

Supporting Information for

## Anti-Overturning Fully Symmetrical Triboelectric Nanogenerator Based on an Elliptic Cylindrical Structure for All-Weather Blue Energy Harvesting

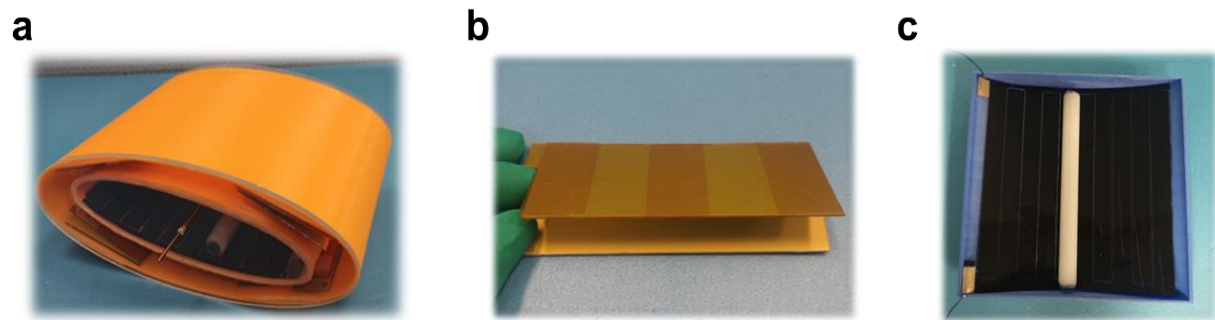
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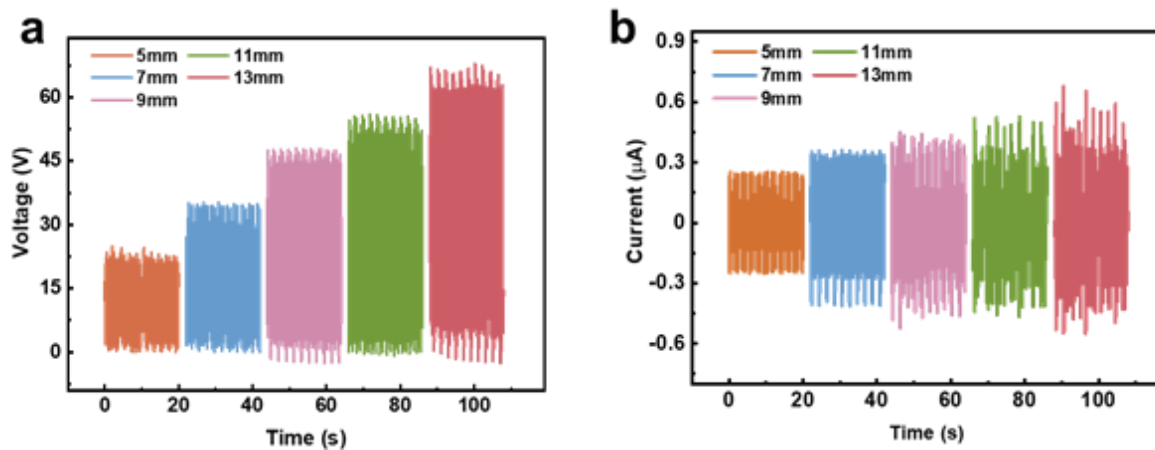
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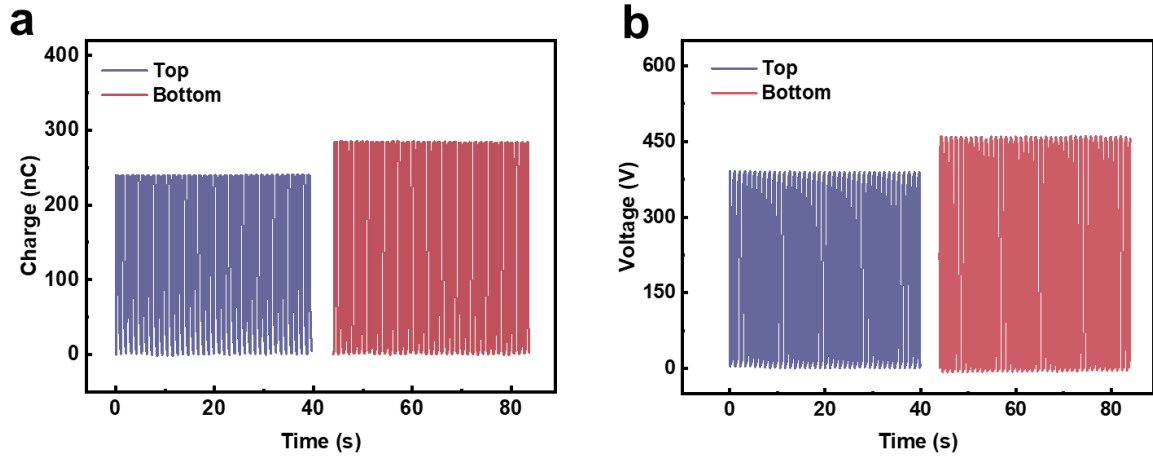
### Supplementary Figures



