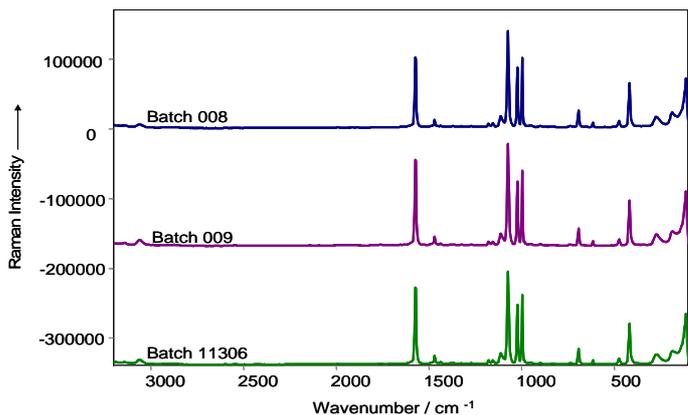
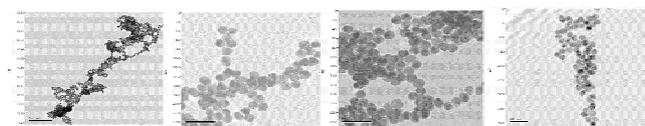


Supplementary Information

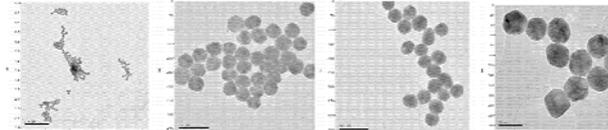


Supplementary Figure 1. SERS spectra from three different batches of nominally 50 nm Au colloid. Absolute SERS intensities vary by < 9%. The particle sizes of the original sample and 3 different batches were found to be extremely similar at 45.5 ± 0.1 , 45.8 ± 0.4 , 45.8 ± 0.4 , 45.9 ± 0.3 nm.

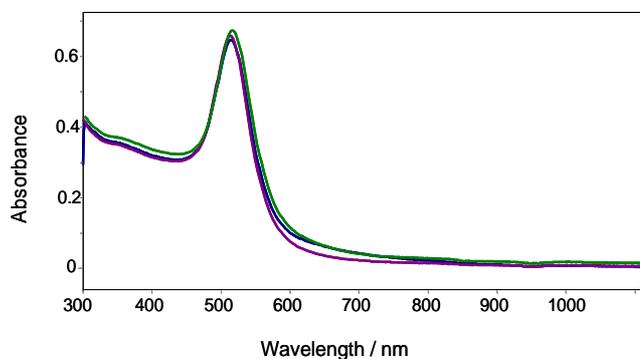
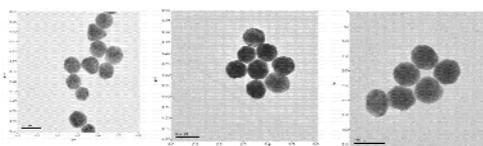
21 nm Au Colloid aggregated with $0.016 \text{ mol dm}^{-3} \text{ MgSO}_4$: MAG: 15,000 x, 71,000 x, 71,000 x, 48,000 x



48 nm Au Colloid aggregated with $0.016 \text{ mol dm}^{-3} \text{ MgSO}_4$: MAG: 7,000 x, 28,000 x, 28,000 x, 71,000 x



74 nm Au Colloid aggregated with $0.016 \text{ mol dm}^{-3} \text{ MgSO}_4$: MAG: 29,000x, 29,000 x, 28,000 x



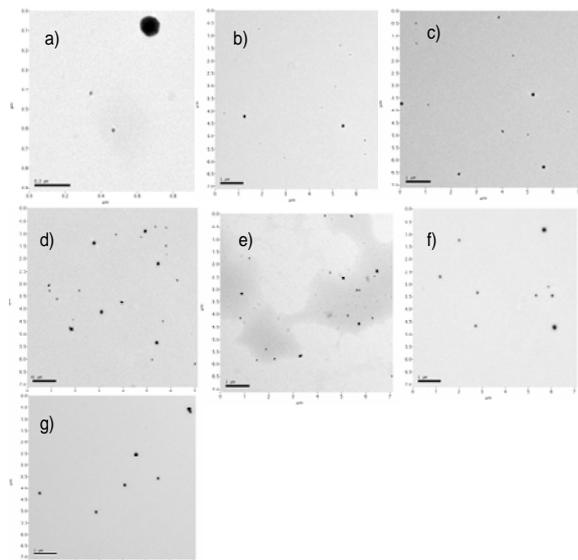
Supplementary Figure 2. Uv/vis spectra from each of the three batches of nominal 50 nm particles (as above). Absorbance at λ_{max} varies by just 3%.

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Supplementary Figure 4. TEM images of aggregated particles with the diameters shown on the Figures.

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Supplementary Figure 3. TEM images from ratios of mixed particle sizes stabilised within Polycarophil® and deposited on a 300 mesh Formvar supported copper grid. Approximately 30 overview images for each of these combinations were taken at *ca.* 5000x magnification. a) 20nm : 100nm b) 30nm : 100nm c) 40nm : 100nm d) 50nm : 100nm e) 60nm : 100nm f) 100nm : 150nm g) 80nm : 150nm.

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