Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

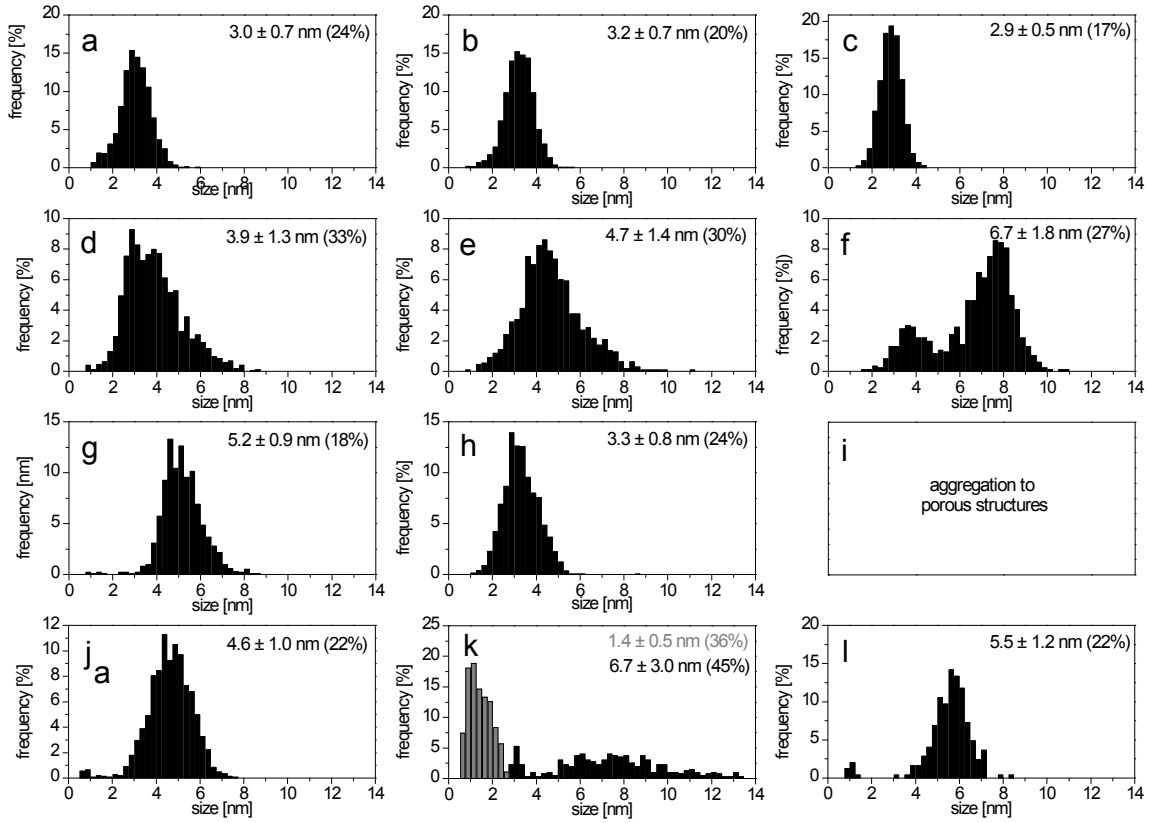

Figure S 1: Statistic evaluation of mean size of nanoparticles with different amine ligands corresponding to Figure 1. The left column (a, d, g, j) represents data "as synthesized", the middle column (b, e, h, k) after heat treatment and the right column (c, f, I, l) after ligand exchange. l represents Au DDAB nanoparticles after ligand exchange with OA. The first row corresponds to Au OA (a - c), the second row to Au DDA (d – f), the third row to Au THA (g – i) and the fourth row to Au DDAB (j – l) nanoparticles, respectively. The mean diameters and the standard deviations were obtained from TEM micrographs (magnification 140k) using ImageJ 1.49.

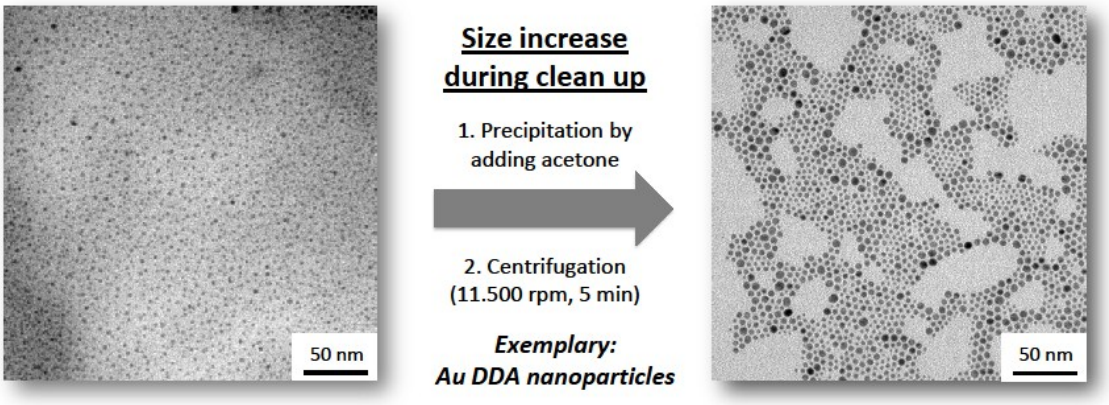

Figure S 2: TEM studies (obtained at 80 kV and 140k magnification) of uncleaned (left) gold nanoparticles and the same material after clean up (right). During clean up the size of the nanoparticles increases dramatically maybe due to the removal of stabilizing compounds.

