Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Synthesis and Plasmonic Properties of Monodisperse Au-Ag Alloy Nanoparticles of Different Compositions from a Single-Source Organometallic Precursor.

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ELECTRONIC SUPPLEMENTARY INFORMATION

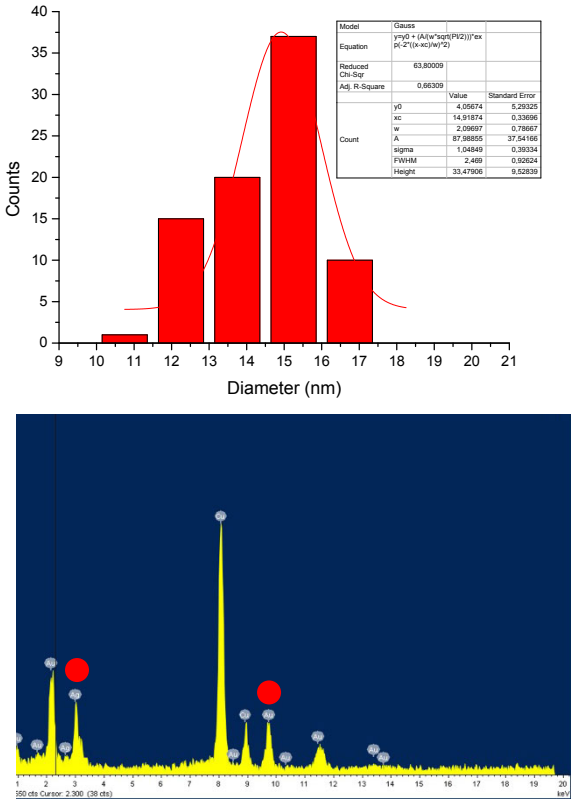


Fig S1: Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **1**.

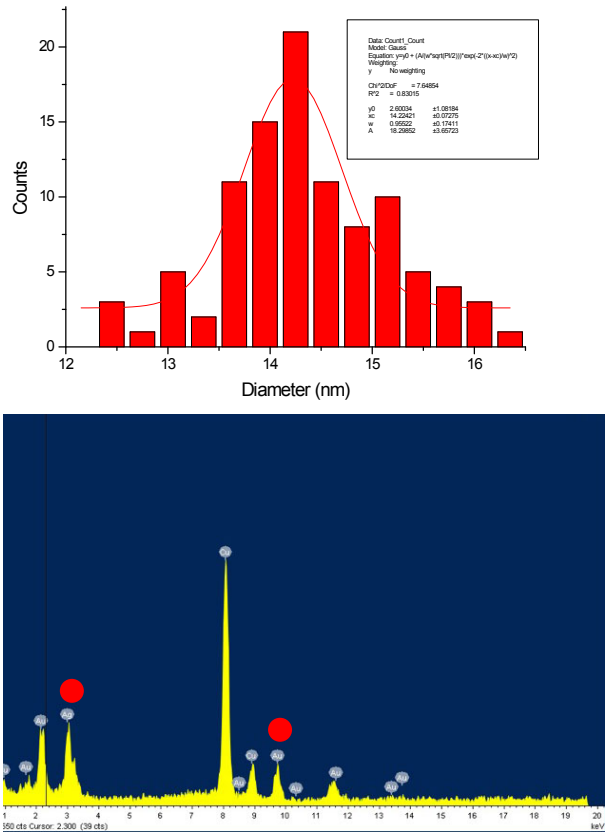


Figure S2. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **2**.

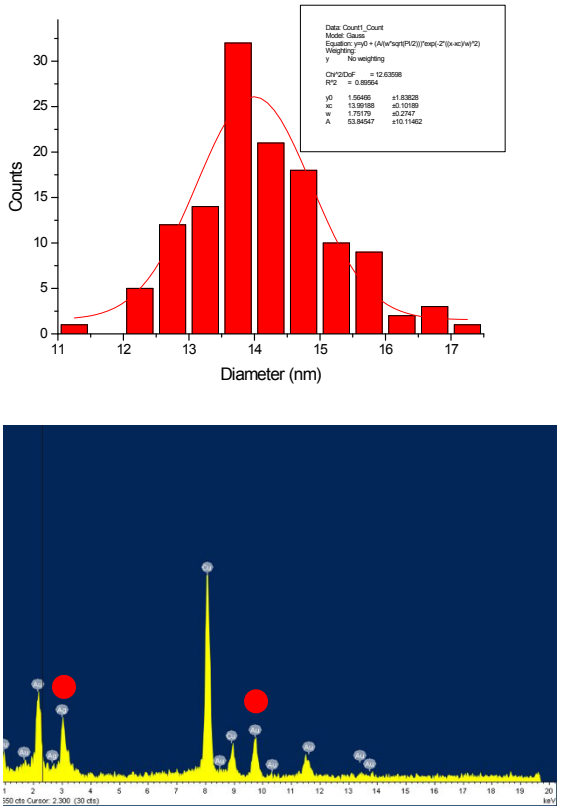


Figure S3. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **3**.

