Supporting information

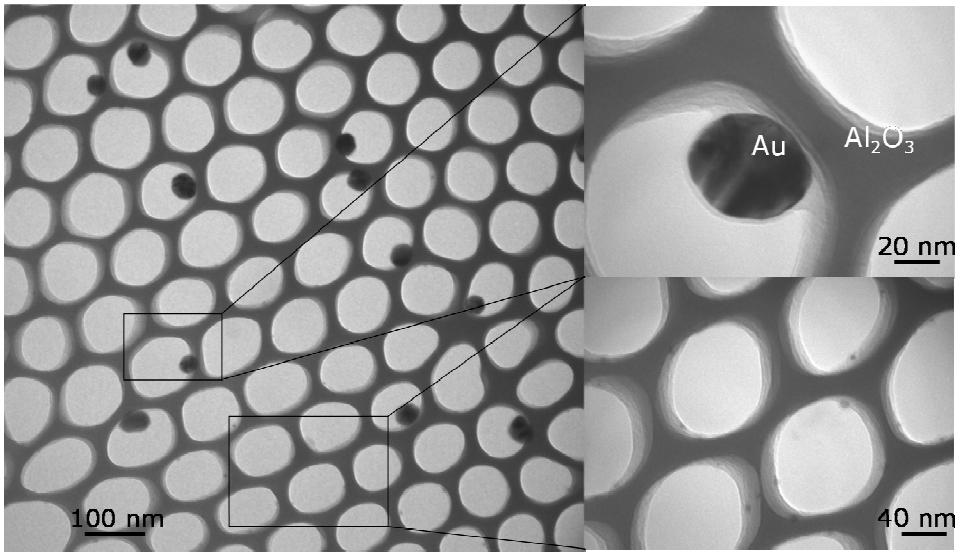

Figure 1. Different Au nanoparticle populations within AMMs after 6 days reduction.

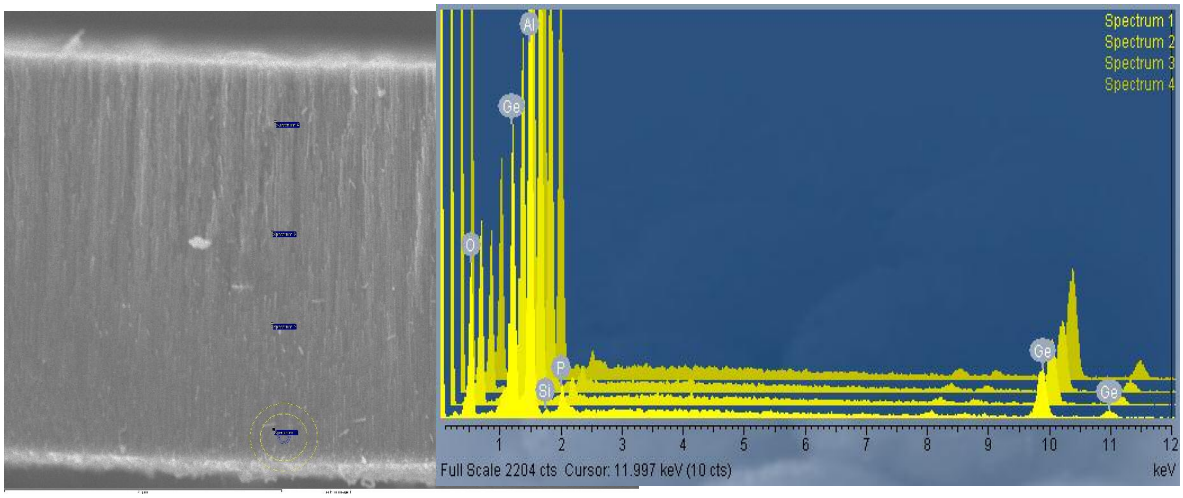

Figure 2. EDX data for the B-SFLS-Au-6 taken across the thickness of the AAMs (marked areas show the excitation areas).

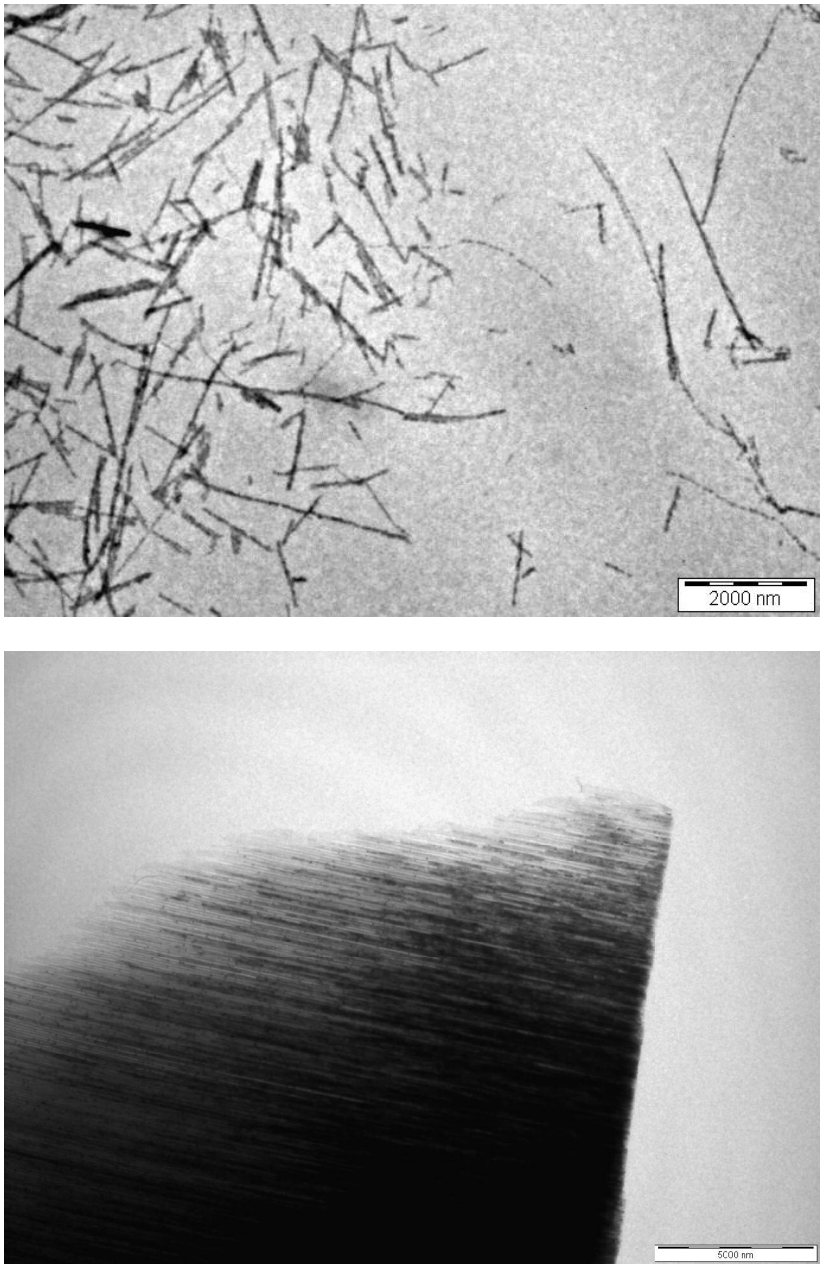

Figure 3 a) 1 D nanostructures isolated from the B-SFLS-Au-6 sample and b) side-view of 1D nanostructures within the channels of the IFT-SFLS-Au-12 sample.