Supporting Information for

## A Liquid-Solid Interface based Triboelectric Tactile Sensor with Ultrahigh Sensitivity of 21.48 kPa<sup>-1</sup>

Jingya Liu<sup>1</sup>, Zhen Wen<sup>1, \*</sup>, Hao Lei<sup>1</sup>, Zhenqiu Gao<sup>1</sup>, and Xuhui Sun<sup>1, \*</sup>

<sup>1</sup>Institute of Functional Nano and Soft Materials (FUNSOM), Jiangsu Key Laboratory for Carbon-Based Functional Materials and Devices, Soochow University, Suzhou 215123, P. R. China

\*Corresponding authors. E-mail: <u>wenzhen2011@suda.edu.cn</u> (Z. Wen); <u>xhsun@suda.edu.cn</u> (X. Sun)

## **Supplementary Figures**

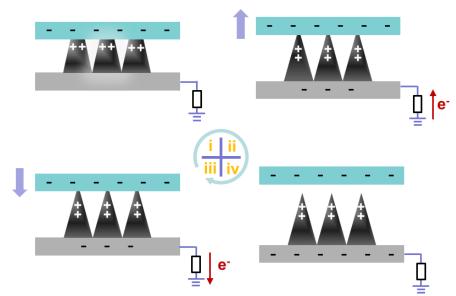
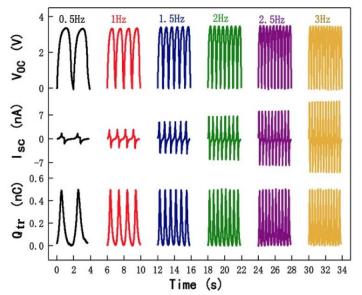


Fig. S1 Complete working principle of the FTTS



**Fig. S2** Electrical output of the FTTS including open-circuit voltage ( $V_{oc}$ ), short-circuit current ( $I_{sc}$ ) and transfer charge ( $Q_{tr}$ )

## Nano-Micro Letters

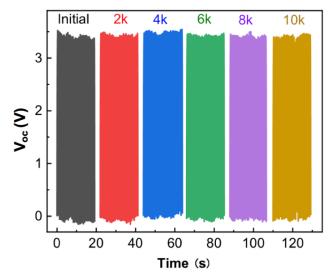
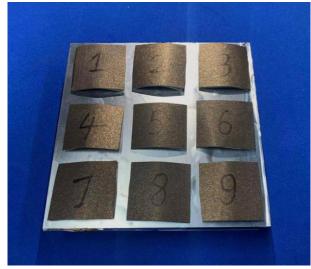


Fig. S3 Stability testing of the FTTS with 10000 cycles



**Fig. S4** Photograph of the topography of ferrofluid patterns at all six distances with magnet, from 0 to 2 cm at intervals of 4 mm



**Fig. S5** Photograph of FTTS array as a nine-digit password lock S2 /S3

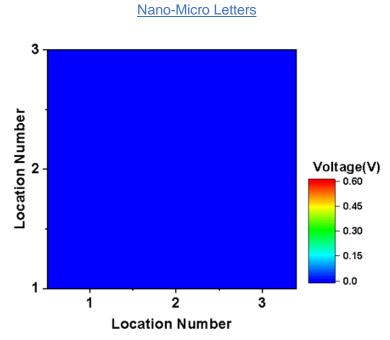
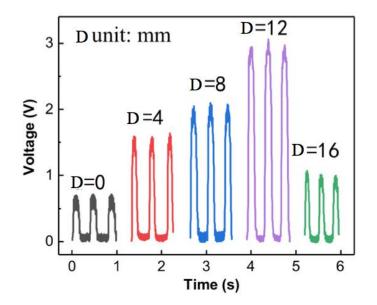


Fig. S6 Contour map of voltage output of all FTTS units in the matrix is at the background level before any pressing



**Fig. S7** Different voltage output when changing distance with magnet under the same external pressing (F = 20 N)