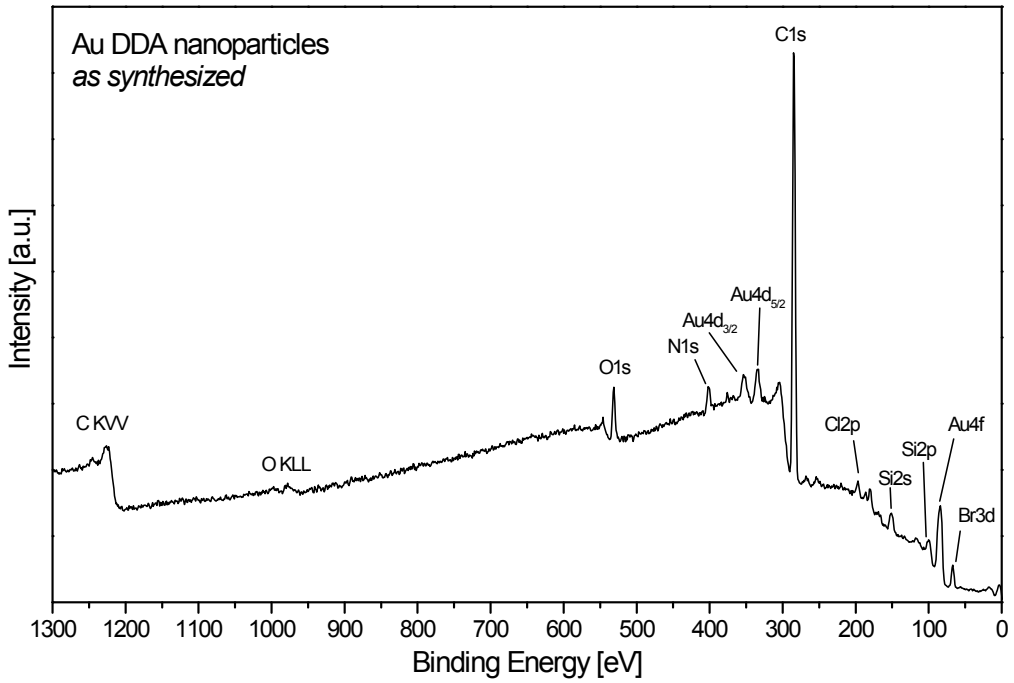

Figure S 3: Representative XPS survey spectrum of Au DDA nanoparticles obtained with 200 eV pass energy, energy step size 1 eV, dwell time 100 ms averaged of 2 scans. Typical signals for gold, bromine, carbon, chlorine, nitrogen, oxygen and silicon can be observed. Au OA, Au THA and Au DDAB nanostructures gave analog results.

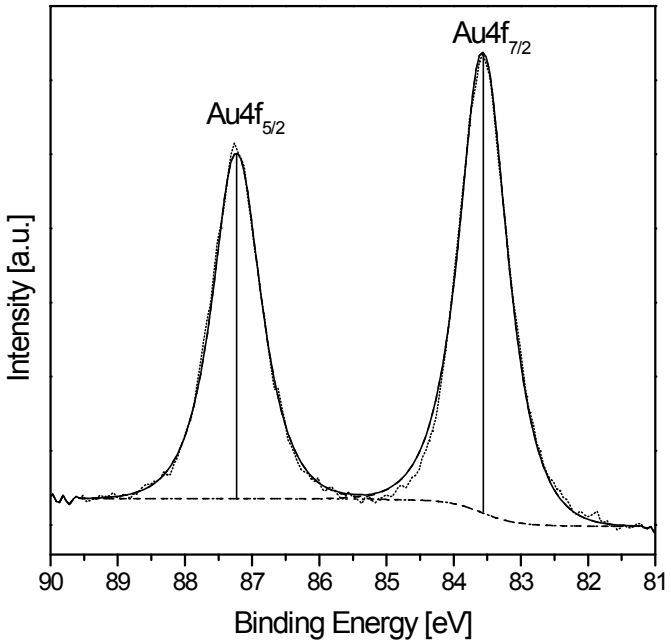

Figure S 4: Detailed XPS spectrum of the Au4f region obtained with 10 eV pass energy, energy step size 0.05 eV, dwell time 100 ms averaged of 10 scans. It's easy to see that there is only one Au^0 species present. Slight shifts of not more than 0.4 eV are observed in order to different adsorbed surfactants.