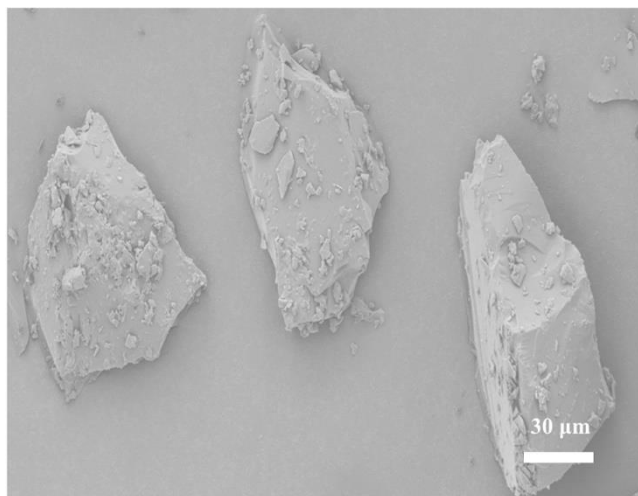
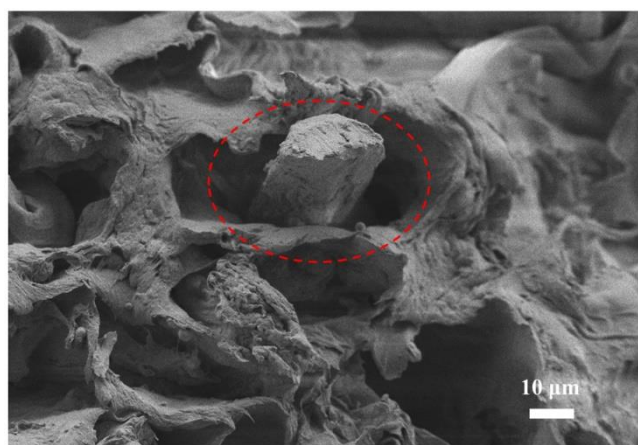


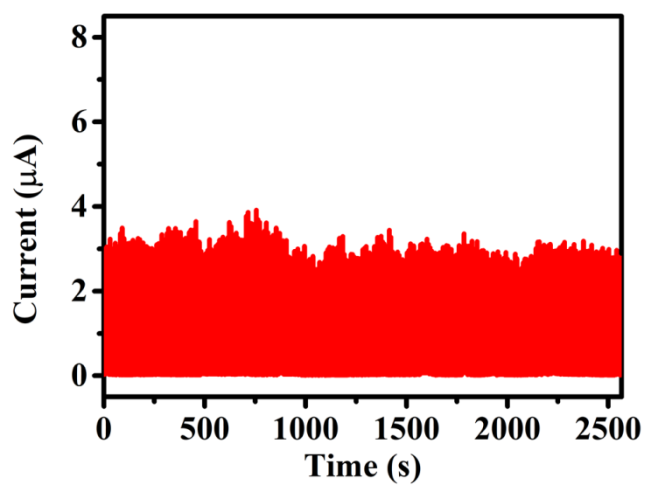
## Supporting Information



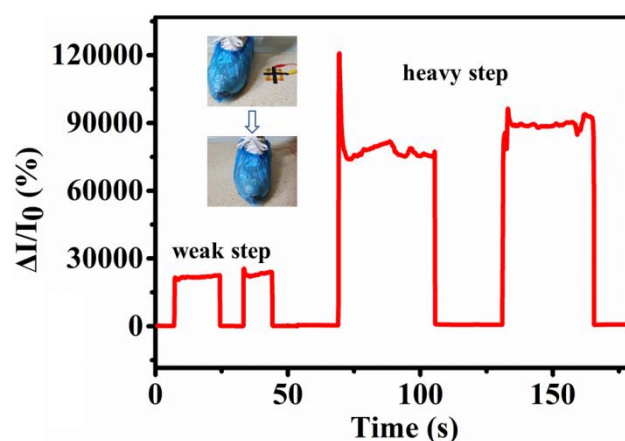
**Figure S1** SEM image of the commercial rosin particles.



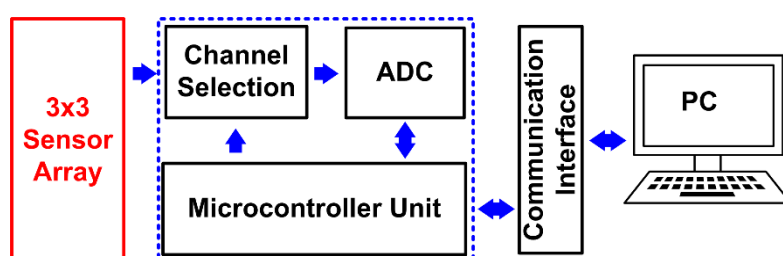
**Figure S2** Cross-sectional SEM image of hydrogel C.



**Figure S3** Stability of the sensor with hydrogel B at 20 kPa for 500 cycles.



**Figure S4.** Pressure signals when a foot steps on and steps off.



**Figure S5.** A schematic diagram of a sensor array with a signal management circuit system.

**Table S1.** Response time, detection limit, and durability of our sensor in comparison with other piezoresistive sensors based on hydrogels as reported in references.

	Response time	Detection limit	Durability
This work	263 ms	100 Pa	500 cycles
LBG-based hydrogels with double-rough surface <sup>1</sup>	356 ms		1000 cycles
MXene-composited PVA/polyvinyl pyrrolidone hydrogel <sup>2</sup>	33.5 ms	0.87 Pa	380 cycles
Gold-nanowire/polyacrylamide composite hydrogels <sup>3</sup>	0.5 s	0.2 Pa	10000 cycles
PVA-polyacrylamide hydrogel <sup>4</sup>	150 ms		500 cycles
CNTs/hydrophobically associated polyacrylamide hydrogel <sup>5</sup>	0.6 s		300 cycles

TEMPO-oxidized cellulose nanofibril/polypyrrole hydrogel <sup>6</sup>	< 10 ms	0.3 Pa	>9000 cycles
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