

Supporting information for

**Self-Powered Droplet Sensor Based on Triboelectric Nanogenerator
toward concentration of green tea polyphenols**

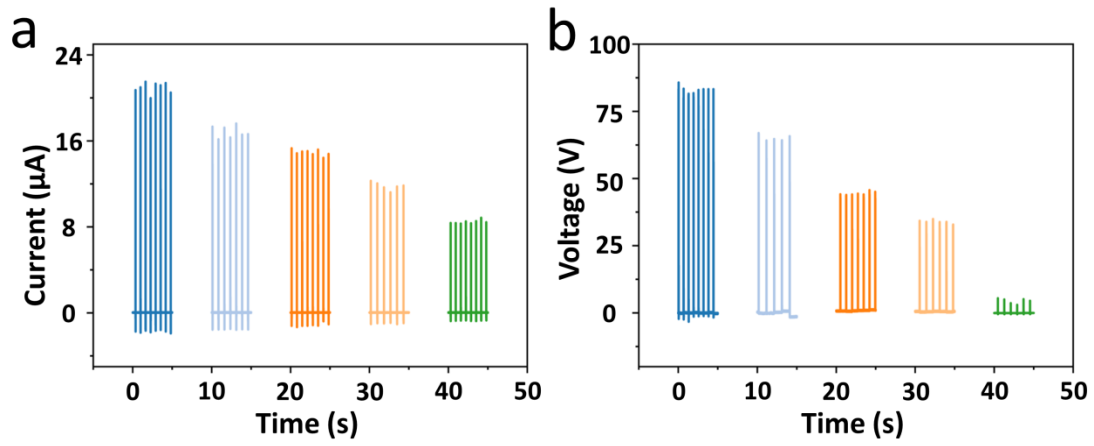
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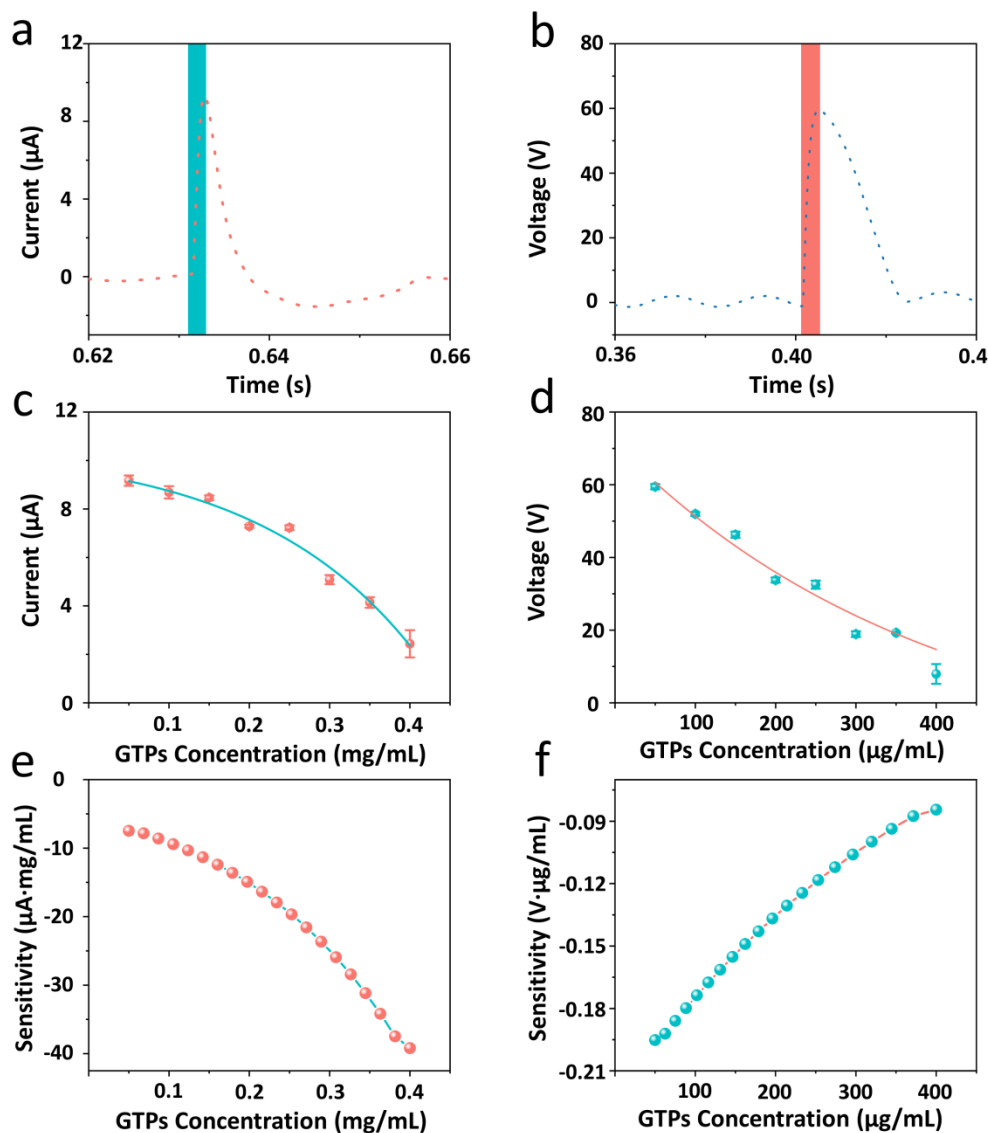
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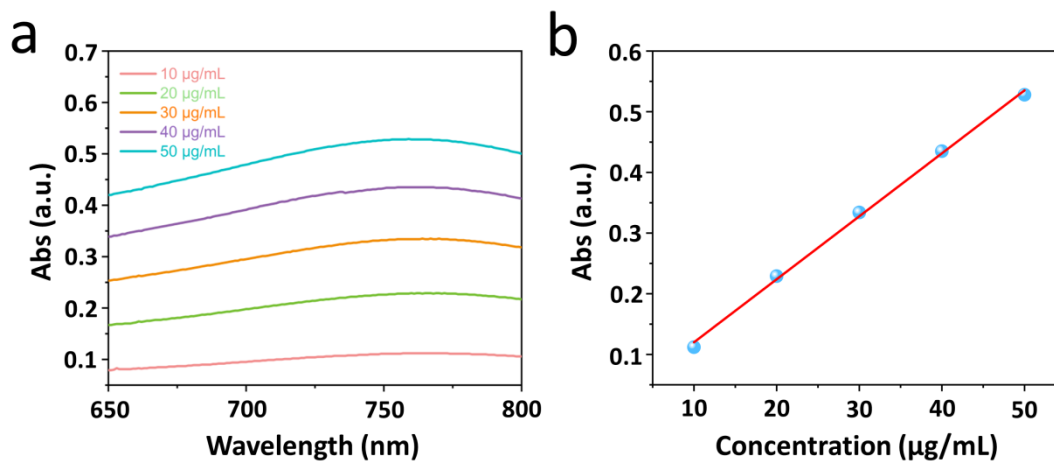
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Supplementary Figure 1. **a**, The short-circuit current of NaCl solution.(0, 0.5 mM, 1.0 mM, 1.5 mM, 2.0 mM) **b**, The open-circuit voltage of NaCl solution.(0, 0.5 mM, 1.0 mM, 1.5 mM, 2.0 mM)

