Electronic Supplementary Material (ESI) for Dalton Transactions.

Support Information

Dual-module co-regulated stable pressure sensor for human activity monitoring

Xiang Li [a, b], Wanzhihan Zhang [a], Lanzhen Nie [a], Xiaohui Zhao [a*], Xiaoting Li [b*], Wenming Zhang [a*]

[a] *Province-Ministry Co-construction Collaborative Innovation Center of Hebei Photovoltaic Technology, College of Physics Science and Technology, Hebei University, Baoding 071002, China.*

[b] *National & Local Joint Engineering Research Center of Metrology Instrument and System, College of Quality and Technical Supervision, Hebei University, Baoding, 071002, China.*

Corresponding author at:

E-mail: xhzhao123@163.com (X. Zhao), lxt@hbu.edu.cn (X. Li), wmzhanghbu@126.com (W. Zhang)

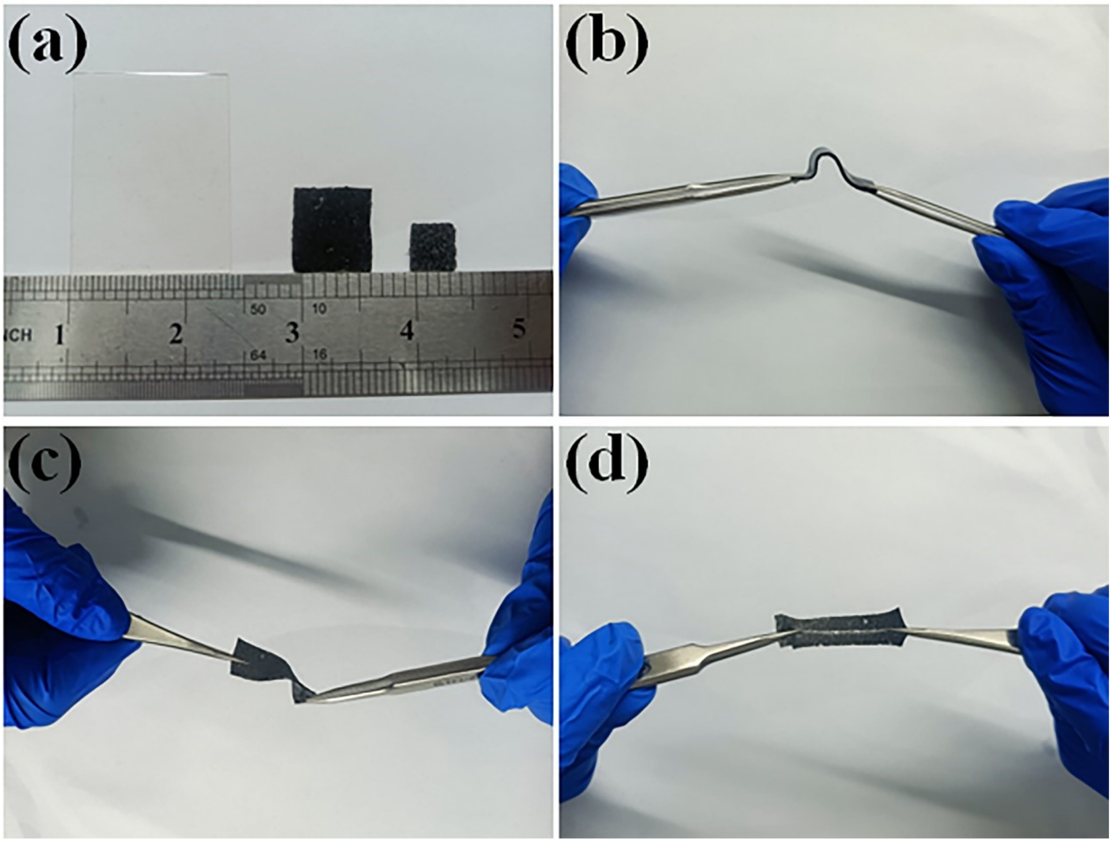

Fig. S1 (a) Comparison of photos of pure PDMS, PDMS with doped carbon nanotubes and PDMS made by double template method. (b) Photo of sensor bending (c) Photo of sensor twisting (d) Photo of sensor stretching.

