

**Fabrication of eco-friendly nanofibrous membranes functionalized with
carboxymethyl- β -cyclodextrin for efficient removal of methylene blue with good
recyclability**

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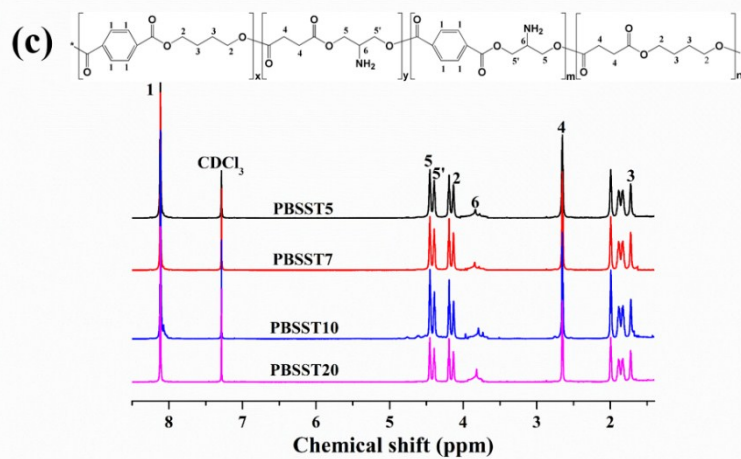
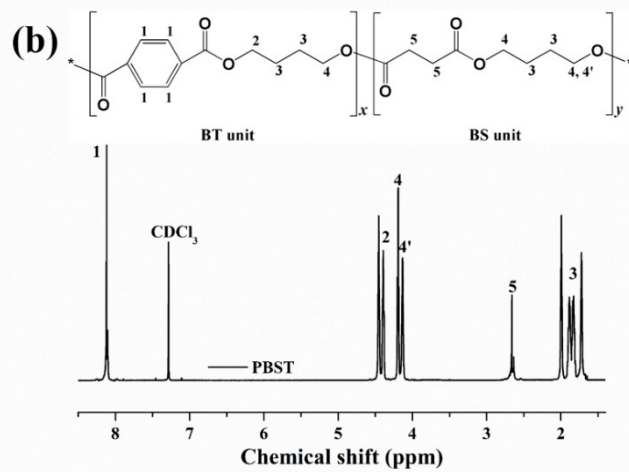
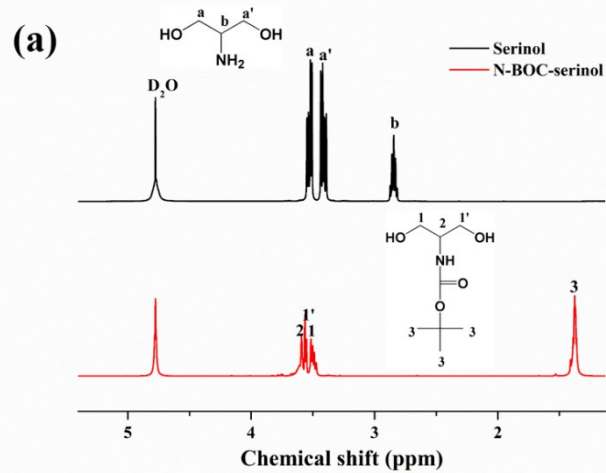
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Table S1 Average diameters and contact angles of PBST, PBSST and PBSST-*g*- β -CD nanofibrous membranes

Sample	Average diameter (nm)	Contact angle (°)
PBST	653 \pm 2	135
PBSST5	623 \pm 3	126
PBSST7	601 \pm 4	121
PBSST10	579 \pm 4	115
PBSST20	558 \pm 3	102
PBSST5- <i>g</i> - β -CD	526 \pm 2	98
PBSST7- <i>g</i> - β -CD	522 \pm 2	86
PBSST10- <i>g</i> - β -CD	486 \pm 3	69
PBSST20- <i>g</i> - β -CD	469 \pm 3	46



