Supporting Information

Conjugated polymer nanostructures displaying high photoactivated antimicrobial and antibiofilm functionalities

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Additional details on cytotoxicity tests

Cells were harvested from culture flasks by trypsinization and aliquots of 100 µL seeded in 96-well microplates in densities of 1×10^4 cells per well and incubated for 24 h at 37 °C in a humidified atmosphere of 5% CO_2 in air (approx. 70-80% confluence). Cell toxicity was studied by means of the colorimetric MTT (3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide) assay based on the reduction of tetrazolium salt by the mitochondrial dehydrogenases of viable cells to yield formazan as colored insoluble product. The reduction of absorbance can be attributed to a lower number of viable cells or the inhibition of cell proliferation upon exposure to PEDOT and PANI nanofibers. Stock solutions of PEDOT and PANI nanofibers were prepared in PBS, diluted in MEM media and dispensed into wells. After 24 h exposure, PEDOT and PANI nanofibers were removed, replaced with MEM/MTT mixture and incubated for 4 h. After that, formazan crystals were dissolved in DMSO and absorbance recorded at 570 and 630 nm using a BioTek® Elisa Reader. At least two independent runs with at least three replicas were used for each concentration level. Cell viability was derived from the formazan generated, the amount of which is proportional to the number of metabolically active cells. Untreated cells and media alone were taken as positive and negative controls. The number of surviving cells was expressed as percent viability and calculated as follows:

$$\text{Percent viability of cells} = \frac{\text{the absorbance of the sample (treated cells)} - \text{background}}{\text{the absorbance of the control (untreated cells)} - \text{background)} \times 100} \quad (1)$$

For the hemolysis assay, erythrocytes obtained from blood cells were PBS washed (pH 7.2) and resuspended in PBS. Then 100 µL of the erythrocyte solution were incubated with PEDOT and PANI nanofibers for 2 h in 96-well plates with PBS. Intact erythrocytes were pelleted by centrifugation at 1000×g for 5 min at 4 °C and the release of hemoglobin was measured using UV-Vis absorbance at 450 nm. The negative and positive controls were PBS and control 1% TritonX-100, respectively. The percent of hemolysis was calculated as follows:

$$\text{Hemolysis \%} = \frac{(\text{sample absorbance} - \text{negative control})}{(\text{positive control} - \text{negative control})} \times 100\% \quad (2)$$

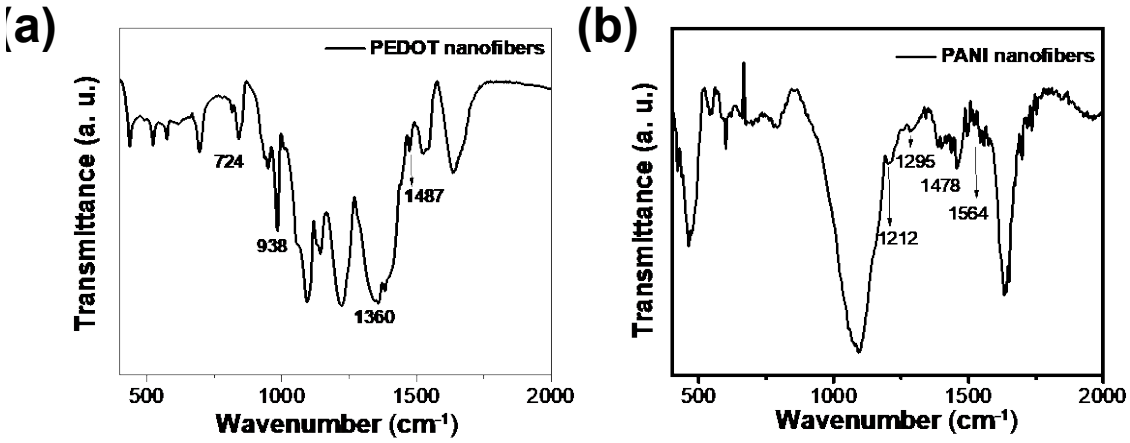


Figure S1. FTIR of (a) PEDOT and (b) PANI nanofibers.

