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Supplementary Material

Aging of silver nanocolloids in sunlight: particle size has a major influence

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Table S1: AF4 method

Detector flow (mL min^{-1})	1
Injection flow (mL min^{-1})	0.2
Focus flow (L min^{-1})	0.5
Injection time (min)	5
Elution	Constant cross flow 1mL min^{-1} during 1 min, then exponential crossflow decrease to 0.1 mL min^{-1} for 20 min

Table S2: ICP-MS experimental conditions

RF power (W)	1550
Plasma gas (Ar) flow rate (L min^{-1})	15
Carrier gas (Ar) flow rate (L min^{-1})	1.15
Sampling depth (mm)	7.5
Integration time / mass (s)	1

Table S3: Summary of the experimental conditions

	Concentration	Medium	pH
Aging	~20 mg L^{-1}	Water/citrate stabilizer	7.9 +/- 0.6
UV/Vis	~4 mg L^{-1}	UP water	6.5 +/- 0.5
DLS	~4 mg L^{-1}	1 mM $NaNO_3$	8.0 +/- 0.5
AF4-MALS-ICP-MS	~1 mg L^{-1}	NaOH (eluent)	10.0 +/- 0.2
TEM	~20 mg L^{-1}	Water/citrate stabilizer	7.9 +/- 0.6

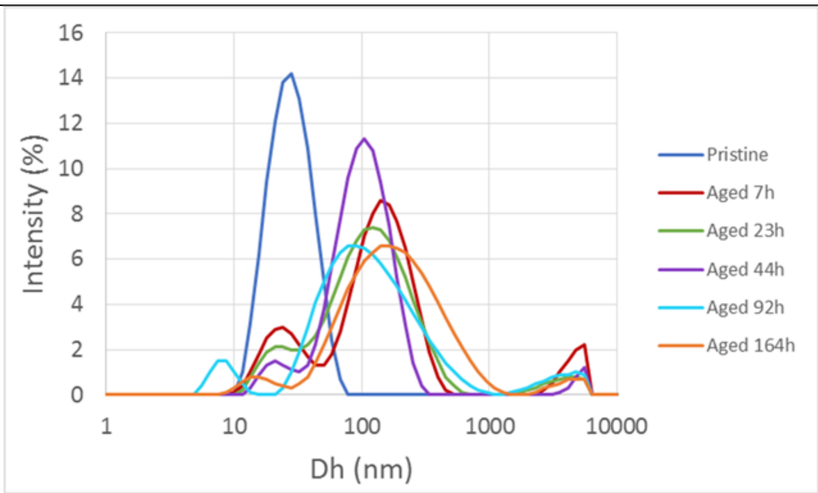
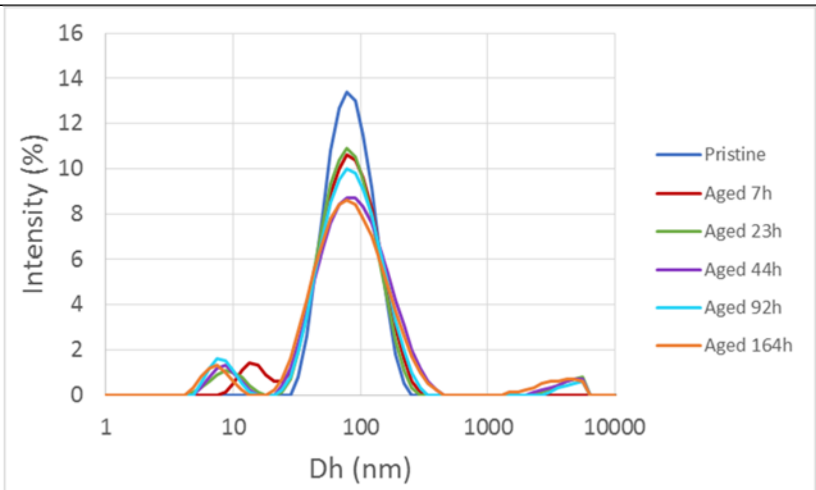
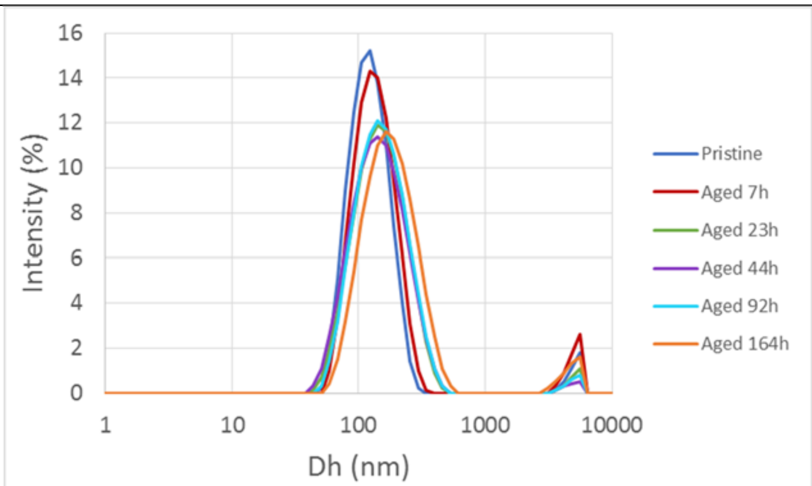
Ag AL 20nm	
Ag AL 60nm	
Ag AL 100nm	

