Supporting Information

Boosting Performances of Triboelectric Nanogenerators by Optimizing Dielectric Properties and Thickness of Electrification Layer

Xiaofang Kang[a,b], Chongxiang Pan[a,c], Yanghui Chen[a,b], Xiong Pu[a, b, c*]

[a] *CAS Center for Excellence in Nanoscience, Beijing Key Laboratory of Micro-Nano Energy and Sensor, Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing 100083, China.*

[b] *School of Nanoscience and Technology, University of Chinese Academy of Sciences, Beijing 100049, China.*

[c] *Center on Nanoenergy Researh, School of Chemistry and Chemical Engineering, School of Physical Science and Technology, Guangxi University, Nanning 530004, China.*

* Corresponding author. E-mail: puxiong@binn.cas.cn

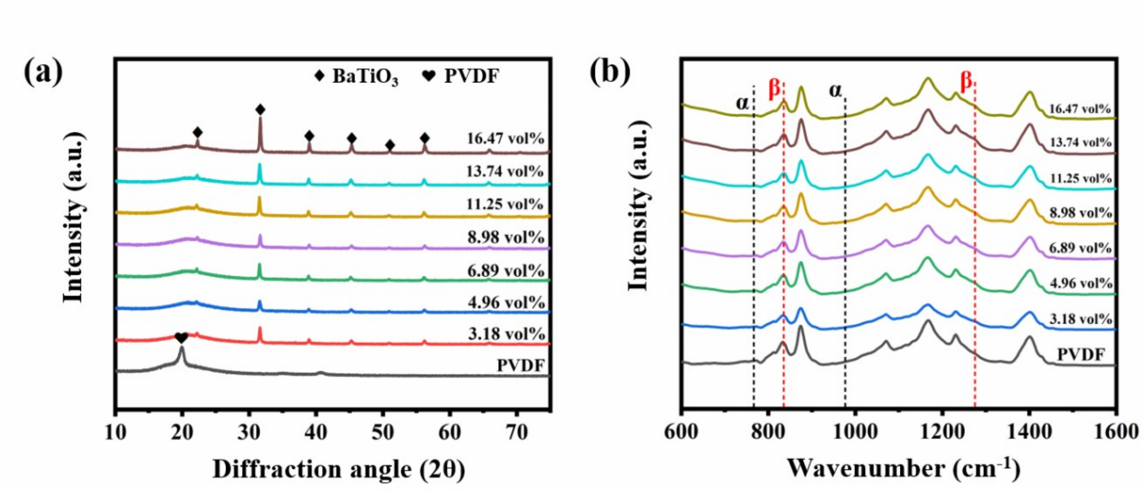

Fig. S1. (a) XRD patterns and (b) FTIR spectra of $BaTiO_3$/PVDF nanocomposite films with different filler contents.

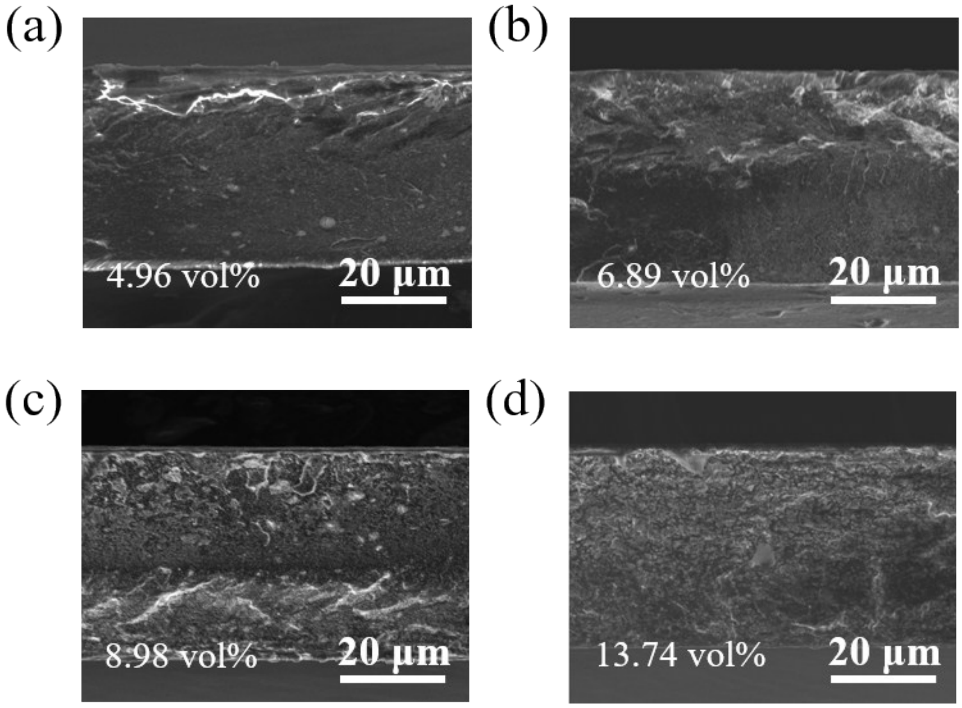

Fig. S2. Cross-sectional SEM images for PVDF-based films with various $BaTiO_3$ volume fraction (4.96 vol%. 6.89 vol%. 8.98 vol%. 13.74 vol%).

