Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information for

Engineering a Nanostructured "Super Surface" with Superhydrophobic and Superkilling Properties

Jafar Hasan[a], Shammy Raj[a], Lavendra Yadav[b], Kaushik Chatterjee[a]*

[a]Department of Materials Engineering and [b]Centre for Nanoscience and Engineering

Indian Institute of Science, Bangalore, Karnataka, India 560012

* *author to whom all correspondence should be addressed*

Email: kchatterjee@materials.iisc.ernet.in

Tel: +91-80-22933408

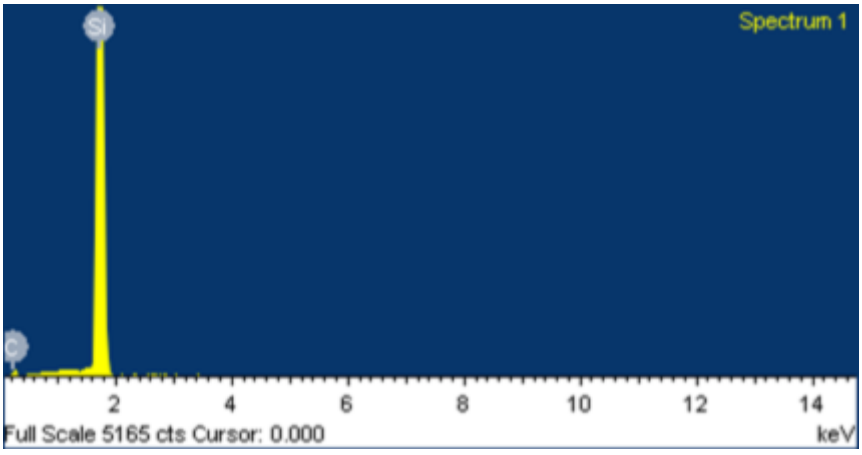

Figure S1. EDX spectra of the control (Silicon wafer) surface.

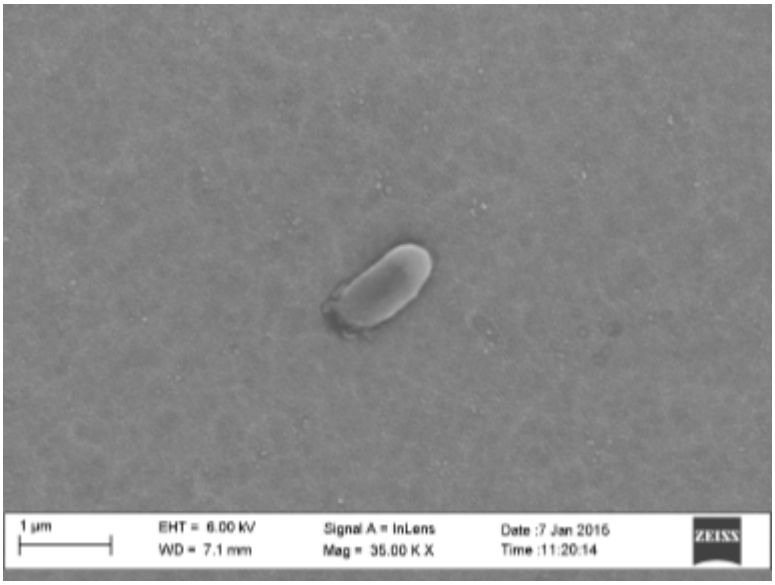

Figure S2. SEM image of an intact *E. coli* cell on a control (Silicon wafer) surface.

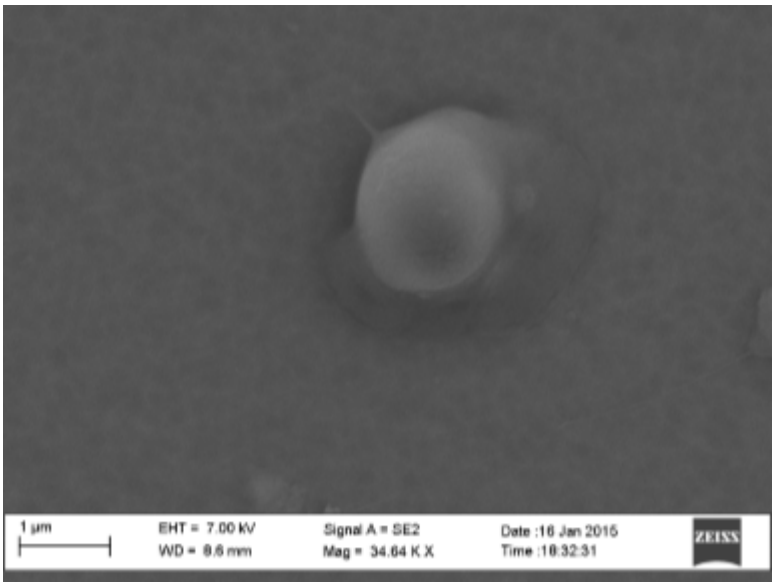

Figure S3. SEM image of an intact *S. aureus* cell on a control (Silicon wafer) surface

