

Supporting Information

High Yield Synthesis of Pure Alkanethiolate-Capped Silver Nanoparticles

Alessandra Mari,¹ Patrizia Imperatori,¹ Giada Marchegiani,¹ Luciano Pilloni,² Alessio Mezzi,³ Saulius Kaciulis,³ Carla Cannas,⁴ Carlo Meneghini,⁵ Settimio Mobilio⁵ and Lorenza Suber^{1}*

¹CNR-Istituto di Struttura della Materia, P.O. Box 10, I-00015 Monterotondo St., (Roma), Italy

²ENEA-CR Casaccia, S.M. di Galeria, (Roma), Italy

³CNR-Istituto per lo Studio dei Materiali Nanostrutturati, P.O. Box 10, I-00015 Monterotondo St., (Roma), Italy

⁴Chemistry Department-University of Cagliari SS 554 Bivio per Sestu, I-O9042 Monserrato, (Cagliari), Italy

⁵Dipartimento di Fisica, Università Roma Tre, Via della Vasca Navale, I-00146 Roma, Italy

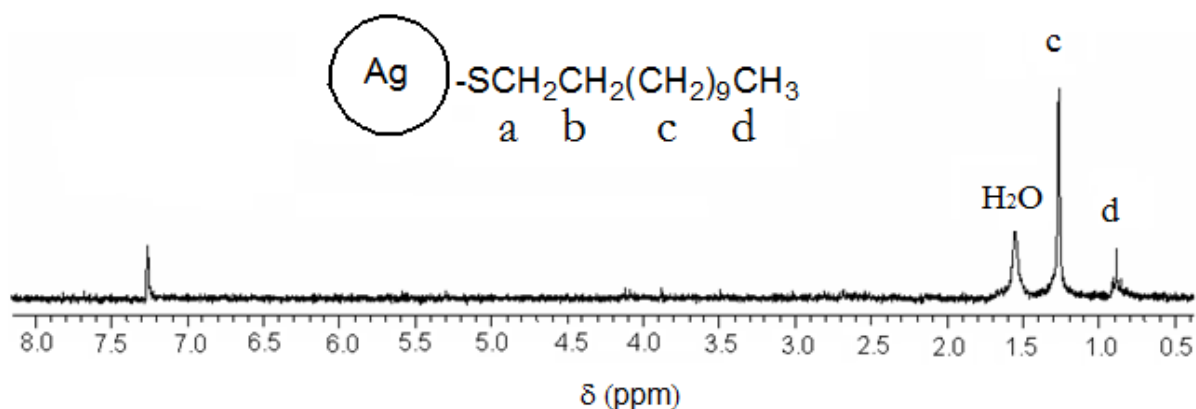


Figure 1 SI: $^1\text{H-NMR}$ of dodecanethiolate-capped Ag nanoparticles in CDCl_3 .