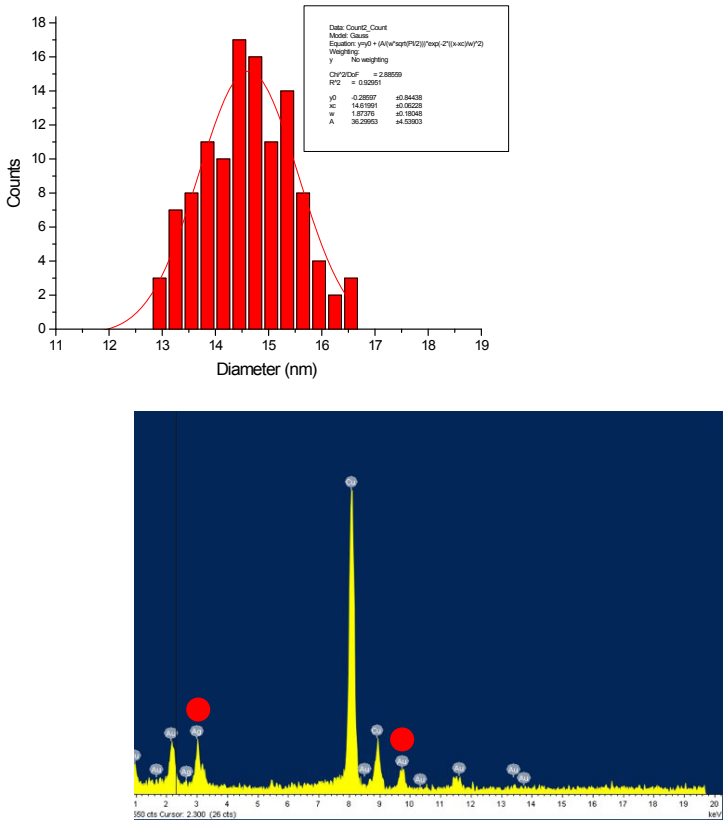


Figure S4. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **4**.

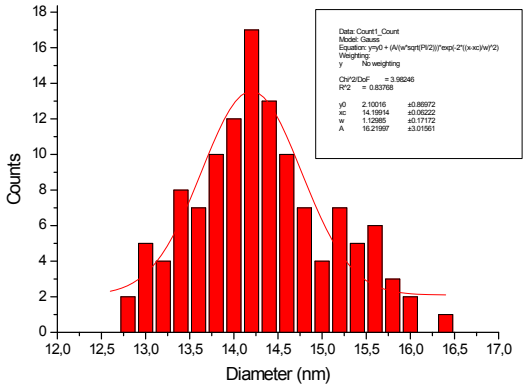


Figure S5. Size distribution for Au-Ag NPs **5**.

Table S1. EDS data taken under Bright Field STEM geometry for Au and Ag quantification in Au-Ag NPs **5**: areas of the Ag-Lα and Au-Lα, with correction from the k factors.

spectrum	Ag [%]	Au [%]	Err [%]
P4 (single np)	53	47	4
P7 (single np)	58	42	5
P8 (single np)	61	39	6
P6 (two nps)	54	46	6
P5 (three nps)	56	44	3
P3 (several nps)	57	43	2

