Triboelectric Generators for Sustainable Reduction Leading to Nanoparticles and Nanoclusters

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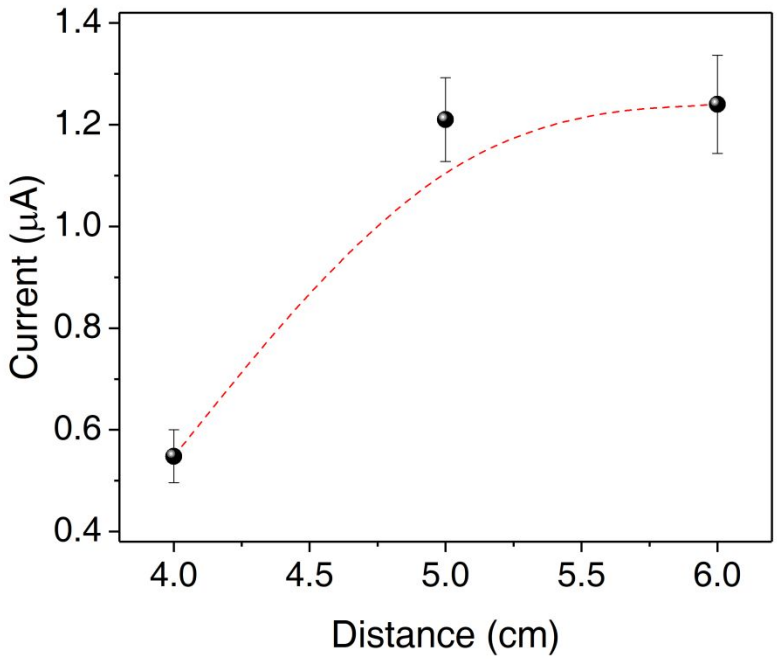

Figure S1. Peak current at different separation between Al electrodes.

Typically, in TENG, nanostructured materials are used to increase the effective contact area, which significantly amplifies the electrostatic charging compared to normal surface. The effect of this increased charging is reflected mainly as a high-voltage output, but the increase in current in not as substantial. Since power ($P = I \times V$), the power values are much higher in such systems. But high voltage (> 100 V) in such systems might have a negative effect on the synthesis of NPs and NCs.

Table S1. A brief comparison of performance of published TENGs with our TG.

	Voltage	**Current**	**Power**	**Mode**	**Materials**
This work	1.4 V	1.2 µA	1.45 µW (~ 1 MΩ)	sliding	1. Teflon sheet 2. paper
Nano Energy **2013**, 2 (4), 491–497[1]	265 V	0.9 µA	0.23 mW (~ 300 MΩ)s	tapping	1. PVA electrospun nanofibers on PET film 2. Teflon film
Nanoscale Research Letters **2018**, 13 (1), 365[2]	8.5 V	0.6 µA	4.8 µW (~16 MΩ)	tapping	1. starch film 2. hand
Nanoscale **2014**, 6 (14), 7842–7846[3]	138 V	65 µA	38 mW (~ 9 MΩ)	tapping	1. electrospun pvdf fibers 2. electrospun nylon fibers

*The values of voltage and current represent the value at peak power.

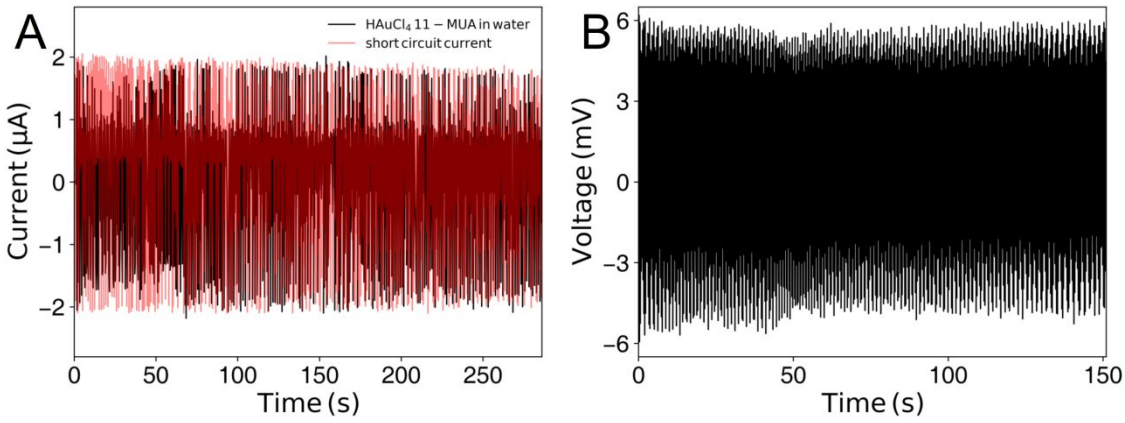

Figure S2. (A) Short circuit current for TG (red), and the current (black) drawn and (B) voltage for the aqueous gold solution during synthesis of MUA-AuNPs.

