On the Nanoscale Mapping at the of the Mechanical and Piezoelectric Properties of Poly (L-lactic acid) Electrospun Nanofibers

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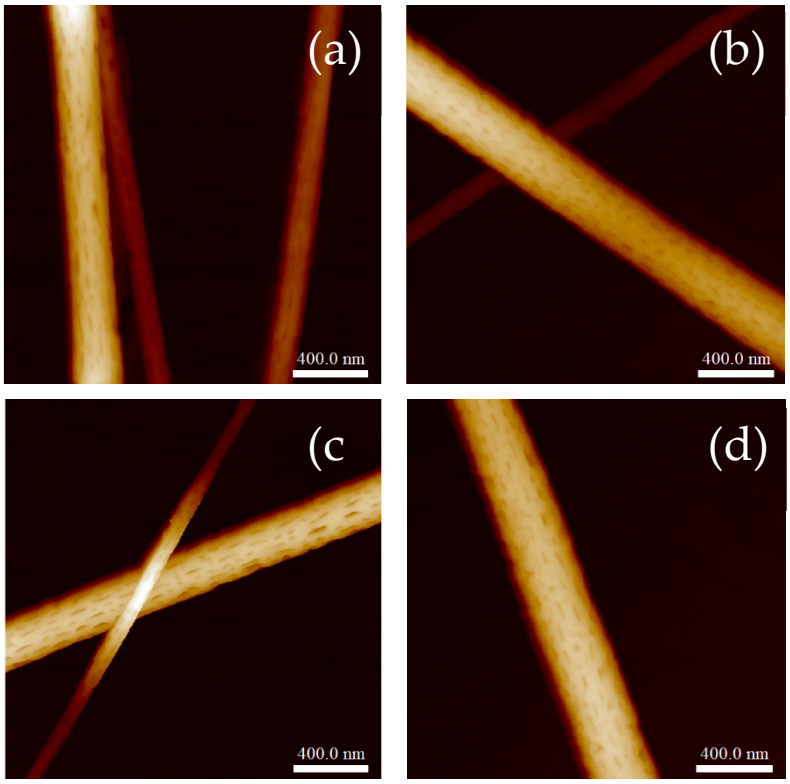

Figure S1. Tapping AFM Height images of several pristine PLLA nanofibers. The Z- scale is 300 nm

