Electronic Supplementary Material (ESI) for Soft Matter.

Electronic Supplementary Information

Restructuring of Poly(2-ethyl-2-oxazoline)/Tannic Acid Multilayers into Fibers

E. Beruhil Adatoz[a], S. Hendessi[b], C.W. Ow-Yang[c,d] and A. L. Demirel[a,b,e,†]

[a] *Biomedical Sciences & Engineering Program, Koç University, 34450 Sarıyer, Istanbul, Turkey.*

[b] *Materials Science & Engineering Program, Koç University, 34450 Sarıyer, Istanbul, Turkey.*

[c] *Materials Science & Nano-Engineering Program, Sabancı University, 34956 Tuzla, Istanbul, Turkey.*

[d] *Nanotechnology Research and Application Center, Sabanci University, 34956 Tuzla, Istanbul, Turkey.*

[e] *Chemistry Department, Koç University, 34450 Sarıyer, Istanbul, Turkey.*

[†] *Corresponding author: ldemirel@ku.edu.tr.*

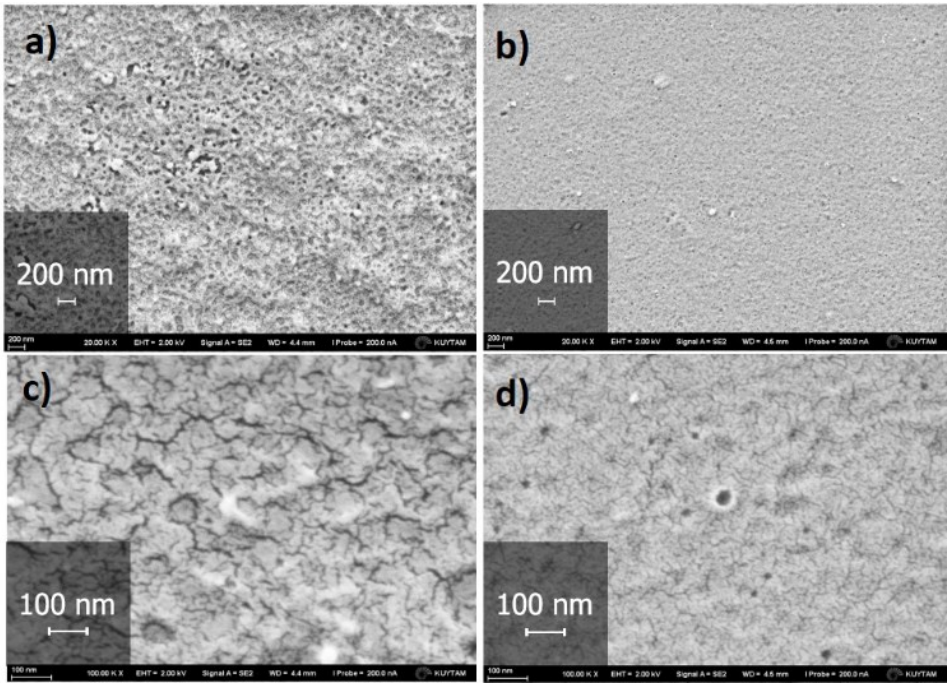

Figure S1. a), c) SEM images of 30 BL PEOX/TA film prepared in the presence of $H_2PO_4^-$ anions; b), d) SEM images of 30 BL PEOX/TA film prepared in the absence of $H_2PO_4^-$ anions.

