

Supporting Information

A Universal Method for Quantitative Analysis of Triboelectric Nanogenerator

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$$C_{total} = \varepsilon_r \varepsilon_0 \left\{ \frac{Lw}{d} + \frac{L}{\pi} \left[1 + \ln \left(1 + 2\pi \frac{w}{d} + \ln \left(1 + 2\pi \frac{w}{d} \right) \right) \right] + \frac{w}{\pi} \left[1 + \ln \left(1 + 2\pi \frac{L}{d} + \ln \left(1 + 2\pi \frac{L}{d} \right) \right) \right] \right\} \quad (S1)$$

$$V_{oc(x)} = \frac{Q_{sc(x)}}{C_{total}} = \frac{\left(\sigma w \frac{d_0}{\varepsilon_r d + d_0} \right) x + \frac{Z_a^2 \sigma w}{x + Z_a} - \sigma w Z_a}{\frac{\varepsilon_r \varepsilon_0 x w \cdot C_a}{\varepsilon_r \varepsilon_0 x w + C_a d_0} + C_{12d} + \frac{\varepsilon_r \varepsilon_0 (L - x) w}{\varepsilon_r d + d_0}} \quad (S2)$$

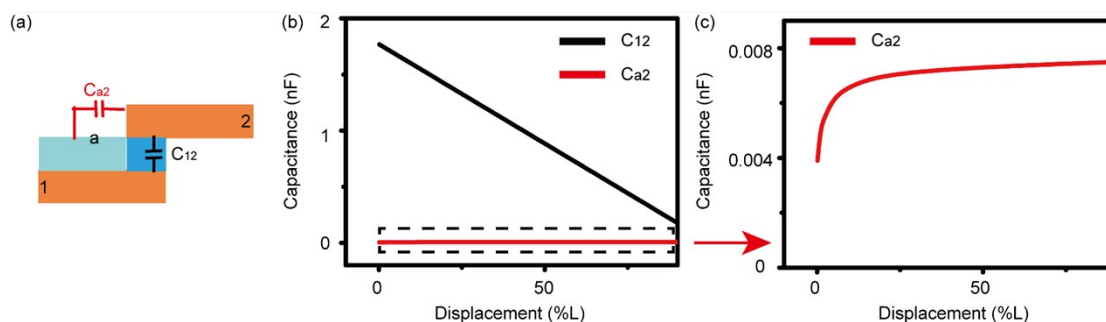


Figure S1. The mode of EDAEC method of the LS mode TENG. The schematic and equivalent capacitance (a) of C_{12} and C_{a2} . The comparison of capacitances (b) and the magnified graph of the edge effect capacitance (c).