

Supplementary Information for

Facile fabrication of composite cellulose fibrous materials for efficient and consecutive dyeing wastewater treatment

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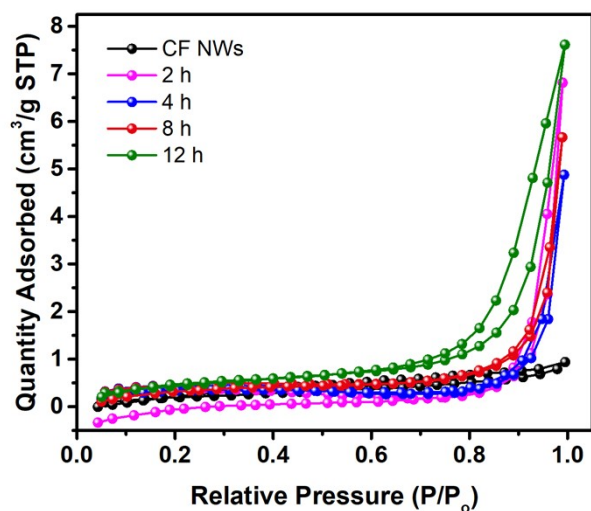


Fig. S1. N₂ adsorption-desorption isotherms of the initial CF NWs and the PDA@CF NWs obtained from different modification time ranging from 2 to 12 h (fixed DA concentration of 1.0 mg mL⁻¹).

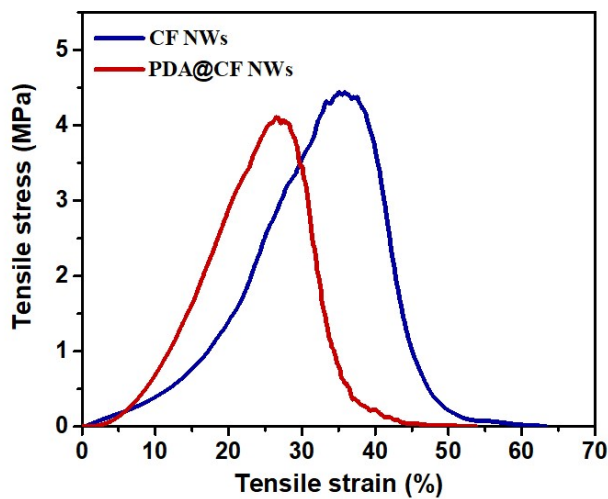


Fig. S2. Tensile strength of the initial CF NWs and the resulting PDA@CF NWs fabricated by different DA concentrations of 1.0 mg mL⁻¹ and polymerization modification time of 8 h.

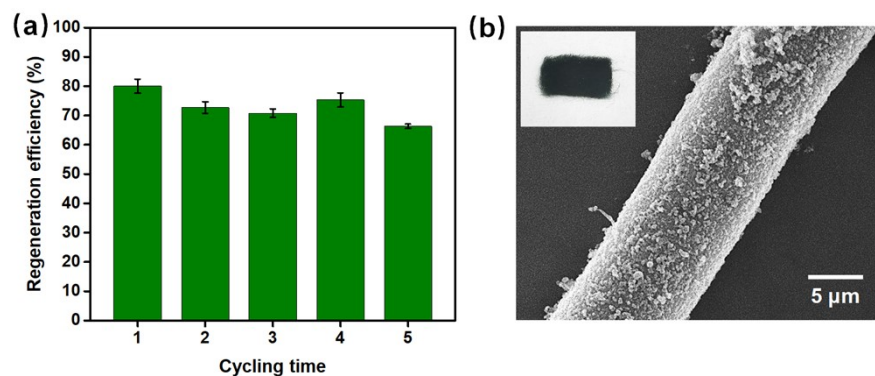


Fig. S3. (a) Regeneration efficiency of MB adsorption capacity of the PDA@CF NWs. (b) Photograph and SEM image of the PDA@CF NWs after cyclic adsorption.

