Supporting Information

Engineered SERS Substrates with Multiscale Signal Enhancement: Nanoparticle Cluster Arrays

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Figure S1: Nanoparticle cluster array with fused clusters.

Figure S2: Nanoparticle cluster array with fabrication imperfections (larger three-dimensional aggregates).

Figure S3: (a) Dependency of the SERS signal of pMA on the excitation power (@ 785 nm) (b) Effect of integration time on the SERS signal intensity for ($D = 200$ nm, $\Lambda = 200$ nm) NCAs.

Figure S4: Optical images of bacteria on NCAs. The positions of the NCAs are marked by black boxes. Under the chosen experimental conditions, the NCAs are typically covered by a monolayer of bacterial cells.