From molecular to nanoplastic SERS detection: insights into the role of analyte on the plasmonic substrate design

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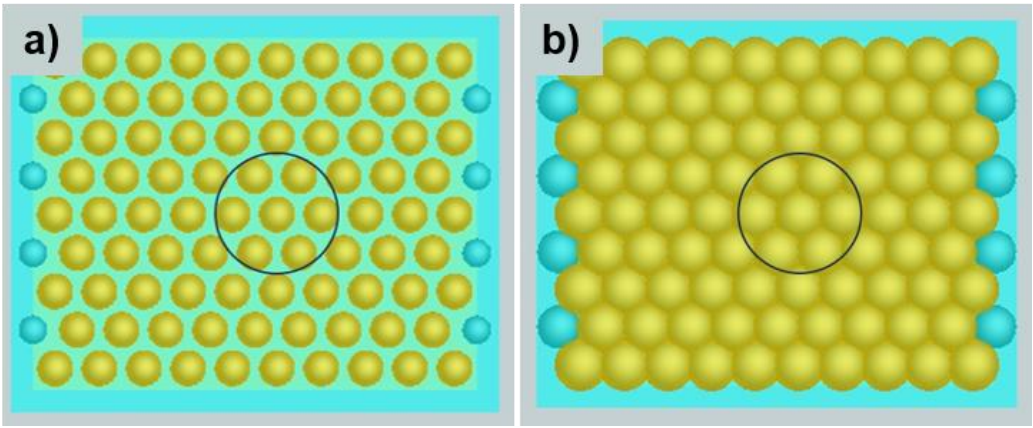

Figure S1. The schematic representation of the simulated AuFoN (a) and AuFoEN (b) structures with the circle indicating the area considered for calculating the mean electric field.

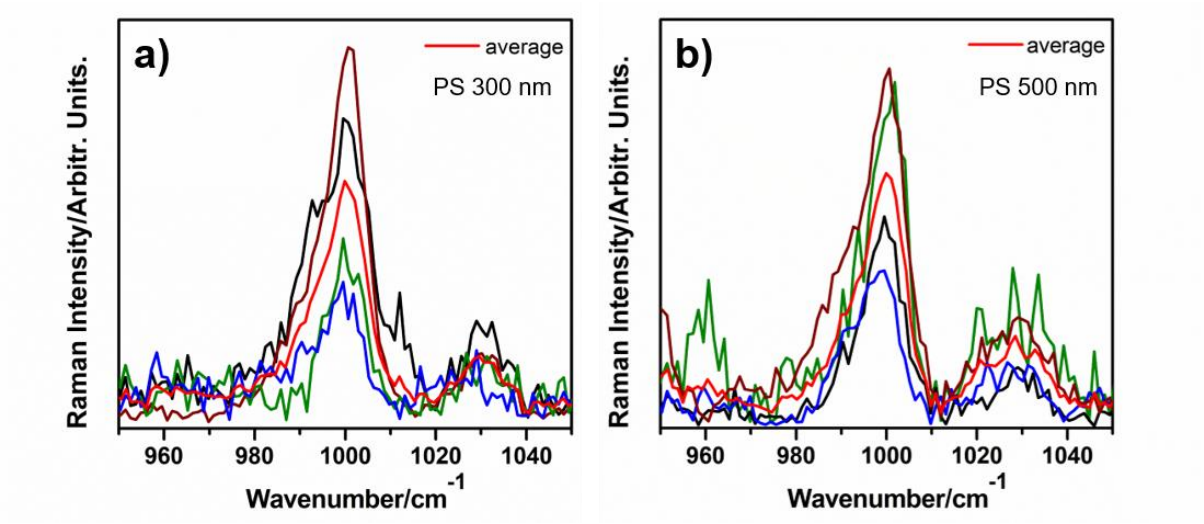

Figure S2. The SERS spectra of 300 nm (a) and 500 nm (b) PS SNP collected from four different positions on the AuFoN substrate; the red spectrum is indicating the average of the spectra.

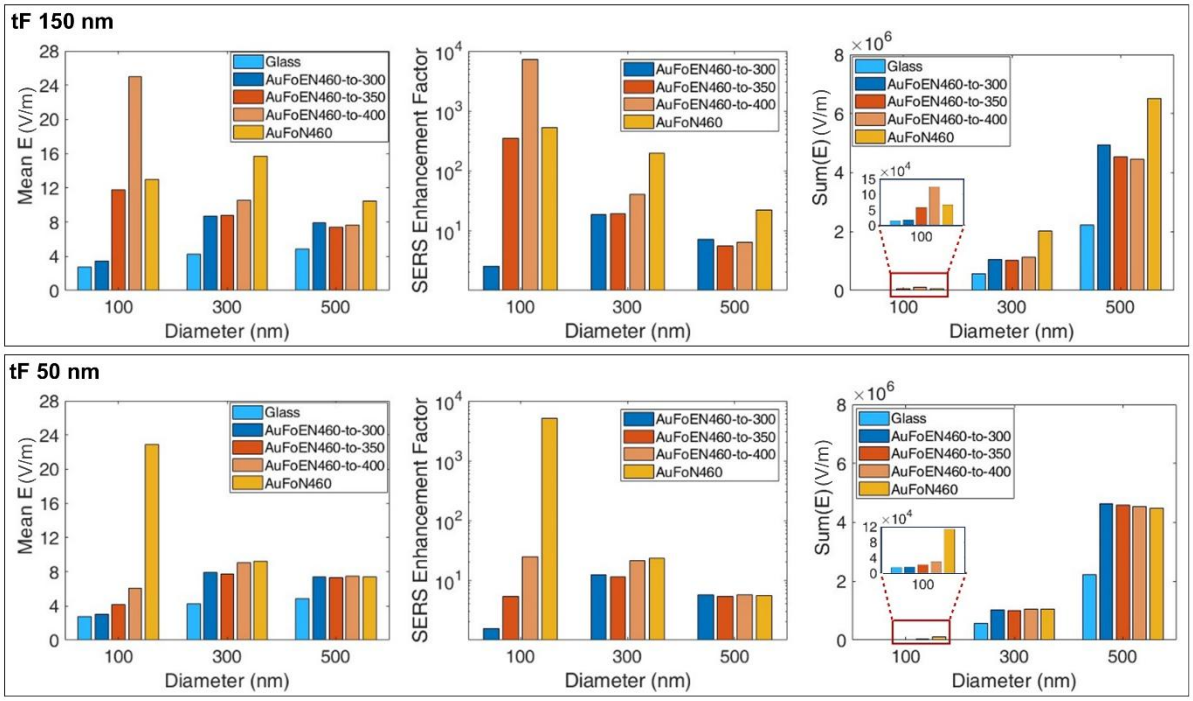

Figure S3. Mean E field, estimated single particle SERS EF, and integral E field per particle for different sized SNP (100, 300, 500 nm) deposited on various SERS substrates: AuFoN based on non-etched 460 nm PS spheres (labelled *AuFoN460* in the legend); AuFoEN based on 460 nm PS spheres etched to 400 nm (labelled *AuFoEN460-to-400*), 460 nm PS spheres etched to 350 nm (labelled *AuFoEN460-to-350*), and 460 nm PS etched to 300 nm (labelled *AuFoEN460-to-350*). Gold film thickness *tF* is 150 nm (top) and 50 nm (bottom). Reference SNP on plain glass substrate (labelled *glass*) is also included. Insets are zooms into the respective figure areas.