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Extraction of cellulose nanofibers from empty palm fruit bunches via mechanical defibrillation

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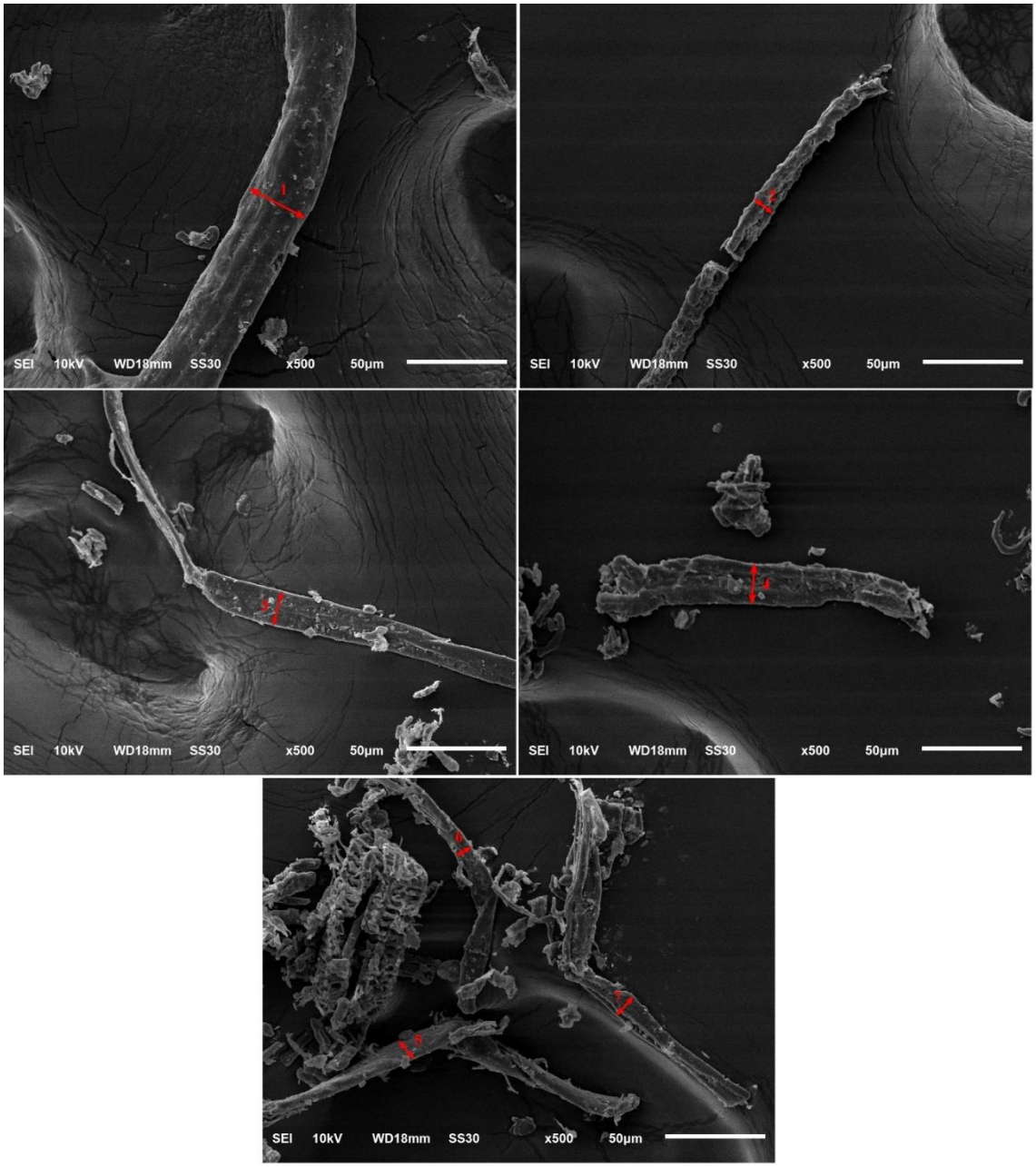

Figure S1. SEM images of raw fibers.