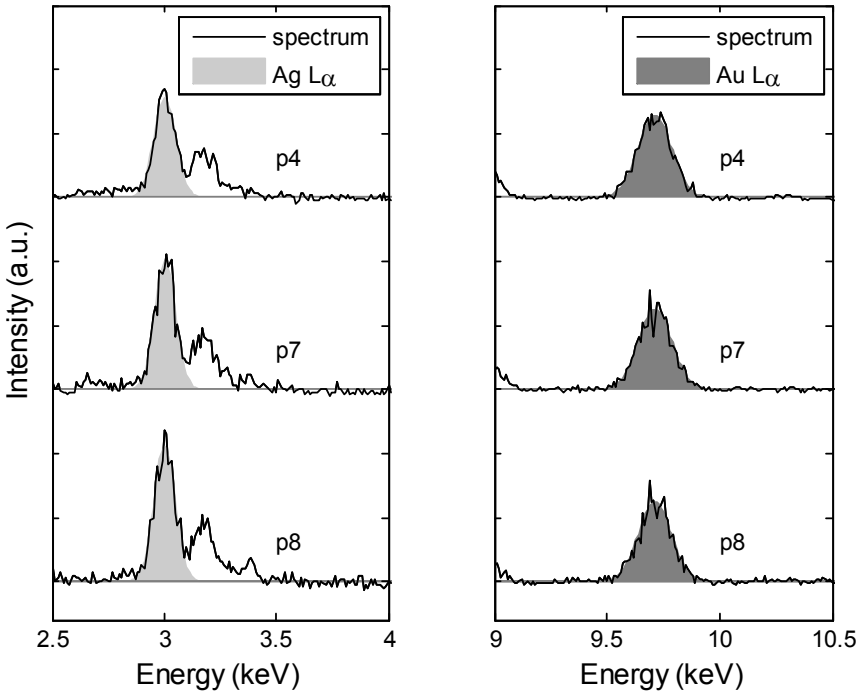


Figure S6. EDS spectra for single nanoparticles Au-Ag NPs (5) taken under Bright Field STEM geometry.

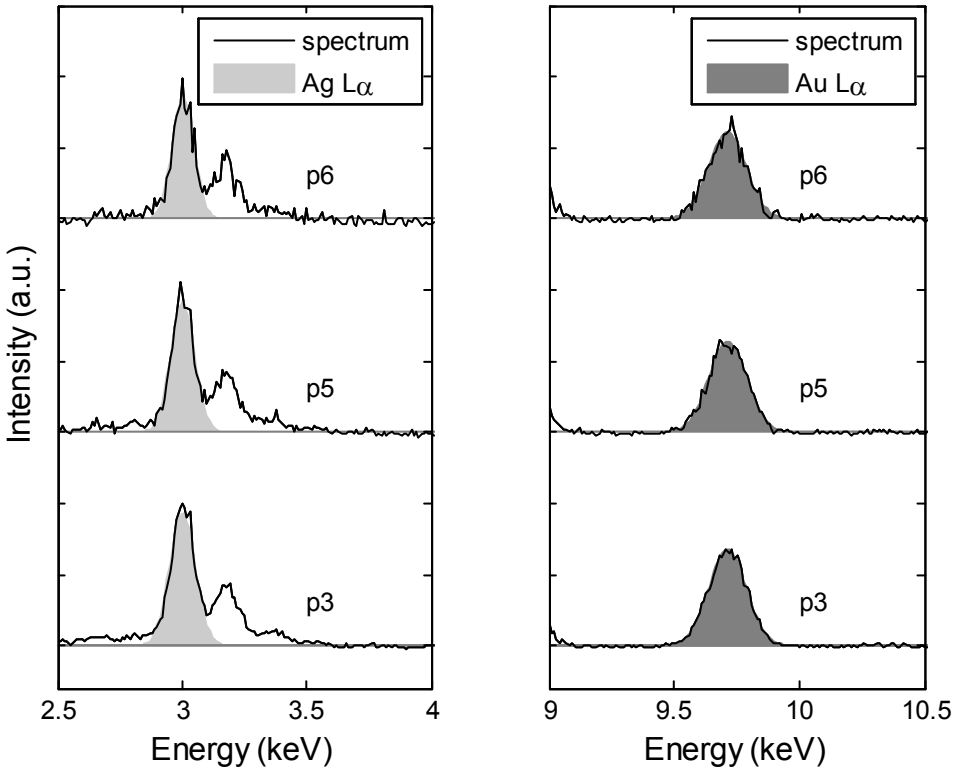
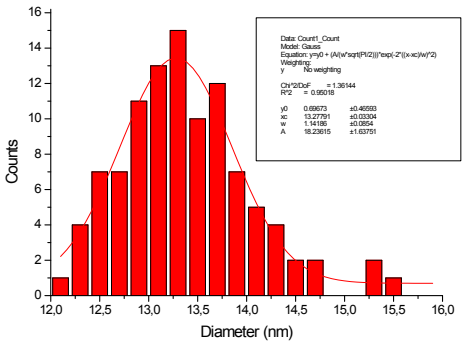


Figure S7. EDS spectra for several nanoparticles Au-Ag NPs (**5**) taken under Bright Field STEM geometry. Spectrum named P3, taken on several tenths of particles, can be considered as a good estimate of the mean composition



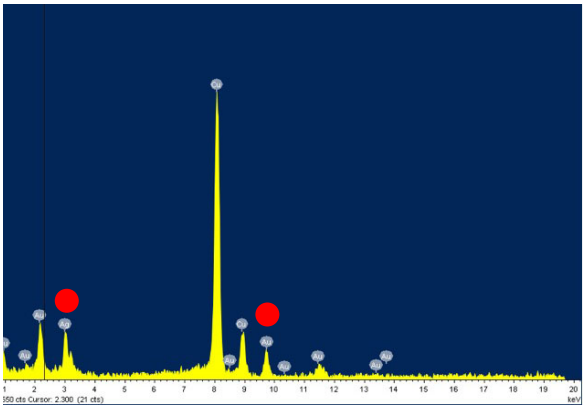


Figure S8. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **6**.