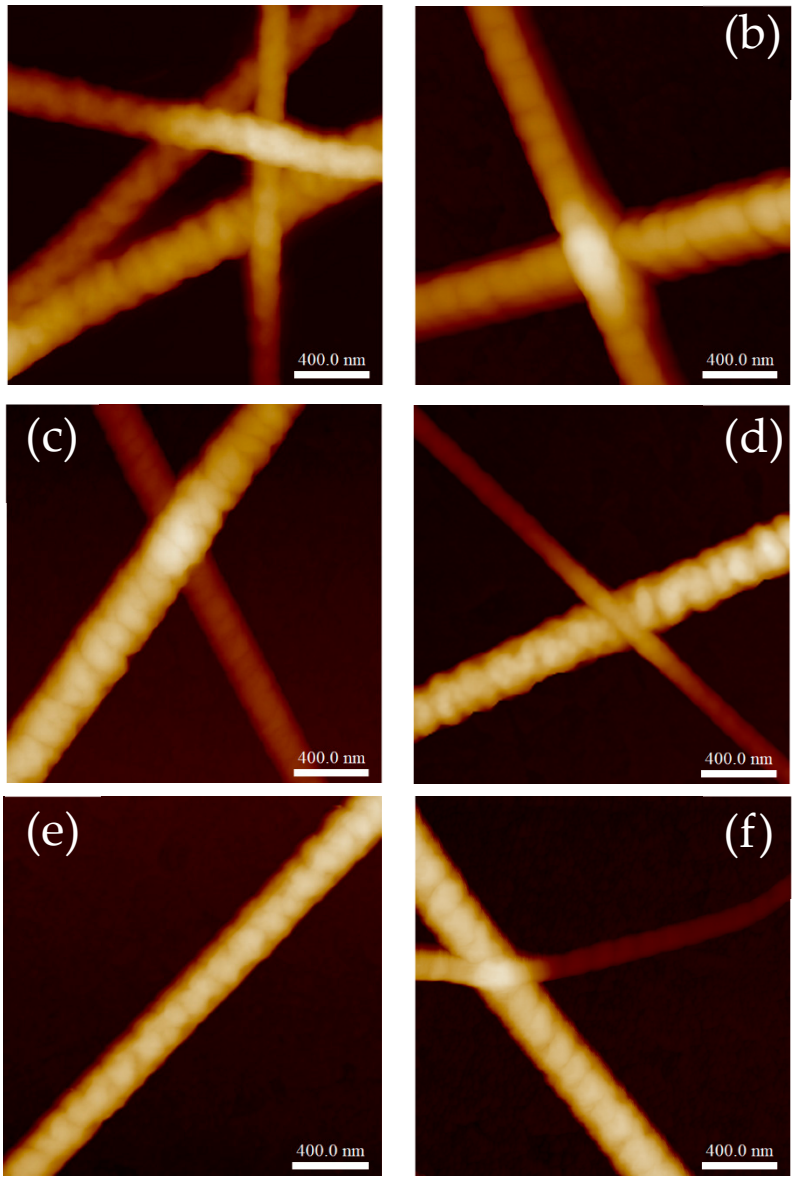

Figure S2. Tapping AFM Height images of several annealed PLLA nanofibers. The Z- scale is 300 nm.

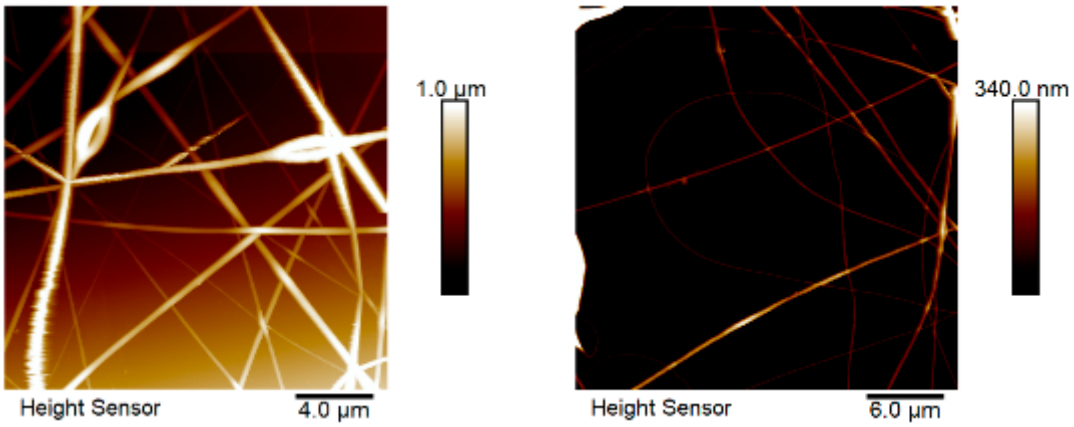

Figure S3. (Left) Tapping AFM Height images of large area of as-spun nanofibers. The scan size is 20 x 20 µm. (Right) Tapping AFM Height images of a large area of annealed nanofibers. The scan size is 30 x 30 µm.

