

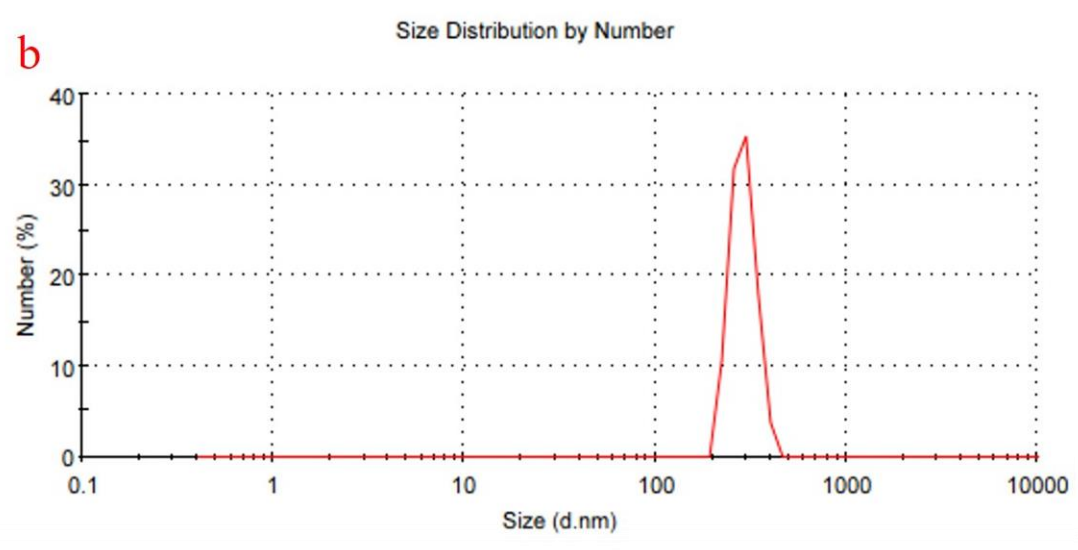
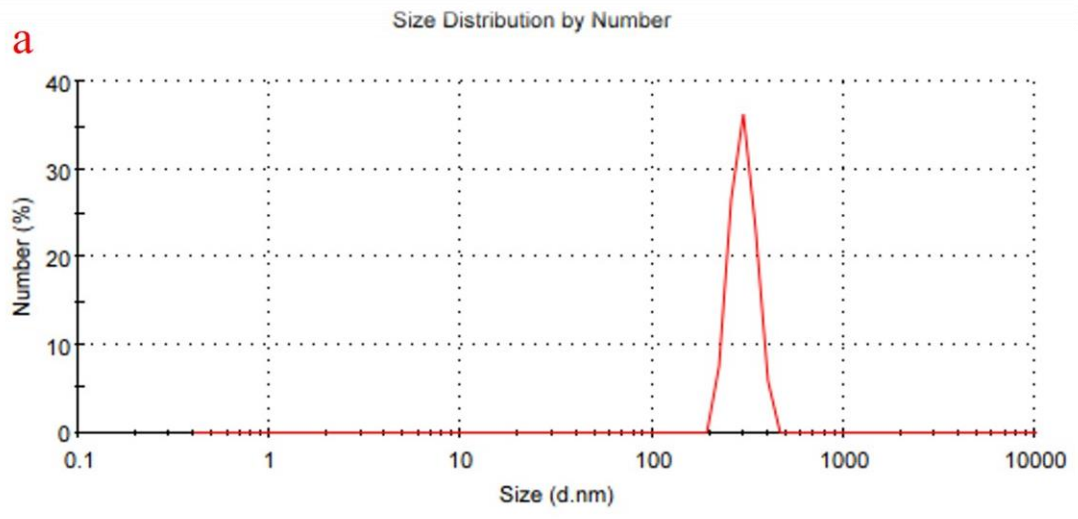
Biological Adsorption and Desorption of Anionic Congo Red Dye by Nano Composite Polymer Sheets

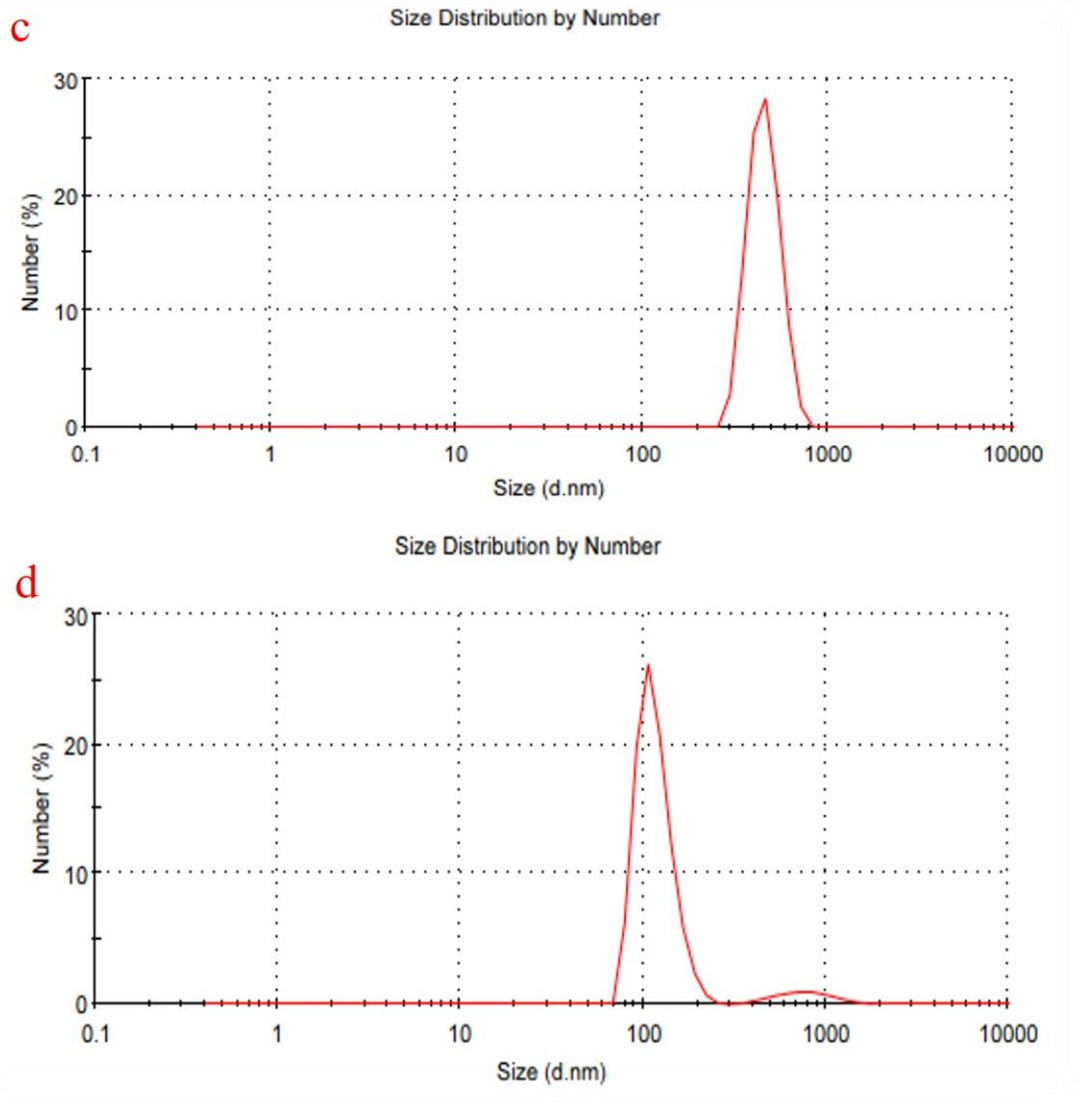
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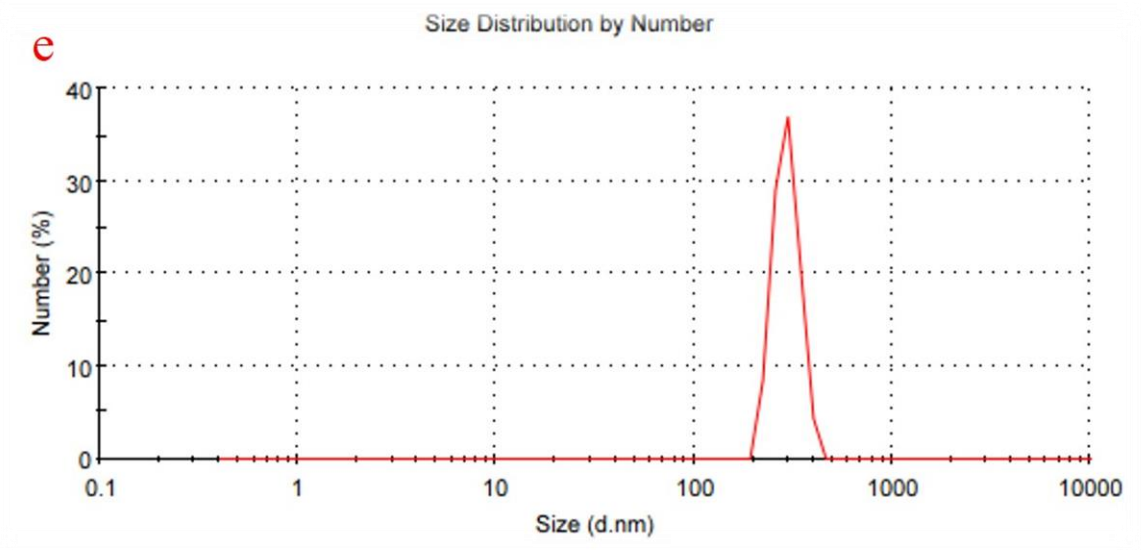
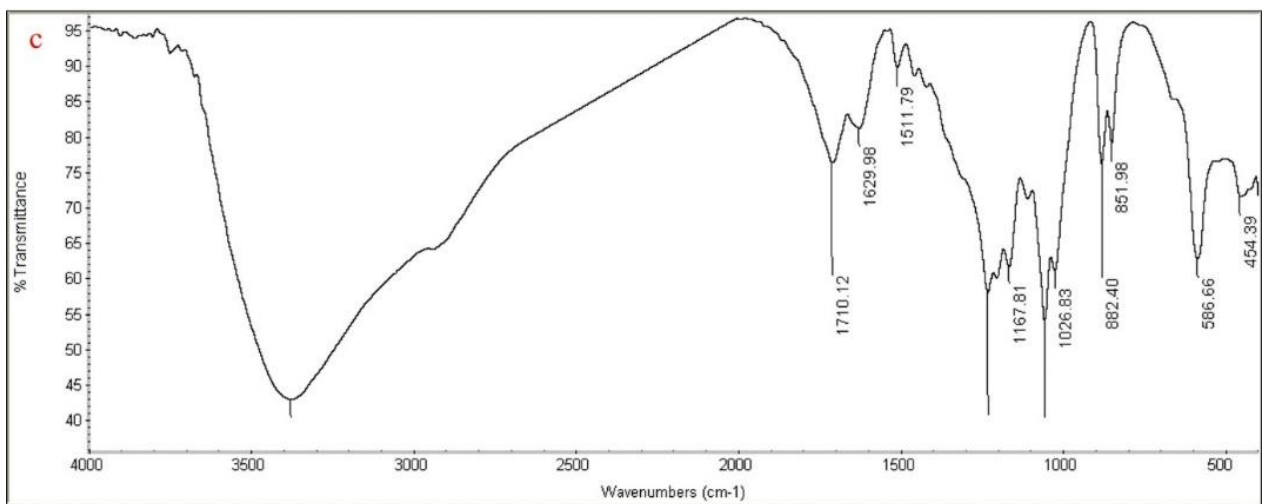
