Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

A broad range and piezoresistive flexible pressure sensor based on carbon nanotube network dip-coated porous elastomer sponge

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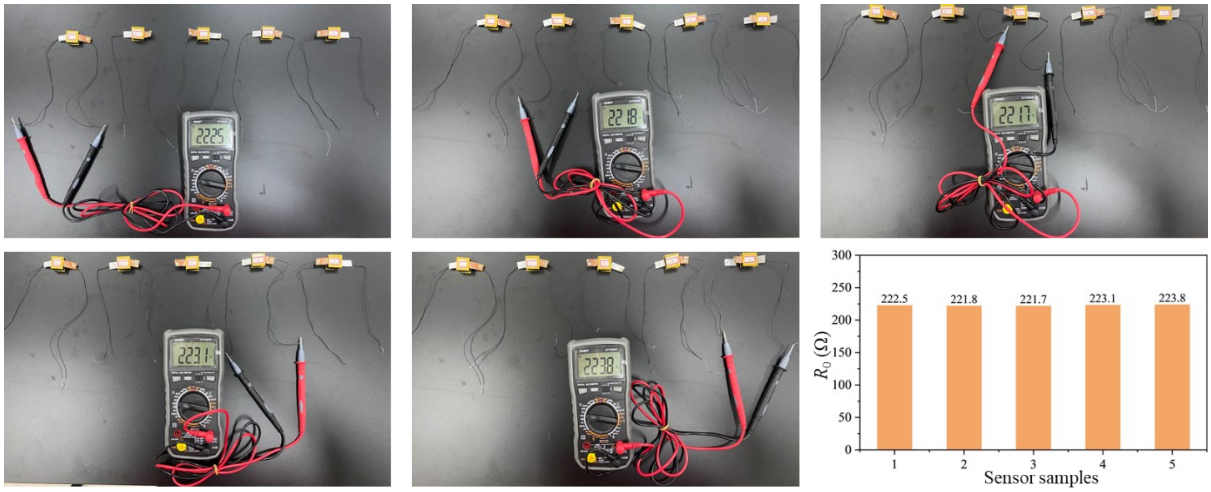

Fig. S1. The initial resistances (R_0) of the as-prepared 5 sensor samples.

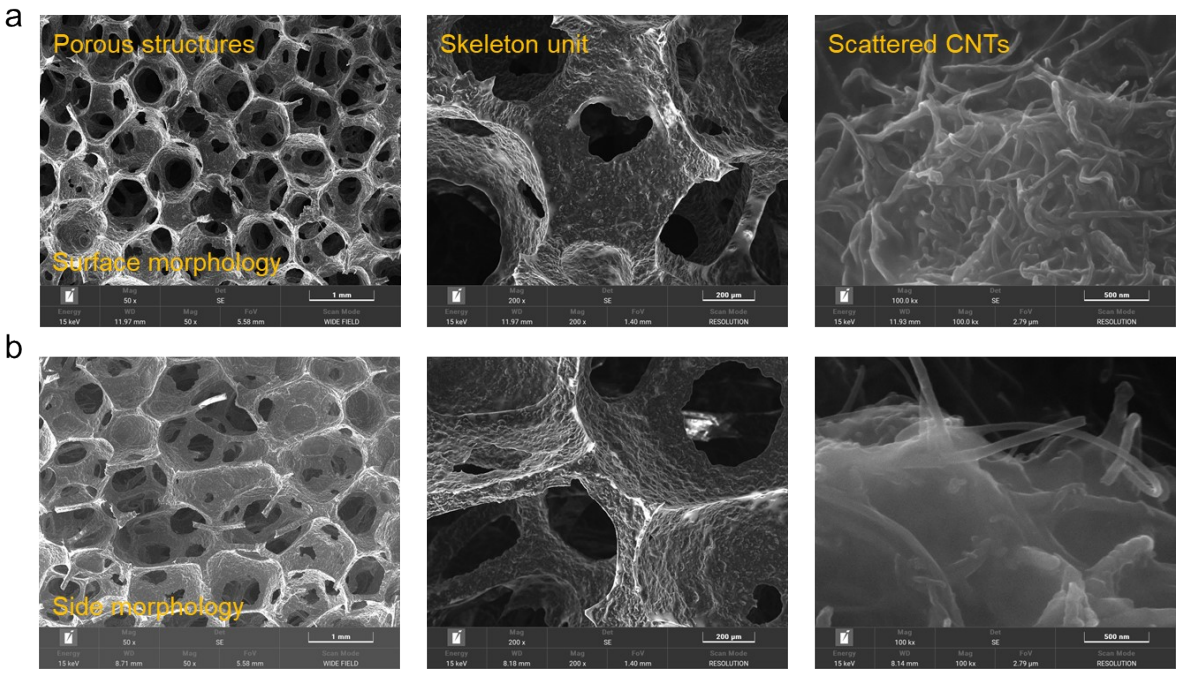

Fig. S2. a) SEM images of the surface morphology of the pressure sensor. b) SEM images of the side morphology of the pressure sensor.