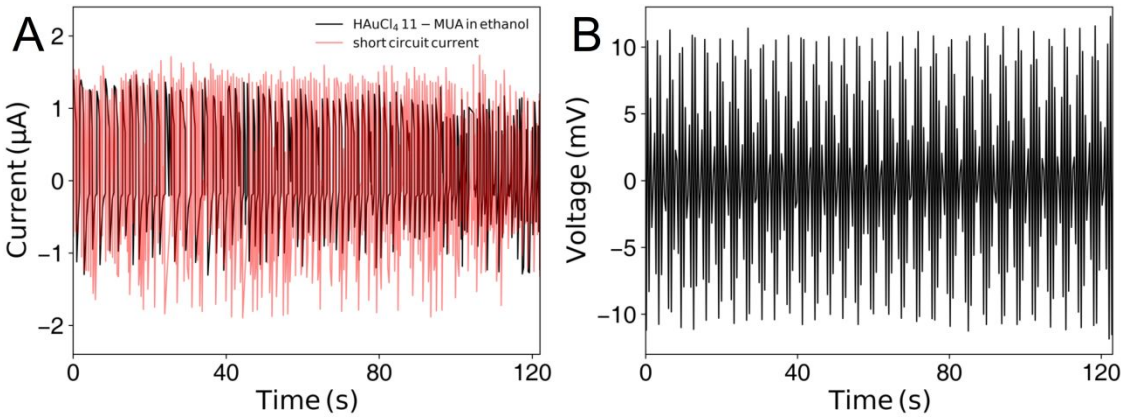

Figure S3. (A) Short circuit current for TG (red) and the current (black) drawn, and (B) voltage for the gold solution in ethanol, during synthesis of MUA-AuNCs.

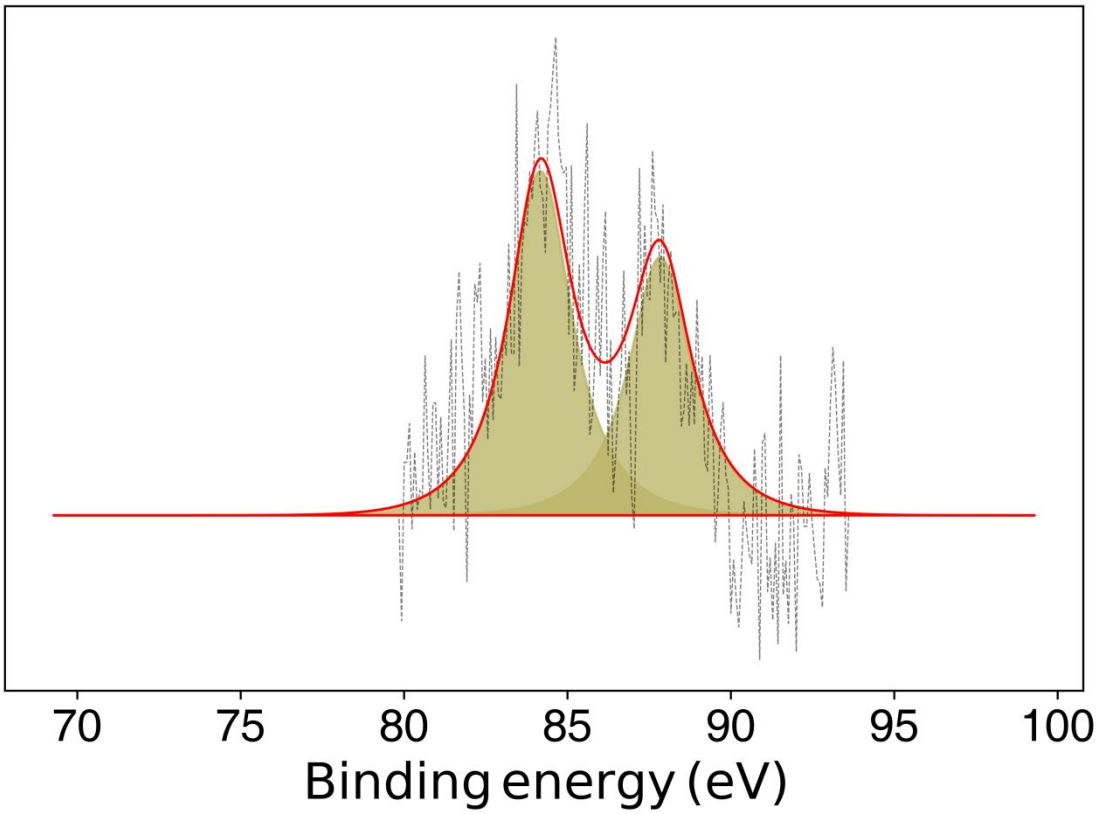

Figure S4. XPS spectrum of MUA-AuNCs in the Au 4f region.

