

**Development of methods for specific capture of biological targets on aluminum  
substrates: application to *Bacillus subtilis* spore detection as a model for anthrax.**

Ethan P. Luta and Benjamin L. Miller\*

Department of Dermatology, University of Rochester, Rochester, NY 14642

**SUPPLEMENTARY INFORMATION**

Supplementary Figure S1: Comparison of silanization with 1%, 5%, and 10% solutions of APTES in dry toluene. Significantly greater numbers of aggregates are observed in substrates treated with the 5% or 10% solutions. Arrows highlight representative aggregates, with their measured size.

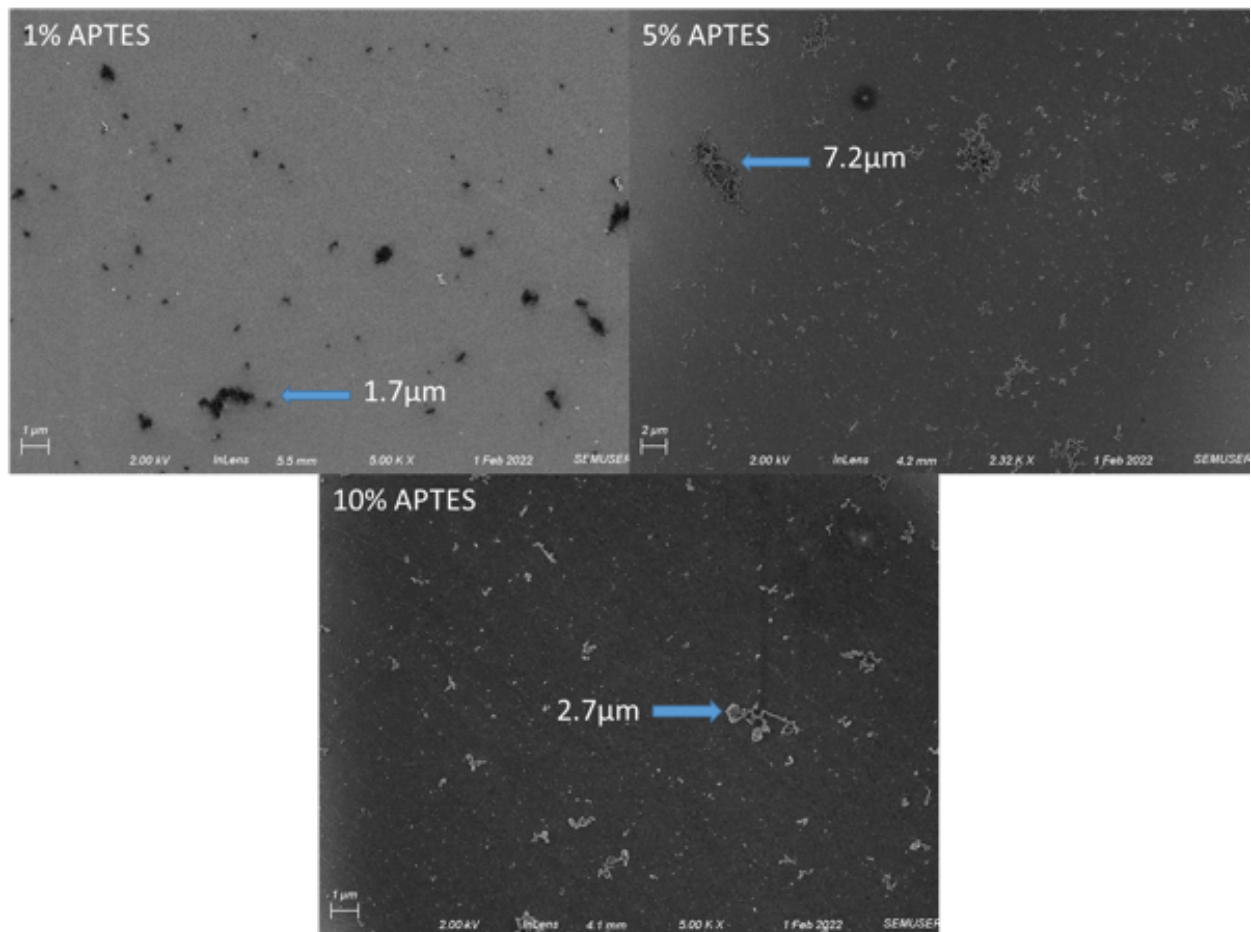


Figure S2: ATR-IR spectrum of APTES-functionalized Al/Al<sub>2</sub>O<sub>3</sub> substrate. A band for the APTES -NH<sub>2</sub> group is readily visible at 3240 cm<sup>-1</sup>; this band is not visible in an unfunctionalized Al/Al<sub>2</sub>O<sub>3</sub> substrate.

