

Electronic Supplementary Information

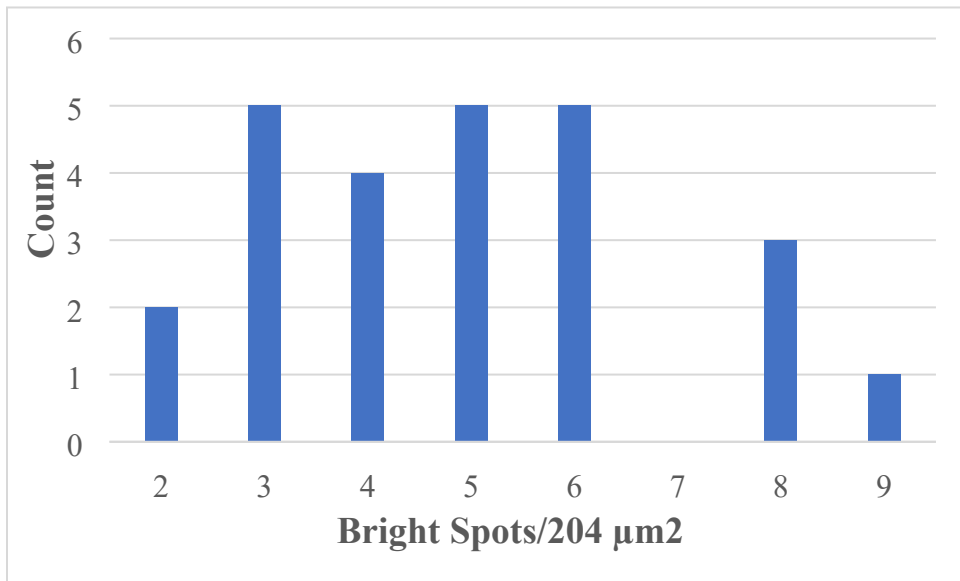
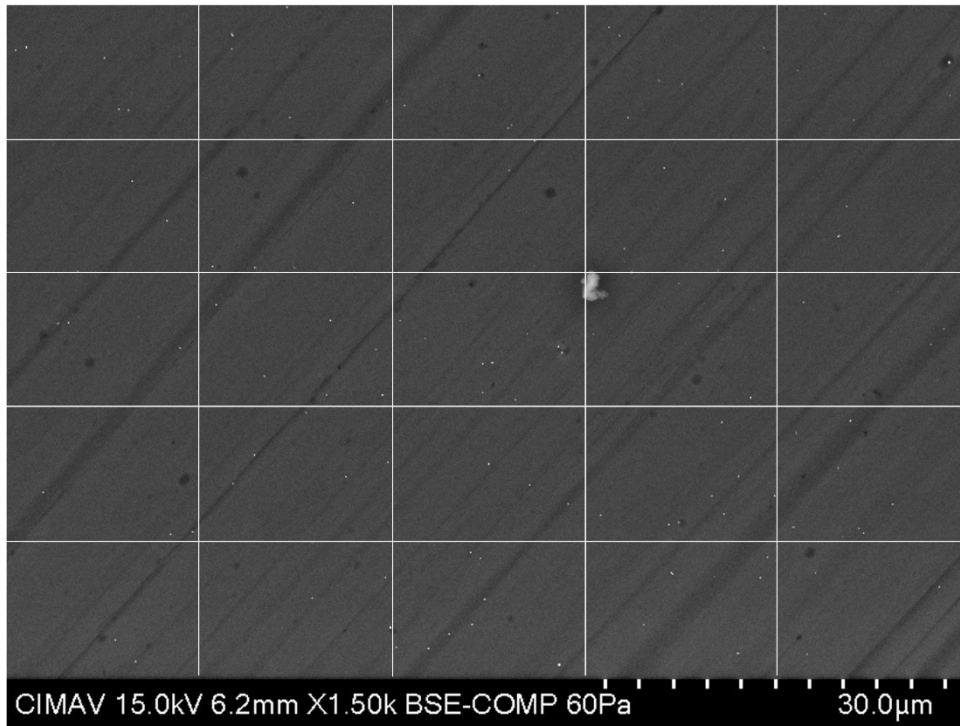


Fig. S1. Analysis of AuNRs randomly distributed in a5 sample.

