

Supporting Materials

High-performance pressure sensors based on MXene@CNTs coaxial nanofiber-coated yarns for multipoint motion detection and health monitoring

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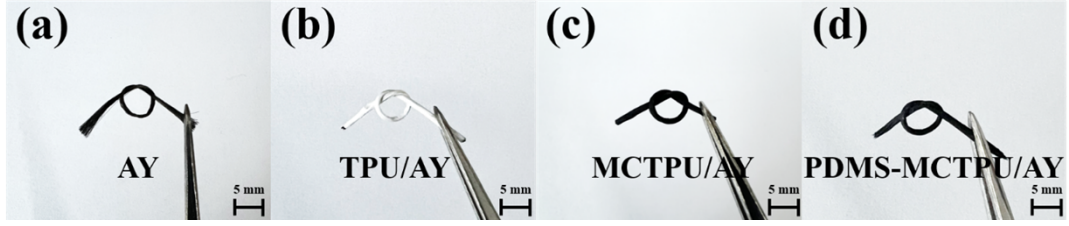


Fig.S1 Digital photographs of (a) AY, (b) TPU/AY coaxial nanofiber-coated yarn, (c) MCTPU/AY coaxial nanofiber-coated yarn, and (d) PDMS-MCTPU/AY coaxial nanofiber-coated yarn with knots.

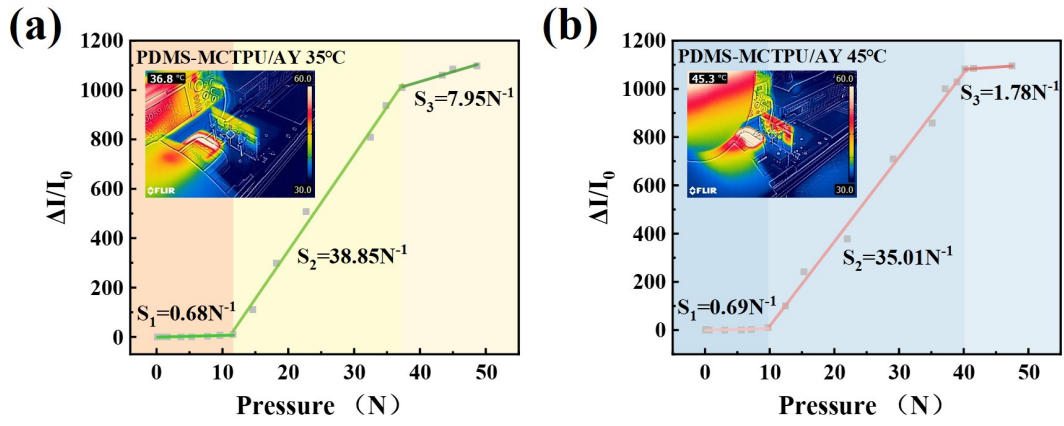


Fig.S2 The “Pressure- $\Delta I/I_0$ ” curves and infrared thermographic images of PDMS-MCTPU/AY pressure sensor at (a) 35°C and (b) 45°C.

Table. S1 Performance comparison of recently reported fabric pressure sensors

Materials	Detection limit	Sensing range	The max sensitivity	Response time	Stability	Refs.
BC@BC/CNT	N/A	0-50 N	2.92 N ⁻¹	40 ms	10000 cycles	20
Ag NWs/PU	0.005 N	0.005-1 N	16.73 N ⁻¹	18/19 ms	10000 cycles	29
CNTs/TPU/silver-plated nylon	N/A	0-5 N	84.5 N ⁻¹	2.1/2.4 ms	5000 cycles	36
GO/PAN/PPy	0.01 N	0.01-5 N	4.08 N ⁻¹	N/A	10000 cycles	54
Double-helix tubular cloth/carbon fibers	3 N	3-480 N	0.178 N ⁻¹	31/24 ms	20000 s	73
Liquid metal/spandex	N/A	0-1.65 N	12.6 N ⁻¹	N/A	N/A	74
Carbon fibers/TPU/table salt-hybrid filament	N/A	0-5 N	5.15 N ⁻¹	60/80 ms	>1000 cycles	75
PI nanofibers	0.005 N	0-8 N	1.537 N ⁻¹	87.5/192.5 ms	>10000 cycles	76
MXene/PVP	~0.6 Pa	0-294 kPa	~1.25 kPa ⁻¹	~30/15 ms	10000 cycles	77
Graphene/Cu/PVAc	1.5 Pa	0-22.5 kPa	18.56 kPa ⁻¹	23/31 ms	~1000 cycles	78
PDMS-MCTPU/AY	0.08 N	0-49.09 N	45.50 N⁻¹	35/35 ms	5000 cycles	This work

BC: Bacterial cellulose; CNT/CNTs: Carbon nanotube; PU/TPU: Polyurethane; Ag NWs: Silver Nanowire; PAN: Polyacrylonitrile; GO: Graphene oxide; PPy: Polypyrrole; PI: Polyimide; PVAc: Polyvinyl acetate; PDMS: Polydimethylsiloxane.

* In this work, the sensing area (interlace point of two crossed PDMS-MCTPU/AY) is difficult to calculate directly and accurately. Consequently, “N” is adopted to characterize the pressure here instead of “Pa” or “MPa”.

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