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Supporting Information

Multi-biofunctional properties of three species of cicada wings and biomimetic fabrication of nanopatterned titanium pillars

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Table S1. Roughness analysis of the cicada wings surfaces measured using AFM scans over 2 µm × 2 µm scanning area.

Samples	Ra (nm)	Rq (nm)	Rmax (nm)	Area percentage	Skewness	Kurtosis
Glass	0.008 ± 0.001	0.07 ± 0.08	1.08 ± 0.5	0.004 ± 0.003	0.86 ± 0.5	4.8 ± 4.9
PC	27.7 ± 3.6	34.6 ± 4.4	119.7 ± 3.2	61.9 ± 16.2	0.05 ± 0.27	0.1 ± 0.3
AC	39.5 ± 12.2	48.7 ± 12.8	159.6 ± 10.7	102.5 ± 42.4	0.1 ± 0.1	0.2 ± 0.4
PE	39.2 ± 13.1	47.9 ± 17.5	168.6 ± 6.1	140.9 ± 20.	-0.5 ± 0.2	0.04 ± 0.14

Table S2. The binding energy and atomic number counts determined by XPS spectra of the three insect wings

Elements	Parameters	PC	AC	PE
C1s	b.e	285	285	285
	a.c	86.6	84.0	88.7
O1s	b.e	529	530	529
	a.c	9.5	12.7	9.1
N1s	b.e	397	397	397
	a.c.	1.7	1.27	0.5

b.e, binding energy; a.c., atomic number

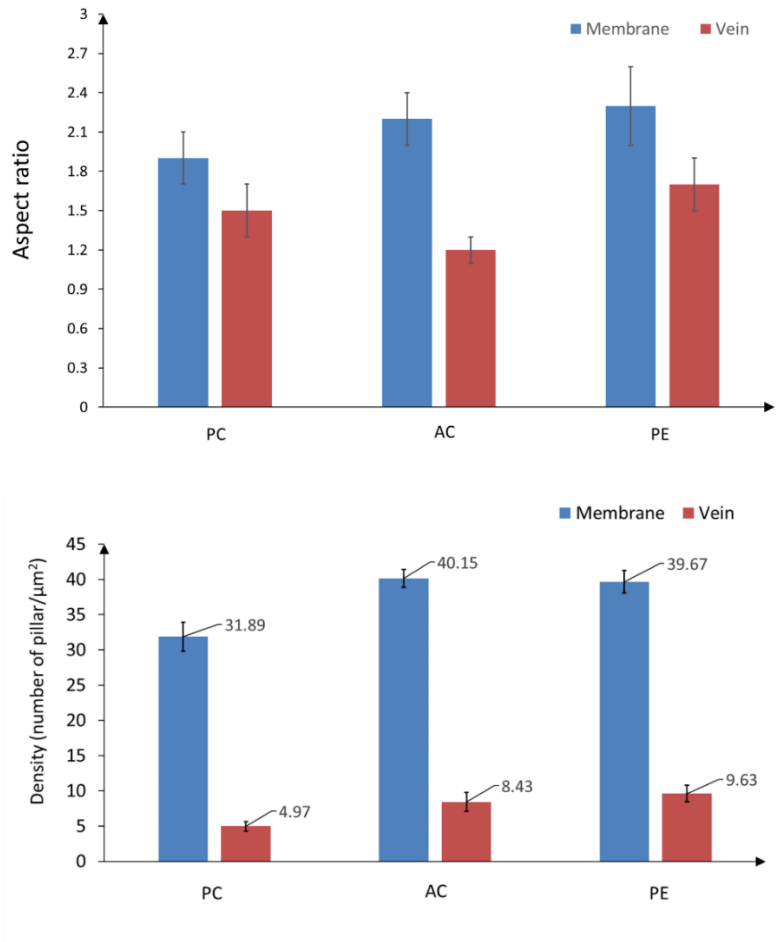

Figure S1. Aspect ratio and density of the nanopillars on the membrane and vein regions of the three species of cicada wings.

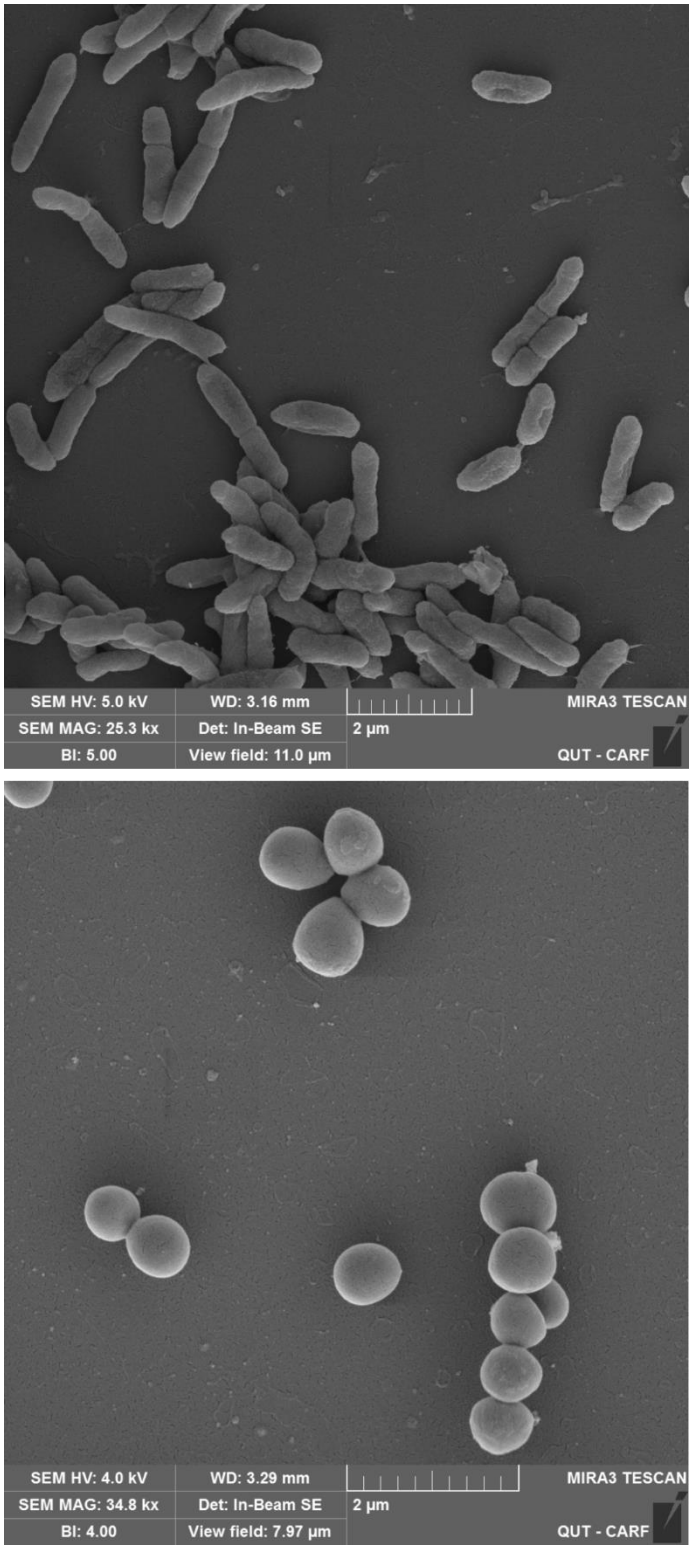

Figure S2. Attachment profile of *P. aeruginosa* and *S. aureus* cells on smooth control (glass) surfaces.