

Supporting Information for **Antibacterial Au nanostructured surfaces**

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1. Plasma etching of W through alumina nanoporous template

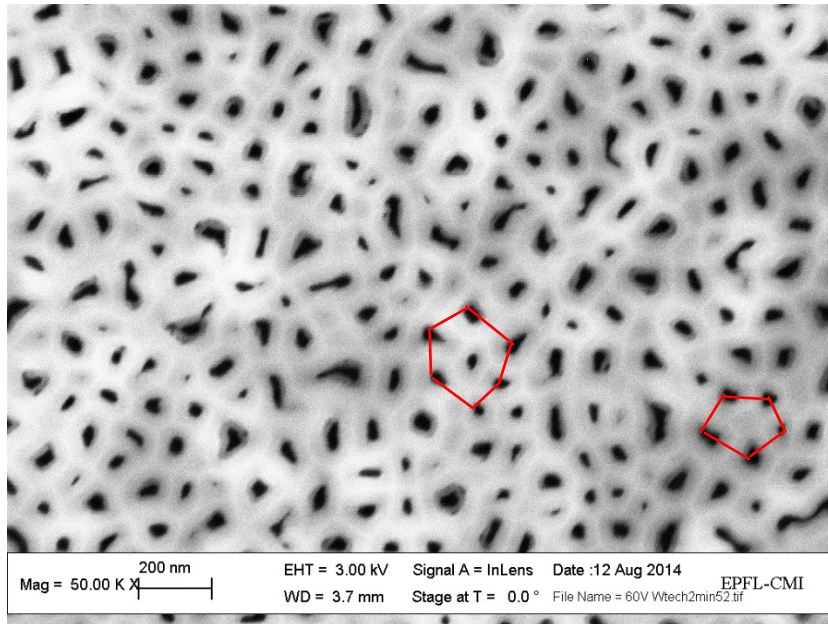


Figure S1 : Top view of alumina nanoporous template after plasma etching of W. The nanopores are self-organized in a near-hexagonal pattern as indicated. Based on which nanorings and nanonuggets are formed.