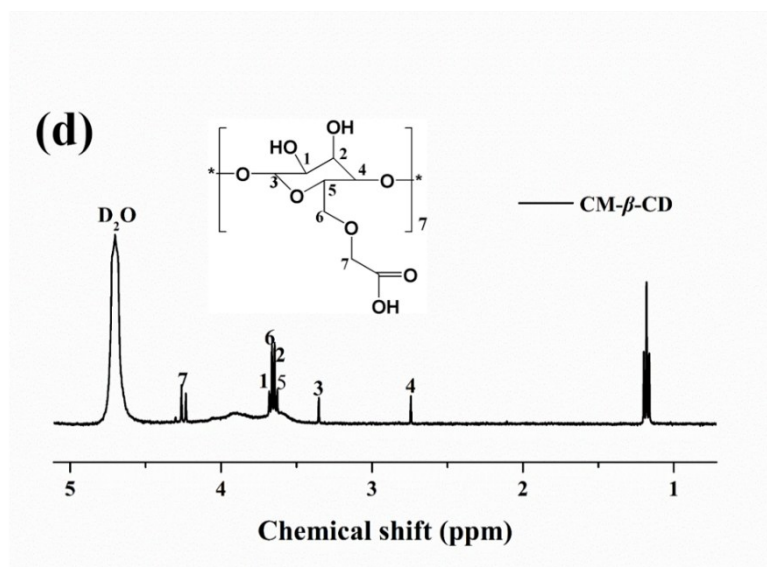


Fig. S1 ^1H NMR spectra of serinol and N-BOC-serinol (a), PBST (b), PBSST5, PBSST7, PBSST10, PBSST20 (c), CM- β -CD (d).

Table S2 Adsorption capacity of PBSST20-*g*- β -CD nanofibrous membrane to MB at different adsorption times

Time (min)	0	2	5	10	15	20	40	60	120
Maximum ^a	10	10	10	10	10	10	10	10	10
q_t (mg/g)	0	5.88	7.35	8.85	8.93	9.76	9.96	9.98	9.99
R_t (%)	0	58.8	73.5	88.5	89.3	97.6	99.6	99.8	99.9

^a The maximum adsorption capacity in theory

Table S3 Adsorption performance of PBSST20-*g*- β -CD nanofibrous membrane to MB solution with different initial concentrations

Initials concentration (mg/L)	5	10	20	40	50	100	200
Maximum ^a (mg/g)	5	10	20	40	50	100	200
C_e ^b (mg/L)	0.053	0.107	0.22	0.46	0.58	1.28	3.28
q_t (mg/g)	4.947	9.893	19.78	39.54	49.42	98.72	196.72
R_t (%)	98.94	98.93	98.90	98.85	98.84	98.72	98.36

^a The maximum adsorption capacity in theory; ^b MB solution concentration after adsorption for 12 h.

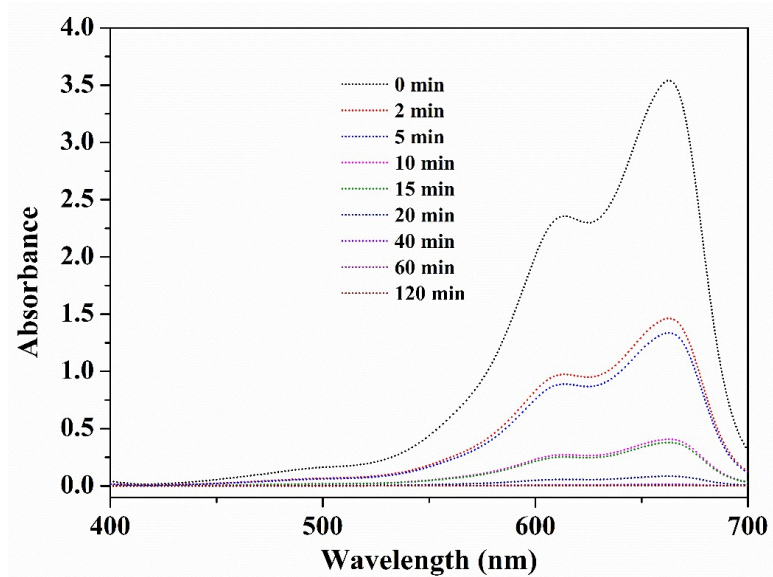


Fig. S2 UV-vis spectra of MB solution adsorbed by PBSST20-*g*-β-CD nanofibrous membrane at different time intervals.

