

Supplemental material for

Organic π -type thermoelectric module supported by photolithographic mold: a working hypothesis of sticky thermoelectric materials

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Table S1. Output voltage of the single π -unit of as-received PEDOT:PSS and the ball-milled TTF-TCNQ mixed with PVC at different ratios.

PVC/TTF-TCNQ	80 °C	90 °C	100 °C
1/3	0.5 mV	0.5 mV	0.6 mV
1/12	0.9 mV	0.8 mV	1.0 mV
0	0.8 mV	1.1 mV	1.4 mV

Table S2. TE performances of PEDOT:PSS dedoped by KW-1000S.

	pH 1 (as-received)	pH 4	pH 7	pH 8
S ($\mu\text{V/K}$)	14.9	19.6	20.1	21.0
σ (kS/m)	1.24	0.231	0.513	0.762
PF ($\mu\text{W/mK}^2$)	0.275	0.0888	0.207	0.336

Table S3. TE performances of the dedoped PEDOT:PSS after the addition of different volume of DMSO per 1 ml PEDOT:PSS solution.

	0 $\mu\text{l/ml}$	10 $\mu\text{l/ml}$	20 $\mu\text{l/ml}$	30 $\mu\text{l/ml}$
S ($\mu\text{V/K}$)	21.0	21.6	21.6	21.2
σ (kS/m)	0.762	7.40	4.99	2.89
PF ($\mu\text{W/mK}^2$)	0.336	3.45	2.33	1.30

Table S4. Output voltage of the single π -unit of the ball-milled TTF-TCNQ and as-received PEDOT:PSS or the dedoped PEDOT:PSS after the addition of different volume of DMSO per 1 ml PEDOT:PSS solution.

	80 °C	90 °C	100 °C	110 °C	120 °C	130 °C
as-received	0.8 mV	1.1 mV	1.4 mV	1.1 mV	1.5 mV	1.6 mV
10 μ l/ml	1.3 mV	1.5 mV	1.9 mV	2.2 mV	2.7 mV	3.1 mV
20 μ l/ml	1.4 mV	1.7 mV	2.1 mV	2.3 mV	2.8 mV	2.9 mV
30 μ l/ml	1.4 mV	1.7 mV	1.9 mV	2.2 mV	2.7 mV	2.8 mV