

## Supplementary information

### **Embedding in-plane aligned MOF nanoflakes in silk fibroin for highly enhanced output performance of triboelectric nanogenerator**

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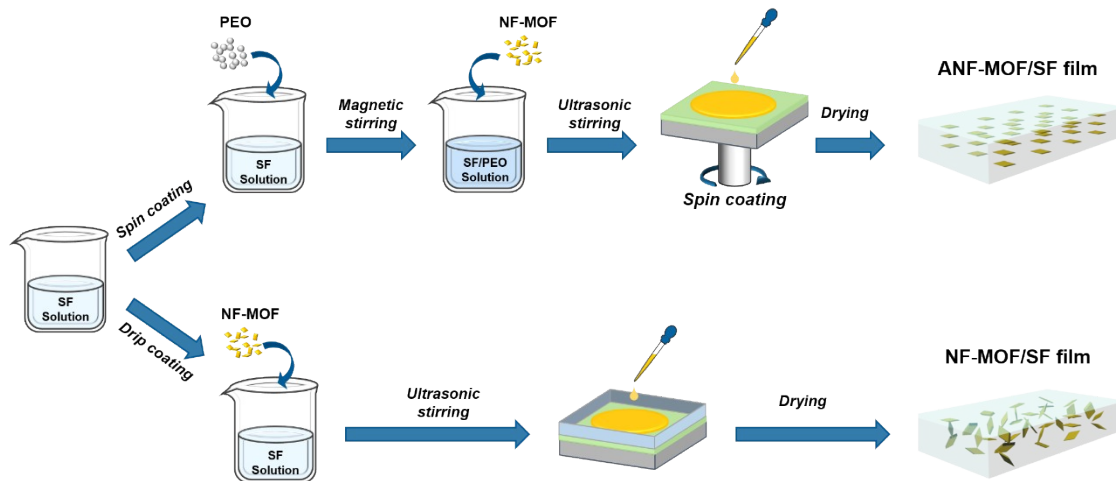


Figure S1 The fabrication process of NF-MOF/SF composite film and ANF-MOF/SF composite film.

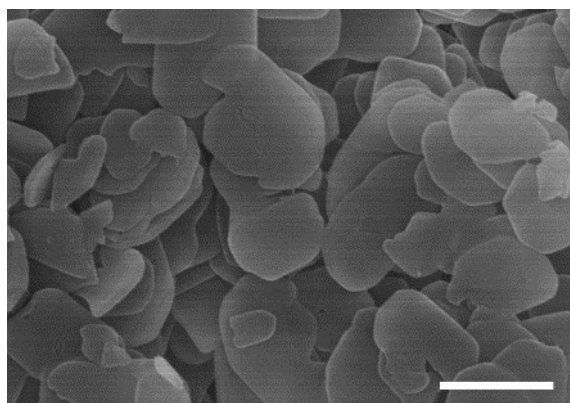


Figure S2 The SEM image of synthesized NF-MOF (scale bar:500 nm).

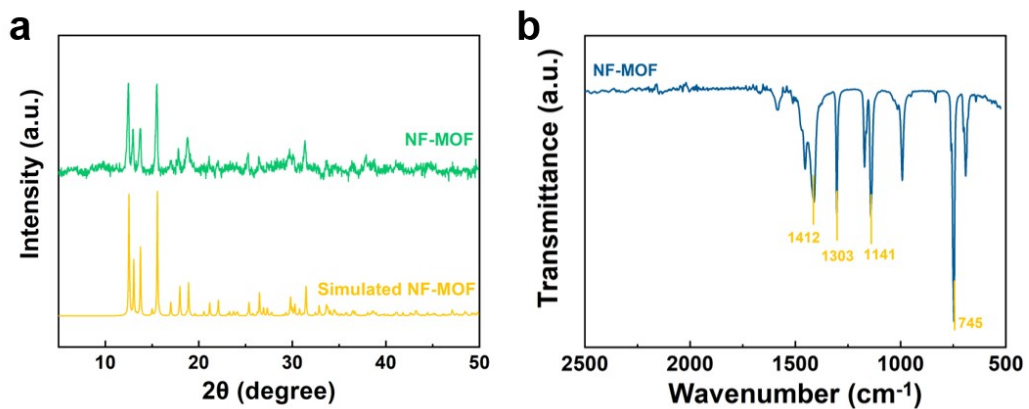


Figure S3 (a) Experimental and simulated XRD spectra of NF-MOF. (b) FT-IR spectra of NF-MOF.

