

Supplementary Material

Significant differences were observed in the evaluated output voltages before and after corona poling. The mechanism of the corona-poling treatment to enhance the piezoelectric properties can be explained as follows:

Through the corona-poling process, C=O linkages in PLA webs were compelled to align with the direction of the surface normal, maximizing the d_{11} , d_{12} , d_{13} , d_{24} , and d_{35} associated with the remnant polarization of PLA/BTNP composite nanowebs, as shown in Figure S1. Consequently, the PLA/BTNP composite nanowebs, after the corona-poling process, may exhibit significantly enhanced piezoelectricity.

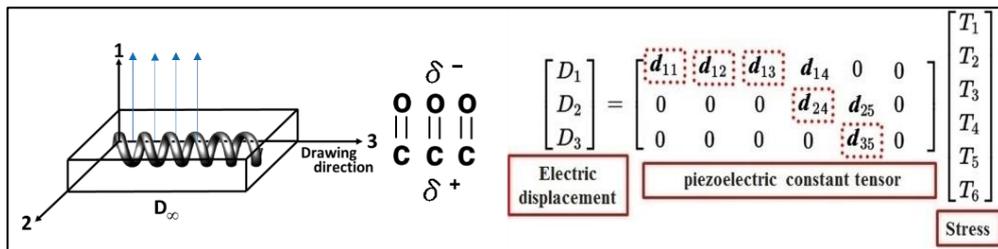


Figure S1. Piezoelectric characteristics of normal stress (T_1) in the PLA/BTNP composite nanowebs after corona-poling process.

As shown in Fig. S1, the charge between the top and bottom electrodes on surface 1 during both normal and shear stress can be described as $D_1 = d_{11}T_1 + d_{12}T_2 + d_{13}T_3 + d_{14}T_4$. When only the normal stress T_1 is present, $D_1 = d_{11}T_1$. Thus, the PLA/BTNP composite nanowebs, after the corona-poling process, should primarily respond to the normal stress T_1 .