Electronic Supplementary Information

A do-it-yourself approach to achieving a flexible pressure sensor using daily available materials

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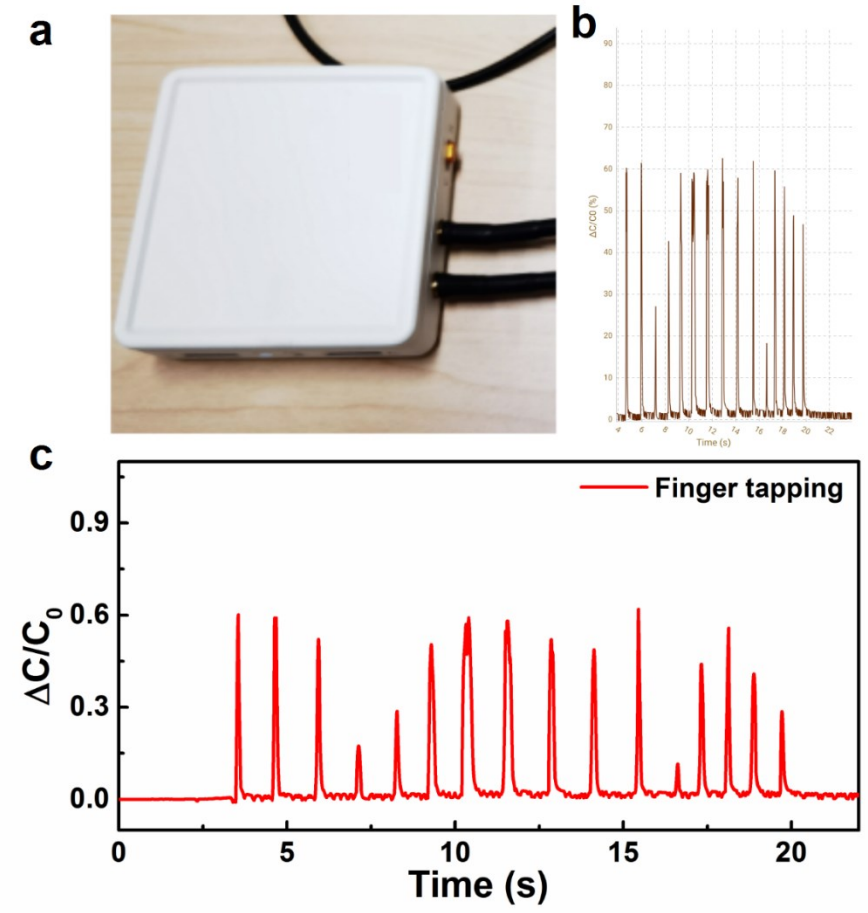

Fig. S1 (a) Optical photograph of the capacitance tester with Bluetooth. (b) Screen capture of real-time response curve to finger tapping at different pressures. (c) Enlarged view of (b).