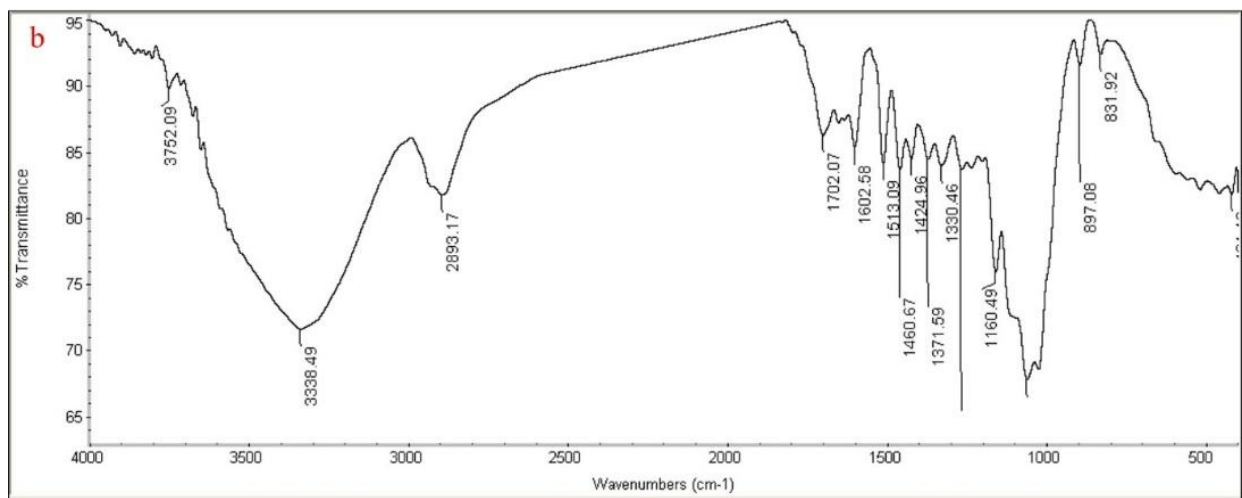
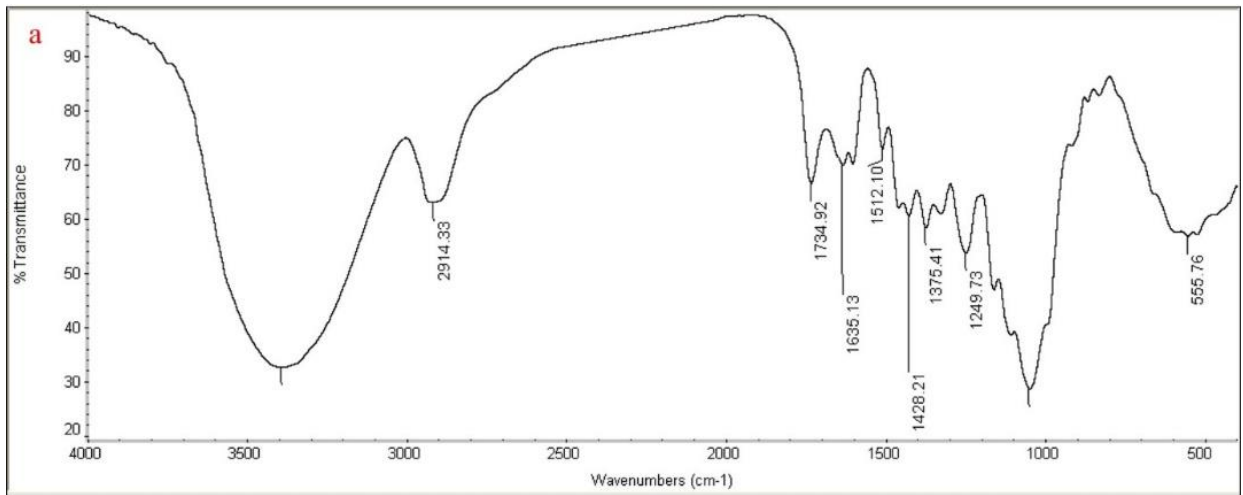


Fig. S1. The size of the ground unhydrolyzed bagasse wastes, control, 1, 2, 3 and 4 using Dynamic Light Scattering (DLS) a, b, c, d, e, respectively



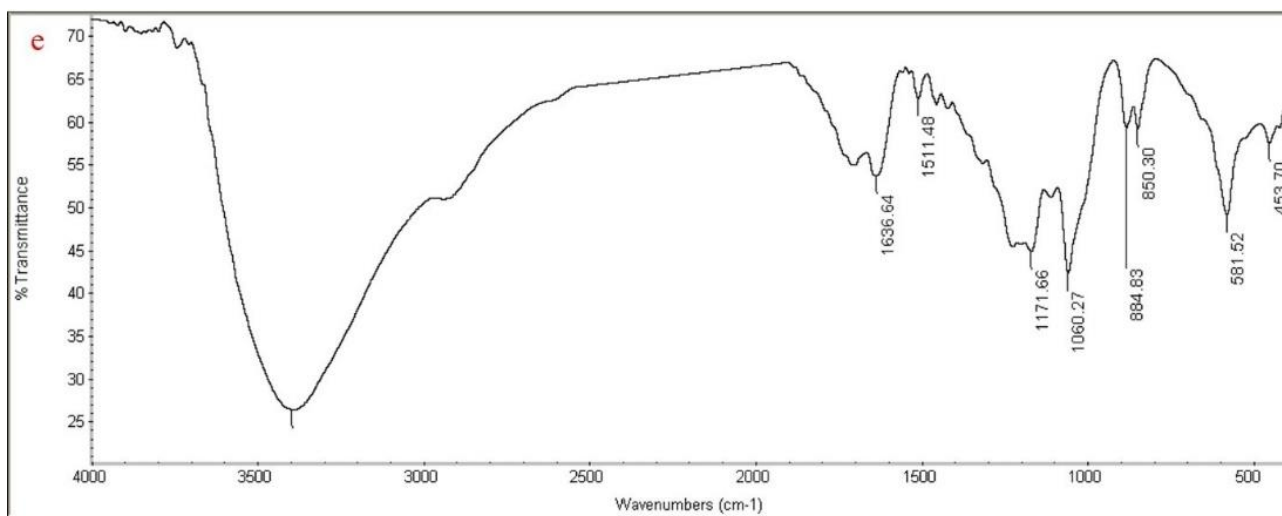
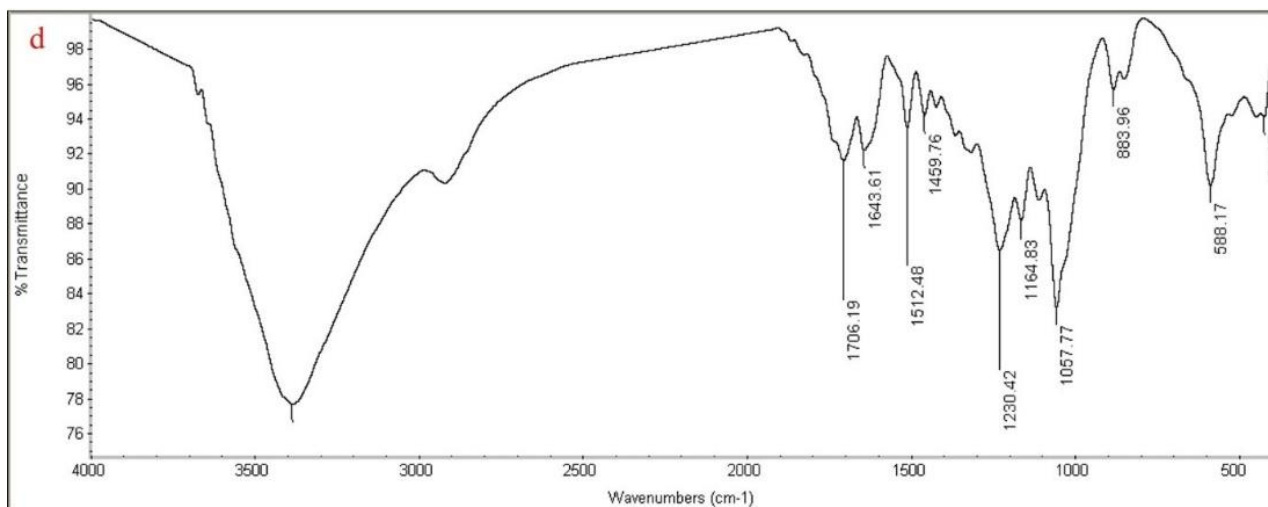


Fig. S2. FT-IR spectra of the ground unhydrolyzed bagasse