Supporting Information

Simple and Rapid Fabrication of Pencil-on-paper Triboelectric Nanogenerators with Enhanced Electrical Performance

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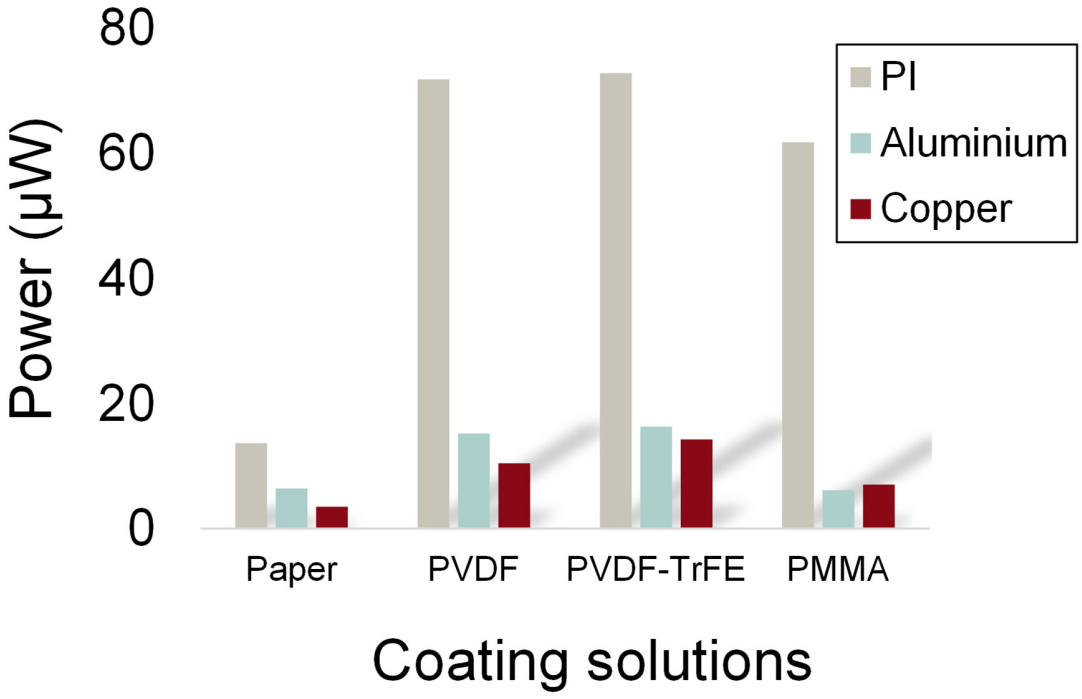

Figure S1. Output comparison between counter materials (PI, aluminum, and copper) rubbed with coated and uncoated paper.