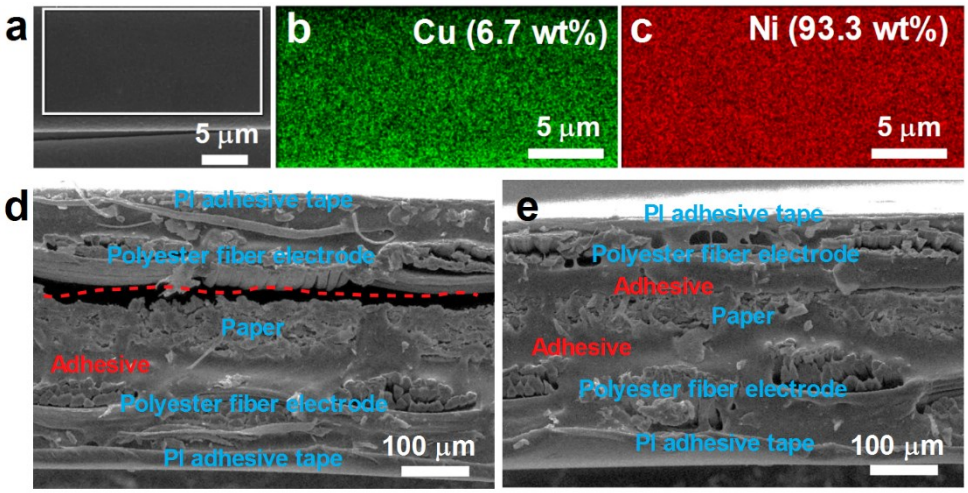

Fig. S2 (a) Surface SEM images of the polyester conductive tape at high magnification. Selected SEM elemental mappings of (b) Cu and (c) Ni. Cross-section SEM images of the (d) sensor S1 and (e) sensor S0.

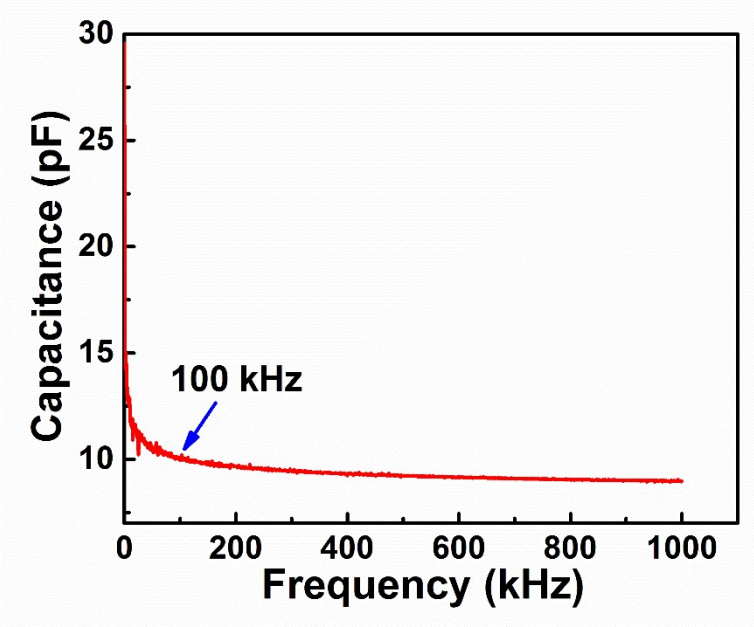

Fig. S3 Frequency dependence of sensor capacitance.

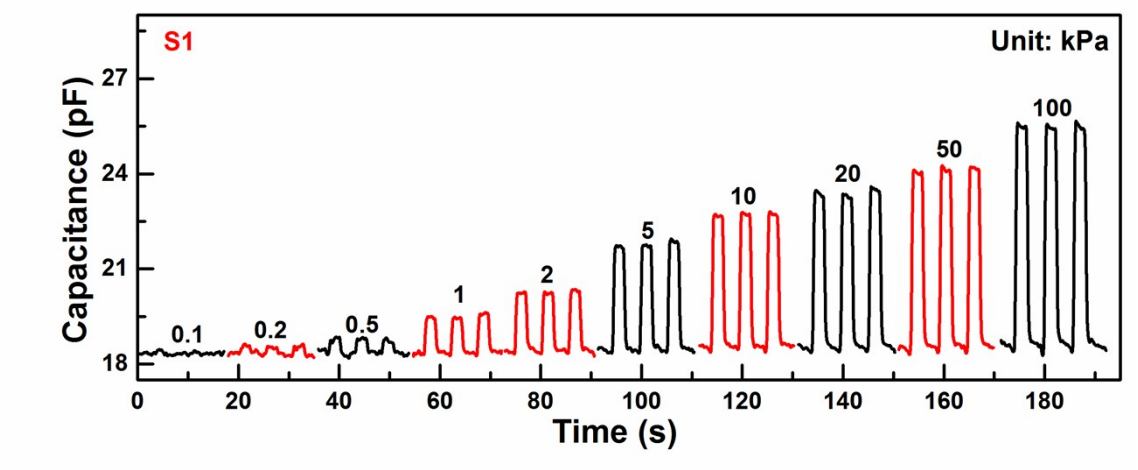

Fig. S4 Response and recovery curves of the sensor S1 to increased pressures (0.1−100 kPa). The capacitance of the sensor S1 without loading pressure is about 18.4 pF.