Figure S1: Evolution of the hydrodynamic diameter distribution (DLS, intensity based) of the three populations Ag AL 20nm, AG AL 60nm, and Ag AL 100nm during the aging process. Aging process in QSUN (sunlight, 40°C). Dilution factor: 5 in 1 mM $NaNO_3$. pH = 8.0 ± 0.5. The suspensions were vortexed for homogenization and sonicated for 1 min to re-disperse the precipitate when necessary (Ag AL 100nm). Repeatability was poor in some instances (particularly, the smallest population was not present in all the replicates) and the choice was made to display the curves showing a maximum number of peaks.

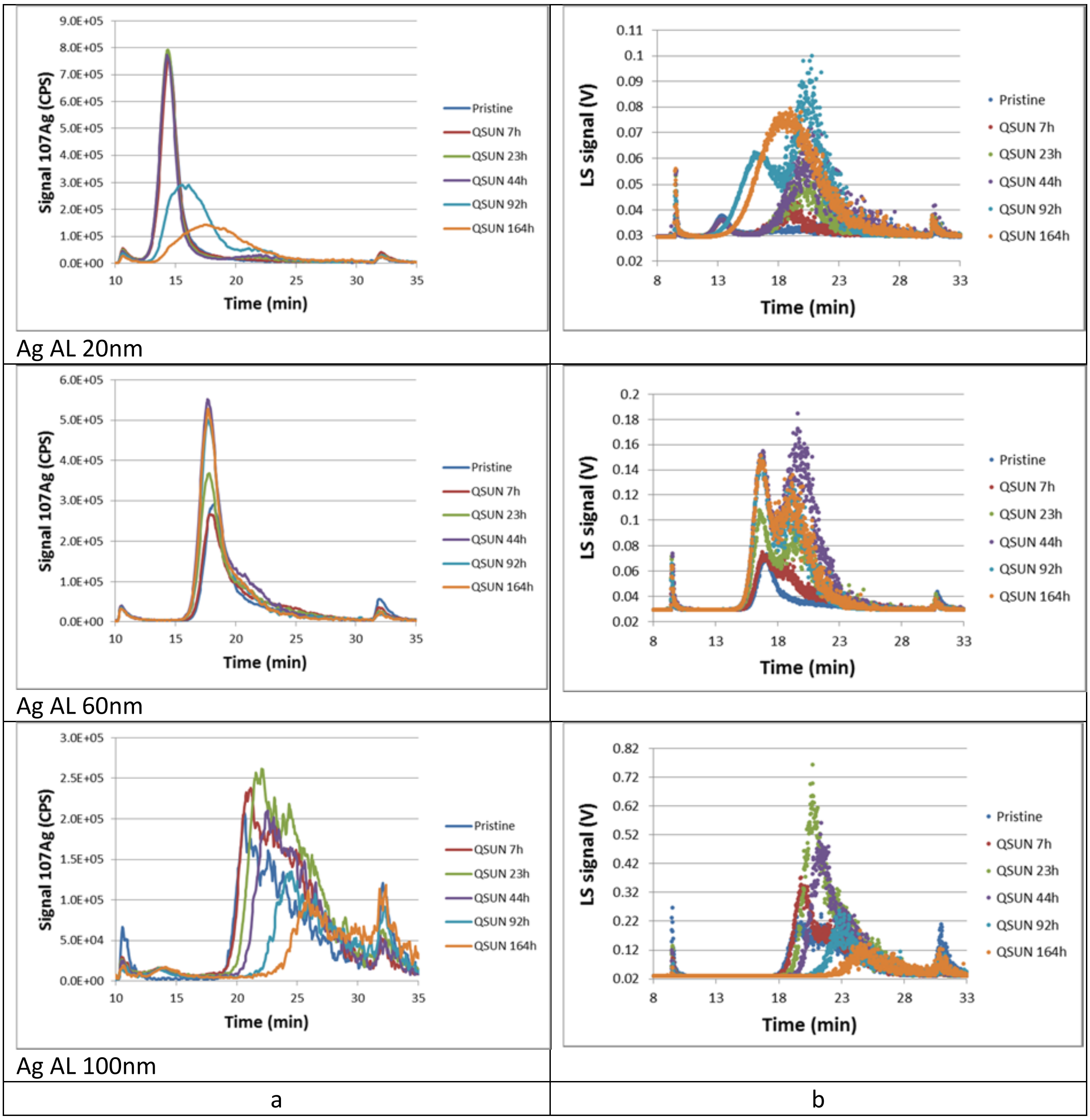
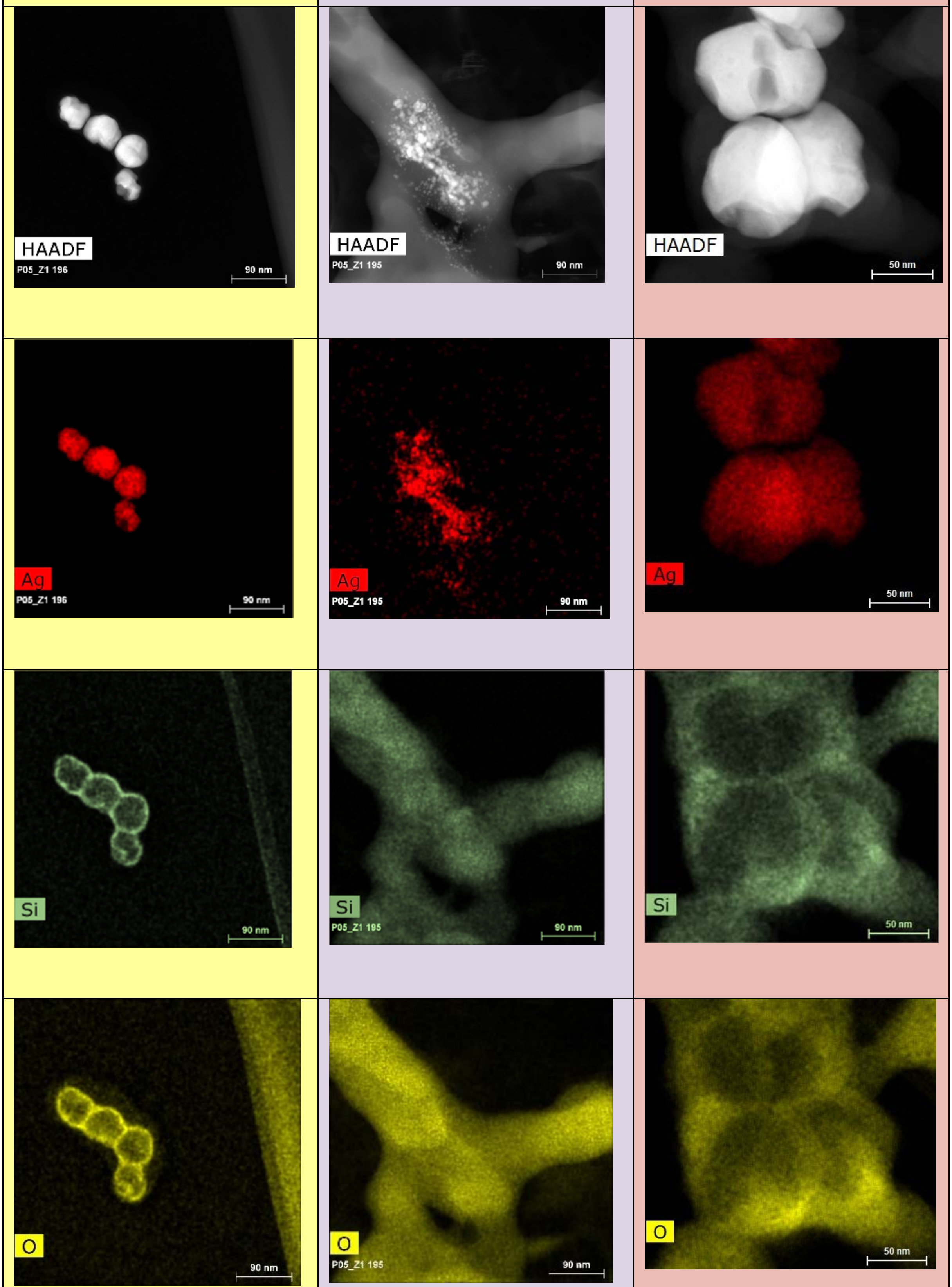