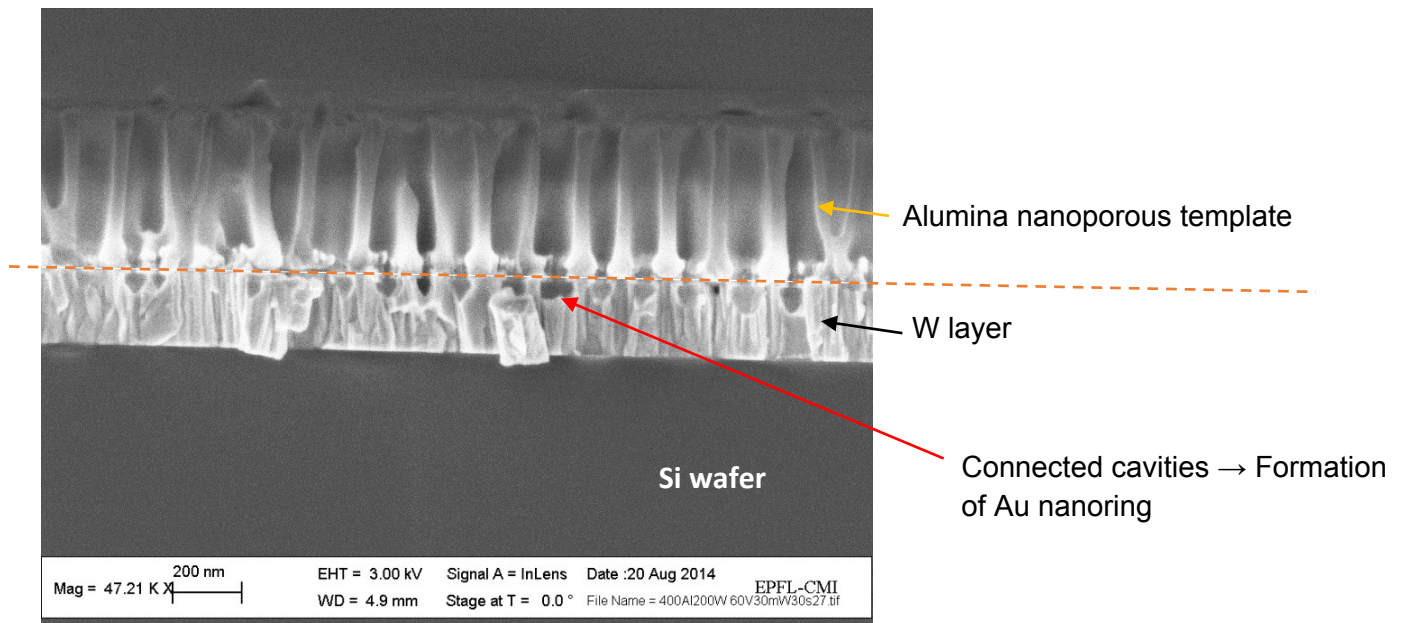
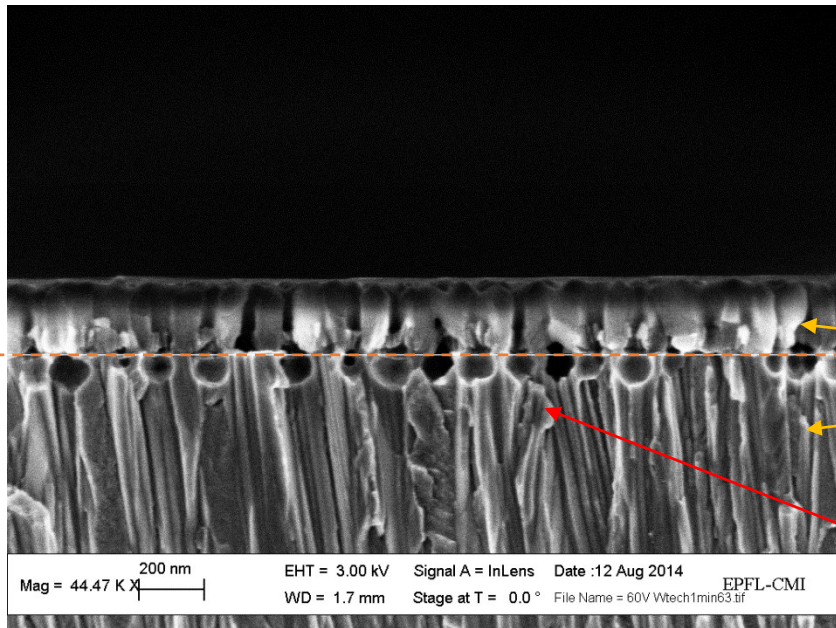


Figure S2 : Cross section image of the template after plasma etching of W-30s



Alumina nanoporous template

W layer

Large connected cavities →
Formation of Au nanonugget

Figure S3 : Cross section image of the template after plasma etching of W-60s. The W layer is thick (1 μm) in this case.

