

SUPPORTING INFORMATION

Ion Permeation through Silica Coating of Silver Nanoparticles Functionalized with 2-Mercaptoethanesulfonate Anions: SiO₂-Encapsulated SERS Probes for Metal Cations

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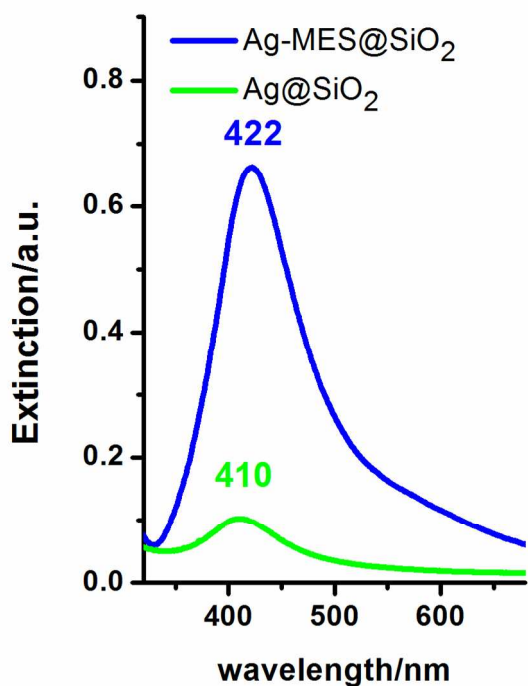


Figure S1. Comparison between the extinction spectra of Ag@SiO₂ obtained with use of MES-coated Ag nanoparticles (Ag-MES@SiO₂, blue spectrum) and MES-uncoated Ag nanoparticles (Ag@SiO₂, green spectrum).

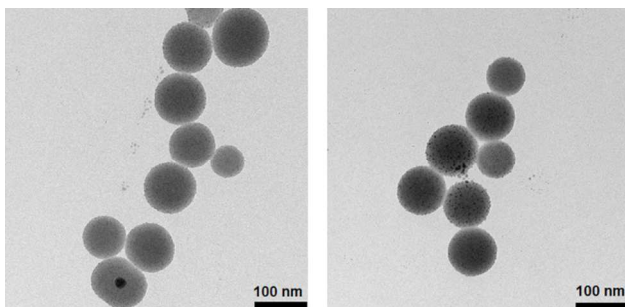


Figure S2. Sample TEM images of Ag@SiO₂ NPs prepared with Ag nanoparticles uncoated with MES. The sample consists of SiO₂ beads with rare Ag cores which look significantly smaller (picture on the left, in the bottom left corner). SiO₂ are covered with small Ag nanoparticles etched with ammonia.

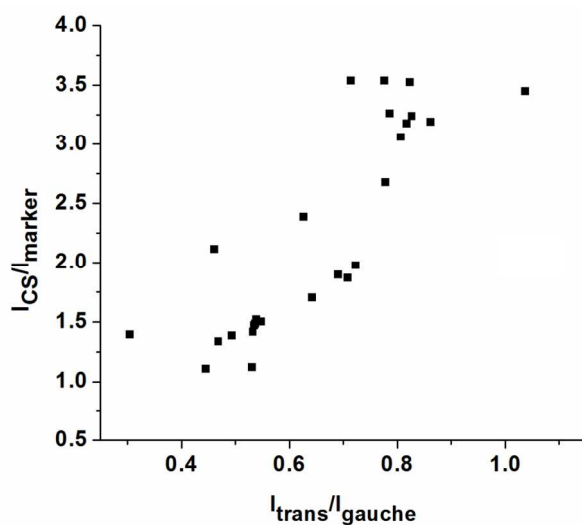


Figure S3. Intensity ratio of C-SO₃⁻ vibrational band in the SERS spectrum of MES to the marker band at 1035 cm⁻¹ plotted against the intensity ratio of C-S bands for trans and gauche conformers for different samples. The plot shows that these two values are proportional. Since a change of I_{trans}/I_{gauche} indicates structural changes in the monolayer, such a relation suggests that I_{CS}/I_{marker} is also influenced by the structure of the monolayer.

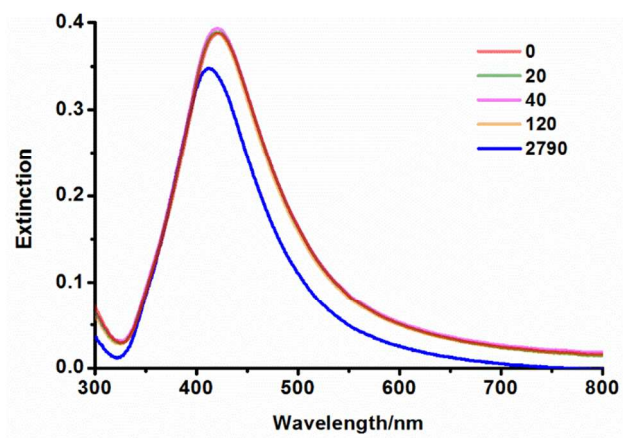


Figure S4. Temporal changes in UV-Vis spectra of Ag-MES@SiO₂, time after the synthesis in minutes is given in the legend.