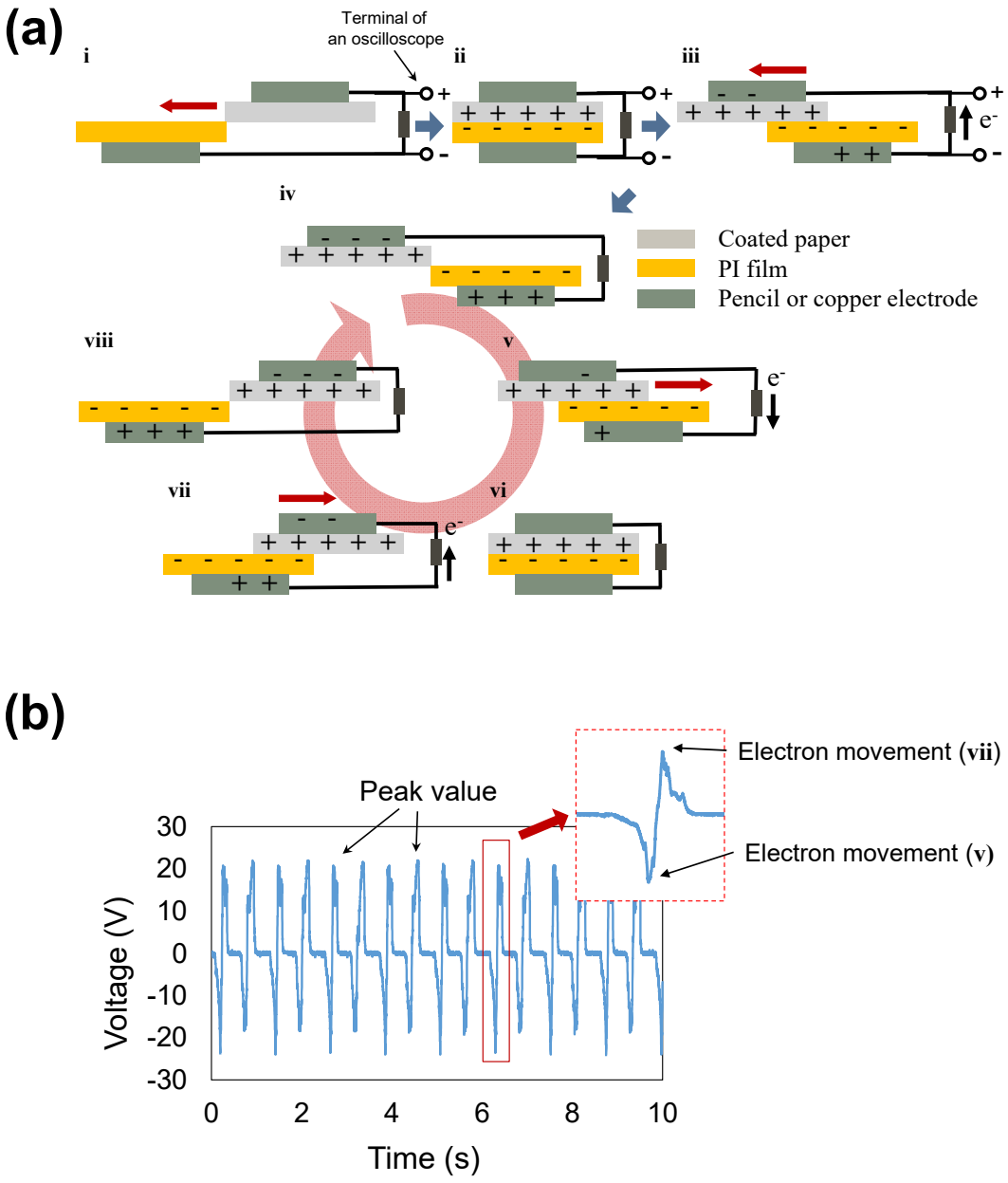

Figure S2. (a) Working mechanism of the PP-TENG. (b) A performance example of the PP-TENG open-circuit voltage. The inset is magnified for a single sliding process.

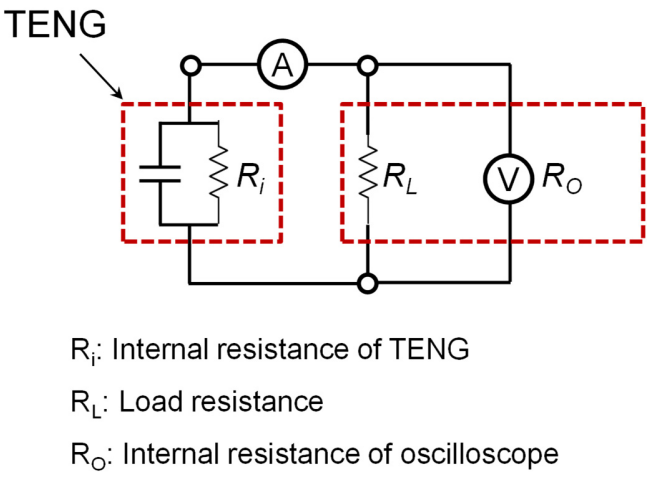

Figure S3. Electric circuit for measurement of voltage and current.