2. Comparison of antibacterial properties for nanopillar structures

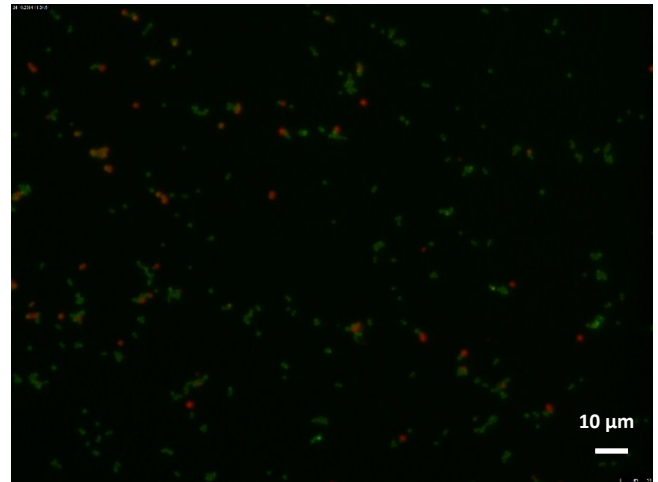
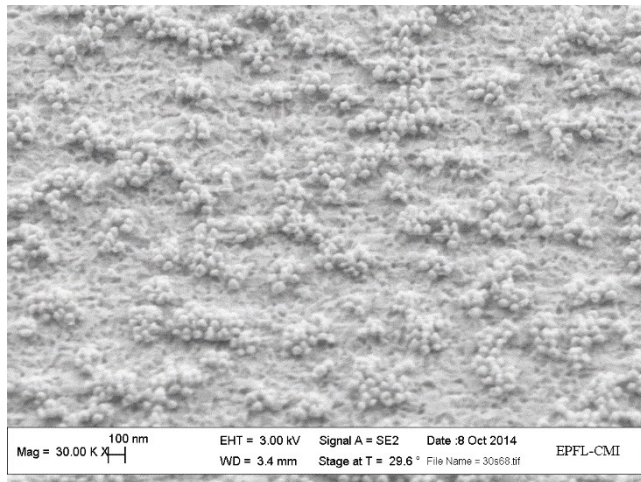


Figure S4 : Au nano-dots on W reference substrate by deposition time of 30 s. Most of the *S. aureus* cells appear alive.

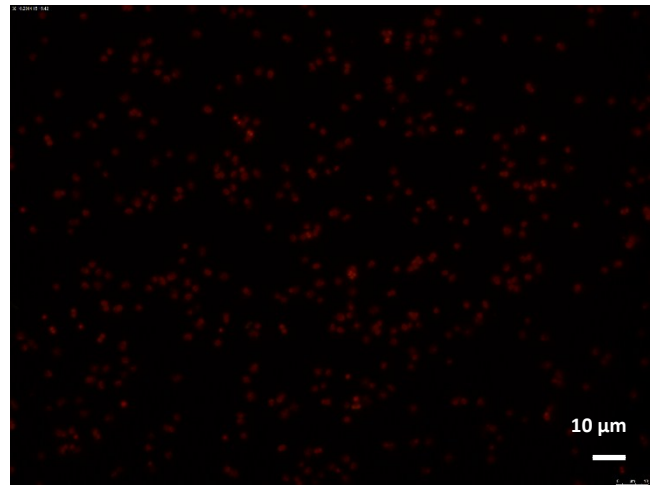
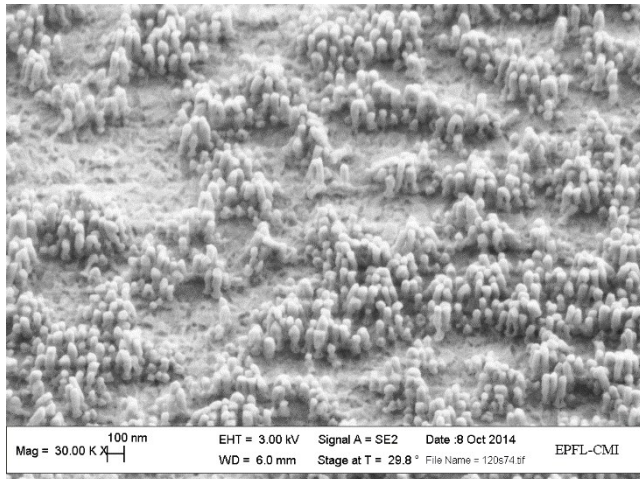


Figure S5 : Au nano-pillar on W reference substrate by deposition time of 120 s. Nearly all the *S. aureus* cells appear dead.