

Supplementary information

Surface Modification of Triboelectric Materials by Neutral Beams

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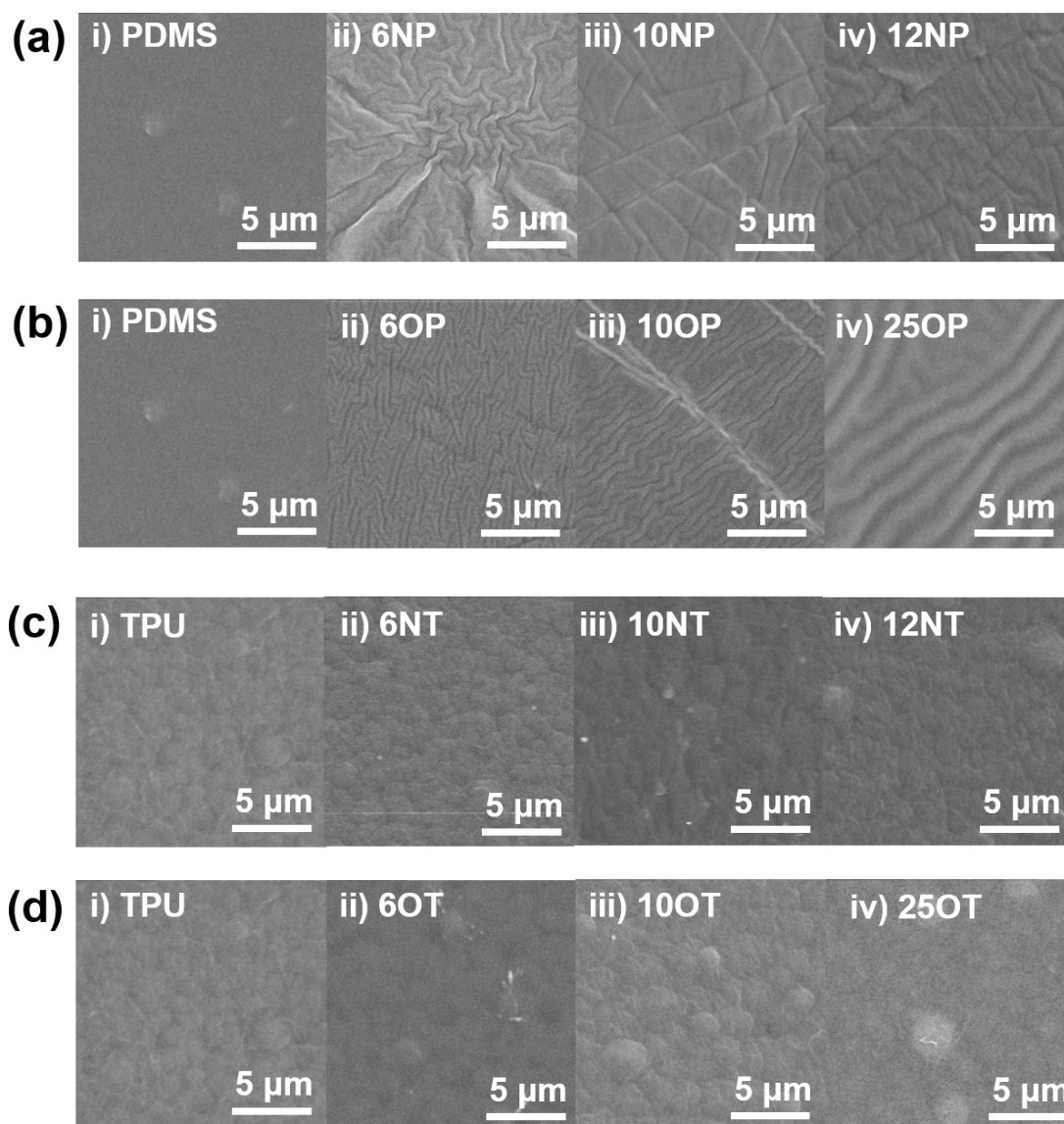


Fig. S1. SEM images of NB-treated PDMS and TPU samples. Surface morphology of (a) N-NB and (b) O-NB treated PDMS samples and (c) N-NB and (d) O-NB treated TPU samples.

