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A Size-Unlimited Surface Microstructure Modification Method for Achieving High Performance Triboelectric Nanogenerator

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Abstract

Triboelectric nanogenerator (TENG) is a promising mechanical energy harvesting device, which has many advantages such as low cost, high efficiency and easy fabrication. Surface modification on tribo-surface has been proved to be an efficient way to improve the output performance of TENG. However, the existing methods are time-consuming, high-cost and difficult for large-area processing, which, to some extent, limited the industrial production of TENG technology. In this work, we demonstrated a simple, fast and low-cost method, in which the tribo-surfaces of TENG were processed without size limitations to improve its output performance. Through this method, a large-scale treated TENG can be easily achieved and its output voltage and power can be increased by a factor of 3 and 5, respectively, providing us a size-unlimited, low-cost and time-saving surface micro-structure

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