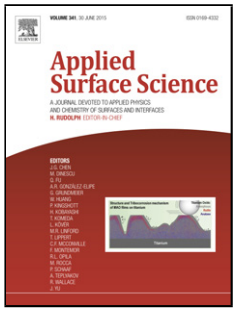


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# Effect of Argon Plasma Treatment on the Output Performance of Triboelectric Nanogenerator

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## Highlights

1. Two different kinds of PDMS films were prepared by spin-coated.
2. The PDMS surface was plasma treated with different power and time.
3. The output performance of TENG was significantly enhanced by plasma treatment.
4. Plasma treatment effect has time-efficient, the output declines with store time.

**Abstract:**

Physical and chemical properties of the polymer surface play great roles in the output performance of triboelectric nanogenerator (TENG). Specific texture on the surface of polymer can enlarge the contact area and enhance the power output performance of TENG. In this paper, polydimethylsiloxane (PDMS) films with smooth and micro pillar arrays on the surface were prepared respectively. The surfaces were treated by argon plasma before testing their output performance. By changing treatment parameters such as treating time and plasma power, surfaces with different roughness and their relationship were achieved. The electrical output performances of the assembled TENG for each specimen showed that argon plasma