Electronic Supporting Information (ESI) for:

Controlling Bacterial Adhesion to Surfaces Using Topographical Cues: A Study of the Interaction of *Pseudomonas aeruginosa* with **Nanofiber- Textured Surfaces**

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Supplemental Figures and Tables

Table S1. Total adhesion density (number of cells/length of fiber (mm)) \pm error as a function of fiber diameter (D_f) and spacing (S_f). Total adhesion density represents the adhesion density of all bacteria adhered to the surface regardless of their mode.

Spacing					
Diameter		$S_f < D_b$	$S_f {\approx} D_b$	$D_b \leq S_f \leq L$	$_{b}$ $S_{f} > L_{b}$
$D_f < D_b$		15.2±1.8	20.6±5.3	20.8±2.9	29.1±6.6
$D_{f} \approx D_{b}$		8.3±1.1	19.5±2.0	25.7±5.4	44.7±5.7
$D_f > D_b$		14.7±1.4	33.4±3.3	42.7±8.1	83.0±5.8
Adhesion density in "AF" mode (Number of cells / Length of fiber (mm))	4 3 - 2 - 1 - 0 -	SD (D _f < D _b)	MI (D _f ≈	□ □ □ □ □ □	$S_{f} < D_{b}$ $S_{f} \approx D_{b}$ $D_{b} < S_{f} \leq L_{b}$ $S_{f} > L_{b}$ LD $(D_{f} > D_{b})$

Fig. S1: Adhesion density in the AF mode as a function of fiber diameter and spacing. Illustration of the AF mode, fiber diameter (D_f) and spacing (S_f) has been presented Fig. 1.



Fig. S2. A: Schematic of the STEP platform for manufacturing of highly aligned polymeric nanofibers, B: Illustration of the geometrical parameters of diameter (D_f) and spacing (S_f) of the nanofibers.

Table S2. The solution parameters for the small diameter (SD), medium diameter (MD) and large diameter (LD) nanofibers used in this work.

	(g/mol)	(wt. %)	(nm)
SD	1 Million	7	91±17
MD	1.5 Million	7	482±52
LD	2 Million	13	971±151

Name Molecular weight Concentration of PS in xylene Diameter



Figure S3. Examples of counting process A: half AS for each half-fiber, B: one AS for the half fiber, C: half CS for each half-fiber, D: one CS for the bottom half-fiber, E: half CF for each half fiber, F: half AF for each half fiber. All scale bars represent 500 nm.