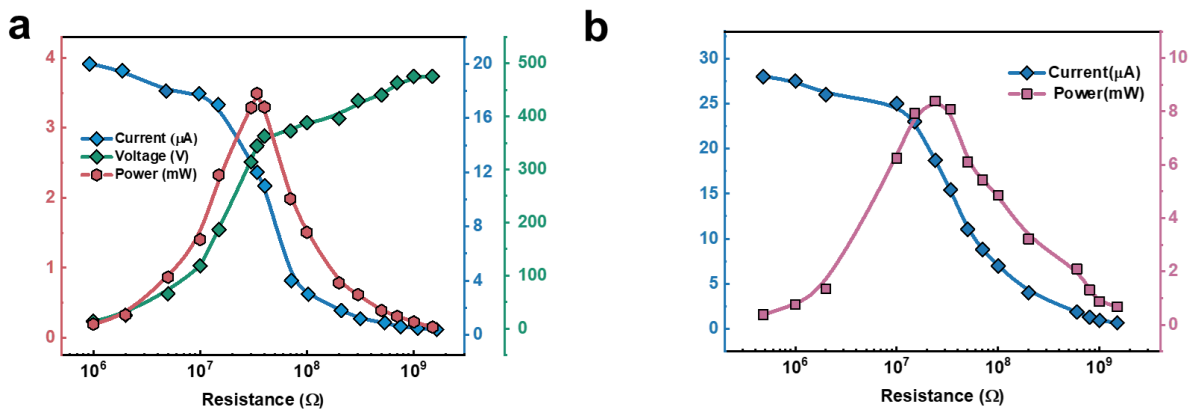
**Fig. S1** Photographs of (a) as-fabricated EC-TENG device, (b) a V-shaped outer TENG, and (c) the inner TENG



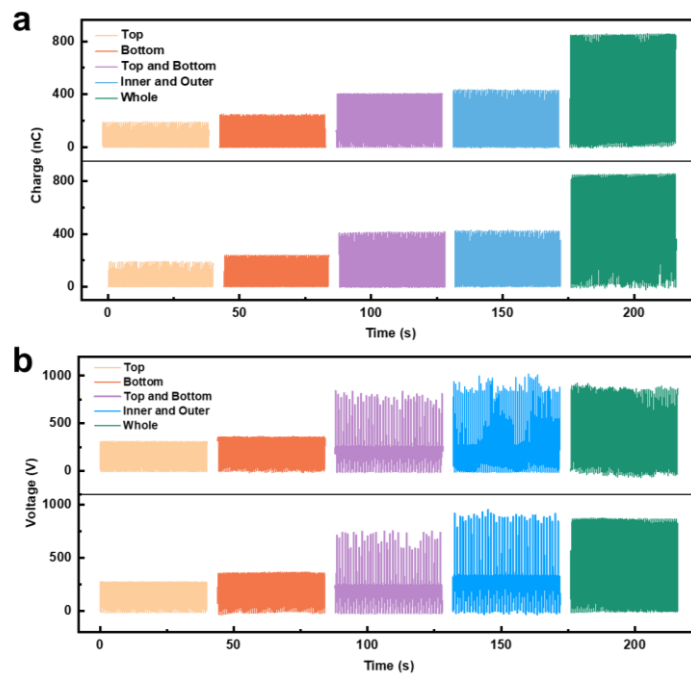
**Fig. S2** (a) Open-circuit voltage and (b) short-circuit current of the inner TENG under various electrode widths at  $f = 0.25$  Hz and  $\text{Deg} = 27^\circ$