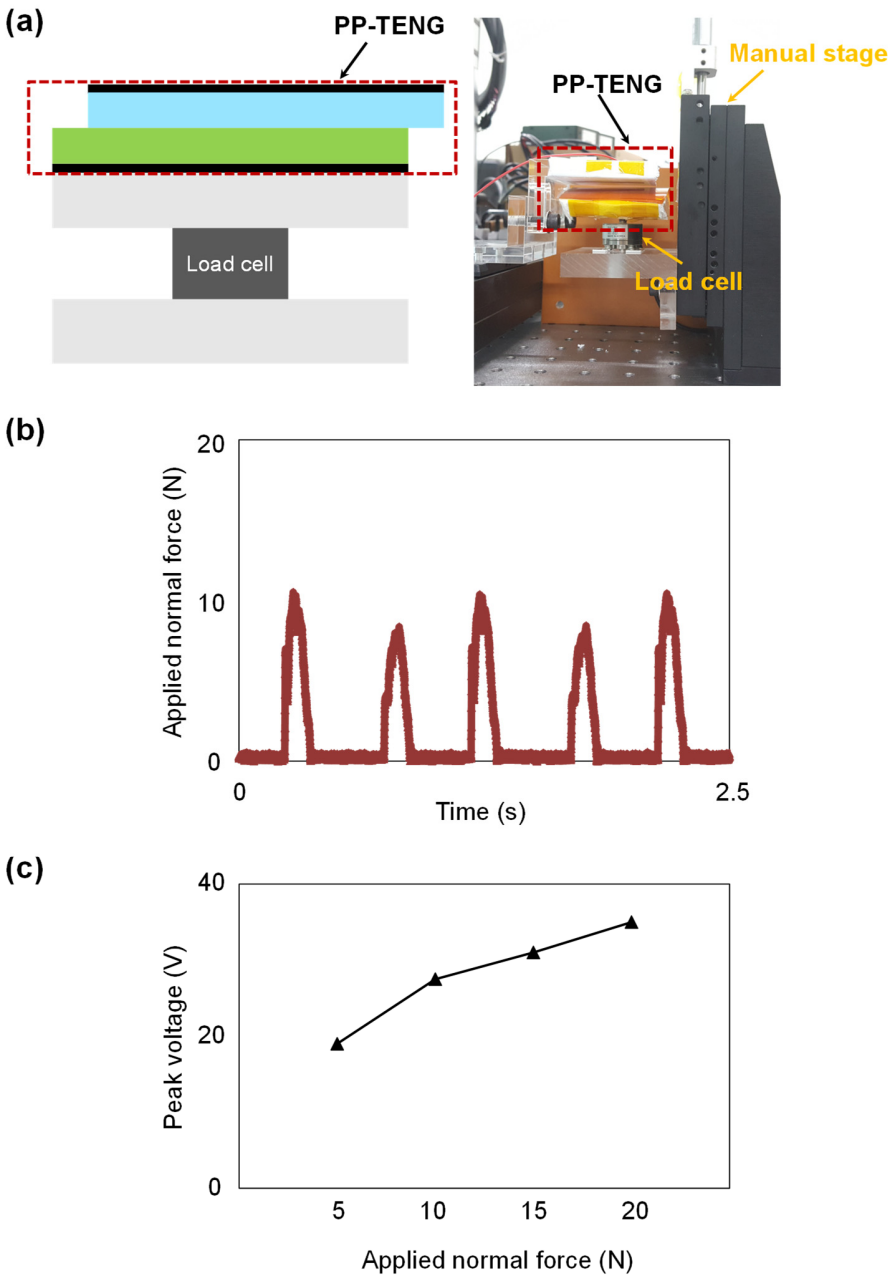

Figure S4. (a) Schematic and experimental setup for measurement of applied force, (b) applied force as a function of time, and (c) peak voltage of PP-TENG with respect to applied force.