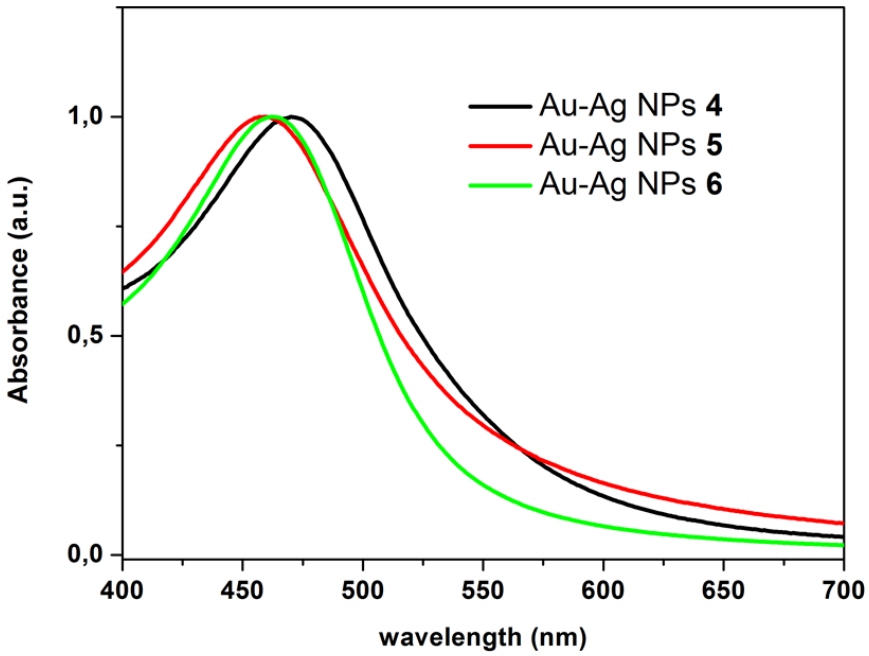


Figure S9. UV/Vis spectra for Au-Ag NPs **4**-**6**.

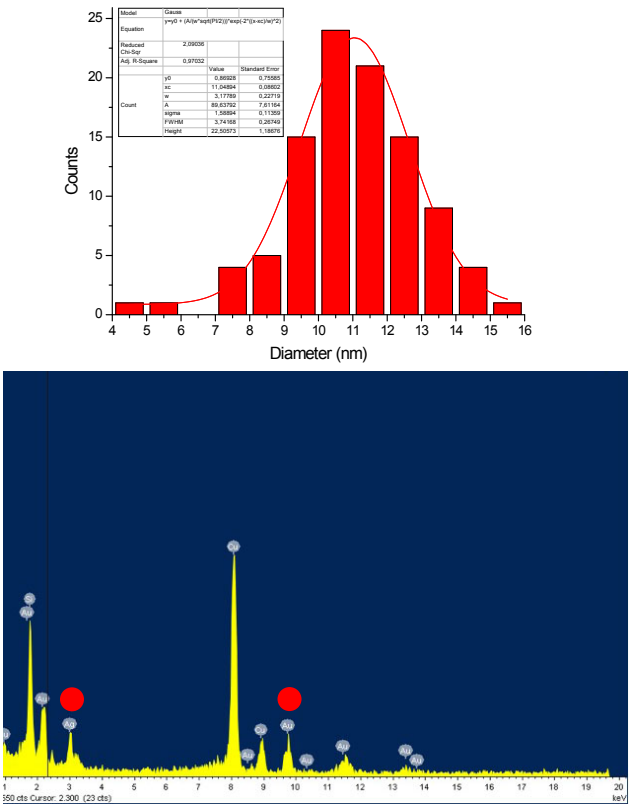


Figure S10. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **7**.

