Supporting Information

Fluorescent aerogels based on chemical crosslinking between nanocellulose and carbon dots for optical sensor

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Table S1. CD grafting content (G_{CD}) for CNF-based aerogels calculated by UV spectrophotometric method according to Equation (1).

Sample	V_i mL	C_i mg.g^{-1}	V_r mL	Abs_r	C_r mg.g^{-1}	G_{CD} mg.g^{-1}
CNF/CD-0.5%	10	5	2000	0.04901	0.0229	67
CNF/CD-1%	10	10	2000	0.09334	0.0476	72
CNF/CD-2%	10	20	2000	0.18200	0.0971	90
CNF/CD-3%	10	30	2000	0.27049	0.1465	110
CNF/CD-3.5%	10	35	2000	0.31616	0.1720	94
CNF/CD-4%	10	40	2000	0.36142	0.1972	88

Table S2. Physical and macroscopic parameters of aerogels, including specific surface area (BET), nitrogen adsorption volume ($V_{a,\ BJH}$), nitrogen stripping volume ($V_{d,\ BJH}$), apparent density ($\rho_{aerogel}$) and calculated porosity.

Sample	BET $m^2 \cdot g^{-1}$	$V_{a,\ BJH}$ $cm^3 \cdot g^{-1}$	$V_{d,\ BJH}$ $cm^3 \cdot g^{-1}$	$\rho_{aerogel}$ $g \cdot cm^{-3}$	Porosity %
CNF	63.5	0.040	0.044	0.0209	98.6
CNF/CD-0.5%	59.8	0.039	0.046	0.0231	98.5
CNF/CD-1%	73.0	0.043	0.047	0.0232	98.5
CNF/CD-2%	84.6	0.049	0.052	0.0234	98.5
CNF/CD-3%	113.9	0.075	0.087	0.0240	98.6
CNF/CD-3.5%	102.5	0.063	0.073	0.0222	98.5
CNF/CD-4%	133.3	0.081	0.085	0.0218	98.5

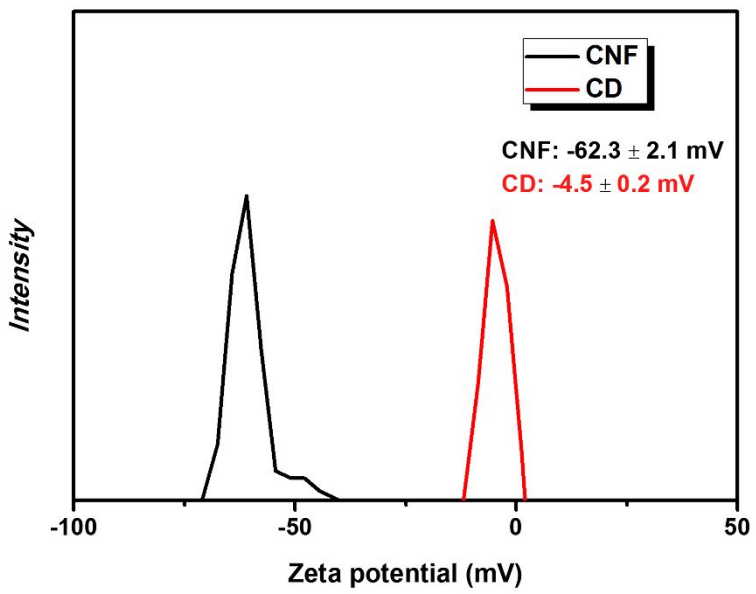

Figure S1. The ζ-potentials of CNF and amino-modified CD aqueous suspensions.