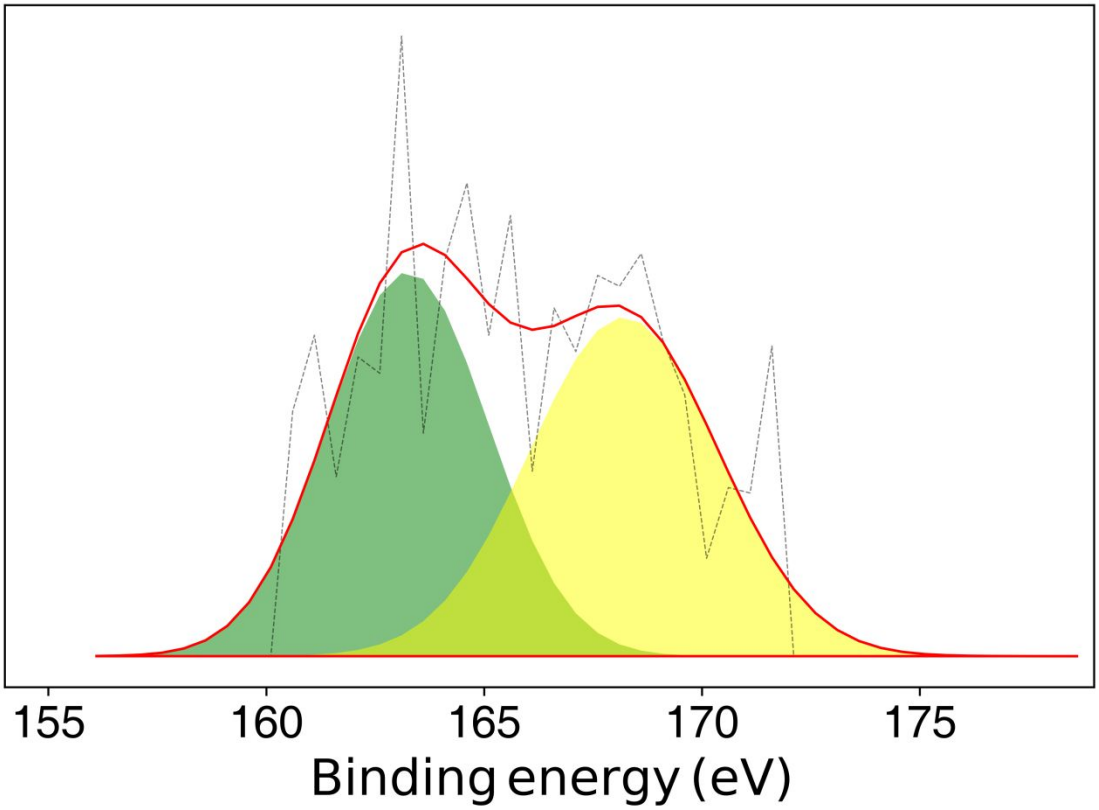

Figure S5. XPS spectrum of MUA-AuNCs (fitted using the survey spectra) in the S 2p region.

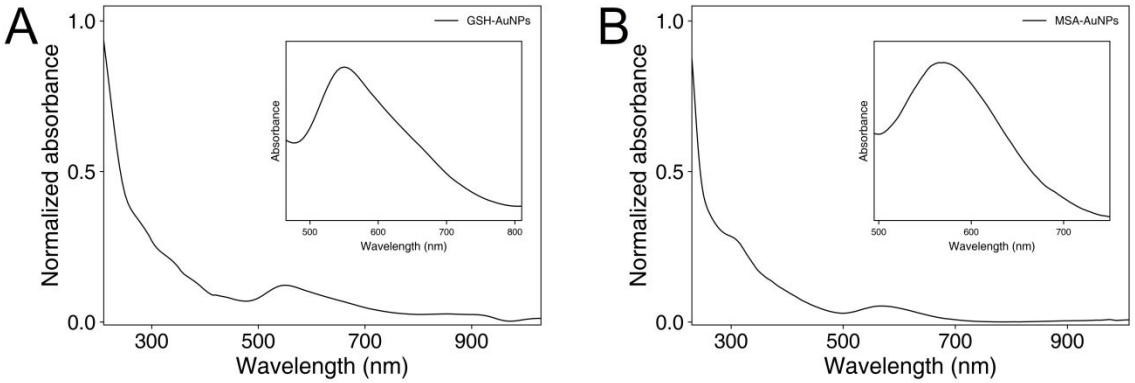

Figure S6. UV-Vis spectra for (A) GSH-AuNPs, and (B) MSA-AuNPs and inset showing the plasmonic peak at 550 nm and 560 nm, respectively.

REFERENCES

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