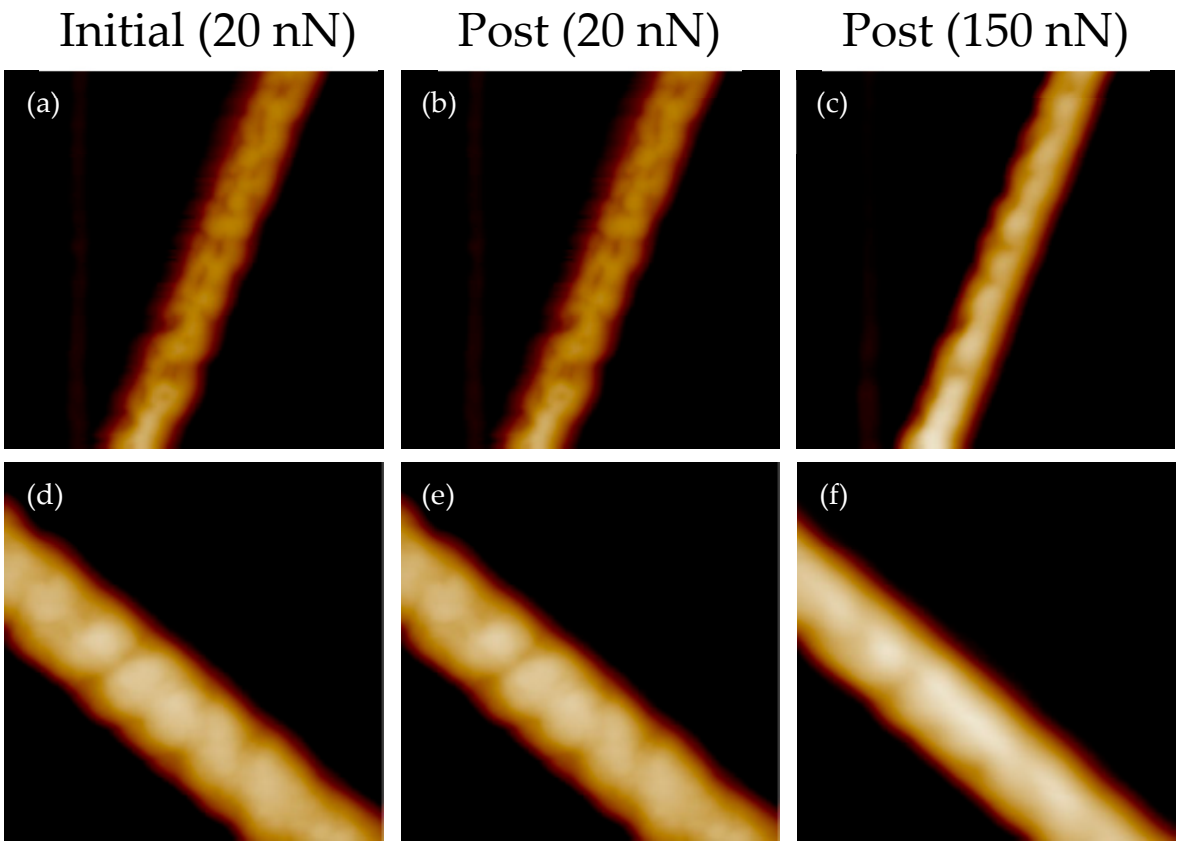

Figure S4. Peakforce QNM Height images corresponding to different applied forces of as-spun nanofibers: (a) initial image, (b) after imaging at 20 nN and (c) after imaging at 150 nN; of annealed nanofibers: (d) initial image, (e) after imaging at 20 nN and (d) after imaging at 150 nN.

All the images were taken at a peakforce of 20 nN.

The changes in morphology with respect to applied force can be clearly observed for the peakforce of 150 nN while there is no modification at 20 nN.

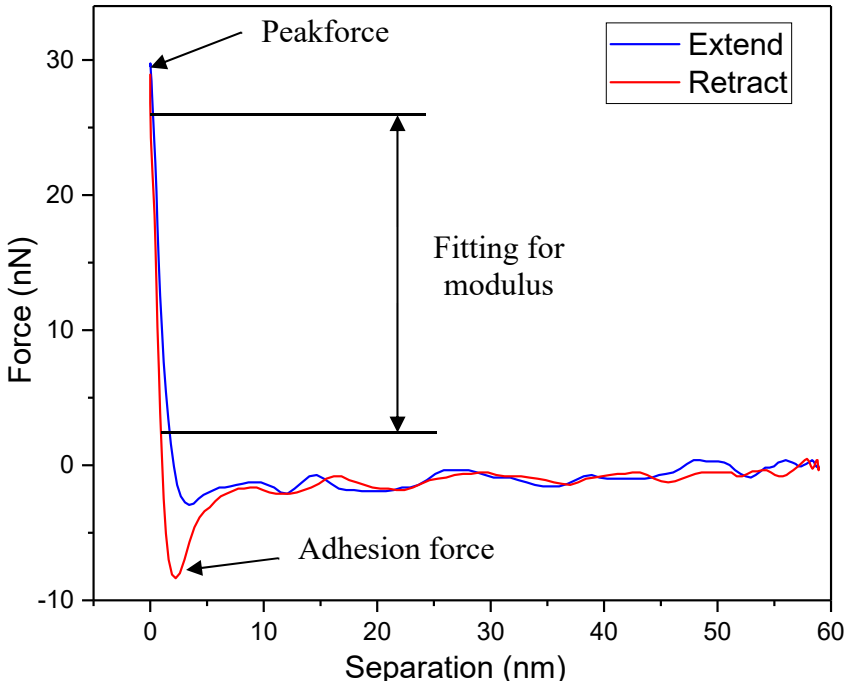

Figure S5. A typical Force-Separation curve obtained by Peakforce QNM. The fitting procedure was applied to the contact part of the retract curve.