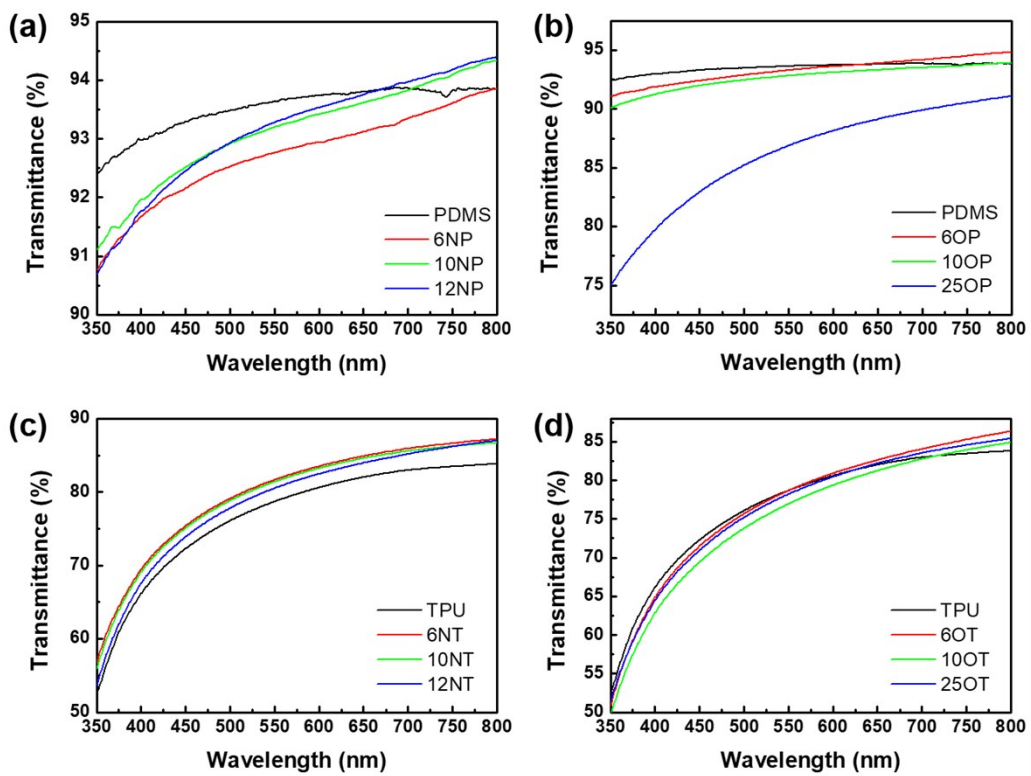


Fig. S2. Transmittance of NB-treated PDMSs and TPUs. Transmittance of PDMSs after (a) N-NB and (b) O-NB treatments. Optical transparency of TPUs after (c) N-NB and (d) O-NB treatments.