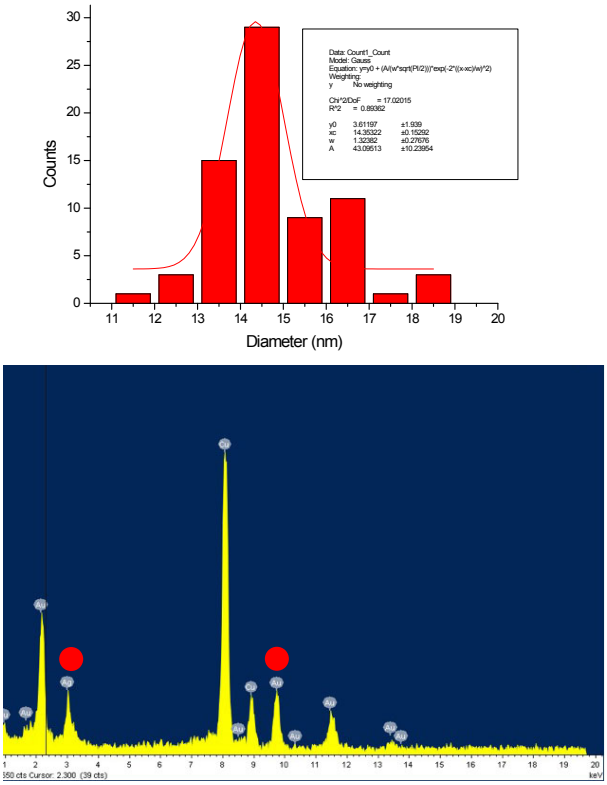


Figure S11. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **8**.

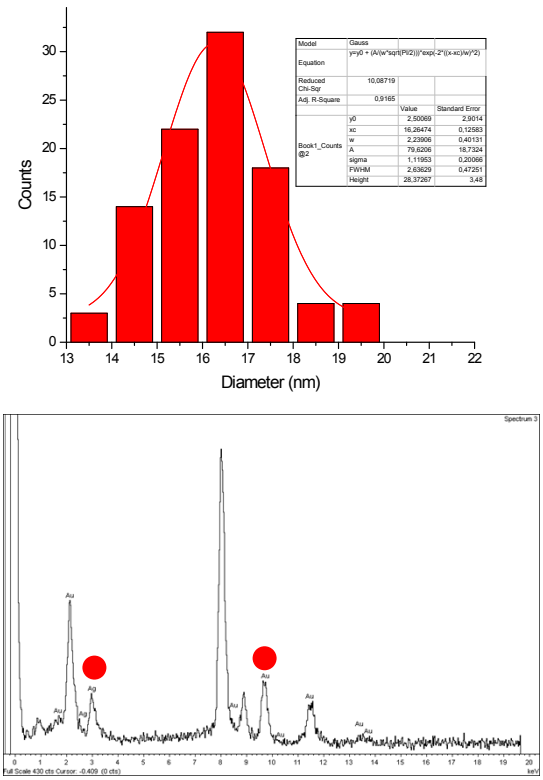


Figure S12. Size distribution (up) and EDS spectrum (bottom) for Au-Ag NPs **9**.

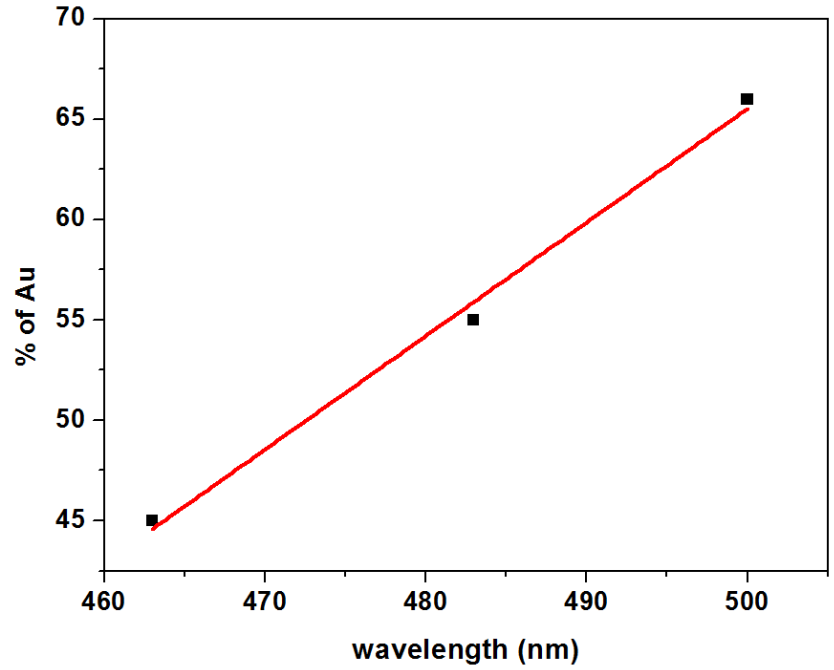


Figure S13. Linear fit displaying the red-shift of the LSPR band (nm) of Au-Ag alloy NPs with increasing Au content (r = 0.99).

