

Improvement of Nanostructured Polythiophene Film Uniformity Using a Cruciform Electrode and Substrate Rotation in Atmospheric Pressure Plasma Polymerization

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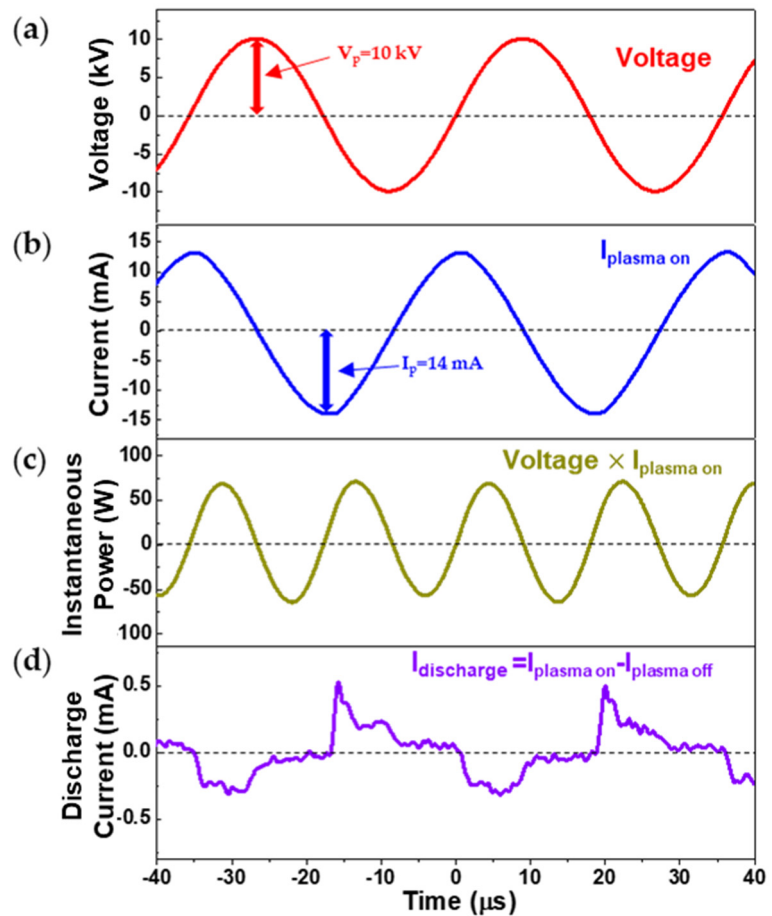


Figure S1. Applied waveforms of (a) voltage, (b) total current in plasma ON state, (c) instantaneous power, and (d) plasma discharge current under the conditions of Table 1.

The averaged power was calculated according to the following formula:

$$P = \frac{1}{T} \int_0^T U(t) \times I(t) dt$$

where T is the period of applied voltage, U(t) is the voltage signal, I(t) is the acquired current, and t is time, respectively. In Figure S1c, the integrated value of the waveform of the power during 1 period (from 0 μ s to 35.6 μ s) is 1.565×10^2 W $\cdot\mu$ s. Therefore, the averaged power during 1 period is 4.40 W.

In Figure S1d, the plasma discharge current is measured as the difference between the total current when the plasma is sustaining ($I_{\text{total}} = I_{\text{discharge}} + I_{\text{displacement}}$) and the total current when it is off ($I_{\text{total}} = I_{\text{displacement}}$).