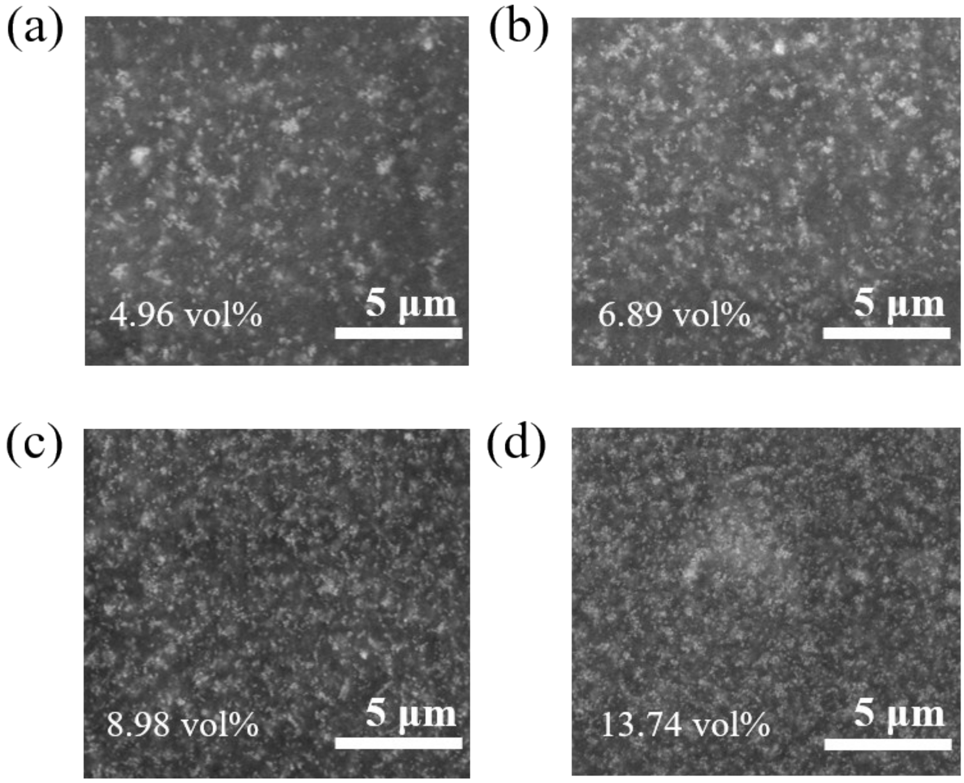

Fig. S3. Cross-sectional SEM images for PVDF-based films with various $BaTiO_3$ volume fraction (4.96 vol%. 6.89 vol%. 8.98 vol%. 13.74 vol%).

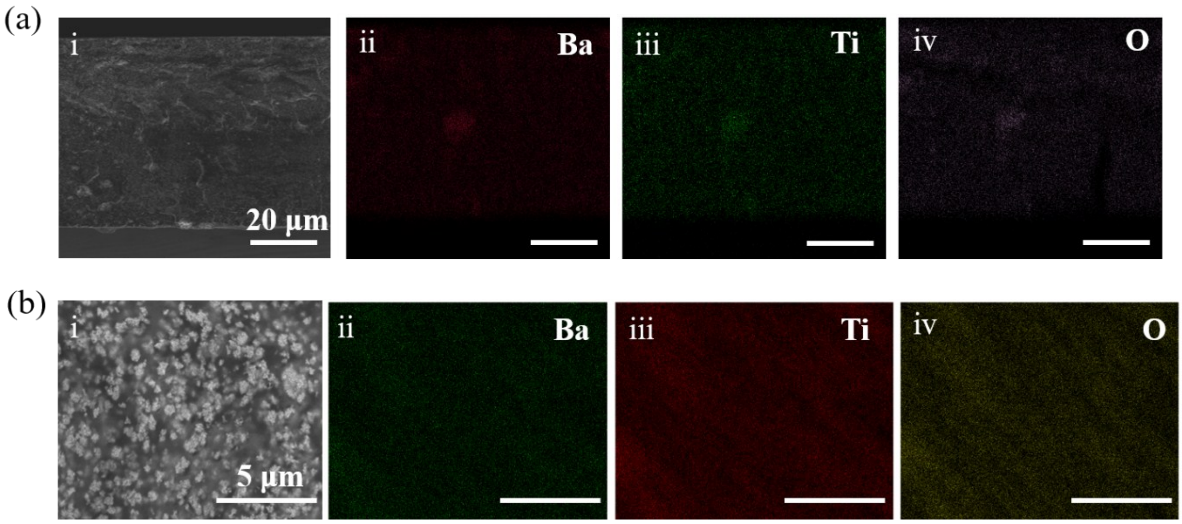

Fig. S4. (a) (b) The elemental mapping showing the dispersion states of nanoparticles in the representative $BaTiO_3$/PVDF composite film with 11.25 vol%.

