



Article

Flocculation of Cellulose Microfiber and Nanofiber Induced by Chitosan-Xylan complexes.

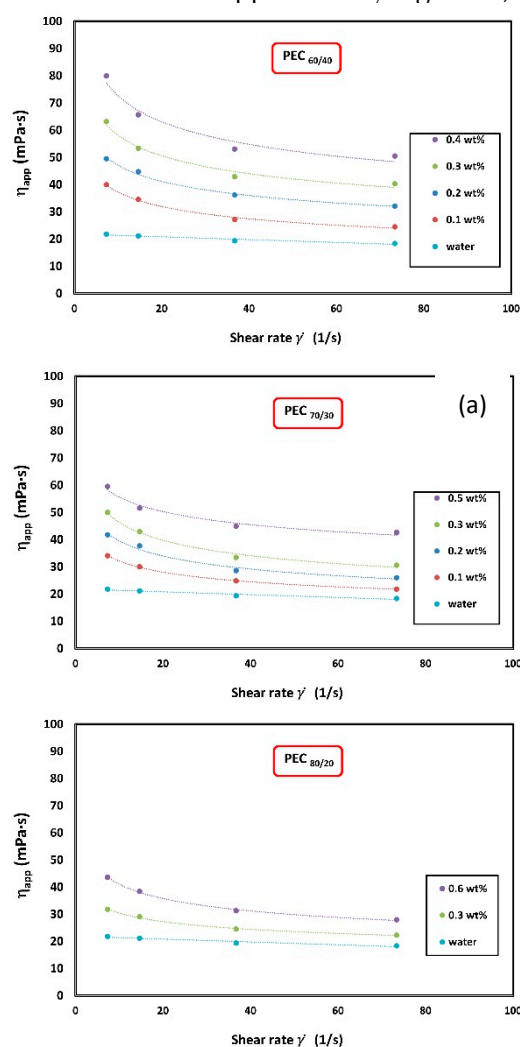
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This file includes Supplementary Figure S1, S2 and S3. Table S1, S2 and S3



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Figure S1. Apparent viscosity (η_{app}) versus shear rate (7.34; 14.68; 36.69 and 73.38 1/s) and different concentration (from 0.1 wt% to 0.6 wt%) for complexes (PECs) at different mass ratio Xyl/Ch: (a) 60/40; (b) 70/30 and (c) 80/20. Temperature: 25 °C.

Table S1. Rheological parameters of PECs at different concentration using the Power Law model.

Samples	Concentration (wt %)	K (1(mPa·s))	n	R ²
PEC _{60/40}	0.1	61.8	0.780	0.9917
	0.2	73.8	0.806	0.9933
	0.3	92.4	0.799	0.9727
	0.4	116.3	0.796	0.9563
PEC _{70/30}	0.1	50.4	0.805	0.9995
	0.2	65.5	0.781	0.9785
	0.3	77.2	0.779	0.9853
	0.5	77.8	0.855	0.9679
PEC _{80/20}	0.3	43.9	0.841	0.9955
	0.6	64.7	0.803	0.9967