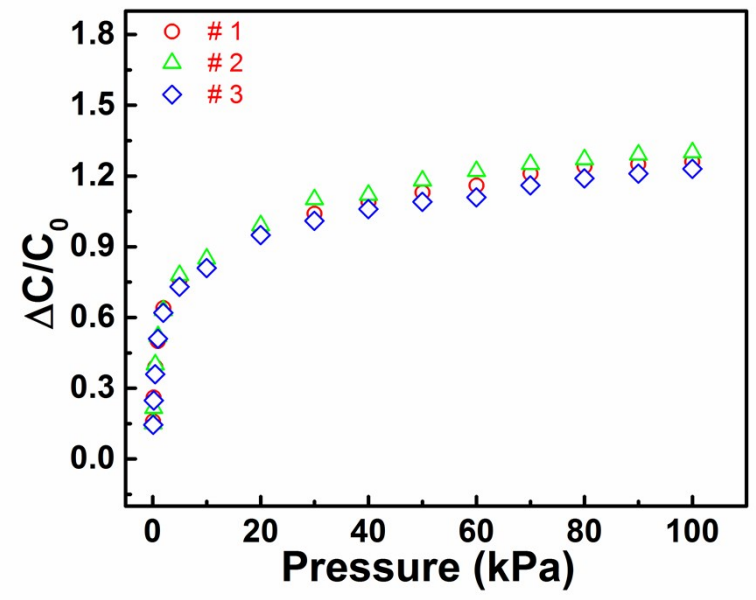

Fig. S5 Response results of three different sensors S2 (#1, #2, #3) based on the same fabrication method.

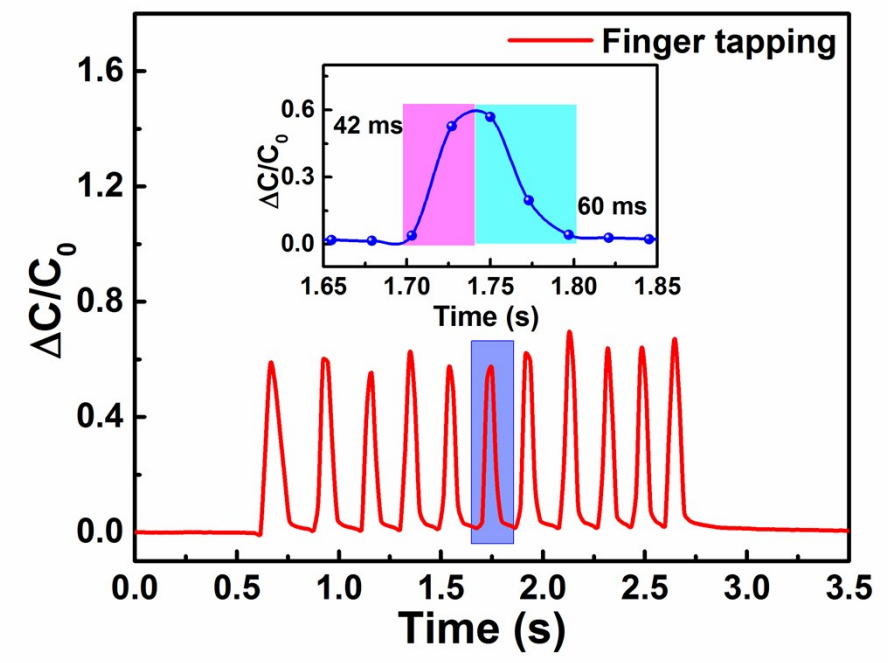

Fig. S6 Response curve to finger tapping at a fast speed, and the inset is the enlarged response and recovery curve.