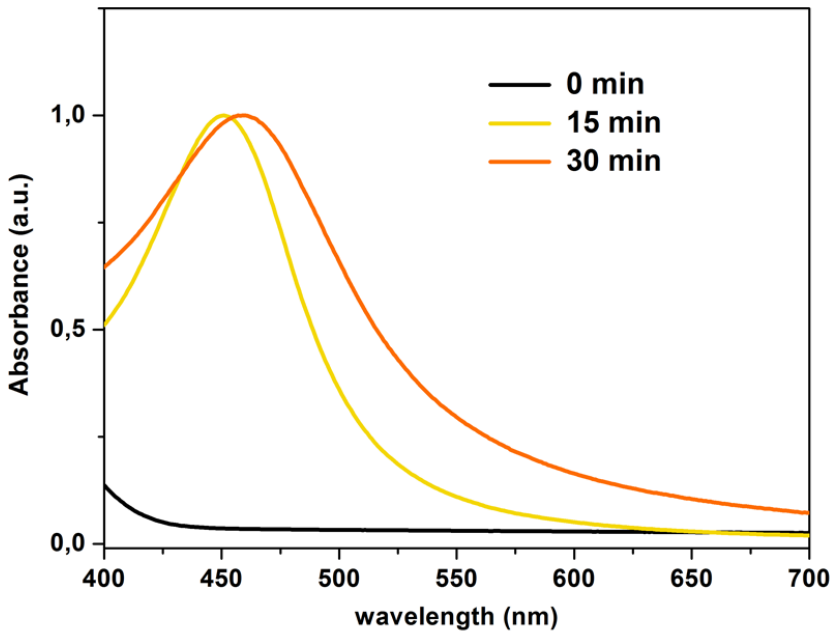


Figure S14. Time-resolved UV/Vis spectra for Au-Ag nanoparticles **5**.

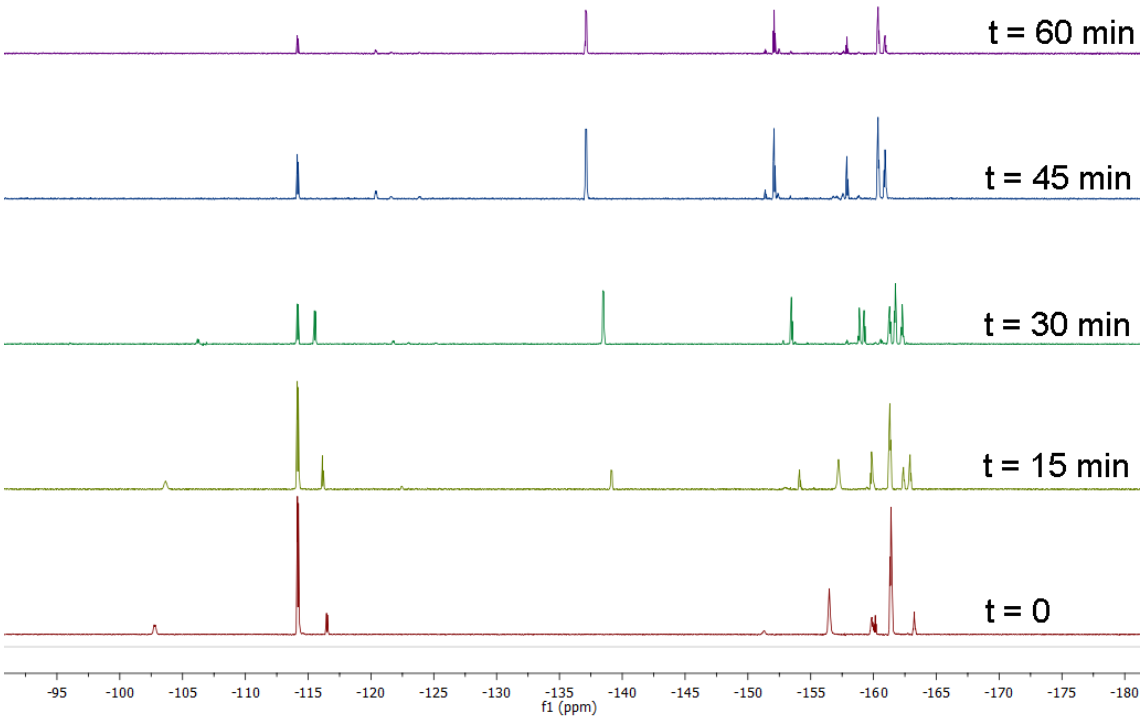


Figure S15: Time-resolved ^{19}F NMR spectra of the decomposition of complex $[Au_2Ag_2(C_6F_5)_2(OEt_2)]_n$ in the presence of 2 equivalents of Hexadecylamine, in toluene under H_2

