Supporting information for

Triboelectric charge-separable probes for potential single droplet

biochemical sensing

Along Gao,[†]a Boyou Wang,[†]a Chengpai Peng,^a Xiali Yang,^a Man Zhang,^a Hanyue Liu,^a Jing Pan,^a Hai Zhu,^{*}b Qitao Zhou,^{*}a and Fan Xia^a

 ^a State Key Laboratory of Biogeology and Environmental Geology, Engineering Research Center of Nano-Geomaterials of Ministry of Education, Faculty of Materials Science and Chemistry, China University of Geosciences, Wuhan 430074, China.
^b Department of Civil Engineering, The University of Hong Kong, Pokfulam 999077, Hong Kong Special Administrative Region of China
[†] These authors contributed equally to this work.

*E-mail: zhuhai@hku.hk and zhouqitao@cug.edu.cn



Fig. S1. Dimensions of the device in top view.



Fig. S2. The water contact angle of the PDMS.



Fig. S3. Evolution of current peak and power peak with the increase of external resistance for the device.



Fig. S4. Zeta potential of PDMS at different pH values and the isoelectric point of PDMS.



Fig. S5. The SEM image of the SiO_2 particles (with a diameter of 200 nm) of different masses.



Fig. S6. The SEM image of the SiO_2 particles (with a diameter of 2 μ m) of different masses.



Fig. S7. Zeta potential of E.coli in broth measured at different concentrations.



Fig. S8. The SEM image of *E.coli* on the surface of PDMS.