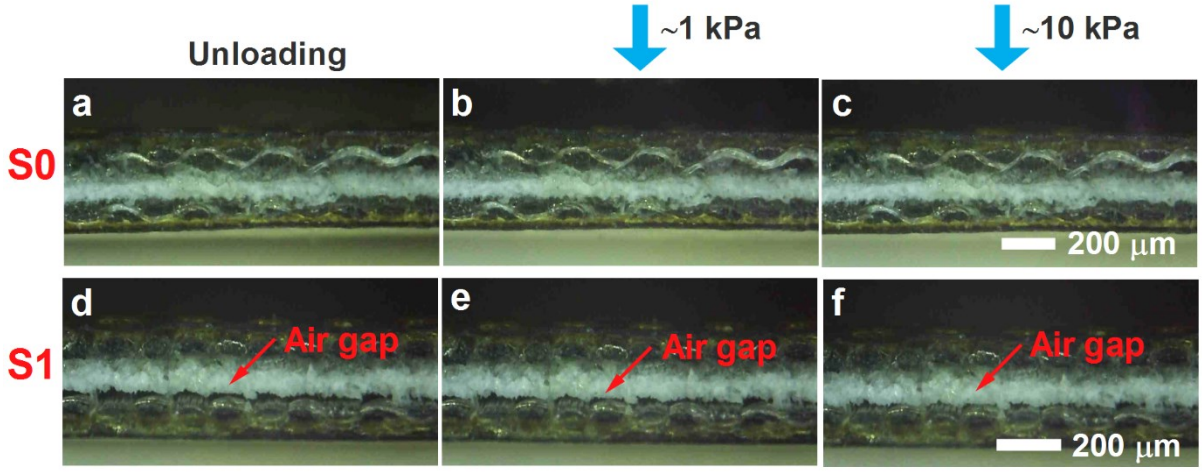

Fig. S7 Optical photographs of the sensor S0 and S1 at different pressures (unloading, 1 kPa, and 10 kPa).

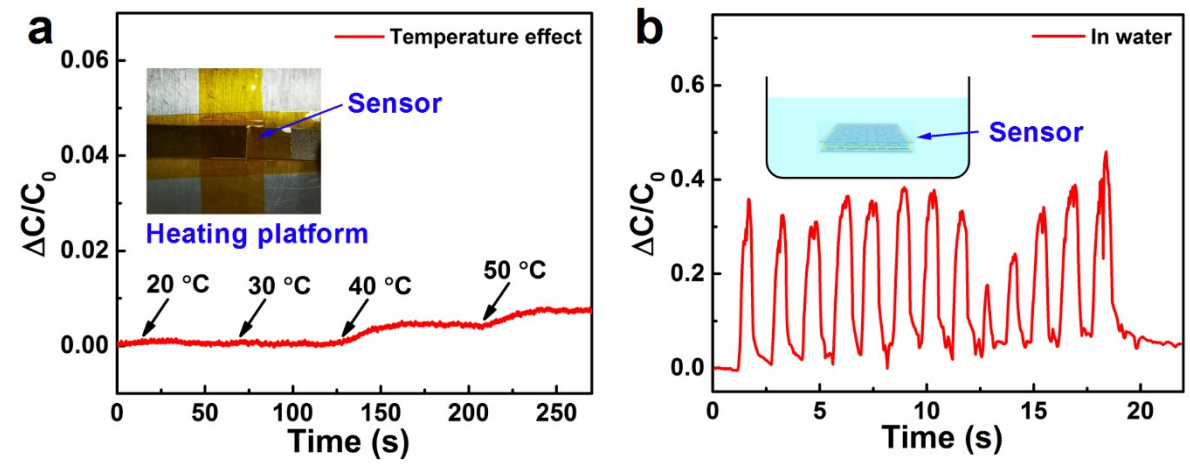

Fig. S8 (a) Real-time response of the sensor S2 to the increased temperatures. (b) Response and recovery curves of the sensor S2 to different finger presses in water.