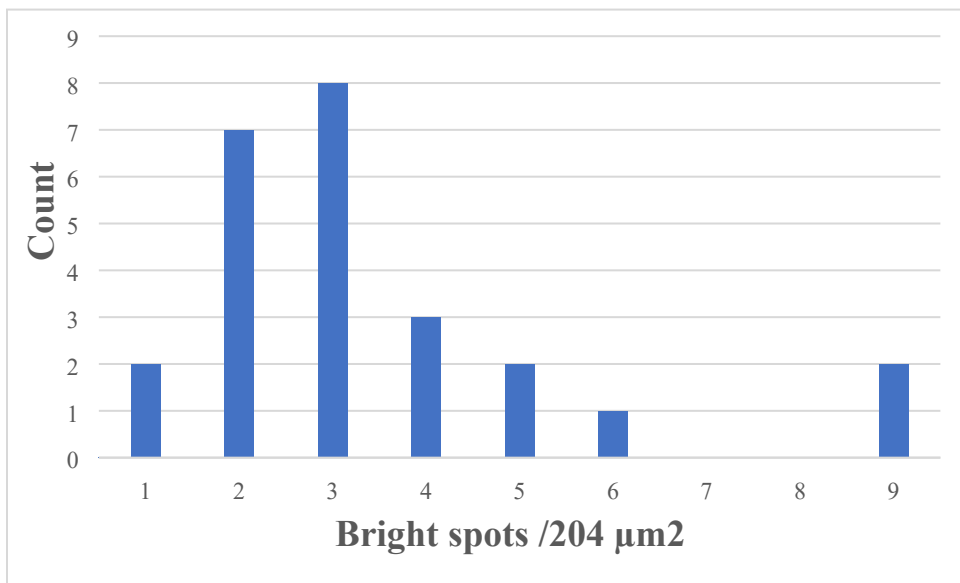
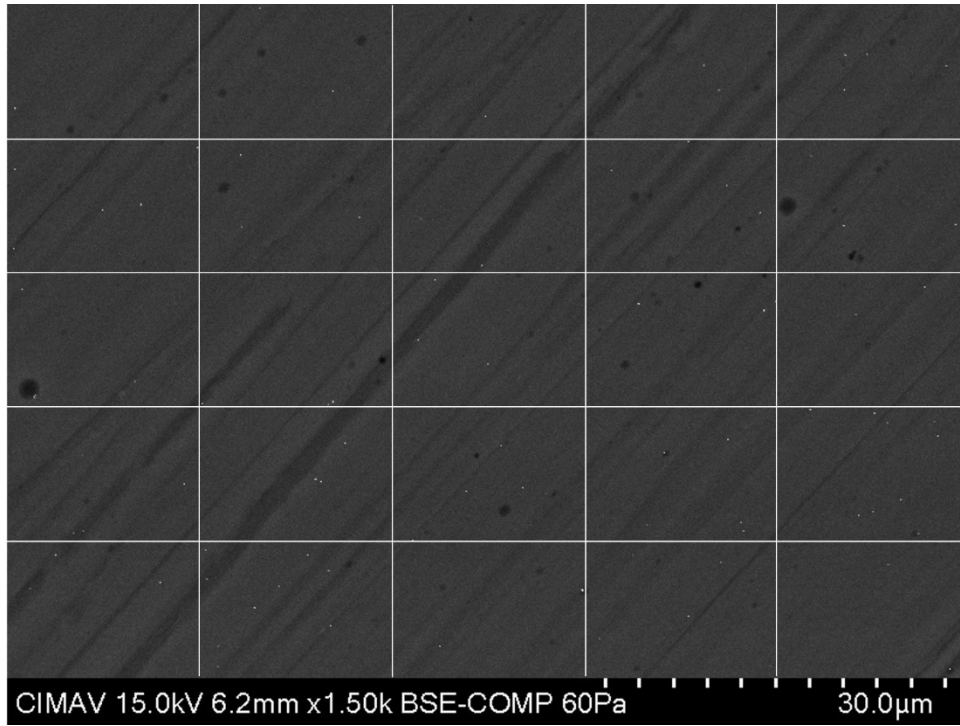


Fig. S2. Analysis of AuNRs randomly distributed in a4 sample.