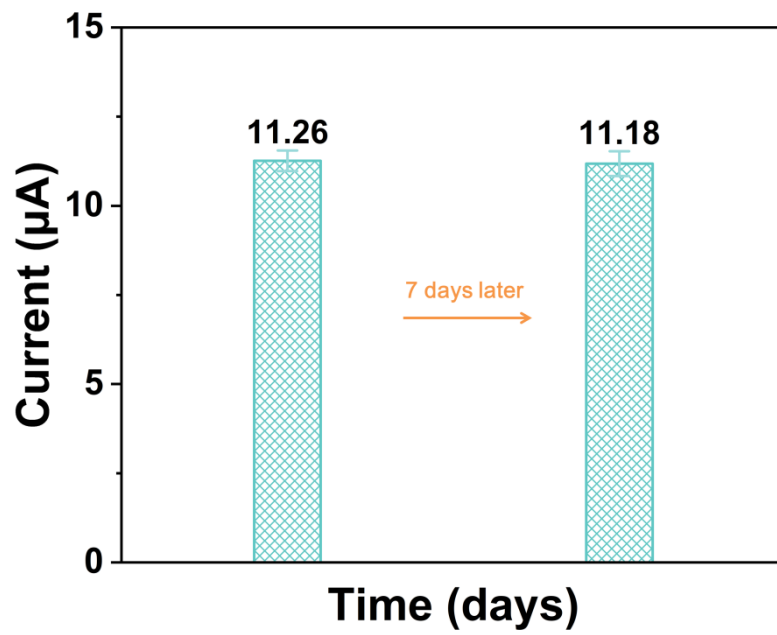


Supplementary Figure 2. **a**, Short-circuit current response time of the sensor at the concentration of GTPs solution is 0.05 mg/mL. **b**, Open-circuit voltage response time of the sensor at the concentration of GTPs solution is 0.05 mg/mL. **c**, Fitting curves of short-circuit currents of tea polyphenol solutions with different concentrations (from 0.05 to 0.4 mg/mL). **d**, Fitting curve of open circuit voltage of tea polyphenol solution with different concentration (from 0.05 to 0.4 mg/mL). **e**, Short-circuit current sensitivity of the sensor with the concentration of tea polyphenol solution from 0.05 to 0.4 mg/mL. **f**, Open-circuit voltage sensitivity of the sensor with the concentration of tea polyphenol solution from 0.05 to 0.4 mg/mL.



Supplementary Figure 3. a, Absorption spectra of gallic acid standard solution with different concentrations. **b**, Standard curve of gallic acid standard solution

The absorption peak of gallic acid working solution is at 765nm. The figure S3 a showed the absorption spectra of gallic acid working fluids at different concentrations (10, 20, 30, 40 and 50 µg/mL). Then a scatter plot is made based on the concentration and the absorption rate at 765nm of gallic acid working solution. Figure S3 b showed the standard curve of gallic acid working fluid obtained by linear fitting of the scatter plot, and the slope of the curve was 0.01038.



Supplementary Figure 4. The average short-circuit current of Longjing green tea water diluted 20 times after seven days by the same LS-TENG.

The figure S4 showed the average short-circuit current of Longjing green tea water diluted 20 times after seven days by the same LS-TENG. The average short-circuit current decreased from $11.26 \pm 0.29 \mu\text{A}$ to $11.18 \pm 0.35 \mu\text{A}$, indicated that the device has good stability within 7 days.