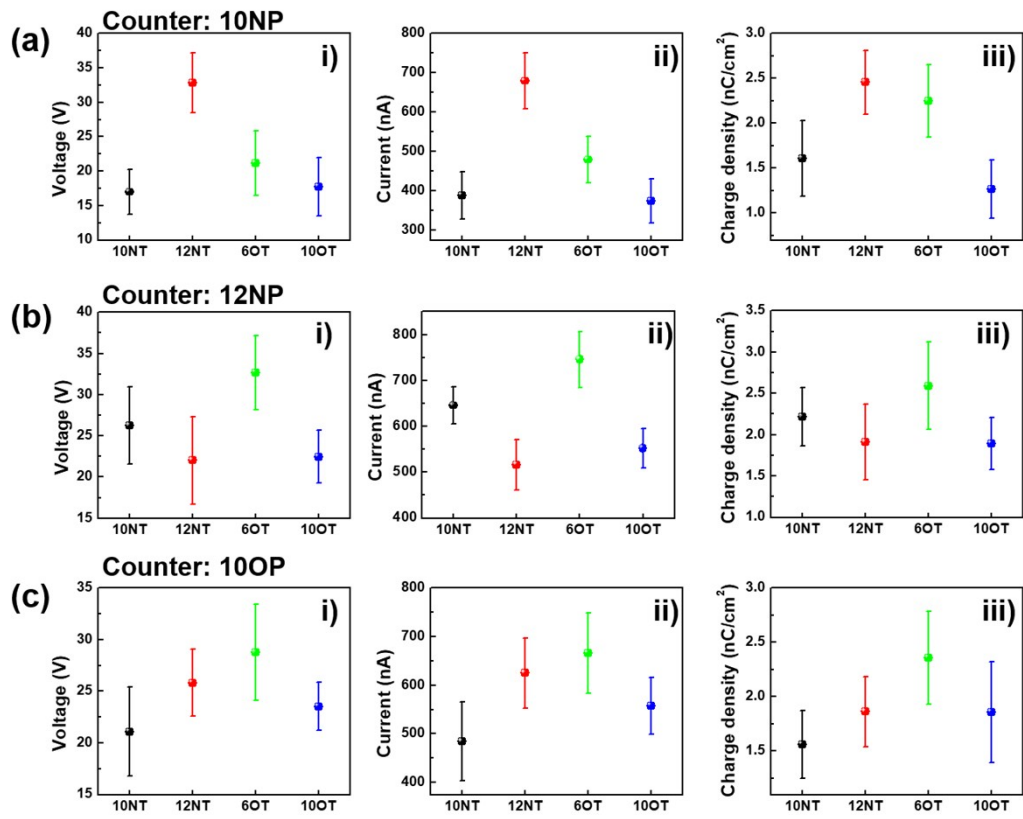


Fig. S3. Triboelectric performance of fully NB-treated TENGs with different counter triboelectric materials. (a) 10 NP, (b) 12 NP, and (c) 10OP; i) voltage, ii) current, and iii) charge density.

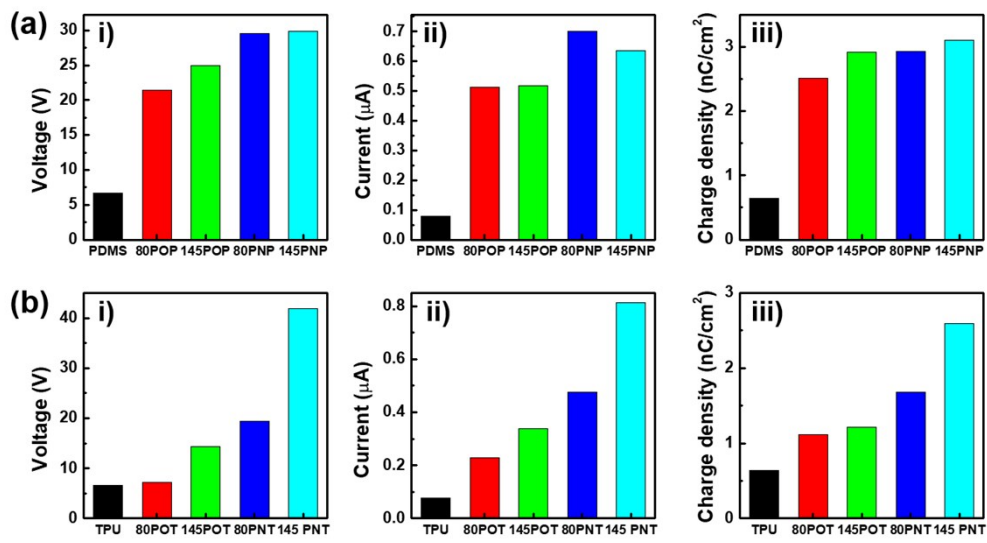


Fig. S4. Effect of oxygen and nitrogen ambient-based plasma on triboelectric characteristics. Triboelectric performance of plasma-treated (a) PDMS and (b) TPU in terms of i) voltage, ii) current, and iii) charge density.