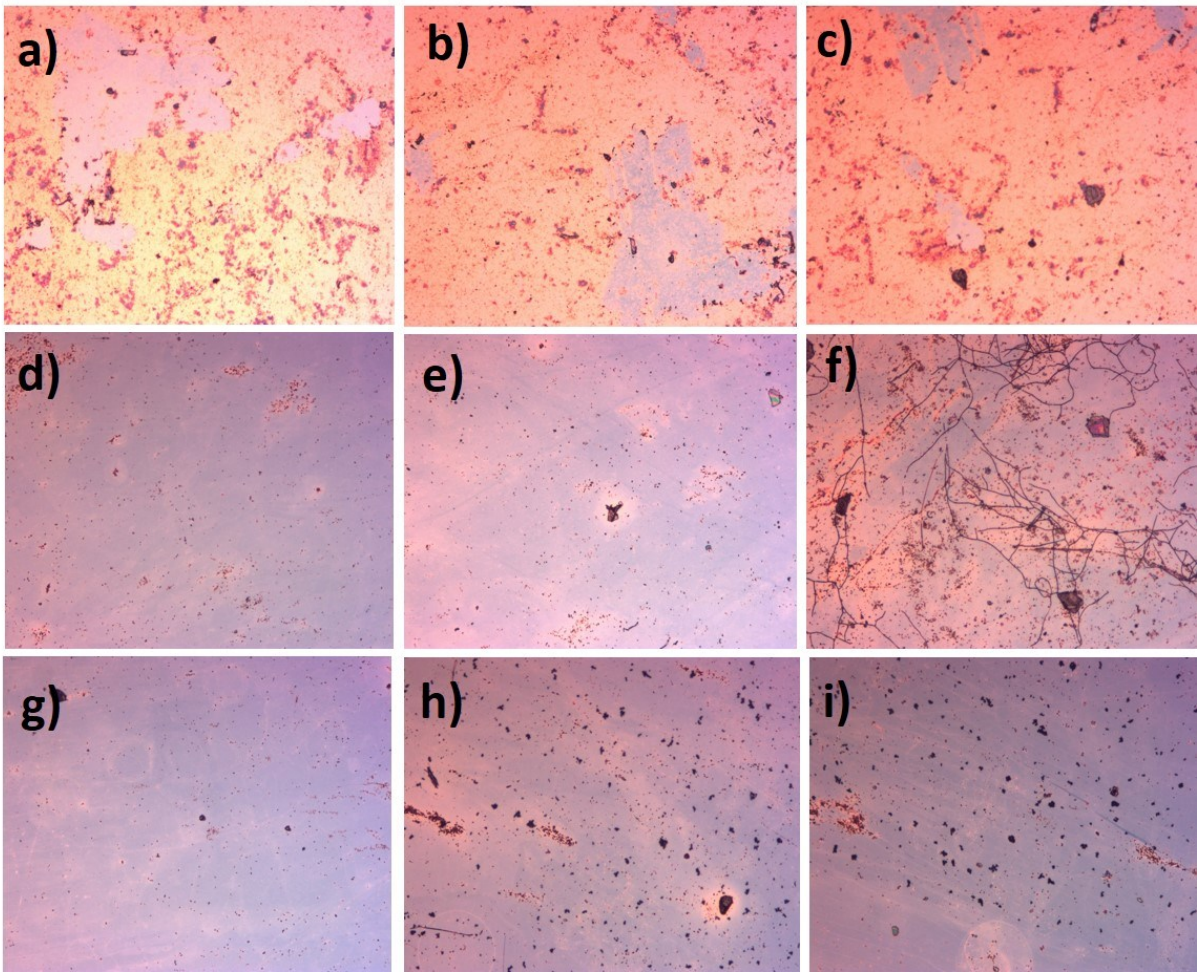

Figure S2. Optical microscopy images of 30 BL PEOX/TA films grown and kept at various conditions: a-c) 30 BL PEOX/TA film prepared at pH3 phosphate buffer and observed at pH3 in the absence of $H_2PO_4^-$ anions: a) after preparation, b) after 1 day at pH3, c) after 2 days at pH3; d-f) 30 BL PEOX/TA film prepared at pH3 in the absence of $H_2PO_4^-$ anions and observed at pH3 in the presence of $H_2PO_4^-$ anions: d) after preparation, e) after 1 day at pH3, f) after 2 days at pH3; g-i) 30 BL PEOX/TA film prepared at pH3 in the absence of $H_2PO_4^-$ anions and observed at pH3 in the absence of $H_2PO_4^-$ anions: g) after preparation, h) after 1 day at pH3, i) after 2 days at pH3. All images are 2.74 mm x 2.05 mm.