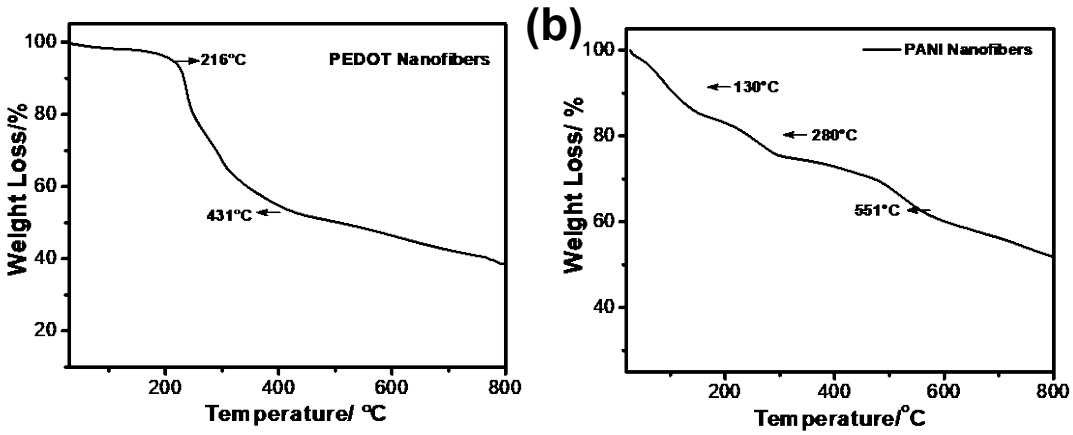
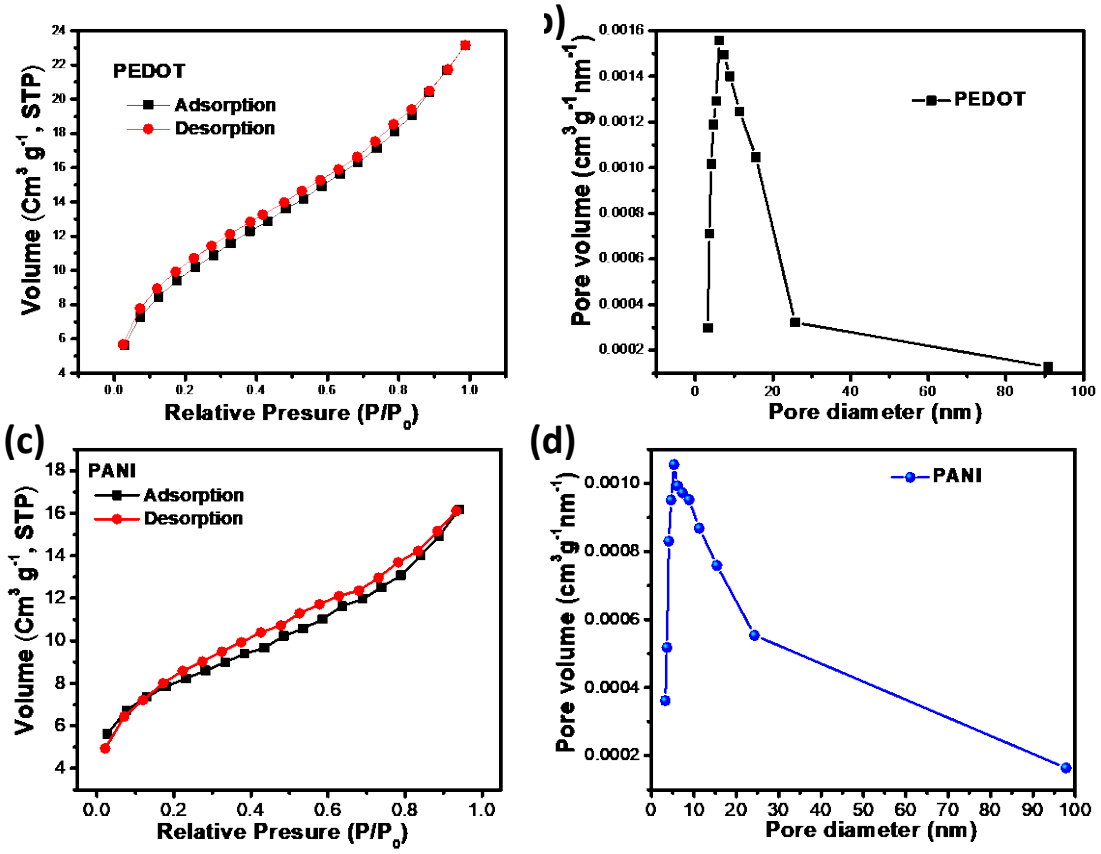


Figure S2. TGA profiles of (a) PEDOT and (b) PANI nanofibers.

Table S1 summarizes the weight average M_w and polydispersity index of the PEDOT and PANI nanofibers by gel permeation chromatography.