* Corresponding author, E-mail: lorenza.suber@ism.cnr.it

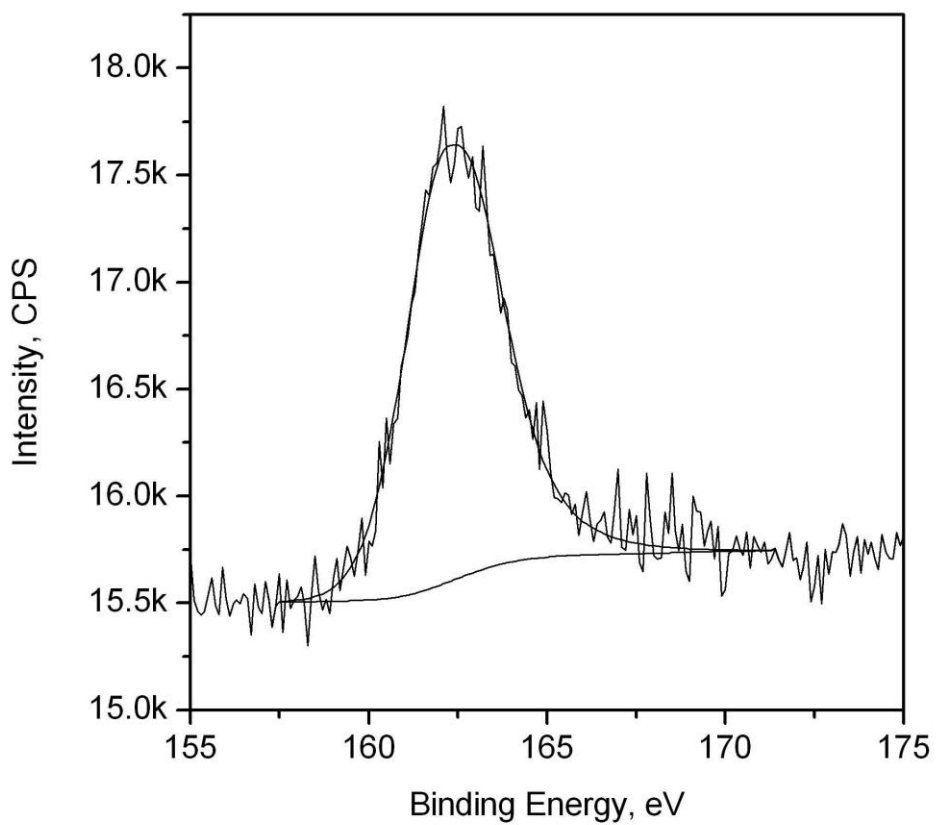


Figure 2 SI: XPS spectrum for S 2p signal of dodecanthiolate-capped Ag nanoparticles showing an asymmetric peak (asymmetry index ~ 0.20) at BE = 162.4 eV. The spectrum was collected at 50 eV constant pass energy and the Shirley's method was used to remove the background.

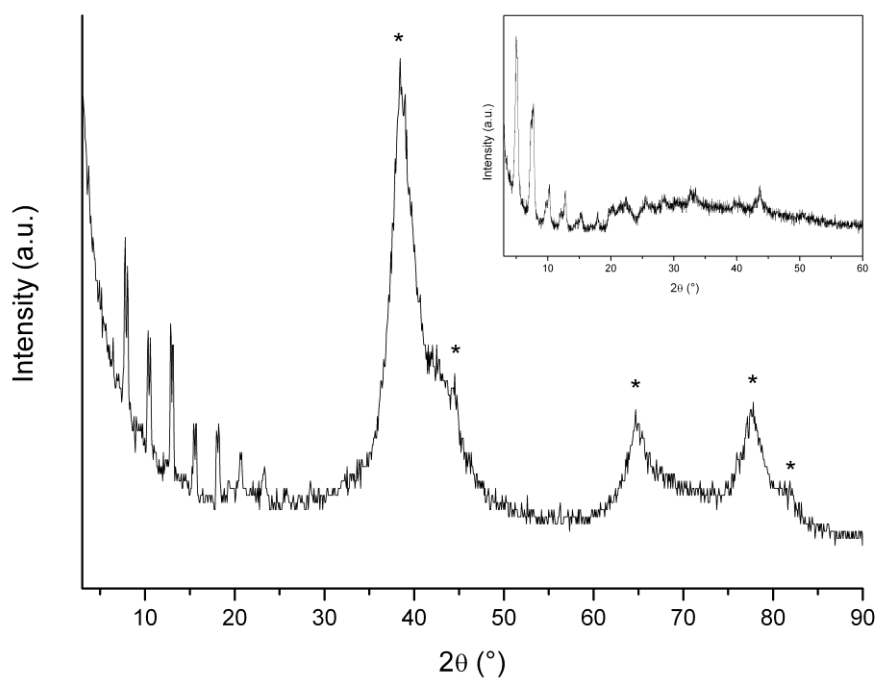


Figure 3 SI: Typical XRD pattern of Ag nanoparticles powder, prepared according Ref 15, prior to the purification process, showing low angle peaks due to the silver dodecanethiolate complex, whose pattern is reported in the inset. The * indicates Silver reflections.

