

### **Description of Additional Supplementary Files**

File Name: Supplementary Movie 1

Description: Both shielding electrode and extra blank-tribo-area are necessary for CSA-S-TENG.

File Name: Supplementary Movie 2

Description: Demonstration of the stepwise charging voltage of 1 $\mu$ F capacitor.

File Name: Supplementary Movie 3

Description: 912 green LEDs are powered by R-CSA-S-TENG

File Name: Supplementary Movie 4

Description: A digital scientific calculator is powered by R-CSA-S-TENG.

File Name: Supplementary Movie 5

Description: A commercial multifunctional thermo-hygrometer is powered by R-CSA-S-TENG.