Samples	M_w (kDa)	Polydispersity Index (PDI)
PEDOT	1205.2	1.4
PANI	980.5	1.8



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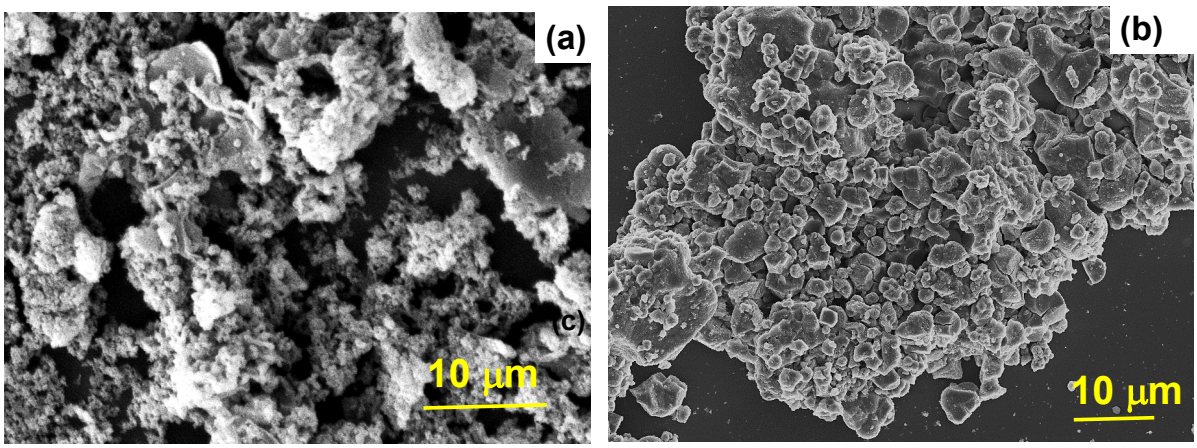

Figure S4. SEM images of bulk PEDOT and bulk PANI obtained from the monomer solution in presence of oxidant without using any surfactant or soft template.

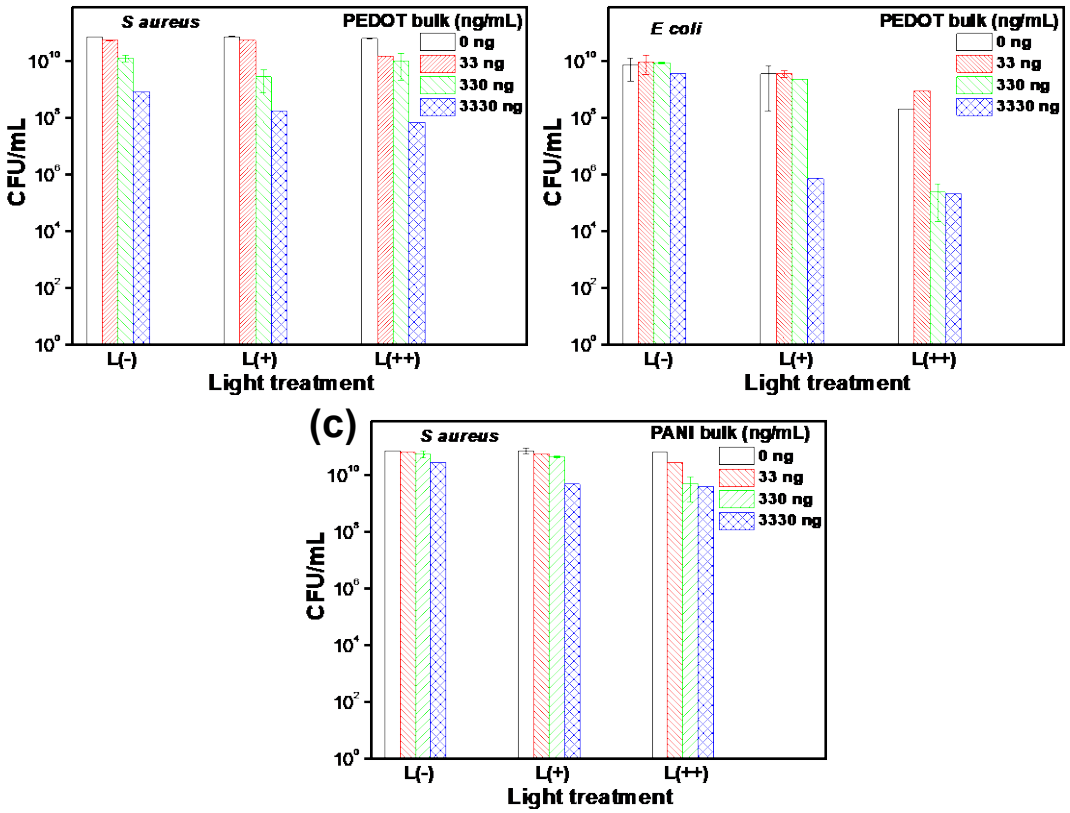

Figure S5. Colony forming units mL^{-1} of *S. aureus* and *E coli* cultures in contact with suspensions of (a, b) bulk PEDOT and (c) bulk PANI.