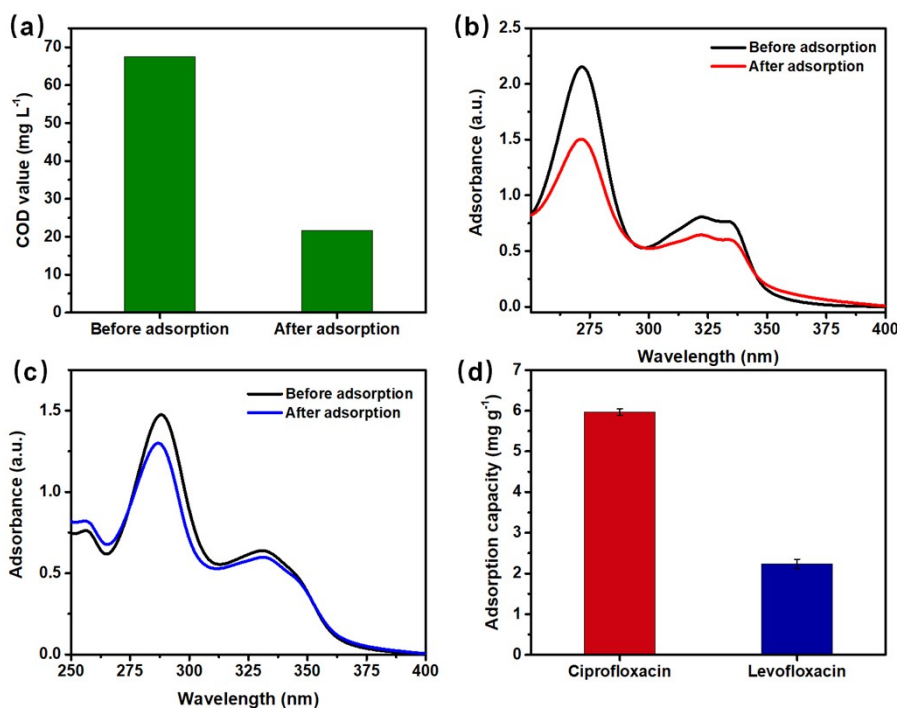


Fig. S4. (a) COD value of the MB solution before and after static adsorption by the proposed composite cellulose fibrous materials. UV-Vis spectrum of the (b) ciprofloxacin and (c) levofloxacin solution at the concentration of 20 mg L⁻¹ before and after static adsorption by PDA@CF NWs. (d) The corresponding adsorption capacity of PDA@CF NWs towards ciprofloxacin and levofloxacin.

Table S1. Textural parameters including BET surface area, BJH desorption average pore diameter, and pore volume of the CF NWs and the PDA@CF NWs obtained from different modification time (fixed DA concentration of 1.0 mg mL⁻¹).

Sample	BET surface area (m ² g ⁻¹)	Average pore diameter (nm)	Pore volume (cm ³ g ⁻¹)
CF NWs	0.841	6.515	0.0015
PDA@CF NWs-2 h	1.188	32.164	0.0105
PDA@CF NWs-4 h	1.295	30.669	0.0075
PDA@CF NWs-8 h	1.601	29.214	0.0087
PDA@CF NWs-12 h	1.671	19.469	0.0118

Table S2. Comparison of adsorption capability of the PDA@CF NWs to those of other fibrous dye adsorbents.

Substrate	Modified material	Adsorption equilibrium time (h)	Adsorption capacity (mg g ⁻¹)	Reference
Cotton	Citric acid	24	49.6	39
Lignin	5-sulfosalicylic acid	12	83.3	40
SiO ₂ /SnO ₂ NFM	/	0.5	78.6	41
Hierarchical porous ultrafine alumina fibers (HPAFs)	/	0.5	59.07	42
Polyester fibers	Glucose carbon microspheres	2.5	17.5	43
Kenaf fibre char	Hydrochloric acid	8	17.79	44
Luffa cylindrica fibers	Sodium hydroxide	25	49	45
Data palm fibers	TiO ₂ nanoparticles	2	45.08	46
Cotton fibers	Caffeic acid/chitosan	2.5	38.92	47
Cellulose nonwovens	PDA	2	90.45	This work