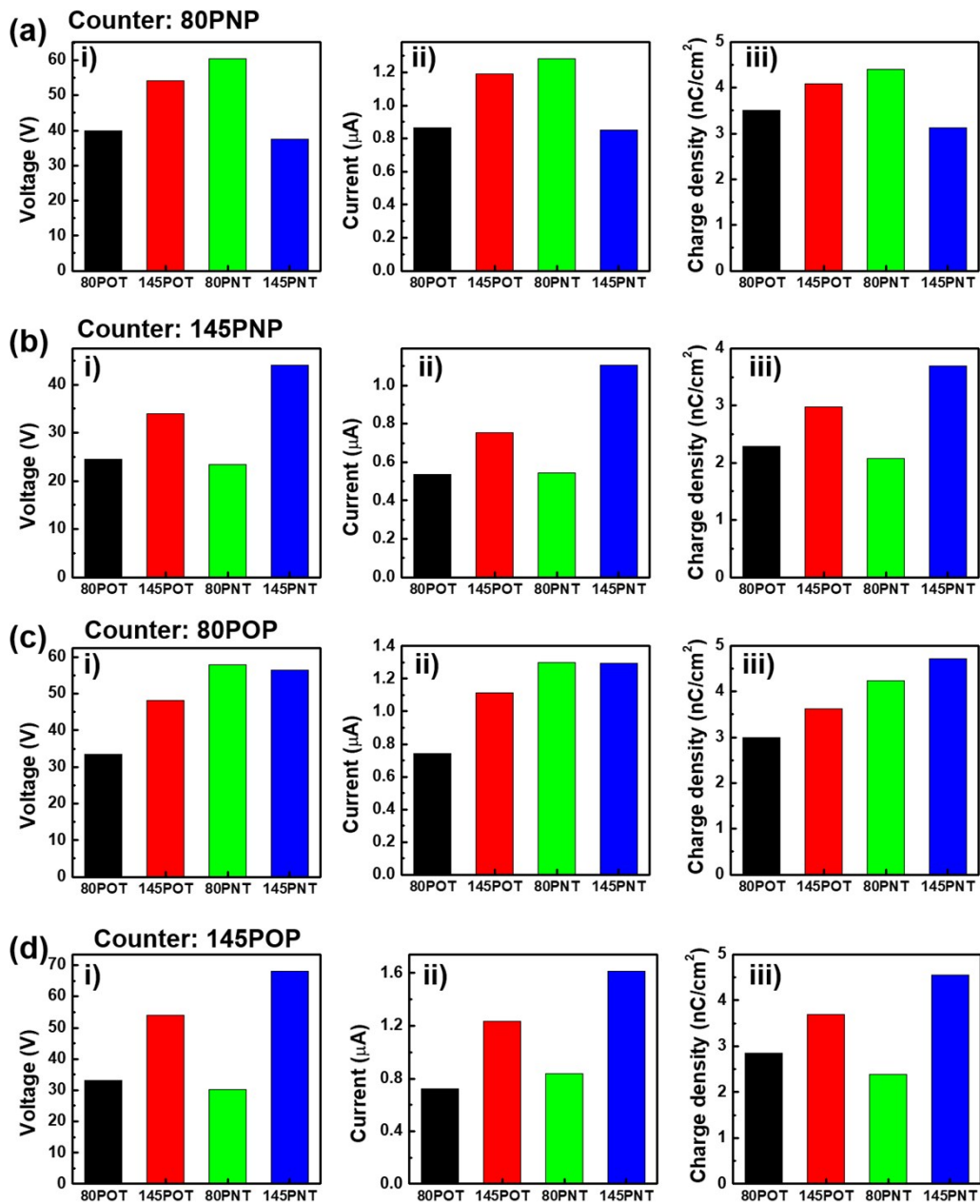


Fig. S5. Measured triboelectric performance of fully plasma-treated TENGs with various counter triboelectric materials. Triboelectric signals obtained when using (a) 80 PNP, (b) 145PNP, (c) 80POP, and (d) 145POP as the counter triboelectric material to 80POT, 145POT, 80PNT, and 145PNT.