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Rheology of Pickering Emulsions Stabilized and Thickened by Cellulose Nanocrystals over Broad Ranges of Oil and Nanocrystal Conc

The rheology of oil-in-water emulsions, stabilized and thickened by cellulose nanocrystals was investigated over a range of NCC and oil concentrations. The NCC concentration was varied from 1.03 to 7.41 wt%. The oil concentration of the emulsion was varied from approximately 10 to 70 wt%.

The emulsions were highly stable with respect to creaming/coalescence. The emulsions were non-Newtonian in that they exhibited strong shear-thinning behavior. The consistency index (K) and the flow behavior index (n) of the emulsions were strongly dependent on the NCC and oil concentrations.