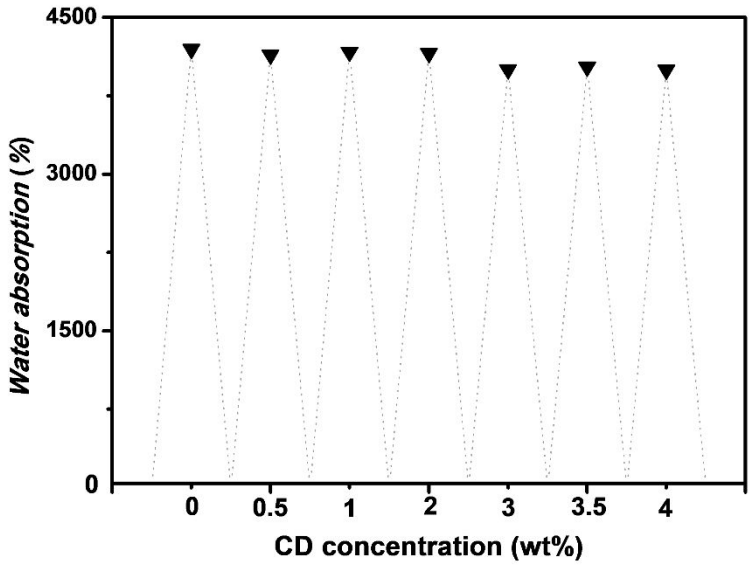

Figure S2. Water absorption for the prepared aerogels.

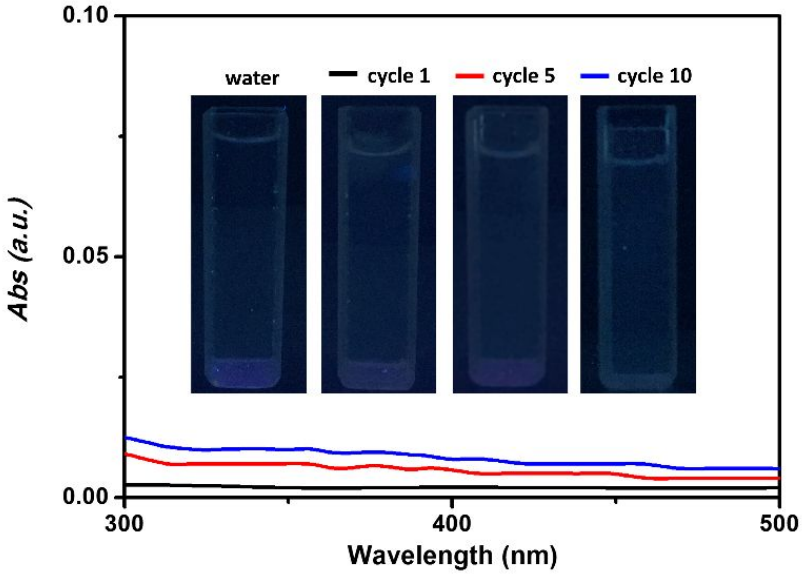

Figure S3. UV spectrum of collected residual liquids for the fluorescent aerogel CNF/CD-3% after 1, 5, 10 cycles of compression tests.

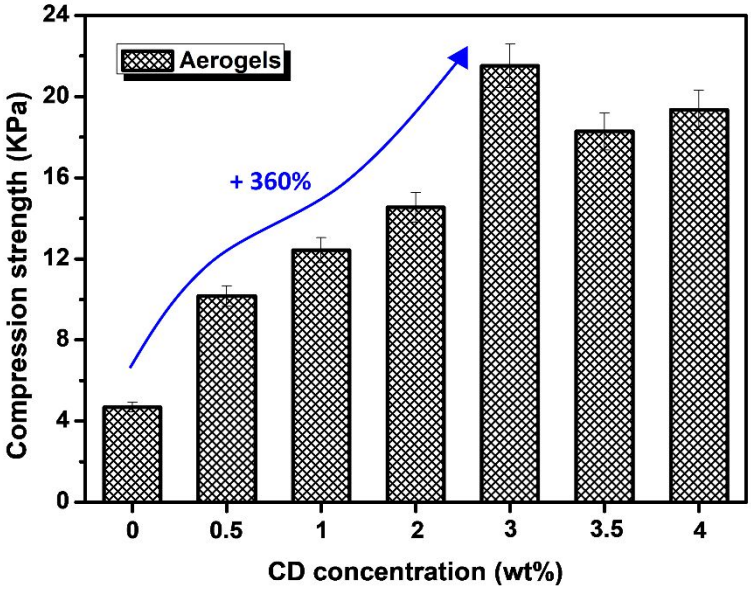

Figure S4. Compression strength for the fabricated aerogels.

Video 1: Compression test with 200 g weight and structural recovery in water for the neat CNF aerogel

Video 2: Compression test with 200 g weight and structural recovery in water for the CNF/CD-3% fluorescent aerogel

Video 3: Successive compression test experiments for the evaluation of structural recovery of the CNF/CD-3% fluorescent aerogel