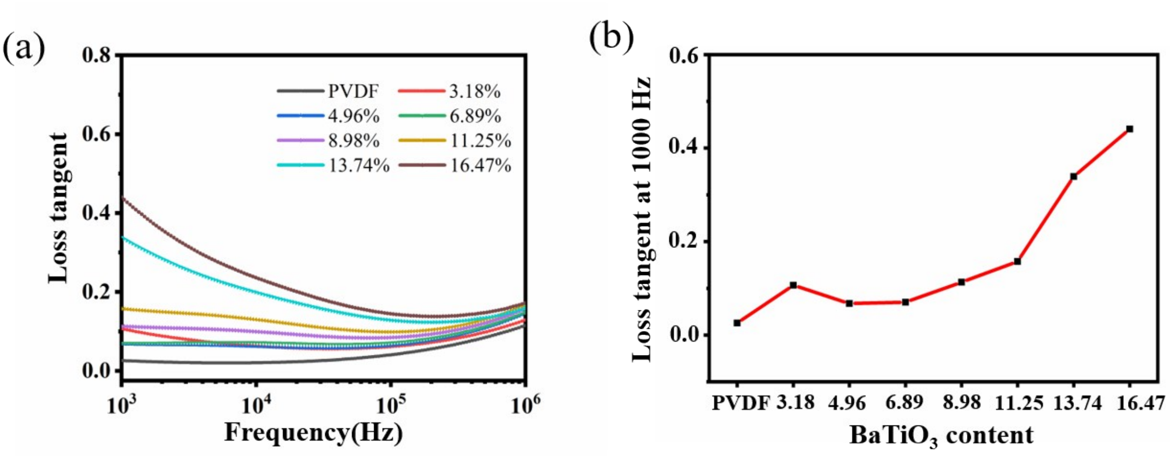

Fig. S5. (a) Frequency dependence of dielectric loss values for PVDF-based films with various $BaTiO_3$ volume fraction ranging from 0 to 16.47 vol%. The variation of (b) dielectric loss at 1000 Hz for PVDF-based films with various $BaTiO_3$ volume fraction.

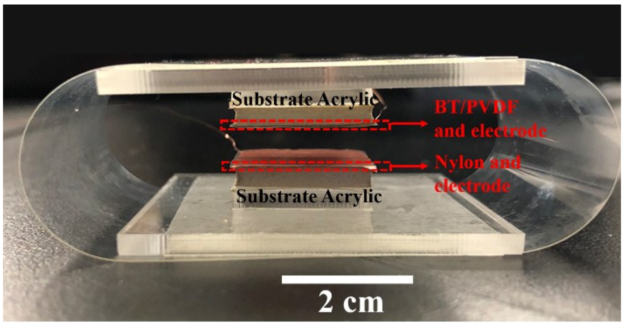

Fig. S6. A photograph of as-fabricated TENGs.

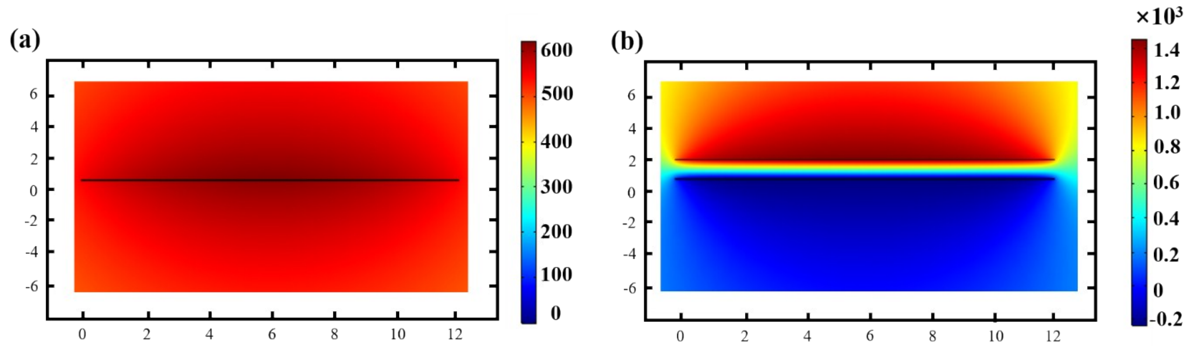

Fig. S7. Potential distribution of TENG. (a) the gap distance is 5 μm. (a) the gap distance is 1 mm.

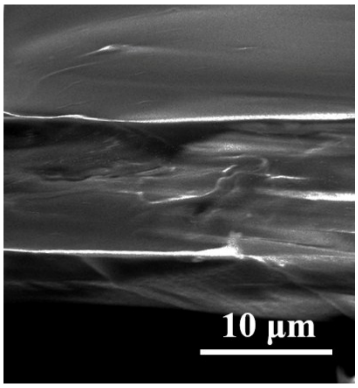

Fig. S8. Cross-sectional SEM image of Nylon.