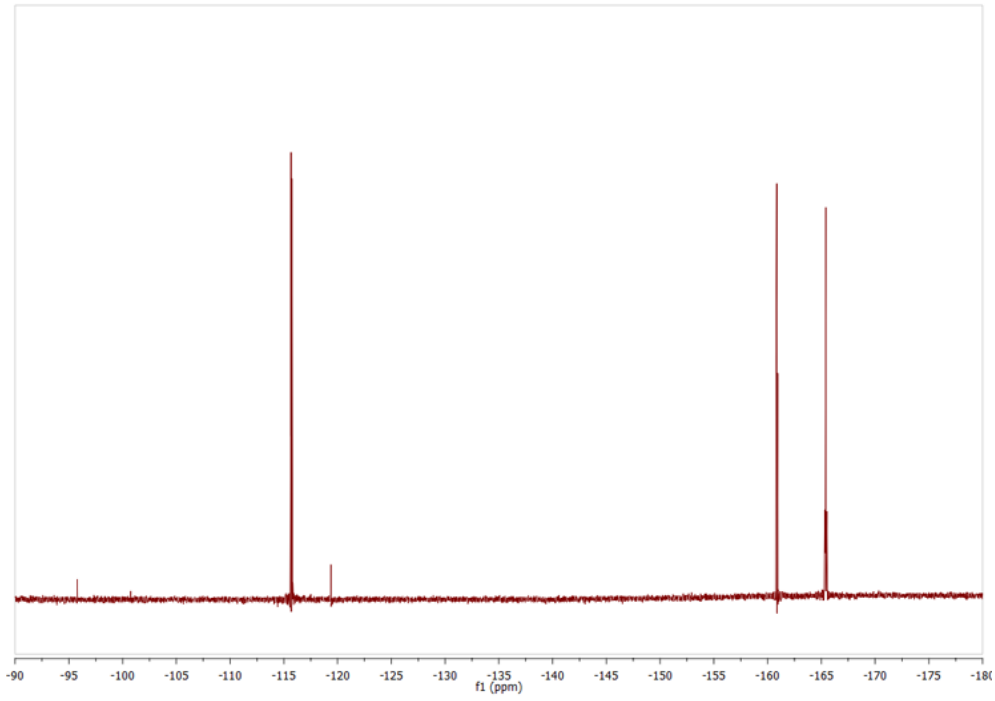


Figure S16. ^{19}F NMR spectrum for complex $[Au_2Ag_2(C_6F_5)_4(OEt_2)_2]$ in d8-Toluene.

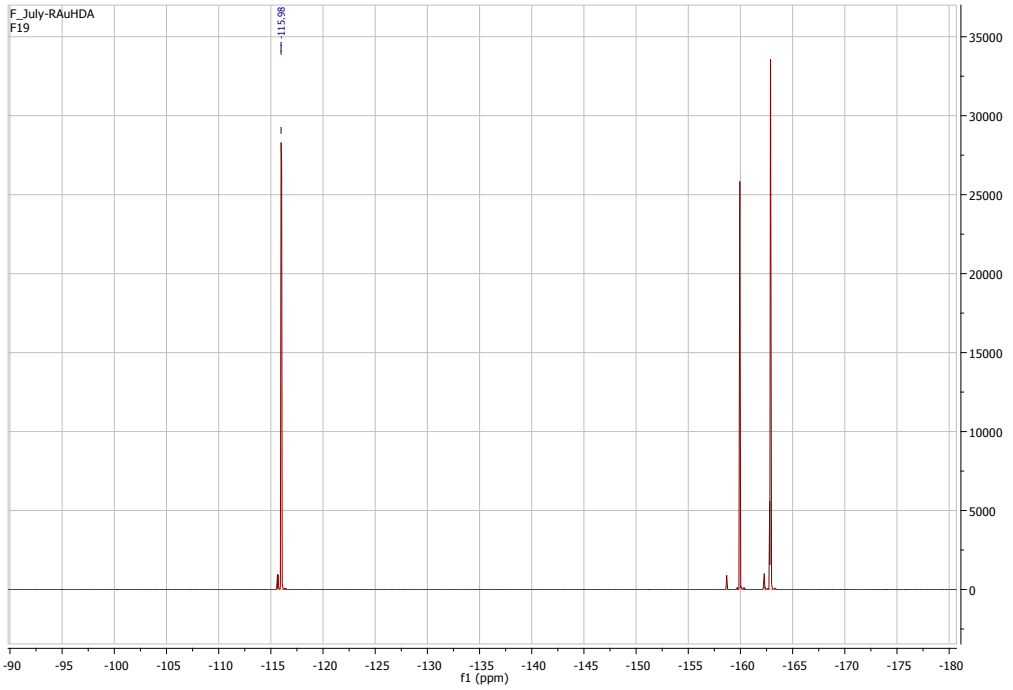


Figure S17. ^{19}F NMR spectrum for complex $[Au(C_6F_5)(HDA)]$ in d8-Toluene.