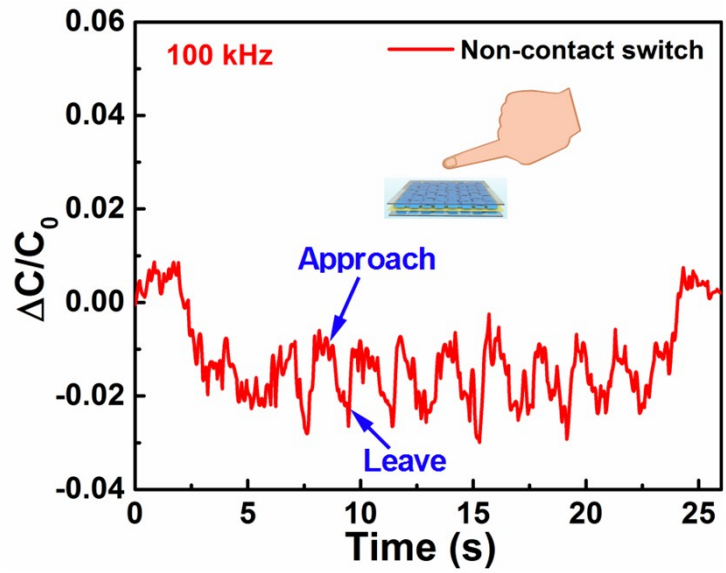

Fig. S9 Non-contact response at 100 kHz.

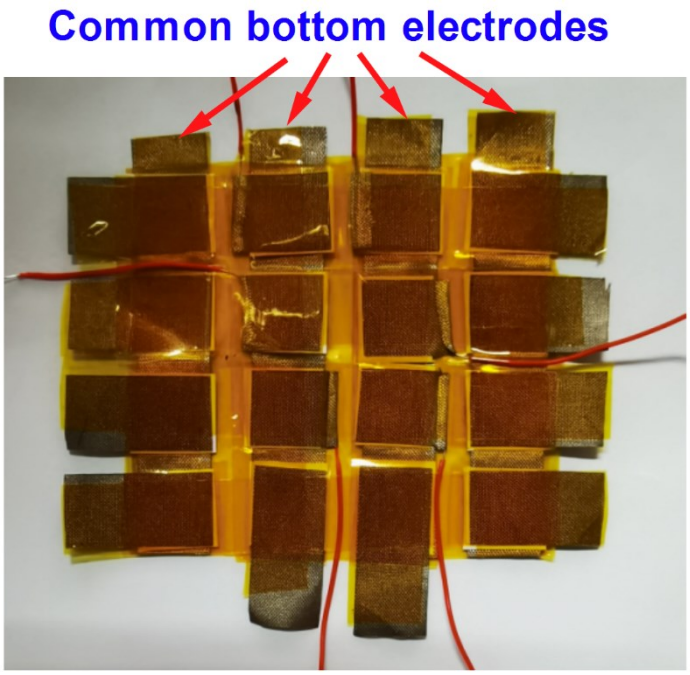

Fig. S10 Optical photograph of the pressure sensor array (3×3).

Supplementary video captions

Fabricating process of the PB pressure sensor (Video S1).

Real-time change of the cross section of sensor S1 under pressure and pressure relief (Video S2).

Response to different finger pressures in water environment (Video S3).

Monitoring nasal respiration (Video S4).

Response under the different walking steps (Video S5).

Non-contact response to finger at 8 MHz (Video S6).

Anti-interference test of the pressure sensor array (Video S7).