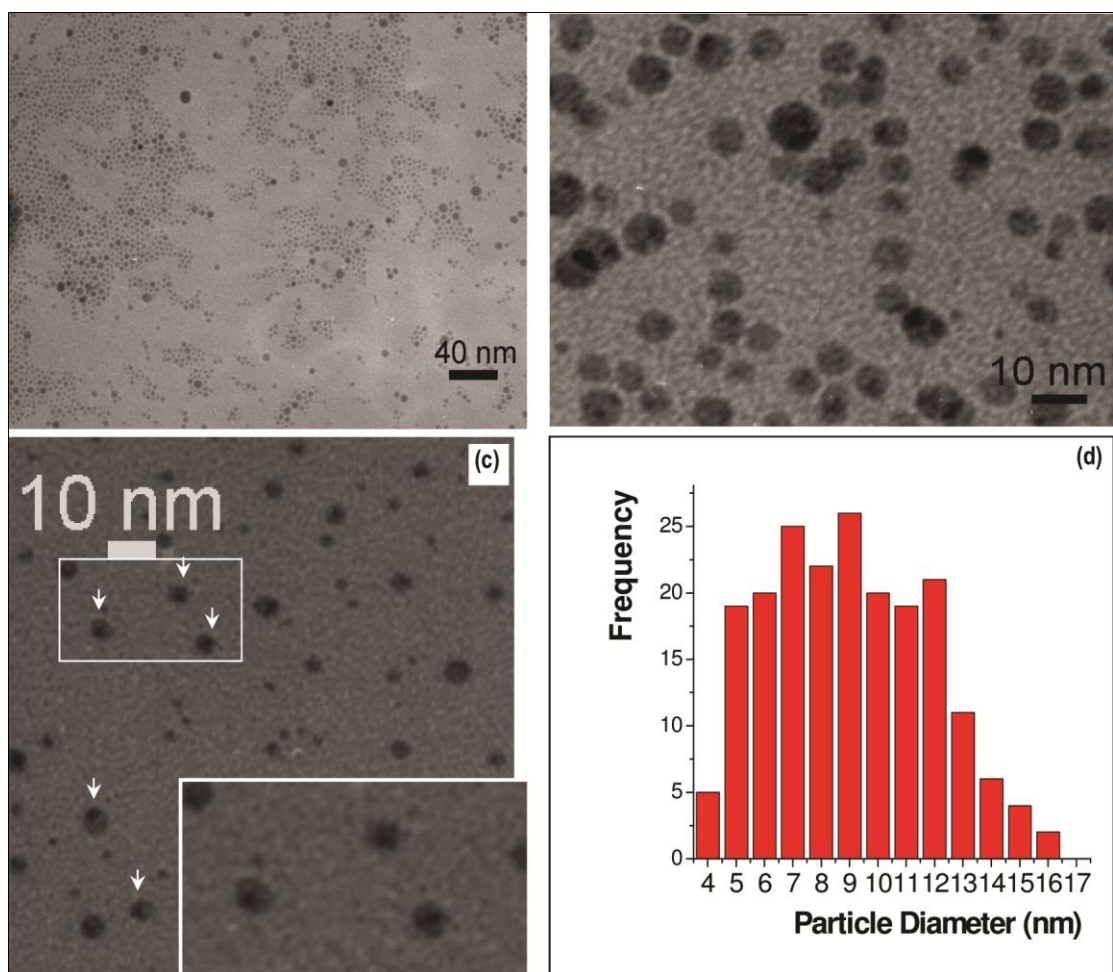


Figure 4 SI: (a,b,c) Positive TEM micrograph in Bright Field of Sample 2. The arrows in figure 4c point out the Ag^0 particle cores. (d) Size distribution histogram of the dodecanethiolate capped Ag^0 nanoparticles.

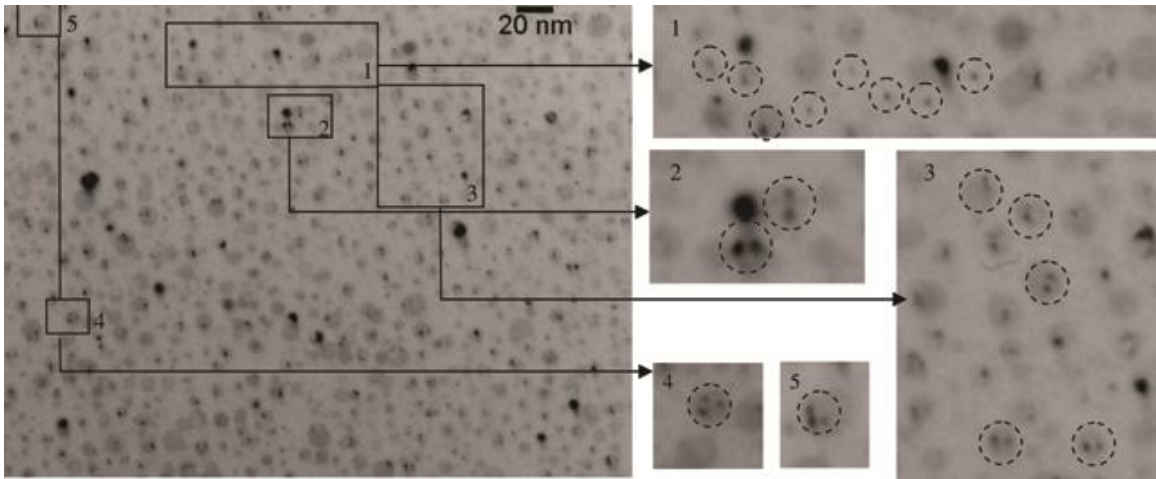


Figure 5 SI: Negative TEM image in Dark Field Mode with enlarged details (1: single core nanoparticles; 2, 3: double core nanoparticles; 4, 5: triple core nanoparticles).