

Table S1. Comparison of the Au strain sensor with the recently reported flexible strain sensor.

	Name	Sensitivity	Detection range	Size	Application	Reference
1	Au strain sensor	Gauge factor=4.1	0-20% strain	5 mm × 2 mm × 6.2 μm	Pulse rate recording, walking motion detection, human-machine interface.	This work
2	Wire-shaped sensor	Gauge factor=8.7	0–10% strain	0.24 mm × 0.24 mm × 40 mm	Finger motion sensing and blood pulse monitoring.	[51]
3	Polymer nanocomposite-based flexible strain sensor	Gauge factor=10	0–35% strain	30 mm × 10 mm	Human-machine interface.	[52]
4	Stretchable strain sensor	Gauge factor=1.25	0–120% strain	90 mm × 5 mm	Human-activity monitoring and recognition	[53]
5	Fabric-based strain sensors	Gauge factor=2.49	0–80% strain	40 mm × 10 mm	Finger bending detection	[54]
6	Flexible multifunctional piezoresistive sensor	Gauge factor=10	0–25% strain	40 mm × 10 mm × 0.3 mm	Human-Activity monitoring	[55]
7	Nickel-coated cotton fabrics strain sensor	Gauge factor=18	0–14% strain	20 mm × 10 mm	Finger bending detection	[56]

Table S2. Availability of the sensor mounting on a male volunteer's different body part.

	Body position	Max. deformation	Elongation rate (%)	Sensor availability on the position
1	Finger joint	Bending 140°	80	No
2	Wrist	Bending 90°	10	Yes
3	Forearm	Twisting 20°	3.3	Yes
4	Back of the hand	Fist clenching	11.4	Yes
5	Elbow	Bending 115°	76.3	No
6	Knee	Bending 60°	36	No
7	Chest	Clamping the arm	5.9	Yes
8	Tummy	Stretching 30°	5.7	Yes
10	Upper back	Bending over 90°	9.5	Yes
11	Lower back	Bending over 90°	8	Yes
12	Waist	Turning around 90°	9.7	Yes
13	Neck	Stretching the neck	6.4	Yes
14	Shoulder	Stretching the shoulder	14.3	Yes
15	Thigh	Bending knee 60°	4.2	Yes
16	Calf	Stretching the calf	2.2	Yes
17	Ankle	Bending ankle 30°	7.5	Yes
18	Instep	Stretching the instep	7.5	Yes

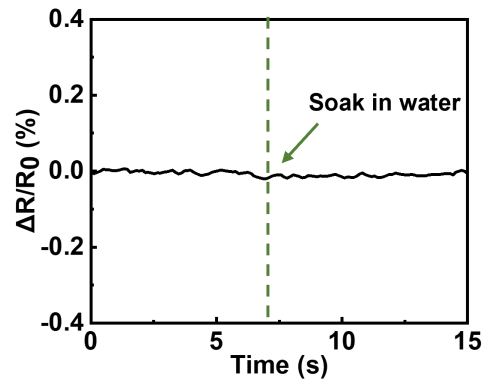


Fig. S1: The electrical characteristics of the strain sensor before and after soaking in a watery environment.



Movie. S1. Strain sensors mounted on the back of a hand and undergo mechanical deformations and rubbing.