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A flexible piezoresistive strain sensor based on MXene/bacterial cellulose hydrogel with high mechanical strength for real-time monitoring of human motions

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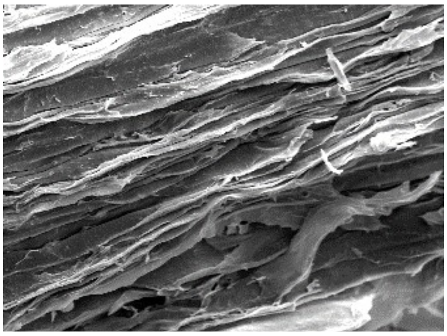

Figure S1. Cross-section SEM micrograph of rBC/MXene hydrogel after elongation break.

Figure S2. Cross-section SEM micrograph of rBC/MXene hydrogel after compression.

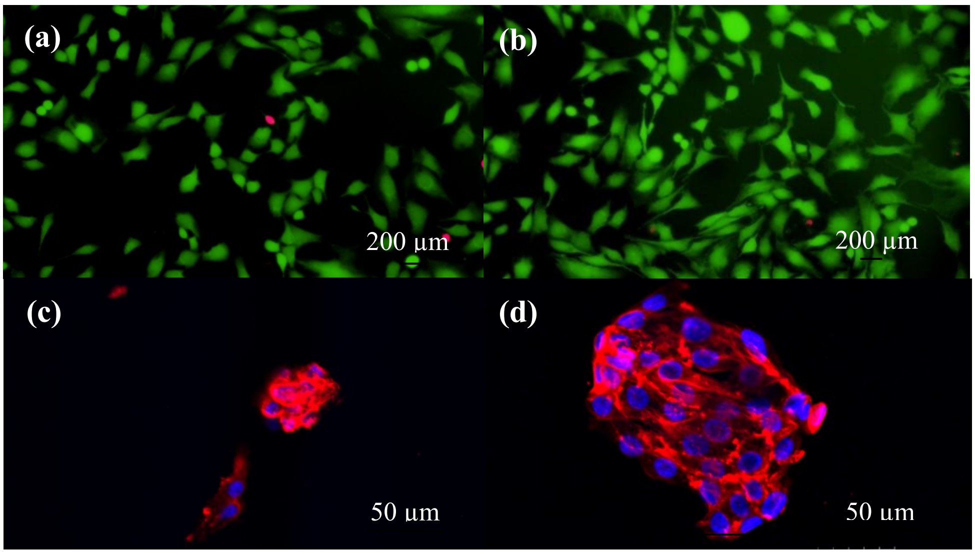

Figure S3. Fluorescence microscopic images of C2C12 cells after live/dead staining, which were seeded onto (a) rBC and (b) rBC/MXene-35 hydrogels and cultured for 24 h. Confocal microscopic images of C2C12 cells after seeding on (c) rBC and (d) rBC/MXene-35 hydrogels for 24 h. The cell skeleton and nucleus were shown in red and blue, respectively.

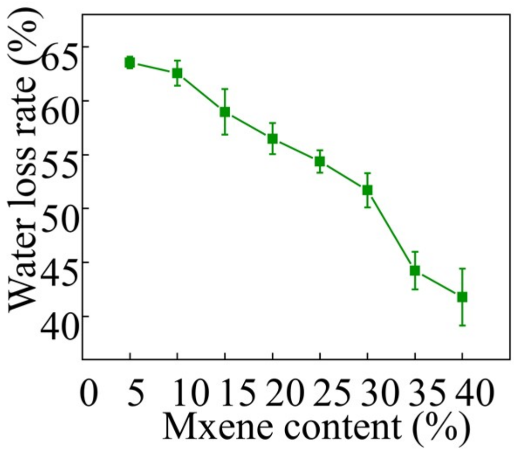

Figure S4. Water loss rate of hydrogels after stretching 100%.

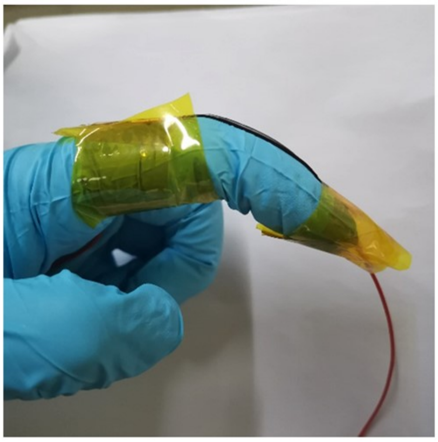

Figure S5. Physical diagram of the use of the sensor.

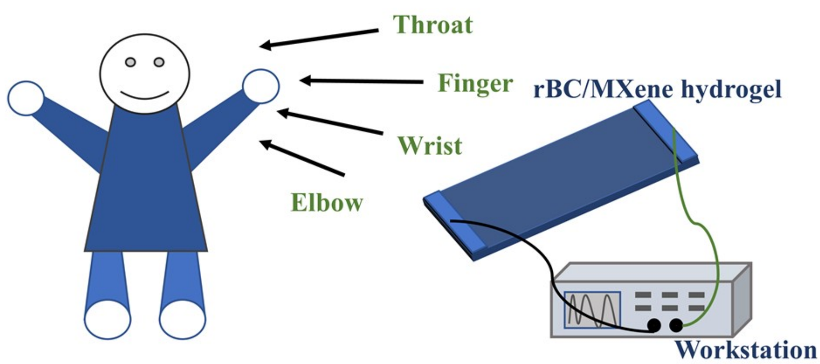

Figure S6. Schematic diagram of the use of the sensor.

Table S1. Comparing the breaking strength and GF value of this work with those from other sensors.

Number	Sensing material	Breaking Strength (MPa)	GF	Ref.
1	Ecoflex-CB	0.125	0.98	[1]
2	pDA-rGO-AgNWs-Sponges	0.0547	1.5	[2]
3	CCP	0.7	10.1	[3]
4	PVA/AgNPs	0.5377	0.75	[4]
5	PAni-PAAm-GOCS	1.81	2.56	[5]
6	PVA/MXene-Ag/sucrose	0.025	3.92	[6]
7	cotton/graphene inks	0.02	22.6	[7]
8	PVA/PEI	0.96	22	[8]
9	P(AMPS/AAm)-CS	0.111	2.011	[9]
10	RSF/$CaCl_2$/HRP	0.04	2.37	[10]
11	CMC	1.54	0.55	[11]
12	PAM/PDA	0.092	3.4	[12]
13	AMPS/APS/MBA	0.0917	0.2448	[13]
14	PAAc/SiO2-g-PAAm	0.0346	5.86	[14]
14	rBC/MXene	2.5	5.15	This work

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