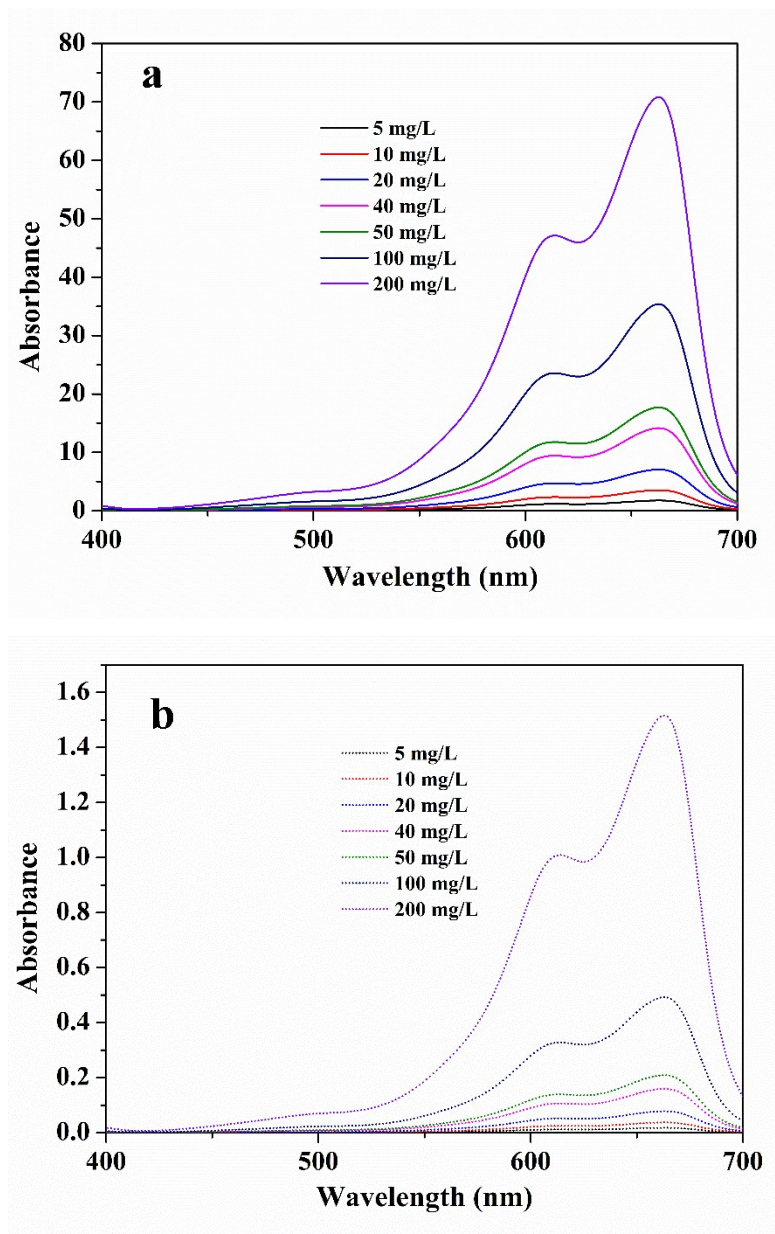


Fig. S3 UV-vis spectra of MB solution adsorbed by PBSST20-*g*- β -CD nanofibrous membrane with different initial concentrations: (a) before adsorption, (b) after adsorption for 12 h.