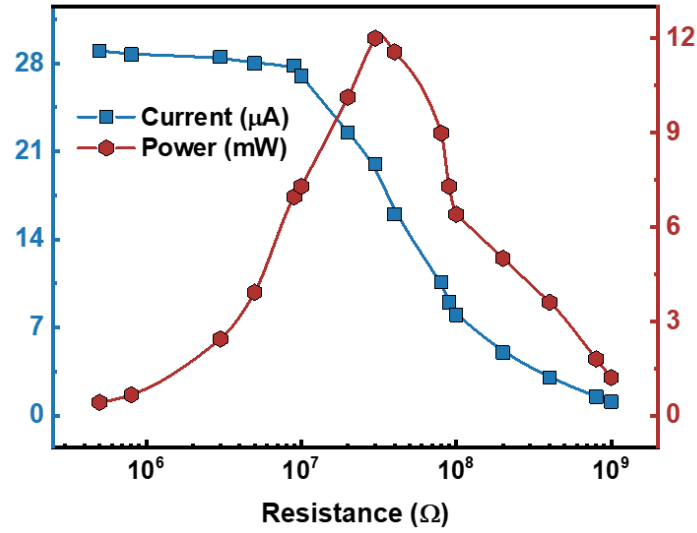
**Fig. S3** (a) Transferred charge and (b) open-circuit voltage of a top and a bottom outer TENG driven by stepper motor under  $f = 1$  Hz and  $\text{Deg} = 63^\circ$



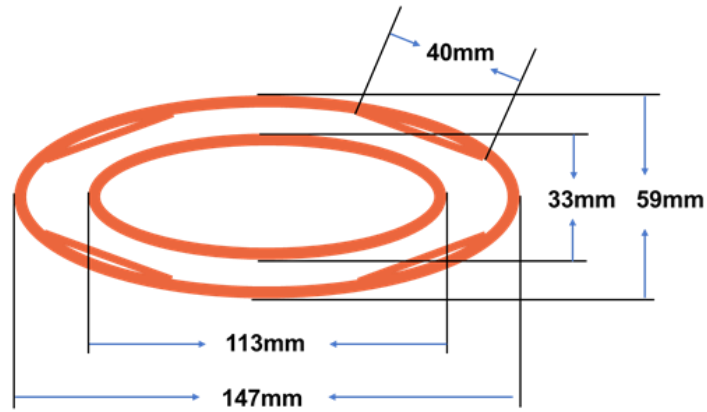
**Fig. S4** Output power of (a) a single top TENG and (b) two diagonal TENGs in parallel under different external load resistances ( $f = 1$  Hz and  $\text{Deg} = 63^\circ$ )



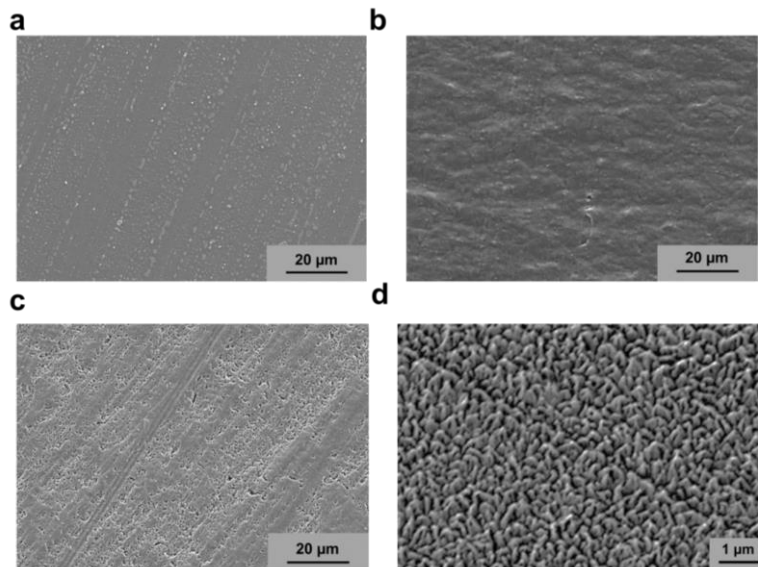
**Fig. S5** Output performance of EC-TENG excited by water waves (1.6 Hz): (a) transferred charge and (b) open-circuit voltage of EC-TENG before and after overturning



**Fig. S6** Output power of whole EC-TENG under different external load resistances when the device is driven by a water wave ( $f = 1.6$  Hz)



**Fig. S7** Parameters of inner and outer elliptical cylindrical shells



**Fig. S8** SEM images of triboelectric material surfaces: (a) nylon film, (b) aluminum film, (c) pristine PTFE film, (d) PTFE film after surface treatment