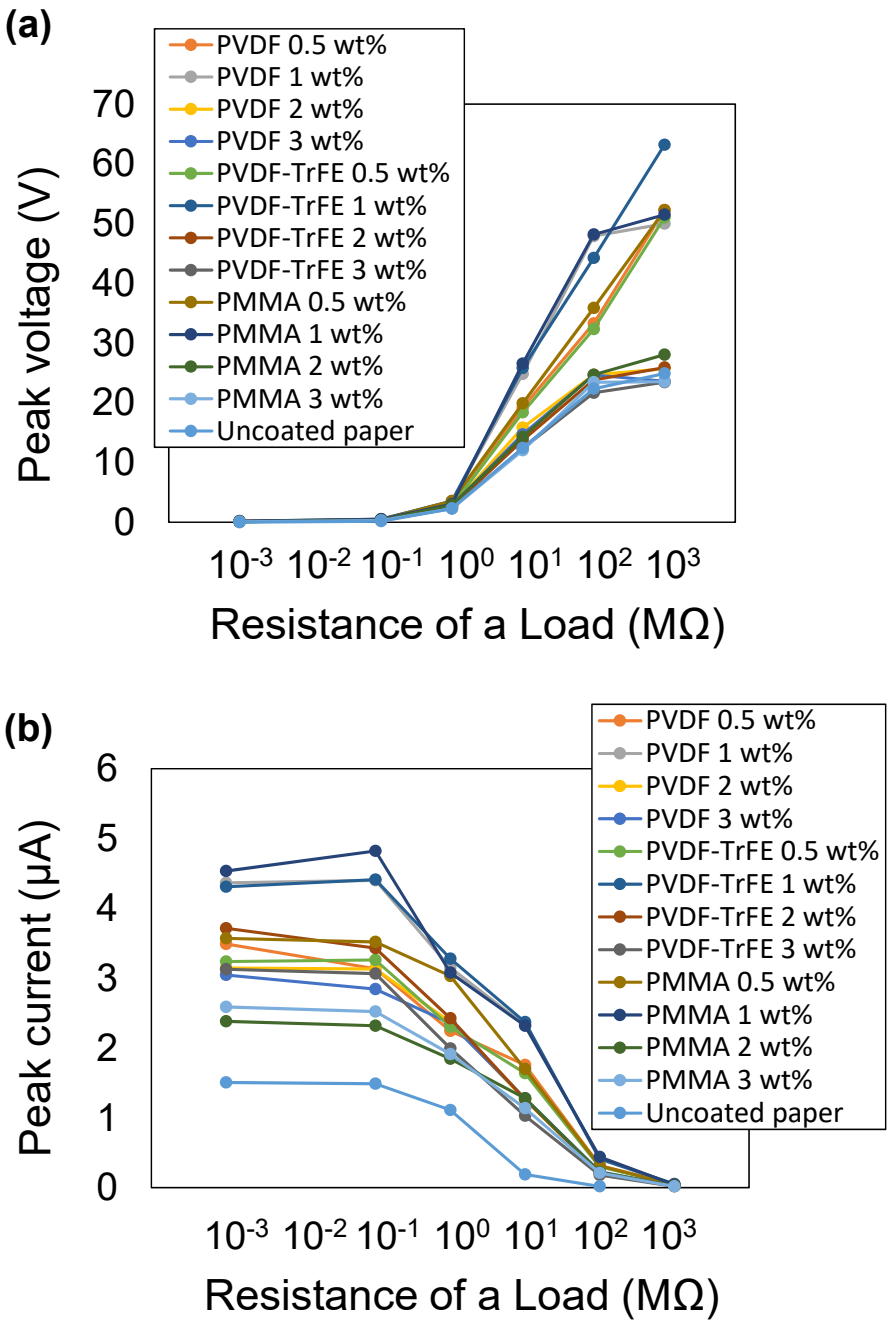

Figure S5. Dependence of the PP-TENG output (a) voltage and (b) current on a load resistance while comparing three solutions and concentrations.