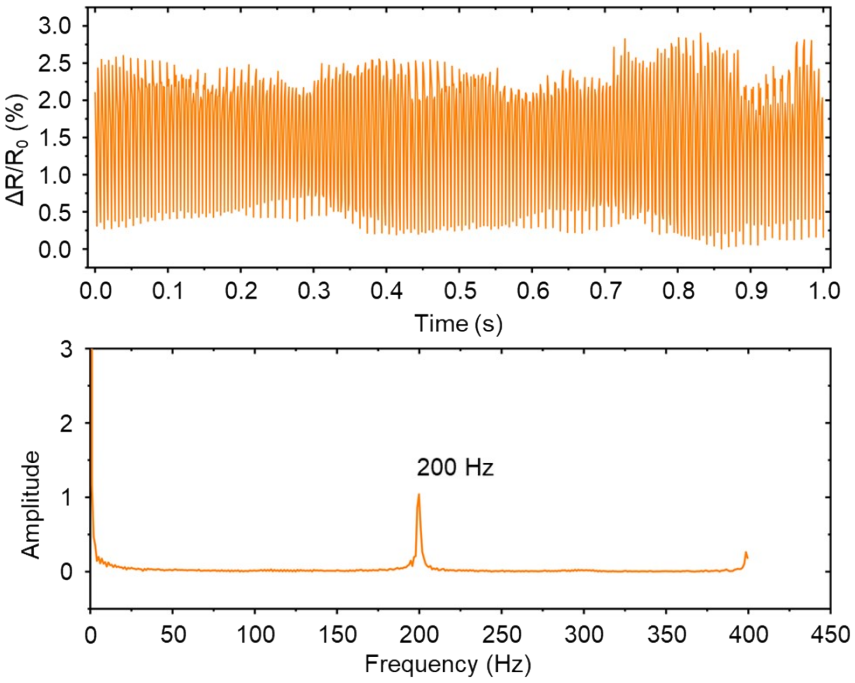

Fig. S3. The response of the sensor under an applied pressure with a frequency load of 200 Hz, and FFT result according to the response signals.

Supplementary Tables

Table S1 Comparison of the properties of the sponge-based pressure sensor in the references and that in our work

Materials	Methods	Sensor types	Sensitivity [kPa^{-1}]	Detection limit [Pa]	Working range [kPa]	Response and recovery time [ms]	Stability	Ref
PET-ITO/PDMS	Physical foaming	Capacitive	0.796	4	25	65	1000	[1]
Melamine foam/MWCNTs/MXene	Soaking	Resistant	0.339	/	180	180/140	1150	[2]
Al/PVC/PDMS	Gas evaporation	Capacitive	0.375	/	230	190	50	[3]
Graphene/PDMS	Sugar dissolving & Dip-coating	Capacitive	0.137	50	12	/	100	[4]
Carbon ink/melamine	Dip-coating	Resistant	0.056	30	31.36	100/100	2000	[5]
Carbon ink/Melamine foam	Dip-coating	Resistant	0.62	/	150	30/55	2500	[6]
MWCNTs/PDMS	Gas evaporation	Capacitive	0.19	/	300	180	35	[7]
AgNW/CF/PDMS	Sugar dissolving	Capacitive	0.161	/	200	/	6000	[8]
MXene/rGO/PDMS	Freeze-drying	Resistant	3.75	1.5	28	20/40	2000	[9]
AgNP/PDMS	NaCl dissolving	Resistant	0.41	25	120	30	1500	[10]
Graphene/styrene-butadiene rubber	Dip-coating	Resistant	1.05	/	150	/	3000	[11]
MXene/PANI	Hydrazine-induced foaming	Resistant	690.91	/	19.12	106/95	10000	[12]
MWCNT/PU	**Dip coating**	**Resistant**	**0.00125**	**150**	**350**	**401/473**	**5000**	**This work**

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