Figure S2: Evolution of the fractograms of the silver suspensions with exposure time (sunlight, 40°C). (a): on-line ICP-MS signal for ^{107}Ag and (b): on-line MALS signal (90° detector). Eluent NaOH pH = 10. AF4 method in Table SI.1. Dilution factor: 20 in UP water.

Ag AL 20nm 92 h	Ag AL 60 nm 164 h	Ag AL 100nm 44 h



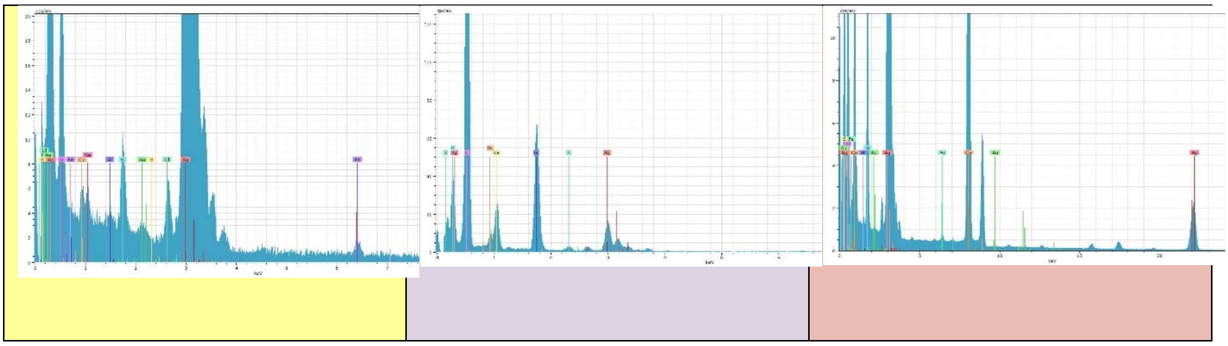


Figure S3: EDS mapping and spectra of some relevant changes in the particle morphology/size/aggregation after aging.