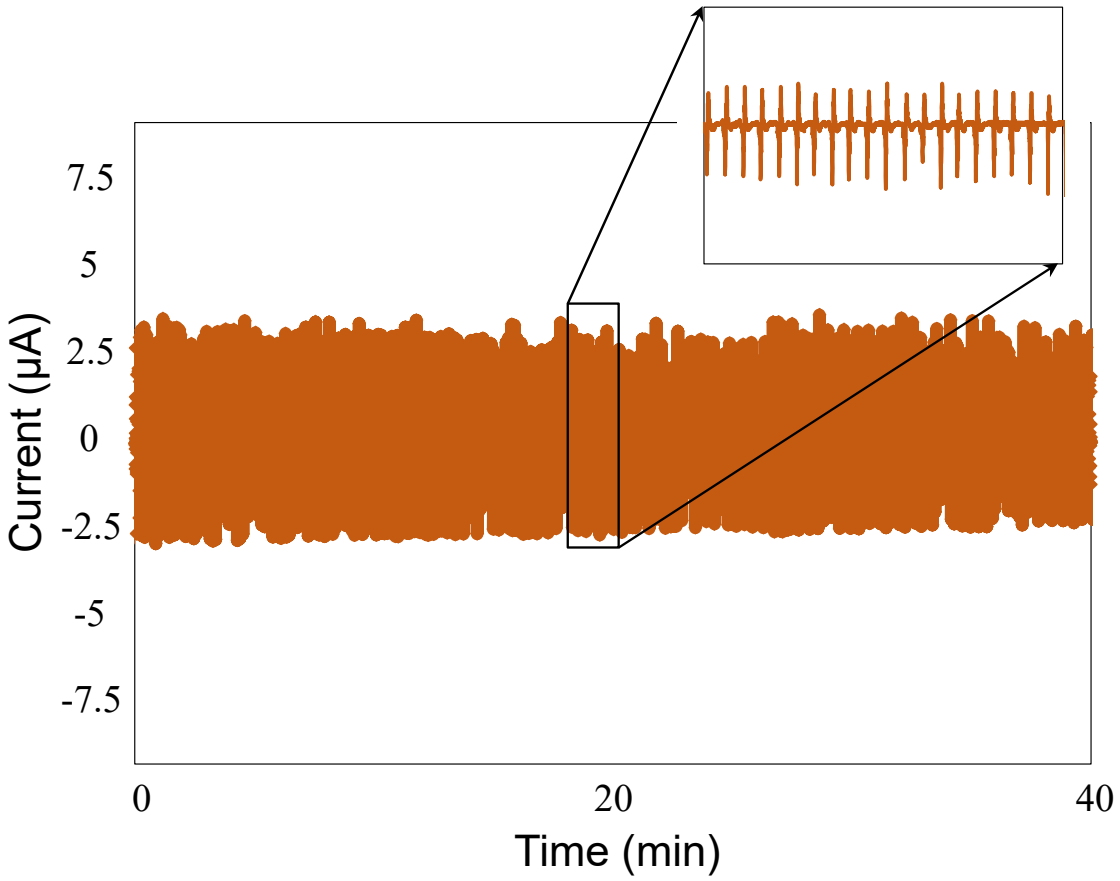

Figure S6. Cyclic test of the PP-TENG fabricated by using 1 wt% PVDF-TrFE solution.