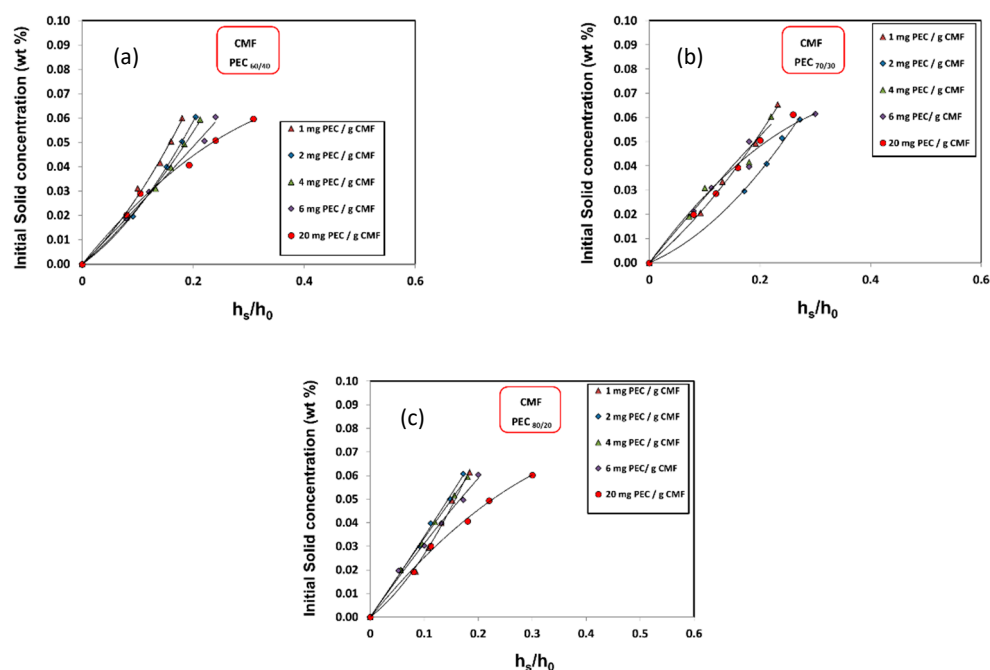
**Figure S2.** Initial solid concentration of CMF vs final sediment height (h_s) / initial (h_0) height of suspension.

Table S2. Sedimentation data of CMF fitted with a quadratic equation and gel point.

Sample	Dosage of PEC (mg PEC / g CMF)	$Y = Ax^2 + Bx$ (*)	R^2	Gel Point (wt %) (**)
PEC _{60/40}	1	$Y = 0.6341x^2 + 0.2163x$	$R^2 = 0.9931$	0.2163
	2	$Y = 0.6549x^2 + 0.1629x$	$R^2 = 0.9995$	0.1629
	4	$Y = 0.4142x^2 + 0.1895x$	$R^2 = 0.9963$	0.1895
	6	$Y = 0.0403x^2 + 0.2337x$	$R^2 = 0.9943$	0.2337
	20	$Y = -0.2888x^2 + 0.2807x$	$R^2 = 0.9935$	0.2807
PEC _{70/30}	1	$Y = 0.3785x^2 + 0.1908x$	$R^2 = 0.9979$	0.1908
	2	$Y = 0.4561x^2 + 0.0971x$	$R^2 = 0.9976$	0.0971
	4	$Y = -0.083x^2 + 0.2783x$	$R^2 = 0.9711$	0.2783
	6	$Y = -0.3534x^2 + 0.3115x$	$R^2 = 0.9767$	0.3115
	20	$Y = -0.0698x^2 + 0.2570x$	$R^2 = 0.9976$	0.2570
PEC _{80/20}	1	$Y = 0.8793x^2 + 0.1785x$	$R^2 = 0.9959$	0.1785
	2	$Y = 0.0993x^2 + 0.3320x$	$R^2 = 0.9974$	0.3320
	4	$Y = -0.0594x^2 + 0.3405x$	$R^2 = 0.9989$	0.3405
	6	$Y = -0.1773x^2 + 0.3294x$	$R^2 = 0.9933$	0.3294
	20	$Y = -0.2633x^2 + 0.2799x$	$R^2 = 0.9963$	0.2799

* Y is initial solid concentration and X is $(h_s)/(h_0)$. ** The first derivate of the curve at the y-intercept gives the gel point.