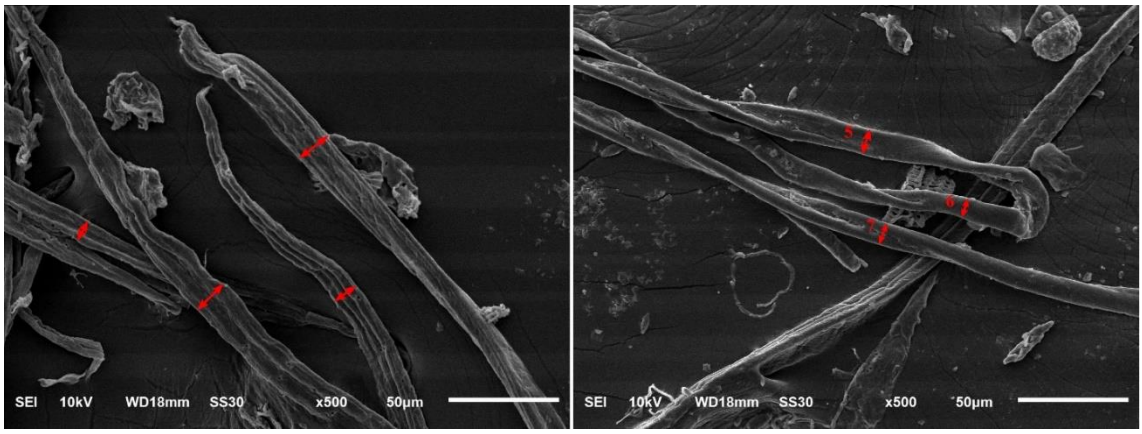

Figure S2. SEM images of purified fibers.