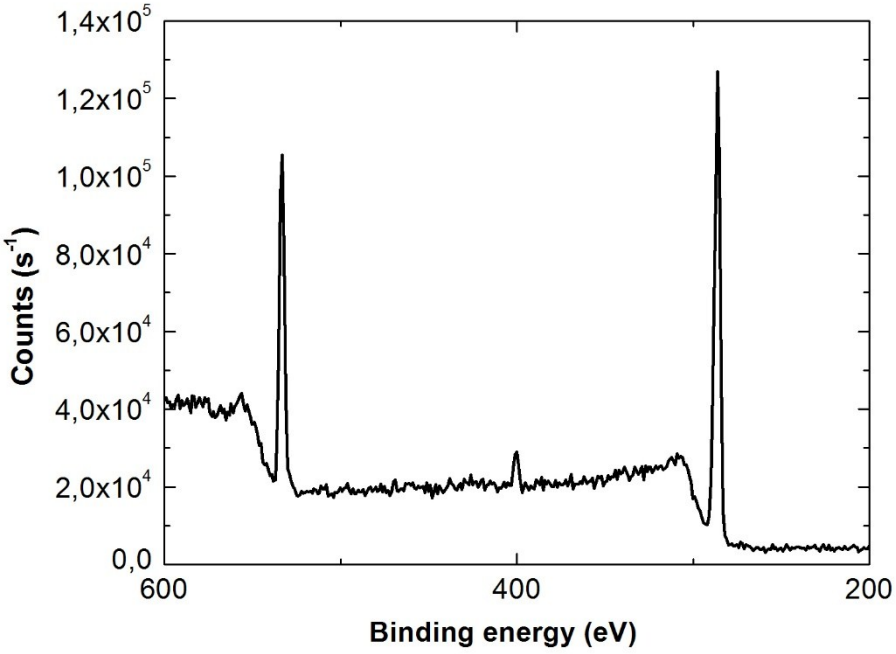

Figure S3. XPS spectrum of dried PEOX/TA fibers. The peaks correspond to C 1s at 286 eV, O 1s at 533 eV and N 1s at 400 eV.

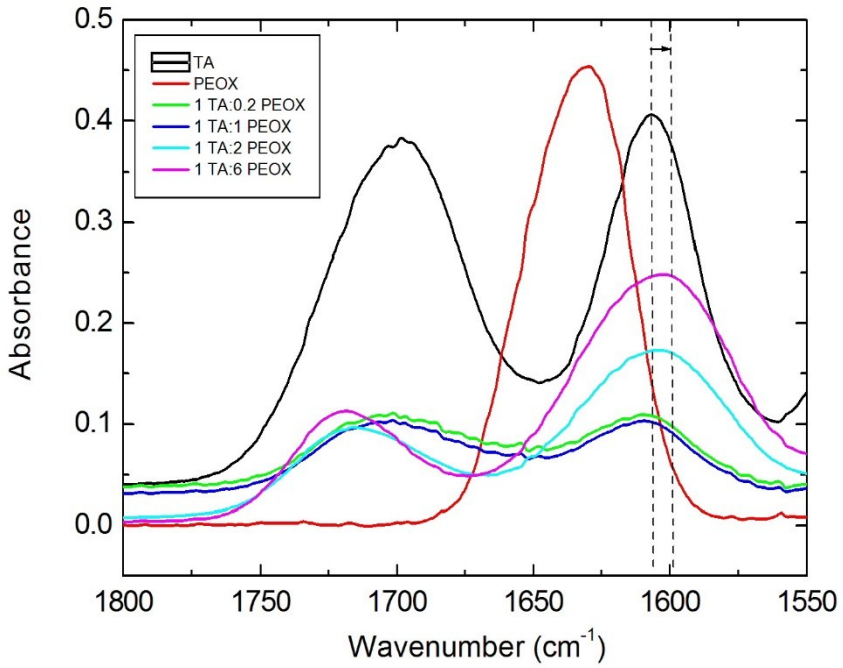

Figure S4. FTIR spectrum of PEOX/TA complexes with changing PEOX monomer ratio at a fixed concentration of TA showing the shifts in carbonyl (C=O) group of both PEOX and TA. The arrow indicates the shift in TA peak due to H-bonds with PEOX.