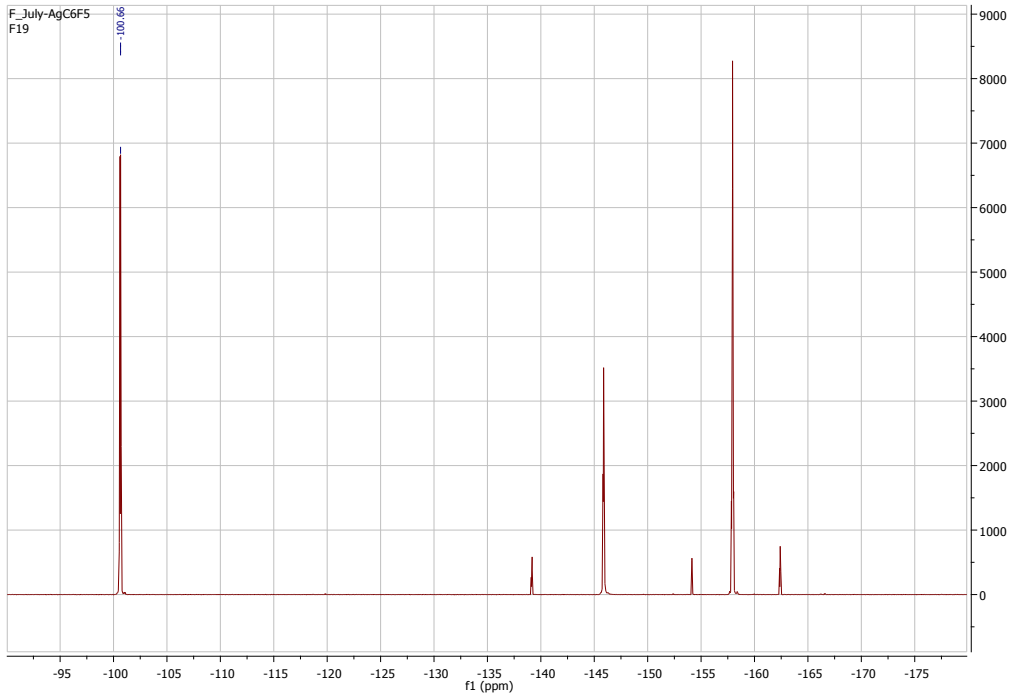


Figure S18. ^{19}F NMR spectrum for complex $[Ag(C_6F_5)]_n$ in d8-Toluene. The less intense signals correspond to decafluorobiphenyl formed in situ.

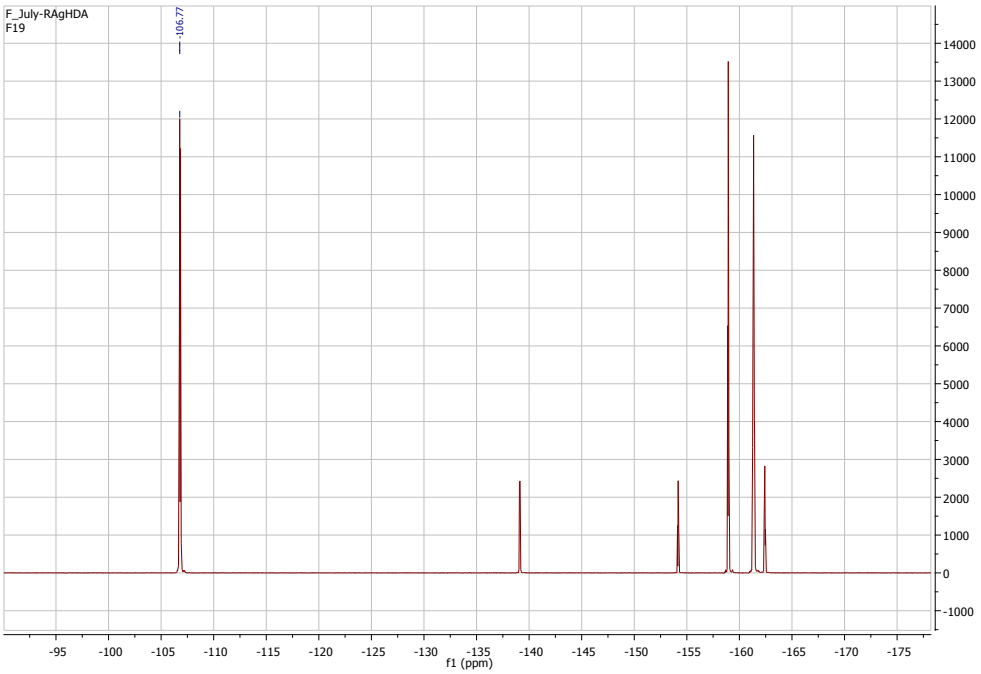


Figure S19. ^{19}F NMR spectrum for complex $[Ag(C_6F_5)(HDA)]$ in d8-Toluene. The less intense signals correspond to decafluorobiphenyl formed in situ.