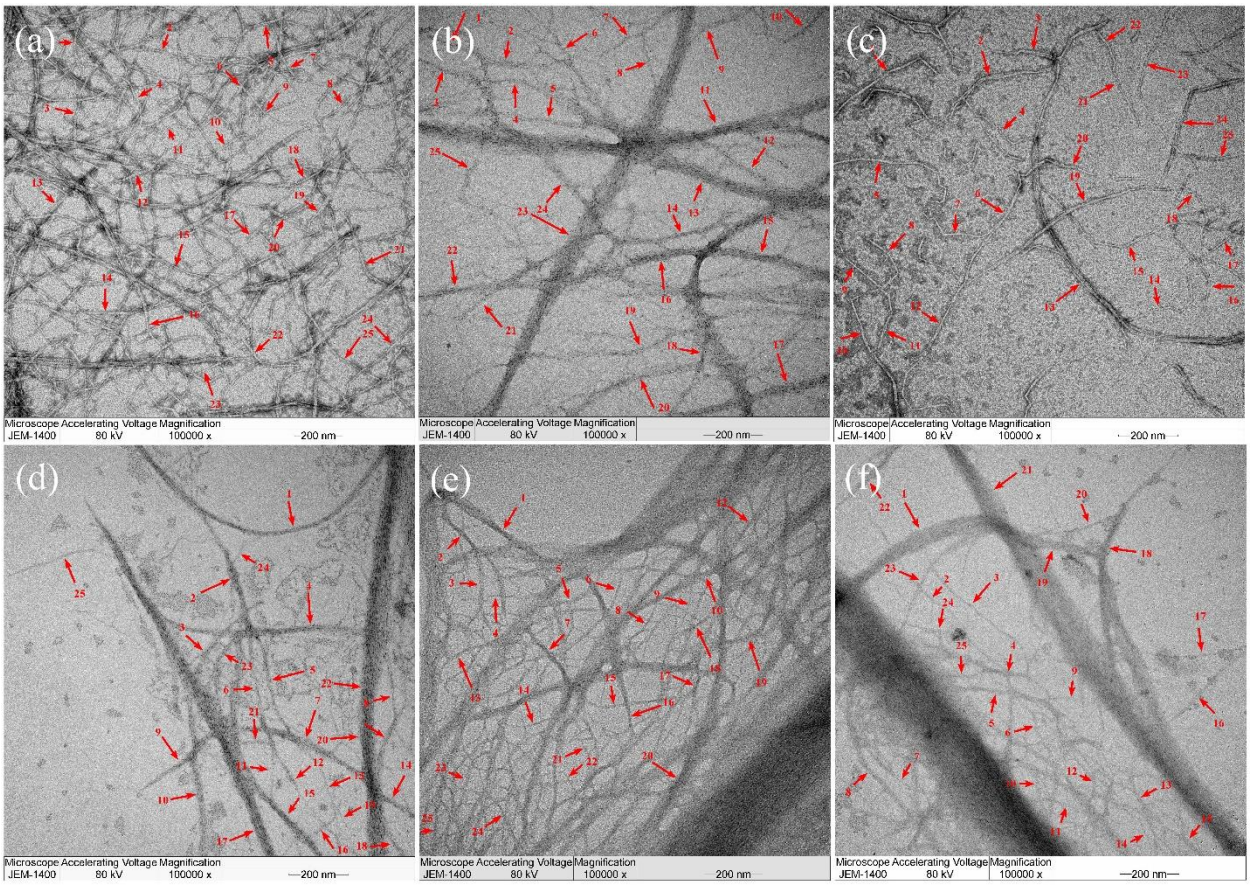

Figure S3. CNFs used for diameter distribution analysis.

Table S1. Diameters range of raw and purified fibers.

Fibers	Fibers diameter (µm)	
	Raw fibers	**Purified fibers**
1	32.2	16.7
2	12.5	17.0
3	17.7	12.2
4	20.8	10.5
5	12.2	12.3
6	9.2	9.7
7	12.9	10.7

Table S2. CNFs diameter.

Fibers	CNFs diameter (nm)					
	CNFs 0.5/30	**CNFs 0.7/30**	**CNFs 1.0/30**	**CNFs 0.5/60**	**CNFs 0.7/1.0**	**CNFs 1.0/60**
1	8.4	10.7	8.1	14.2	18.0	58.7
2	8.6	14.4	10.7	21.9	13.1	7.9
3	13.8	11.8	9.7	16.9	17.6	5.4
4	10.5	14.2	5.3	15.8	8.5	15.6
5	13.5	11.3	7.9	13.2	15.7	13.9
6	10.8	14.9	8.1	9.7	11.5	12.5
7	8.3	13.1	5.7	25.5	14.5	5.7
8	7.2	13.3	6.3	7.5	10.3	12.9
9	9.5	13.3	4.5	16.9	5.1	5.8
10	7.0	14.4	9.8	19.8	21.8	10.8
11	7.5	33.1	10.5	8.8	16.7	9.1
12	10.9	20.2	8.3	7.3	14.8	12.2
13	15.5	40.5	22.7	7.3	13.1	11.5
14	8.4	13.0	7.1	12.1	6.7	4.8
15	6.2	22.9	8.5	16.8	11.1	12.0
16	11.4	32.9	11.0	10.2	11.1	11.0
17	12.5	29.5	9.4	32.2	12.4	6.2
18	10.5	13.8	7.9	11.3	11.6	26.7
19	15.5	14.8	11.5	6.4	15.1	30.2
20	13.6	19.5	6.9	44.8	40.6	10.6
21	12.2	13.9	5.3	8.2	5.1	54.1
22	11.4	15.6	6.7	47.9	6.7	20.1
23	6.1	79.5	8.8	12.2	12.4	11.3
24	10.4	31.1	16.9	7.9	8.8	8.1
25	7.7	15.2	8.9	9.1	12.2	12.2

Table S3. Diameter distribution analysis.

Parameters	Sample					
	CNFs 0.5/30	**CNFs 0.7/30**	**CNFs 1.0/30**	**CNFs 0.5/60**	**CNFs 0.7/1.0**	**CNFs 1.0/60**
Sample size	25	25	25	25	25	25
Mean	10.3	21.1	9.1	16.2	13.4	15.6
Maximum	15.5	79.5	22.7	47.9	40.6	58.7
Minimum	6.1	10.7	4.5	6.4	5.1	4.8
Standard deviation	2.7	14.4	3.8	10.8	6.8	13.4
Range	9.4	68.8	18.2	41.5	35.5	53.9