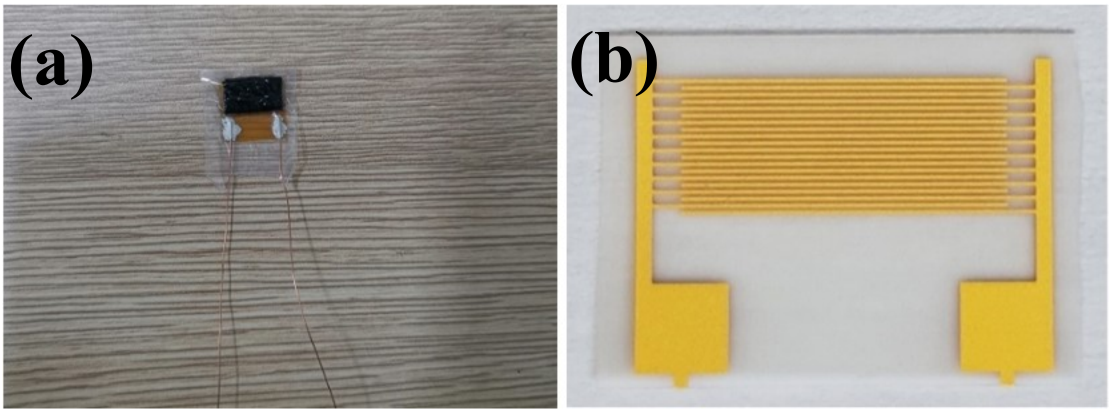

Fig. S2 (a) Picture of the sensor after assembly (b) Picture of interdigital electrode.

Fig. S3 Sensor performance test photo.

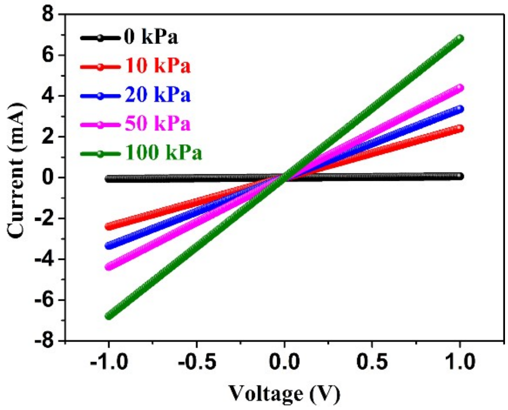

Fig. S4 The sensor device's current and voltage (I−V) property with pressure and non-pressure. The linear characteristic of the I-V curve with voltage between −1 and 1 V show that the sensor follows the Ohm's law and that the conductivity (or sensitivity) of the pressure sensor does not rely on the operating voltage.