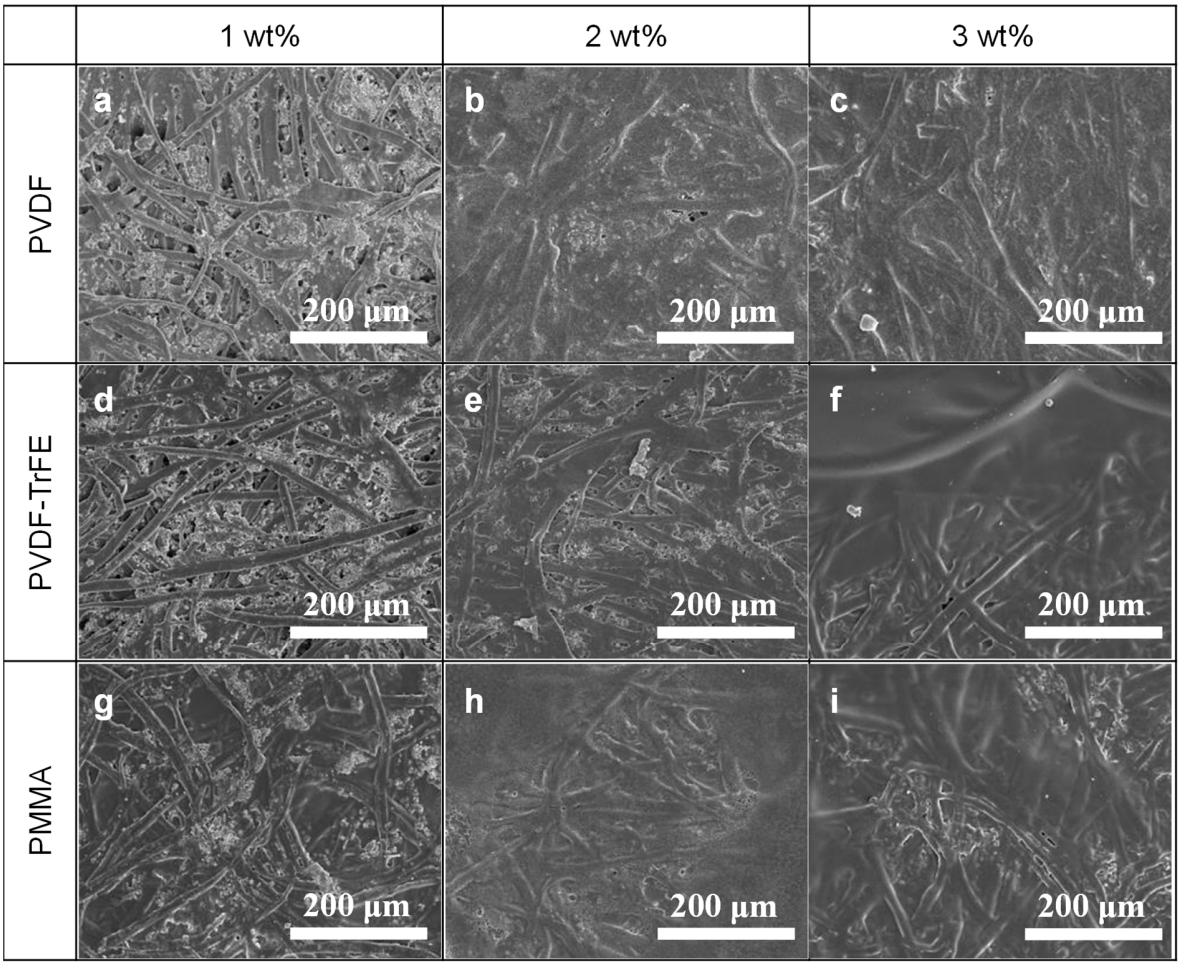

Figure S7. SEM images of paper coated with PVDF, PVDF-TrFE, and PMMA solutions.

