## Supporting information for:

## Influence of the Particle Shape and Density of Self-Assembled Gold Nanoparticle Sensors on LSPR and SERS

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Figure SI1. SEM image of dodecanethiol-coated 80 nm raspberry-shaped Au NPs, drop-coated from a solution in chloroform. The particles agglomerated into large 3D assemblies.



Figure SI2. Large scale SEM images of (a) dense and (b) sparse layers of PS-capped Au NPs, drop-coated from a solution in chloroform.



Figure SI3. SEM images of dense layers of Au NPs capped with (a) 8000 g/mol and (b) 66000 g/mol PS-SH, drop-coated from a solution in chloroform.



Figure SI4. (a) SERS spectra of 4-NTP deposited on the four plasmonic sensors and on Si surface. Panel (b) shows the low-intensity SERS spectra of the sparse layers and of the normal Raman.