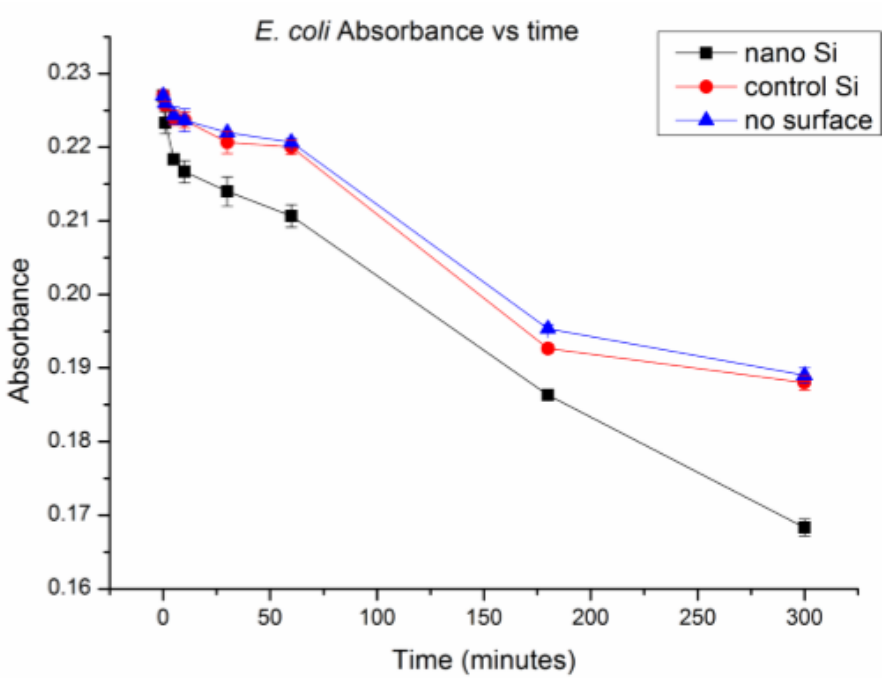

Figure S4. The absorbance values of the *E. coli* cells against the discrete incubation time intervals on the 0.5 cm × 0.5 cm of the controls and nanostructured surfaces. The surfaces were kept in 24-well plates where cells were present in 1 mL of 25 mM PBS solution and the OD measurements were taken after various time intervals.

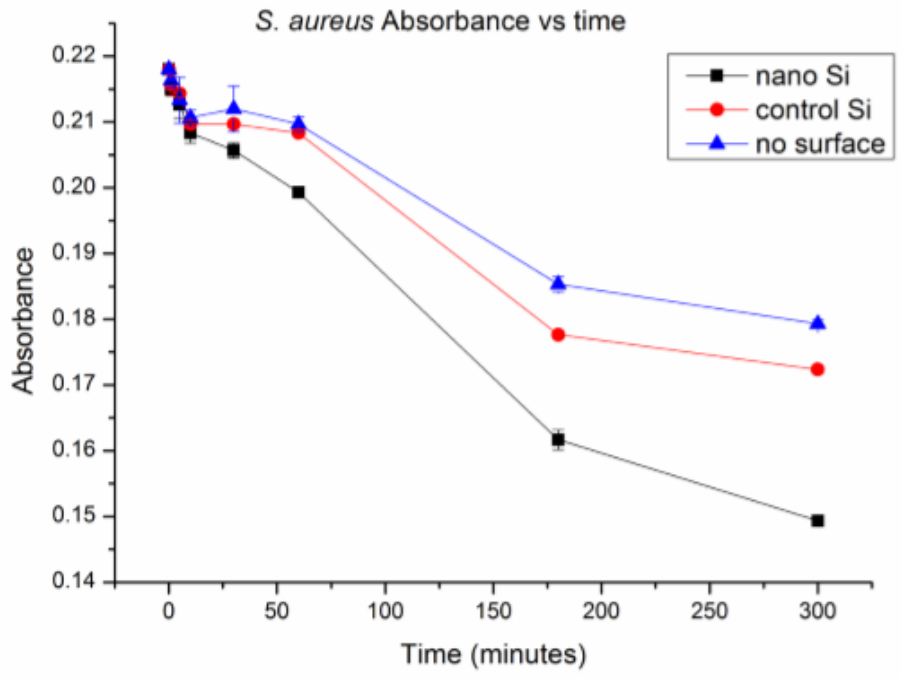

Figure S5. The absorbance values of the *S. aureus* cells against the discrete incubation time intervals on the 0.5 cm × 0.5 cm of the controls and nanostructured surfaces. The surfaces were kept in 24-well plates where cells were present in 1 mL of 25 mM PBS solution and the OD measurements were taken after various time intervals.