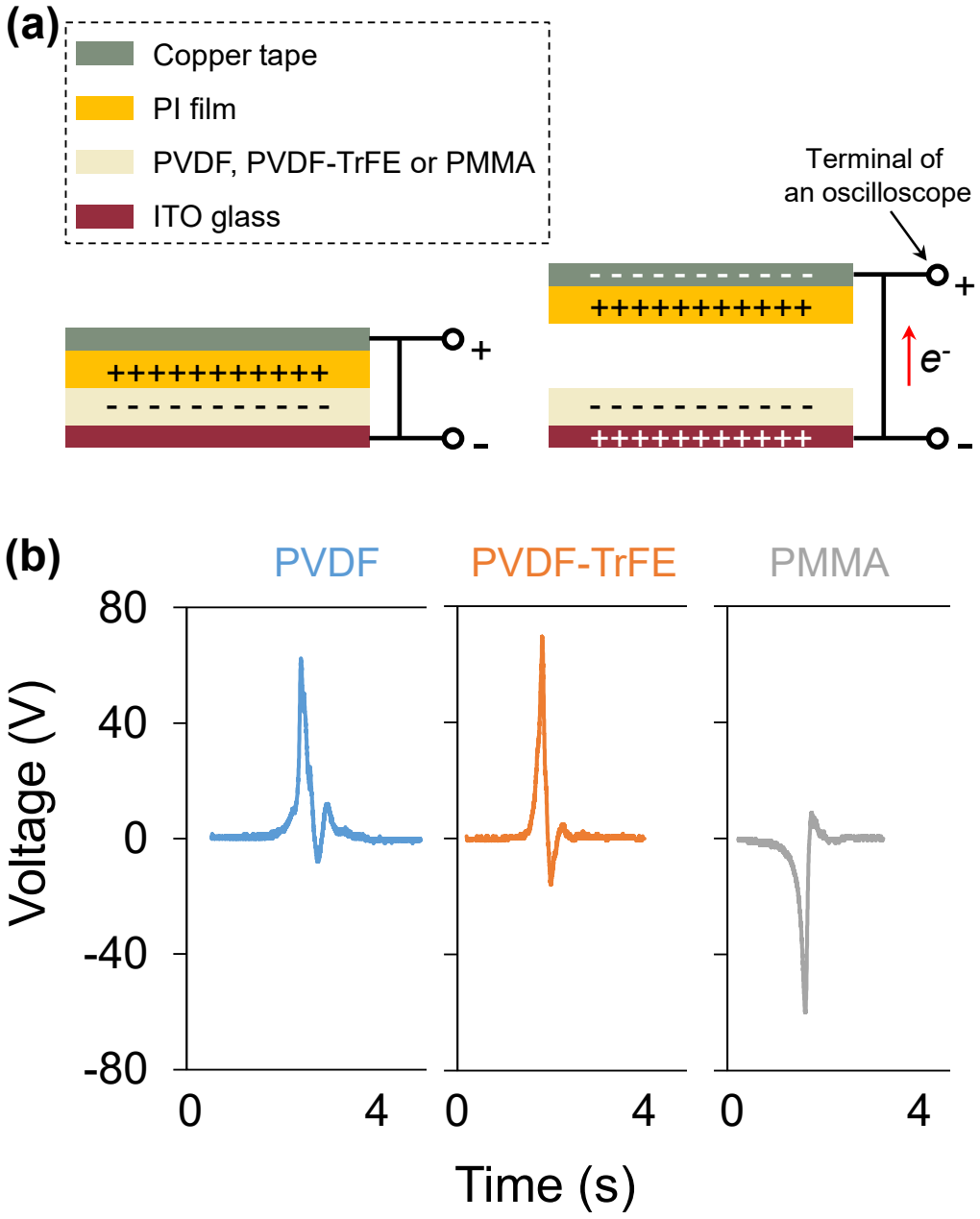

Figure S8. (a) Schematic image of the repeating contact and separation process for PI and each polymer. (b) Voltage profile during the contact and separation of each polymer with PI.

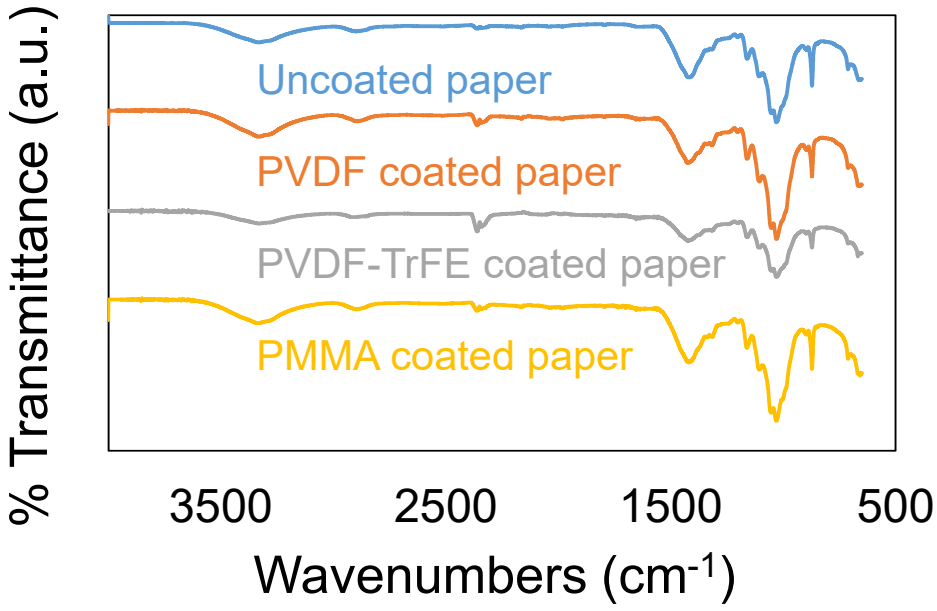

Figure S9. FTIR spectra of uncoated paper and each solution-coated paper.

