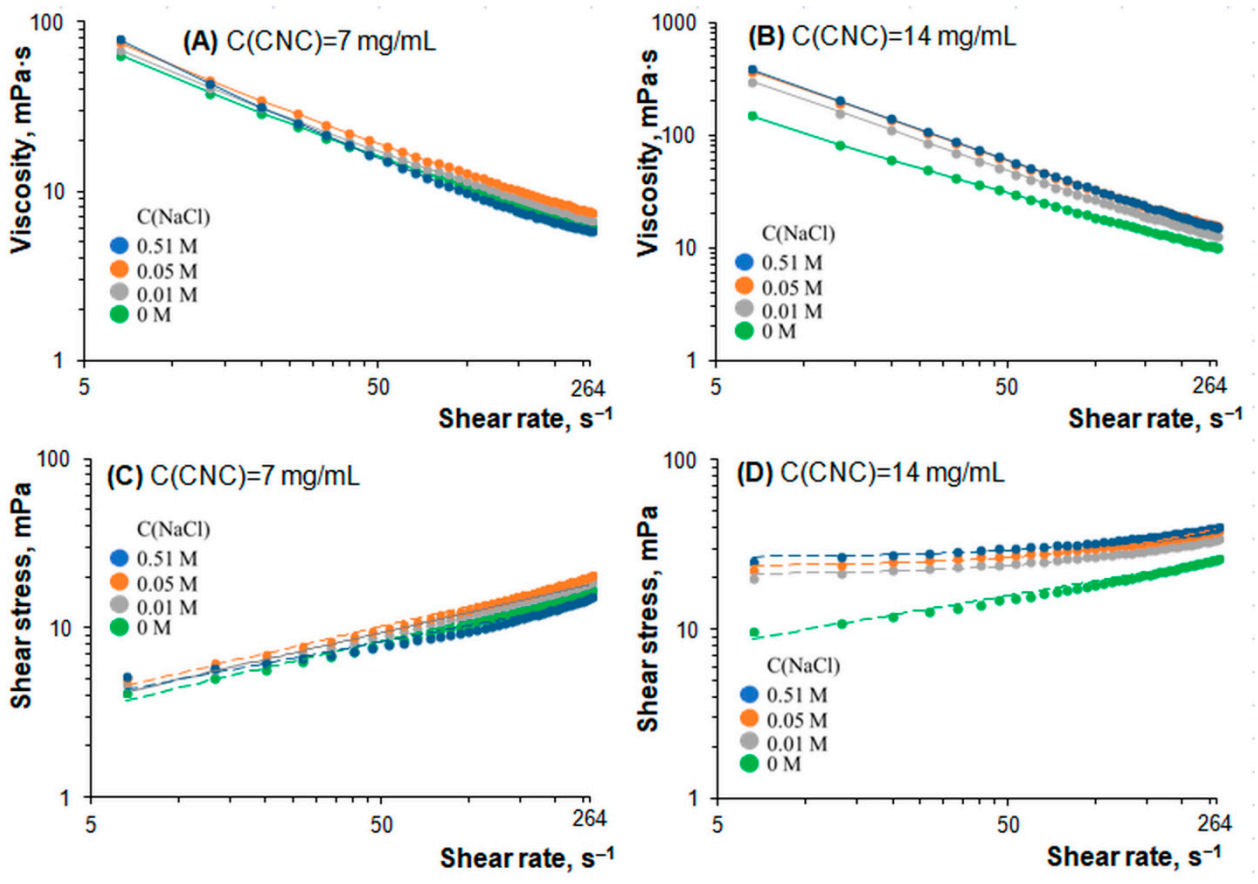

Figure S1. Effect of NaCl addition and CNC concentration on the flow behavior of nanocellulose stabilized liquid paraffin o/w emulsion: (**A**,**B**) flow profiles; (**C**,**D**) rheological profiles. Experimental data of rheological profiles presented as the dots, the broken lines are fitting curves, which have highest r_2 coefficient.

Table S1. Dynamic viscosity of CNC-stabilized o/w emulsions at different CNC and salt concentrations, mPa·s

CNC, mg/mL	C(NaCl), M	Co/w			Liquid Paraffin o/w Emulsion		
		26 s^{-1}	52 s^{-1}	251 s^{-1}	26 s^{-1}	52 s^{-1}	251 s^{-1}
7	0	12.6±0.7	8.8±0.5	4.5±0.3	24.4±0.6	15.8±0.4	6.5±0.1
	0.01	17.4±0.4	11.3±0.3	5.1±0.3	26.2±0.7	16.8±0.2	7.0±0.1
	0.05	22.9±0.8	14.3±0.2	6.1±0.2	29.0±0.5	18.7±0.7	7.8±0.2
	0.51	21.5±0.6	13.7±0.4	6.4±0.2	35.6±0.8	15.2±0.6	6.0±0.1
14	0	59.2±1.1	33.7±0.9	11.3±0.2	49.2±1.7	29.5±0.3	10.3±0.2
	0.01	67.1±0.7	37.6±0.7	12.4±0.1	86.2±1.1	46.6±0.8	13.0±0.2
	0.05	107.9±0.5	58.9±0.8	16.7±0.1	105.2±0.9	56.8±0.5	16.3±0.1
	0.51	102.9±0.8	56.9±0.5	17.2±0.1	107.9±1.1	57.4±0.7	15.8±0.2

Table S2. Rheological parameters of CNC-stabilized liquid paraffin o/w emulsion o/w emulsions at different CNC and salt concentrations

CNC, mg/mL	C(NaCl), M	Bingam model				Power law			
		τ_0, mPa	μ_p, mPa·s	r^2	μ_a^B (50 s^{-1})	K	n	μ_a^{pl} (50 s^{-1})	r^2
7	0			0.950		1.776	0.396	0.167	0.993
	0.01			0.950		1.989	0.395	0.187	0.993
	0.05			0.950		2.369	0.320	0.166	0.960
	0.51			0.989		2.168	0.395	0.203	0.992
14	0			0.932		5.119	0.288	0.315	0.987
	0.01	20.919	0.053	0.971	0.472				0.951
	0.05	23.429	0.059	0.972	0.528				0.950
	0.51	26.437	0.055	0.970	0.584				0.947