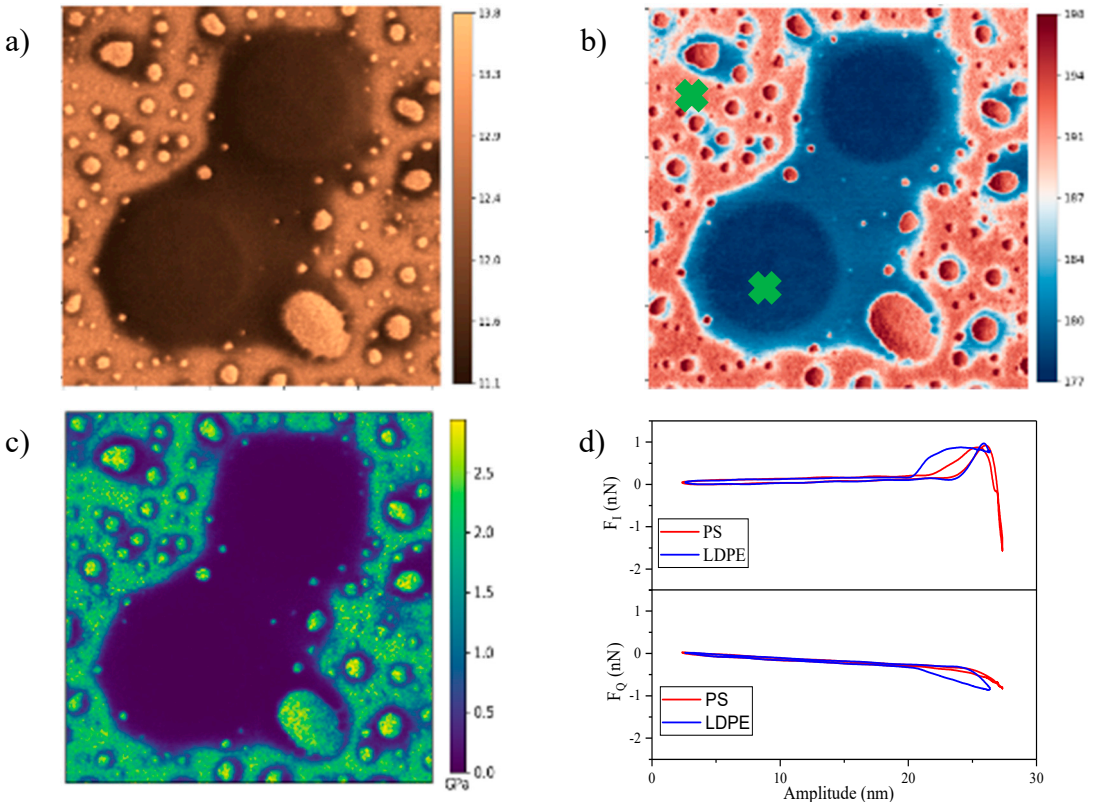

Figure S6. ImAFM results of PS-LDPE reference sample: a) Amplitude image, b) Phase image, c) Young's modulus image and d) F_I and F_Q curves of PS region in red) and LDPE region (in dark blue). The scan size is 2 x 2µm.

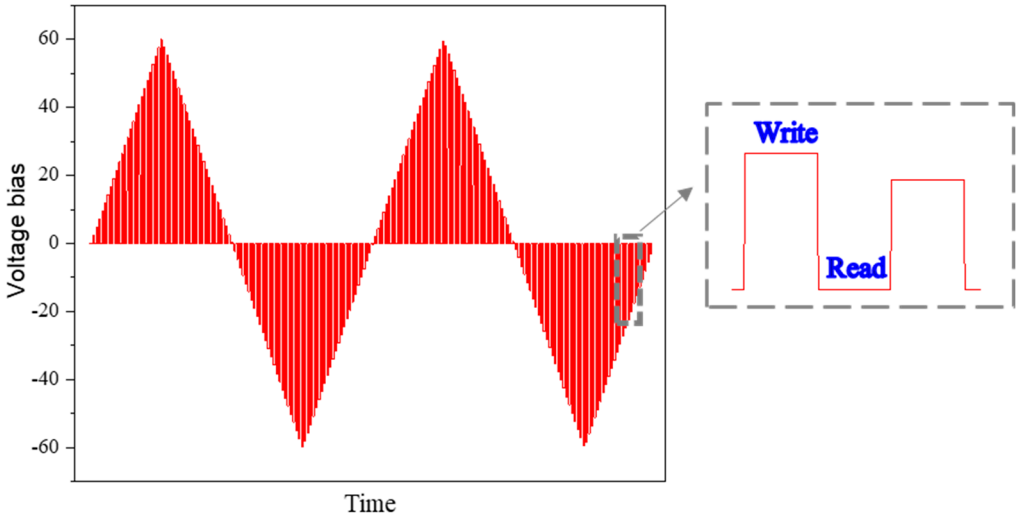

Figure S7. Triangular voltage bias signals applied to the nanofibers. In the write stage: Both DC andAC biases were applied simultaneously. In the read state: The DC bias was turned off and only AC biase was applied.