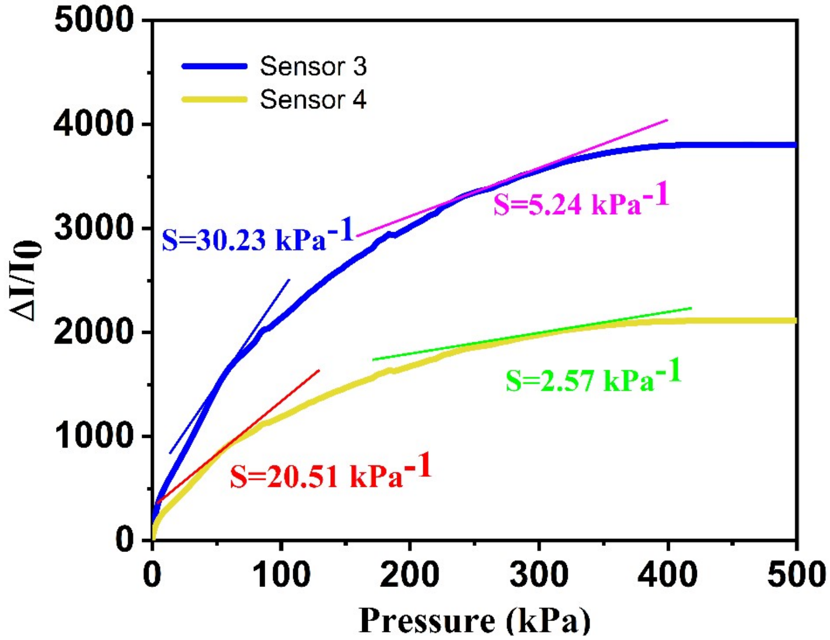

Fig. S5 Sensitivity comparison of sensors made with and without salt templates.

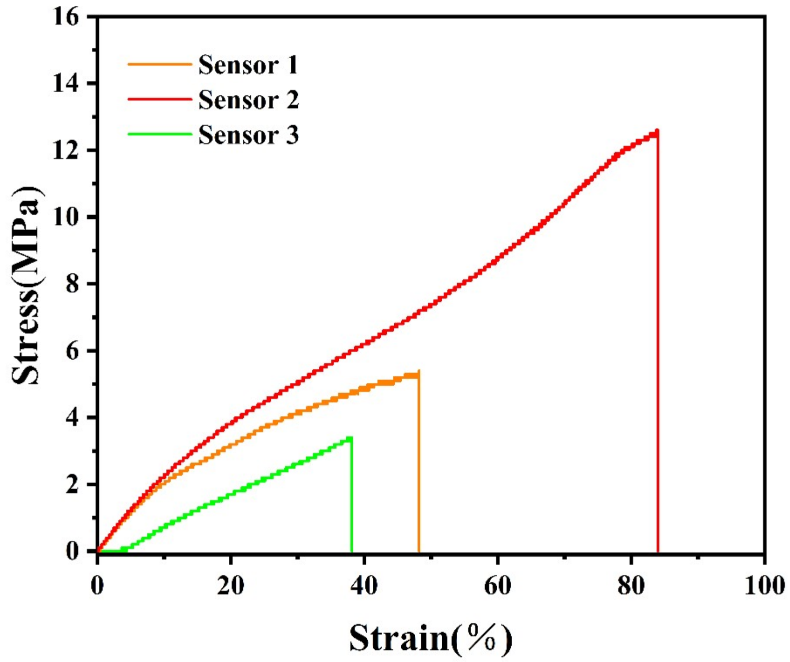

Fig. S6 Comparison of stress-strain curves for sensors fabricated using the template method and the non-template method.

Fig. S7 The morphology comparison of the sensor under different pressures. (a) The initial state of the flexible sensor. (b) Deformation picture of the pressure sensor when pressure is applied. (c) Deformation picture of the pressure sensor when large pressure is applied.

Table S1. Summary of performance of flexible pressure sensor reported in the literature.

Materials	Structure /Microstructure	Sensitivity(kPa^{-1})	Detection range (kPa)	Ref
AgNWs/NCP	Sandwich structure	1.5	30.2	[1]
ZIF-67@CD	Sandwich structure	3.1	470	[2]
CB/MXene/SR	Biomimetic structure	2.18	1700	[3]
AgNWs/PDMS	Wrinkled surface	2.588	20	[4]
microspheres /sandpaper	Random pore structure	11.02	30	[5]
rGO /MXene	Hierarchical micro-spine's structure	-	70	[6]
AgNWs@PDMS	Micro-convex structure	0.78	20	[7]
MXene	Porous structure	1.52	100	[8]
rGO / PDMS	Micro-pyramid structure	1.71	0.225	[9]
PANI/PDMS	Hollow microstructure	0.641	60	[10]
CFs/ CNTs/ PDMS	Interwoven structure	2.02	50.2	[11]
CNTs/ PDMS /CB	Porous microstructure	58.33	400	This work

Supplementary References

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