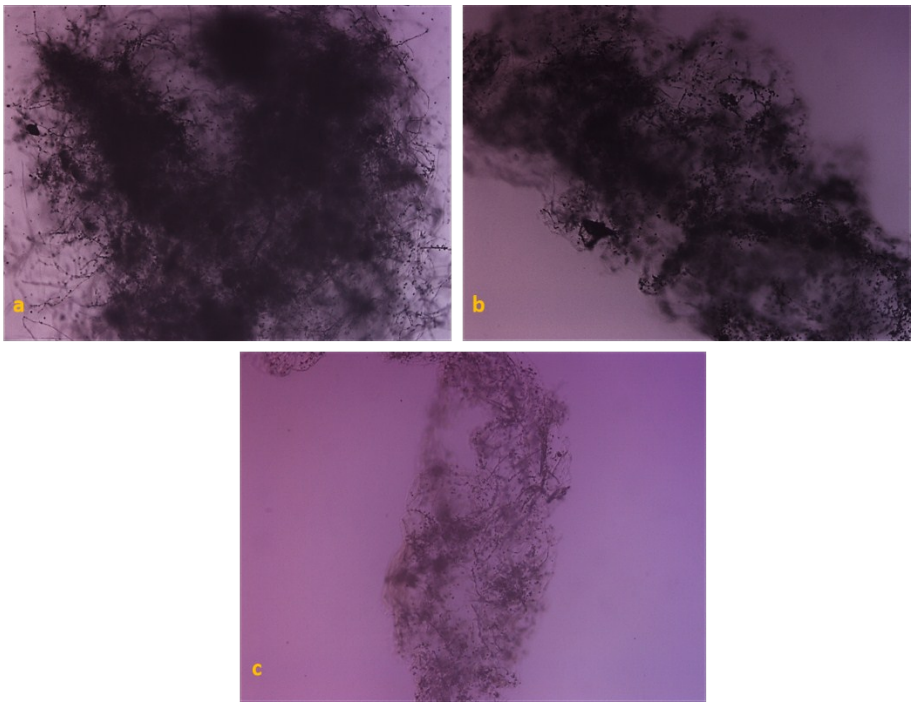

Figure S5. a) Optical microscope image of PEOX/TA fibers in pH3 phosphate buffer solution before transferring into pH10 solution (5480 µm x 4110 µm) b) Optical microscope image of PEOX/TA fibers in pH10 aqueous solution after several hours (5480 µm x 4110 µm) c) Optical microscope image of PEOX/TA fibers in pH10 aqueous solution after 24 hours (5480 µm x 4110 µm).

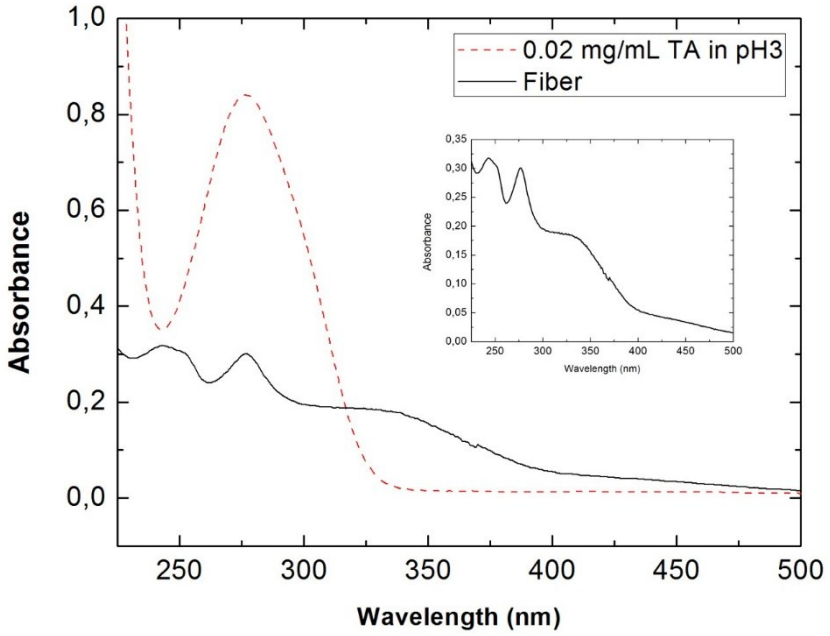

Figure S6. UV-Visible spectrum of dissolved PEOX/TA fibers at pH 10 (solid line) indicating the presence of ionized TA (The inset is the magnified spectrum). The dashed line is the UV-Visible spectrum of TA at pH3 (non-ionized) showing a single peak at 276 nm.