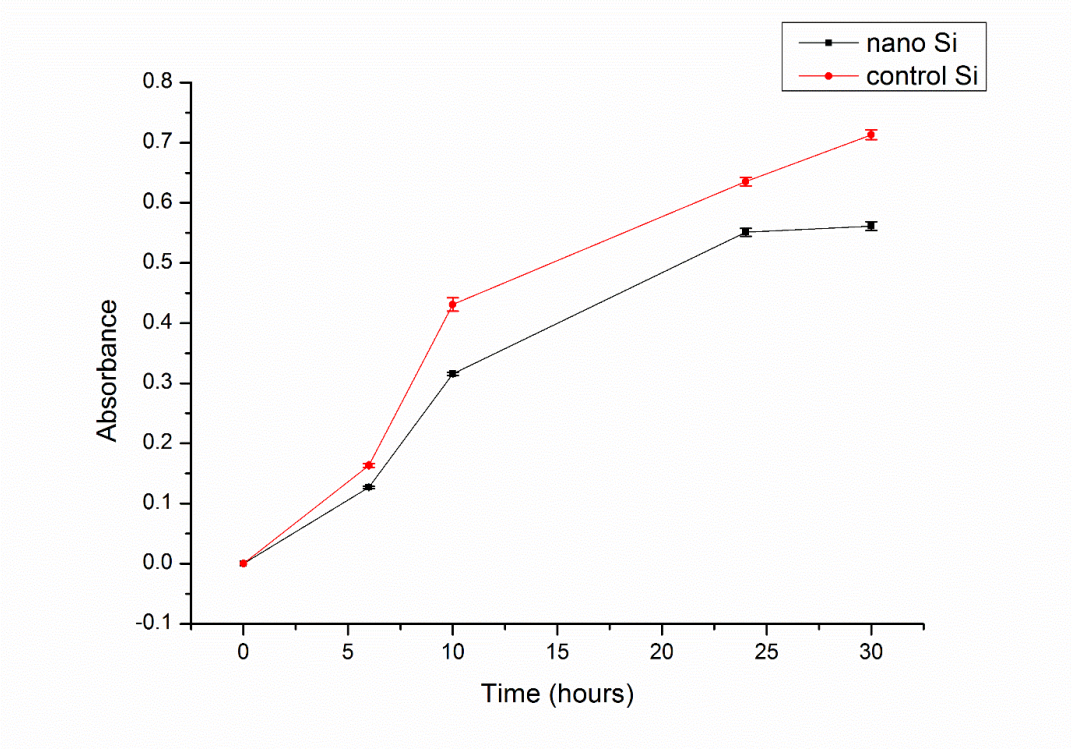

Figure S6. Absorbance vs time curve of the *E. coli* cells on the control and nanostructured surface in a growing nutrient media.