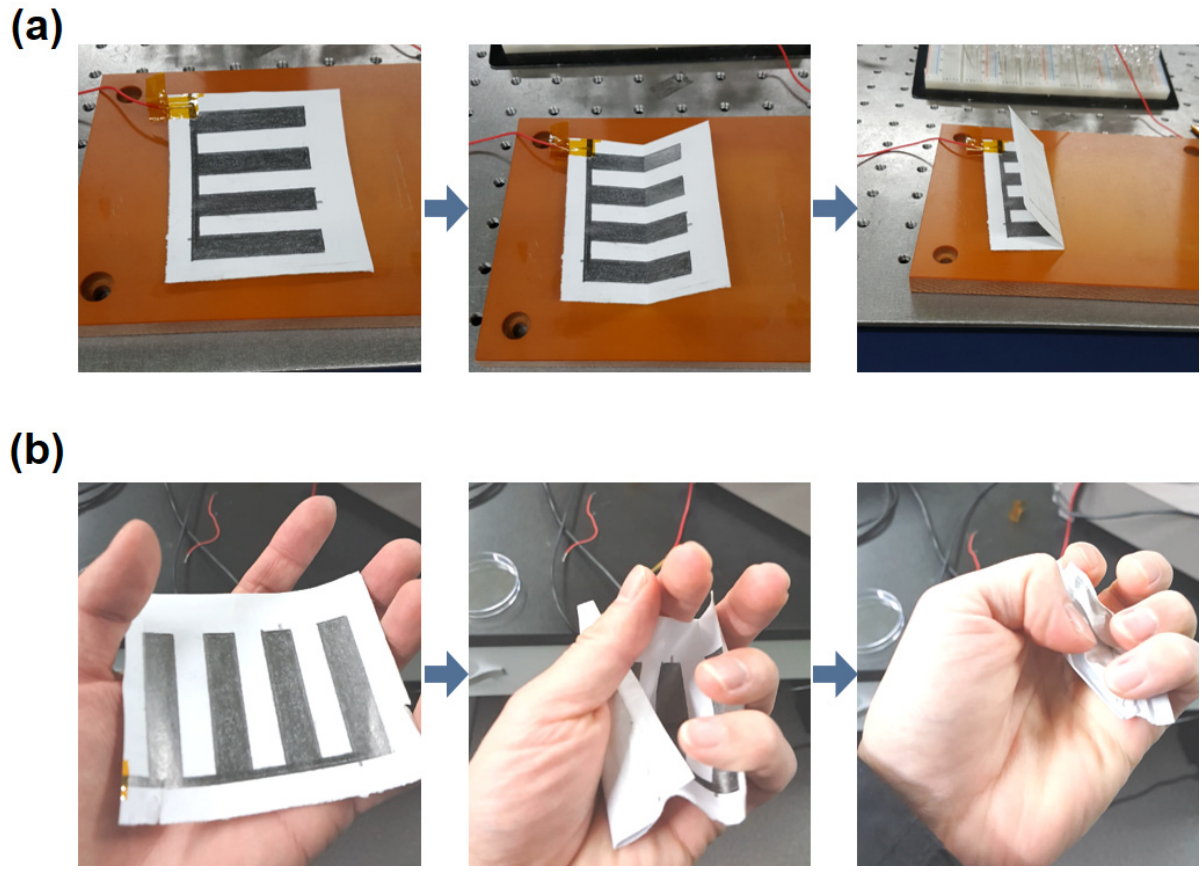

Figure S10. (a) Folding and (b) crumpling of the papers coated with 1 wt% PVDF-TrFE solution.

Table S1. Internal resistance of PP-TENGs.

	PP-TENG without grating	PP-TENG with 4 grating units
Load resistance (R_L)	10 MΩ	10 MΩ
Internal resistance of oscilloscope (R_O)	10 MΩ	10 MΩ
External load (R_e)	5 MΩ	5 MΩ
Output current (I)	2.6 μA	4.74 μA
Output power (P)	0.07358 mW	0.267 mW
Internal resistance of TENG (R_i)	5.88 MΩ	6.88 MΩ