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 |
|-------|--------------------|------|------|------|
| $S$ (µV/K) | 14.9               | 19.6 | 20.1 | 21.0 |
| $\sigma$ (S/cm) | 1.24             | 0.231| 0.513| 0.762|
| $PF$ (µW/mK$^2$) | 27.5             | 8.88 | 20.7 | 33.6 |
Table S3. TE performances of the dedoped PEDOT:PSS after the addition of different volume of DMSO per 1 ml PEDOT:PSS solution.

|       | 0 µl/ml | 10 µl/ml | 20 µl/ml | 30 µl/ml |
|-------|---------|----------|----------|----------|
| $S$ (µV/K) | 21.0    | 21.6     | 21.6     | 21.2     |
| $\sigma$ (S/cm) | 0.762   | 7.40     | 4.99     | 2.89     |
| $PF$ (µW/mK$^2$) | 33.6    | 345      | 233      | 130      |
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 µl/ml     | 1.3 mV | 1.5 mV | 1.9 mV | 2.2 mV | 2.7 mV | 3.1 mV |
| 20 µl/ml     | 1.4 mV | 1.7 mV | 2.1 mV | 2.3 mV | 2.8 mV | 2.9 mV |
| 30 µl/ml     | 1.4 mV | 1.7 mV | 1.9 mV | 2.2 mV | 2.7 mV | 2.8 mV |