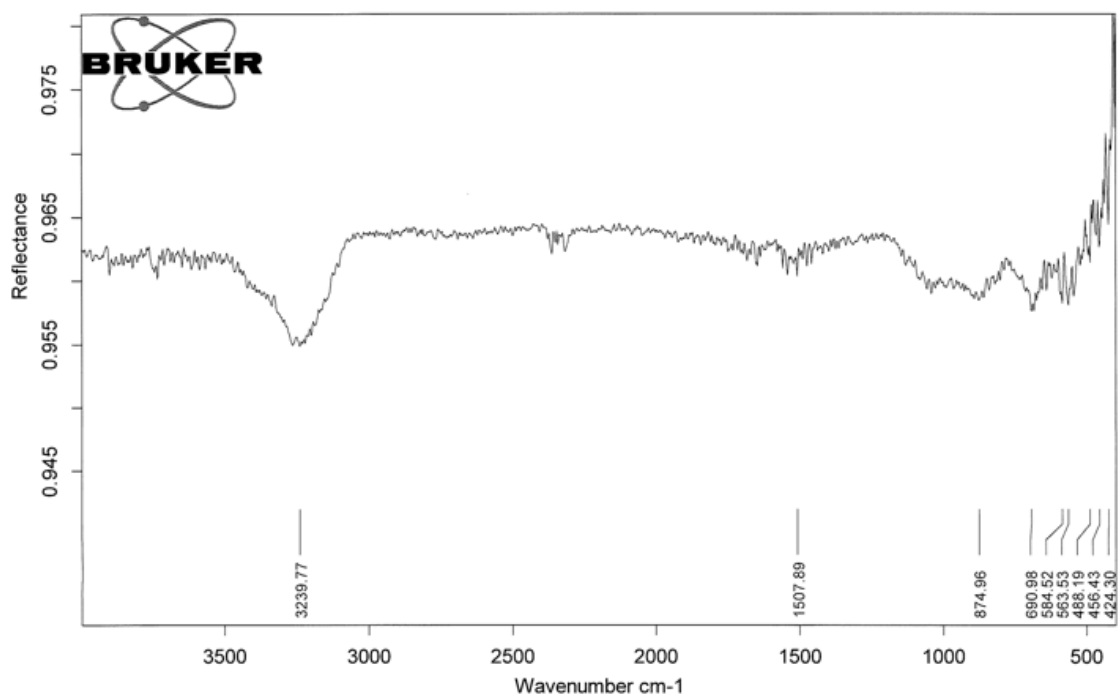


Figure S3: Spores have a distinct size and shape, and are readily distinguished from debris on the surface of the chip.

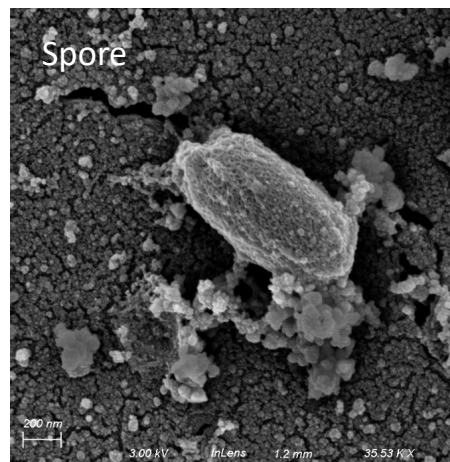
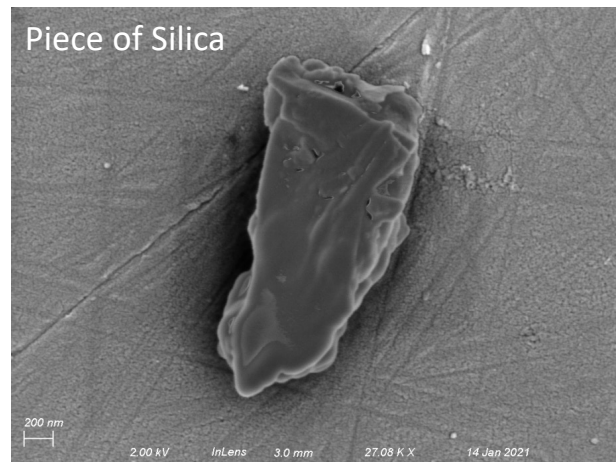
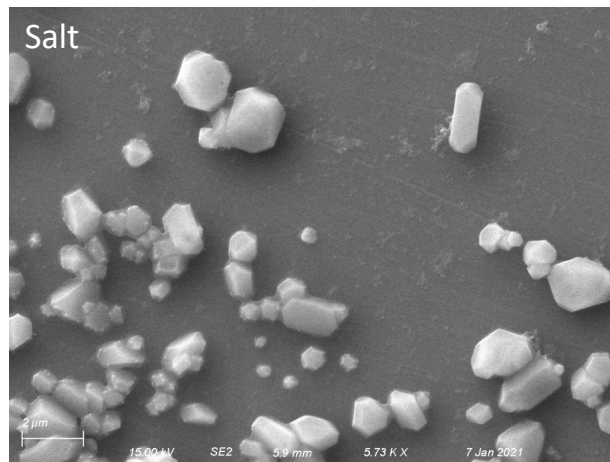


Figure S4: Al/Al<sub>2</sub>O<sub>3</sub> substrate functionalized with an anti-*Bacillus subtilis* antibody does not capture *Bacillus atrophaeus* spores, confirming specificity.