Electron Microscopy Images

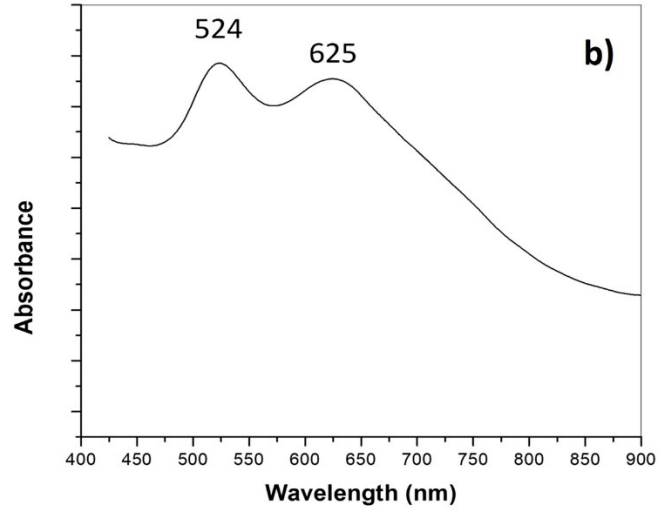
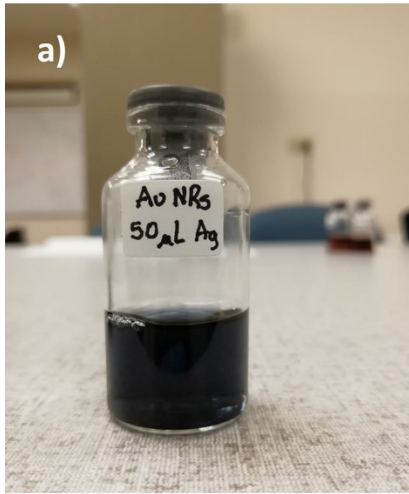


Fig. S3 Gold nanorods (AuNRs) obtained by the seeding method [18]. a) AuNRs suspension; b) absorption spectrum and c) STEM image.