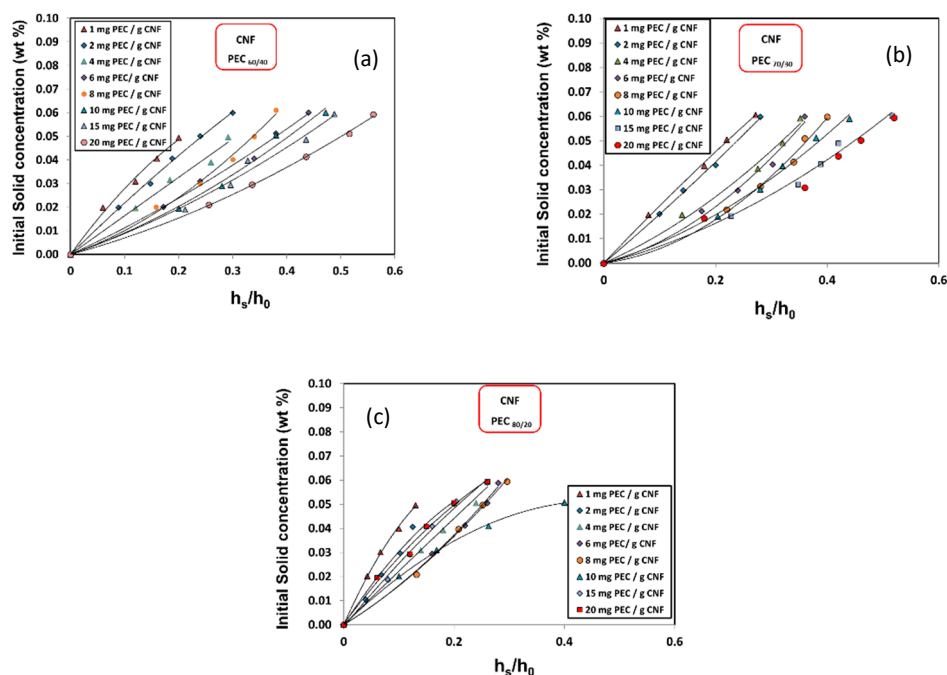
**Figure S3.** Initial solid concentration of CNF vs final sediment height (h_s) / initial (h_0) height of suspension.

Table S3. Sedimentation data of CNF fitted with a quadratic equation and gel point.

Sample	Dosage of PEC (mg PEC / g CNF)	$Y = Ax^2 + Bx$ (*)	R^2	Gel point (wt %) (**)
PEC _{60/40}	1	$y = -0.3517x^2 + 0.3135x$	0.9940	0.3135
	2	$y = -0.0826x^2 + 0.2258x$	0.9981	0.2258
	4	$y = -0.0022x^2 + 0.1636x$	0.9876	0.1636
	6	$y = 0.1999x^2 + 0.0806x$	0.9948	0.0806
	8	$y = 0.0686x^2 + 0.1054x$	0.9938	0.1054
	10	$y = 0.1094x^2 + 0.0797x$	0.9880	0.0797
	15	$y = 0.0838x^2 + 0.0798x$	0.9868	0.0798
	20	$y = 0.0760x^2 + 0.0618x$	0.9992	0.0618
PEC _{70/30}	1	$Y = -0.0447x^2 + 0.2347x$	0.9976	0.2347
	2	$Y = 0.0257x^2 + 0.2043x$	0.9959	0.2043
	4	$Y = 0.1917x^2 + 0.0957x$	0.9884	0.0957
	6	$Y = 0.2601x^2 + 0.0668x$	0.9876	0.0668
	8	$Y = 0.2989x^2 + 0.0289x$	0.9942	0.0289
	10	$Y = 0.1647x^2 + 0.0658x$	0.9933	0.0658
	15	$Y = 0.1199x^2 + 0.0576x$	0.9908	0.0576
	20	$Y = 0.0916x^2 + 0.0651x$	0.9860	0.0651
PEC _{80/20}	1	$Y = -1.0331x^2 + 0.5125x$	0.9989	0.5125
	2	$Y = -0.4768x^2 + 0.3511x$	0.9837	0.3511
	4	$Y = -0.0174x^2 + 0.2119x$	0.9958	0.2119
	6	$Y = 0.2303x^2 + 0.1403x$	0.9969	0.1403
	8	$Y = 0.2129x^2 + 0.1408x$	0.9980	0.1408
	10	$Y = -0.2376x^2 + 0.2212x$	0.9992	0.2212
	15	$Y = -0.1450x^2 + 0.2697x$	0.9943	0.2697
	20	$Y = -0.3063x^2 + 0.3099x$	0.9923	0.3099

* Y is initial solid concentration and X is $(h_s)/(h_0)$. ** The first derivate of the curve at the y-intercept gives the gel point.