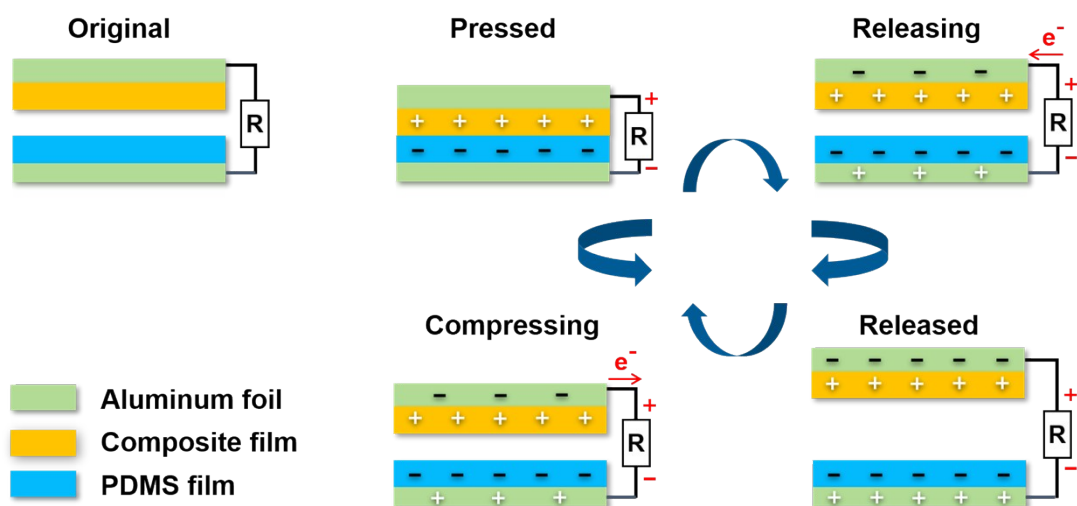


Figure S4 Schematic images of the working principle for the TENG.

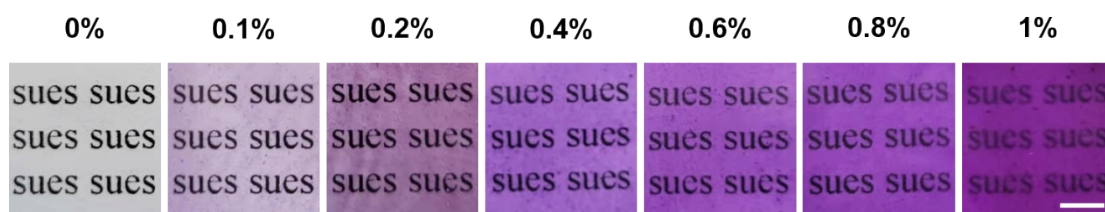


Figure S5 Digital photos of pure SF film and NF-MOF/SF composite film with a mass ratio ranging from 0.1 wt.% to 1 wt.% (scale bar: 5 mm).

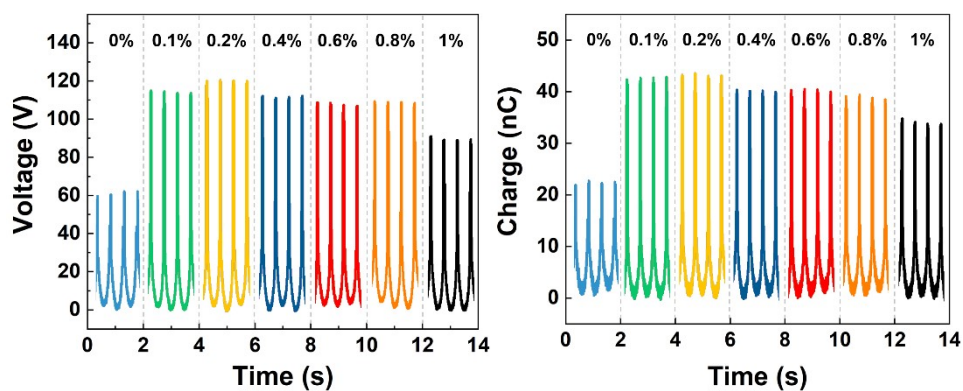


Figure S6 Output voltages and transfer charges of NS-TENG as a function of the mass ratios of NF-MOF in composite films ranging from 0 to 1 wt.%.