wastes; control, 1, 2, 3, and 4 represented as a, b, c, d, and e, respectively.

Table S1. Low and high levels of the general full factorial design experiment for CR removal using the composite sheets

Factors	Symbol	Unit	Low	Mid	High
CR Concentration	A	Ppm	100		500
Composite sheets (Treat.)	B	-	1	3	4
Composite sheets dose	C	g/l	2		7
Contact Time	D	Min	30		240

Table S2. General full factorial design matrix for the Congo Red (CR) removal using the selected composite sheets (1, 3, and 4)

Run Order	Pt Type	Blocks	CV Conc. (ppm)	Treat	Dose (g/l)	Time (min.)	RE (%)	FITS1	RESI1
1	1	1	500	3	7	240	74.70	75.39	-0.26
2	1	1	100	3	2	30	72.96	72.96	-0.38
3	1	1	500	3	7	240	75.60	75.85	-0.24
4	1	1	100	3	2	30	72.85	73.24	-0.38
5	1	1	100	1	7	240	73.60	72.78	0.82
6	1	1	100	3	7	240	74.36	74.67	-0.30
7	1	1	100	4	7	30	73.98	73.27	0.71
8	1	1	500	1	2	240	75.30	75.1	0.19
9	1	1	500	3	7	30	74.48	74.68	-0.20
10	1	1	500	4	7	240	75.75	75.14	0.61
11	1	1	100	1	2	240	70.59	71.52	-0.92
12	1	1	100	4	2	240	72.85	72.5	0.35
13	1	1	100	3	2	240	74.11	73.4	0.71
14	1	1	500	1	7	240	76.27	76.37	-0.09
15	1	1	500	1	2	30	74.27	74.31	-0.04
16	1	1	500	4	2	240	73.69	73.87	-0.17
17	1	1	500	4	7	30	74.21	74.64	-0.42
18	1	1	500	3	2	240	74.42	74.58	-0.16
19	1	1	100	4	7	240	72.98	73.77	-0.79
20	1	1	500	1	7	30	74.51	74.57	-0.05
21	1	1	100	1	7	30	70.96	70.98	-0.01
22	1	1	100	4	2	30	72.72	73.01	-0.27
23	1	1	500	3	2	30	75.02	74.42	0.60
24	1	1	100	3	7	30	73.48	73.5	-0.01

R-sq, 90.49% R-sq (adj), 83.17% R-sq (pred), 67.57%.