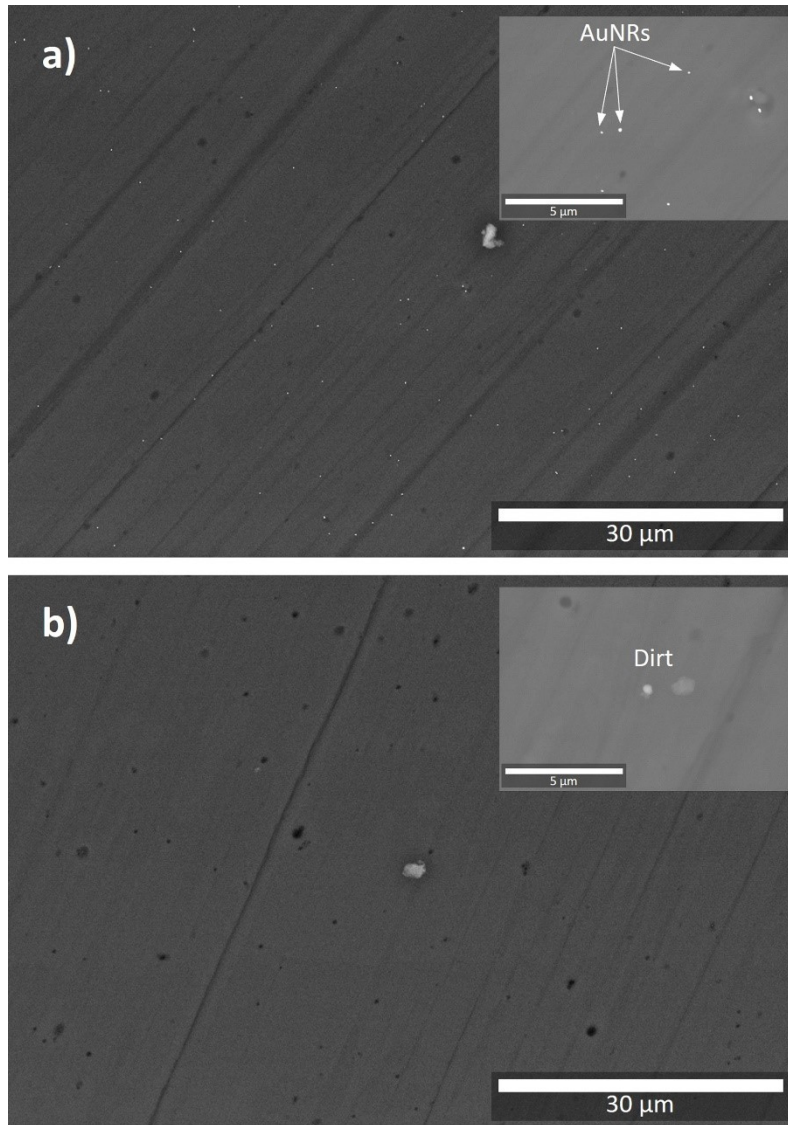
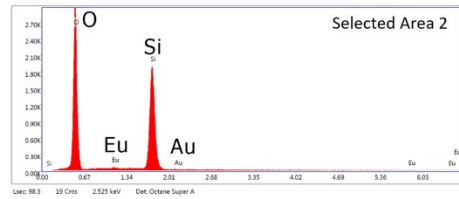
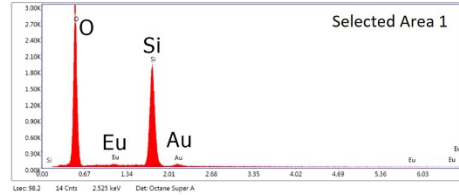
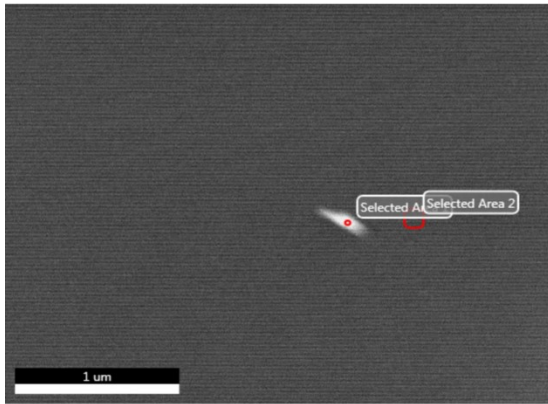


Fig. S4 BSE images of: a) **a5** sample; b) **b5** sample. Insets correspond to samples observed at higher magnifications.

a)



b)

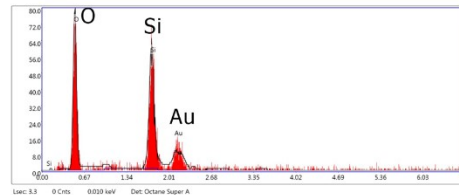
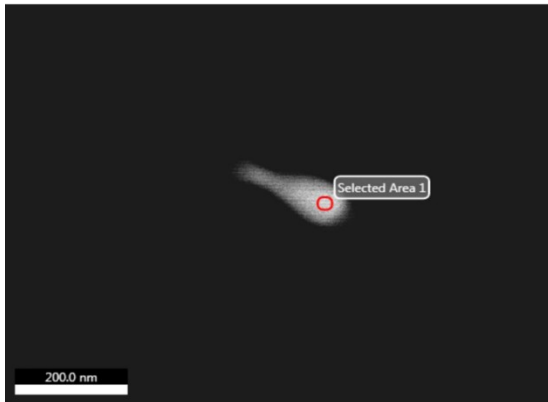


Fig. S5 EDS analysis carried out on (a5) sample. In a) the individual EDS analysis marked as Selected Area 1 over AuNRs and Selected Area 2 on the surface of the silica matrix correspond with the spectra to the left. In b) EDS analysis was carried out at higher magnifications to improve local chemical analysis.