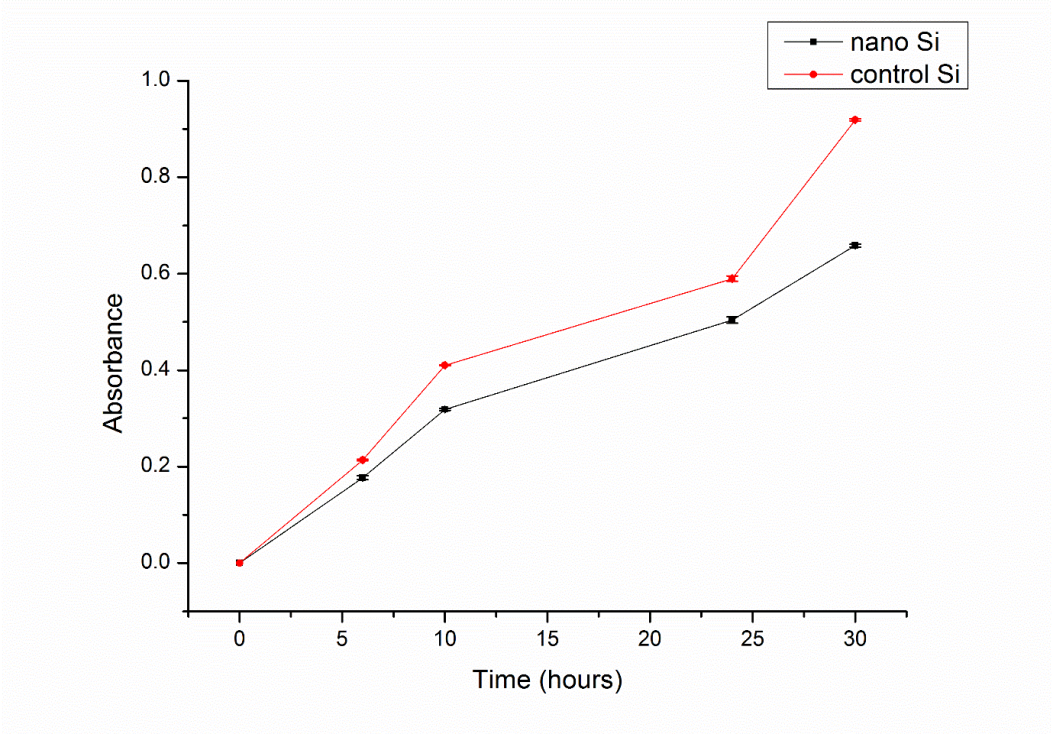

Figure S7. Absorbance vs time curve of the *S. aureus* cells on the control and nanostructured surface in a growing nutrient media.

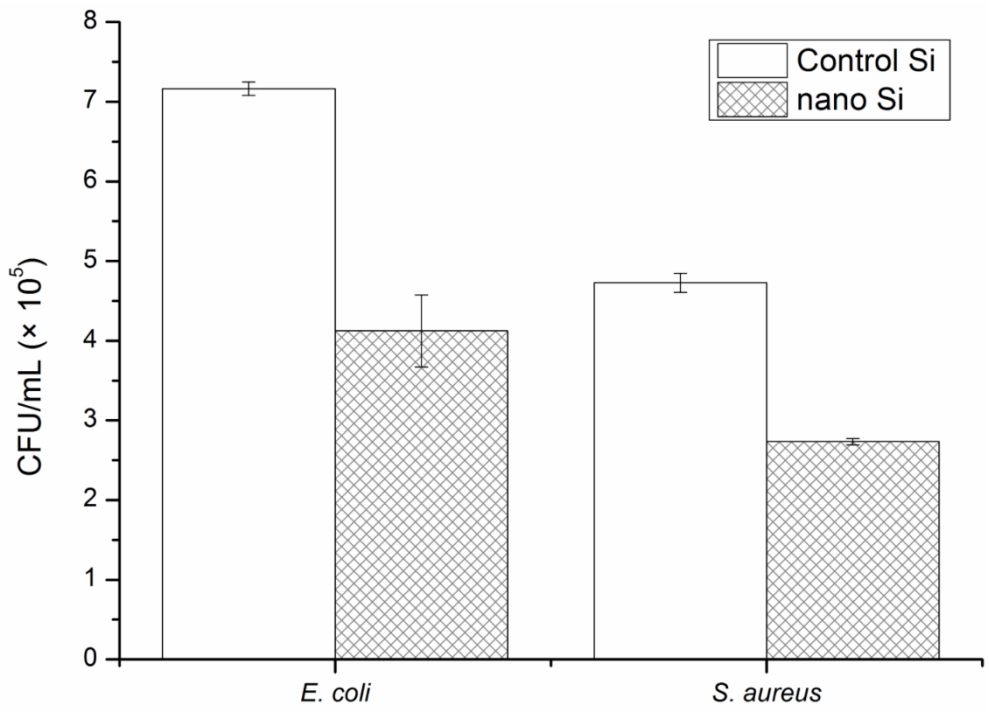

Figure S8. The colony forming units per mL of the two strains were measured after 1 hour incubation on control and nanostructured surfaces.

Table S1. Distribution of elements obtained from EDX spectra of the nanostructured silicon surface.

Element	Weight %	Atomic %
C K	20.68	35.71
O K	1.42	1.84
F K	13.90	15.17
Si K	64.00	47.27

Table S2. Distribution of elements obtained from EDX spectra of the control surface.

Element	Weight %	Atomic %
C K	12.73	25.44
Si K	87.27	74.56

Video S1. The low adhesive nature of the super surface is visible as the water droplet bounces and moves off the surface.