Supplementary Information

In-situ SAXS investigation of the formation of silver nanoparticles and bimetallic silver-gold nanoparticles in controlled wet-chemical reduction synthesis

Paulo R. A. F. Garcia,¹ Oleg Prymak,² Viktoria Grasmik,² Kevin Pappert,² Wagner Wlysses,¹ Larissa Otubo,³ Matthias Epple,²* Cristiano L. P. Oliveira ¹*

¹ Institute of Physics, University of São Paulo, Rua do Matão 1371, São Paulo, São Paulo, 05508-090, Brazil

² Inorganic Chemistry and Center for Nanointegration Duisburg-Essen (CeNIDE), Universitaetsstr. 5-7, 45117 Essen, Germany

³ Laboratório de Microscopia e Microanálises (LMM), Instituto de Pesquisas Energéticas e Nucleares, IPEN-CNEN/SP, 05508-000, São Paulo – SP

Figure S1: Full SAXS data and MC modeling for the synthesis of silver nanoparticles at 90 °C. (a) Series of SAXS data for the full synthesis time. The experimental data is shown as symbols and the theoretical fit as continuous. (b) Series of volume weighted distributions obtained from the MC analysis. In both cases the error bars are not shown for a better visualization of the evolution.

Figure S2: Synthesis of silver nanoparticles at 90 °C: Particle radius distribution histograms obtained from MC analysis. The frames were taken at 7 minutes (top) and 72 minutes (bottom), showing the smaller (1) and the larger (2) particle distributions.

Figure S3: Full SAXS data and APS modeling for the synthesis of silver-gold nanoparticles at 70 °C. (a) Series of SAXS data for the full synthesis time. The experimental data is shown as symbols and the theoretical fit as continuous. (b) Series of number weighted size distributions obtained from the APS analysis. In both cases the error bars are not shown for a better visualization of the evolution.

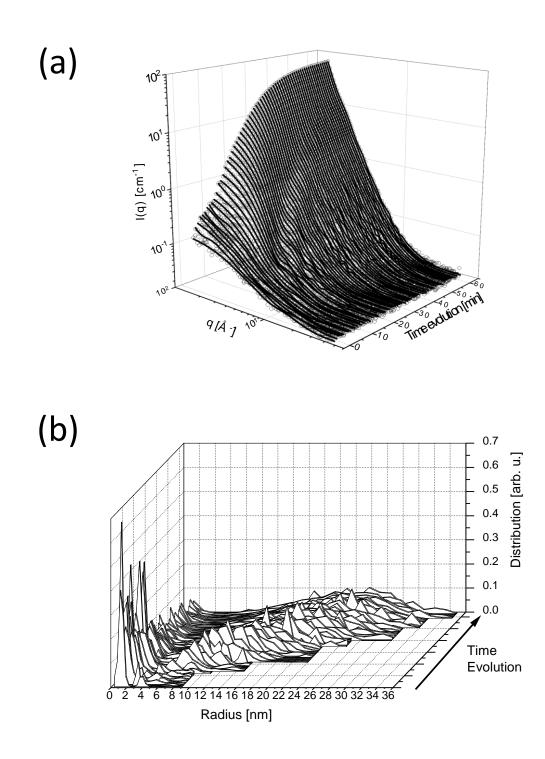
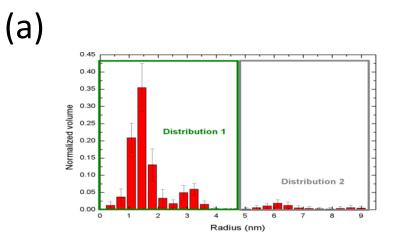


FIGURE S1



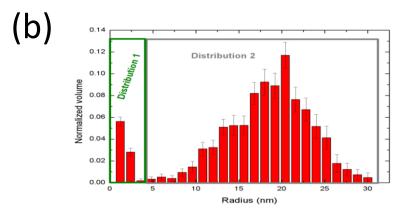


FIGURE S2

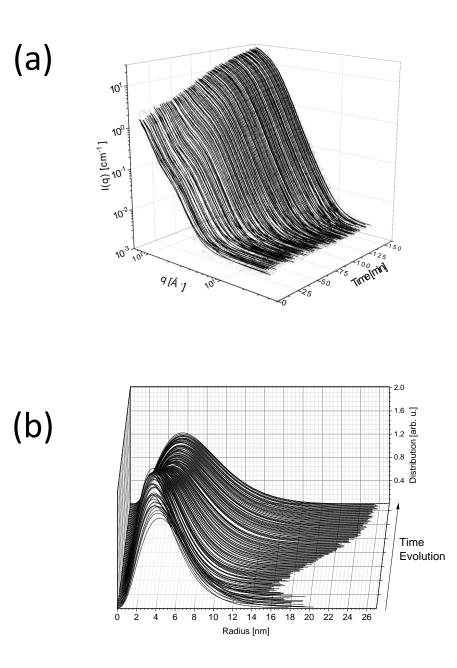


FIGURE S3