TOF-SIMS analysis using Bi_3^+ as primary ions on Au nanoparticles supported by SiO_2/Si: providing insight into metal-support interactions

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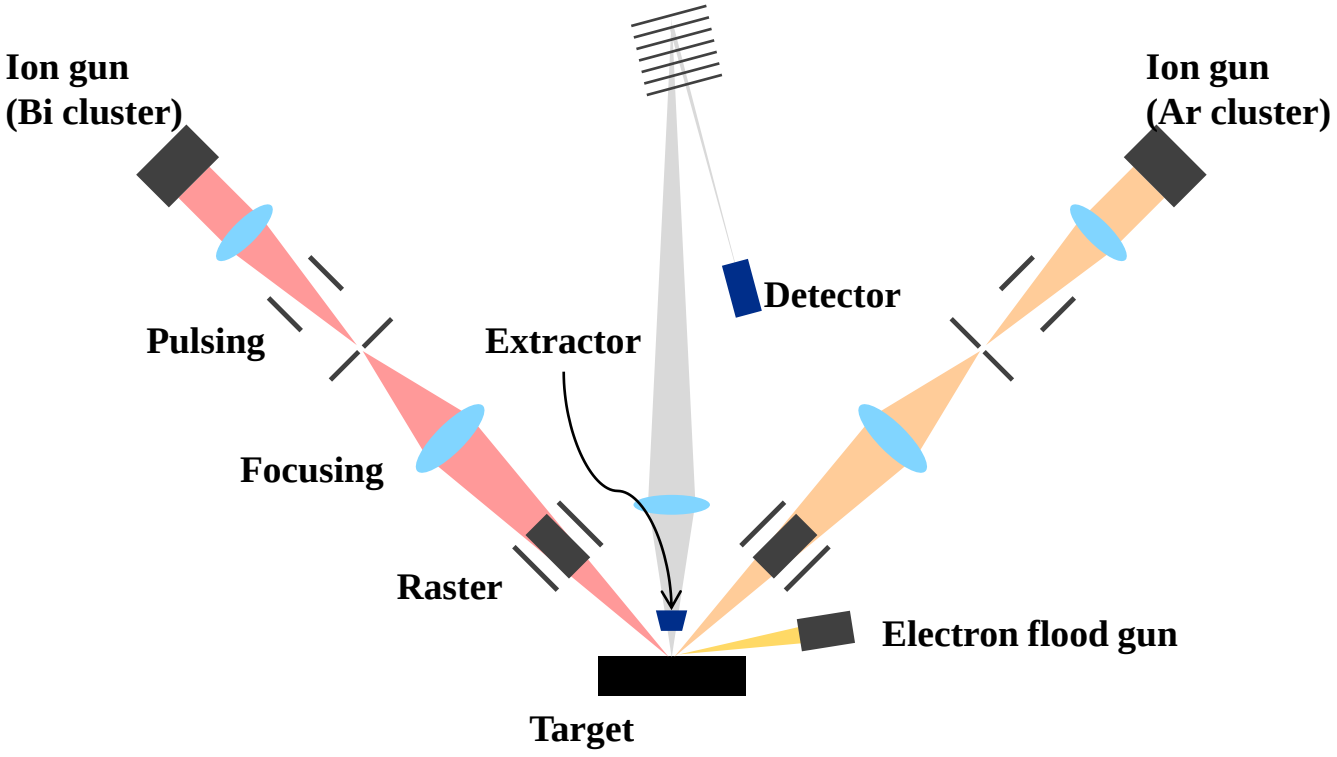

Figure S1. Schematic description of experimental set-up for TOF-SIMS

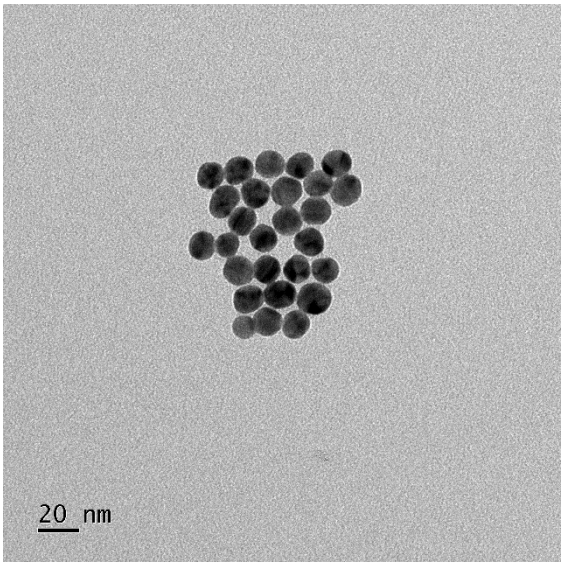

Figure S2. TEM image of Au/Si

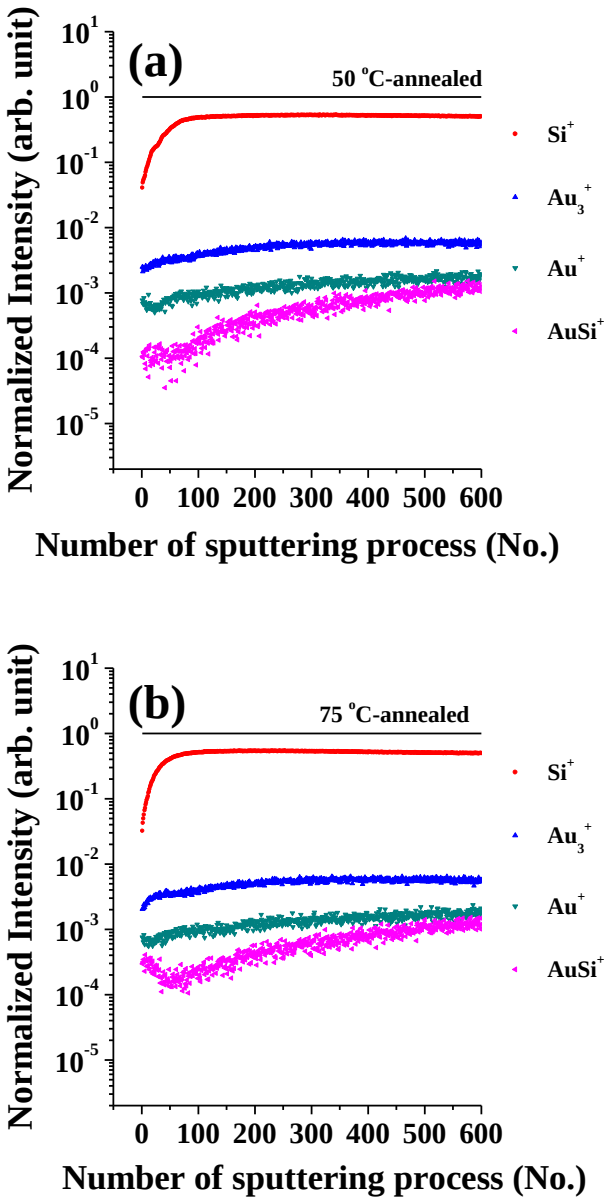

Figure S3. Change in the intensity of Au^+, Au_2^+, Si^+ and $AuSi^+$ signal as a function of number of sputtering + SIMS cycles collected from the surface of (a) 50°C and (b) 75°C annealed Au/Si samples.

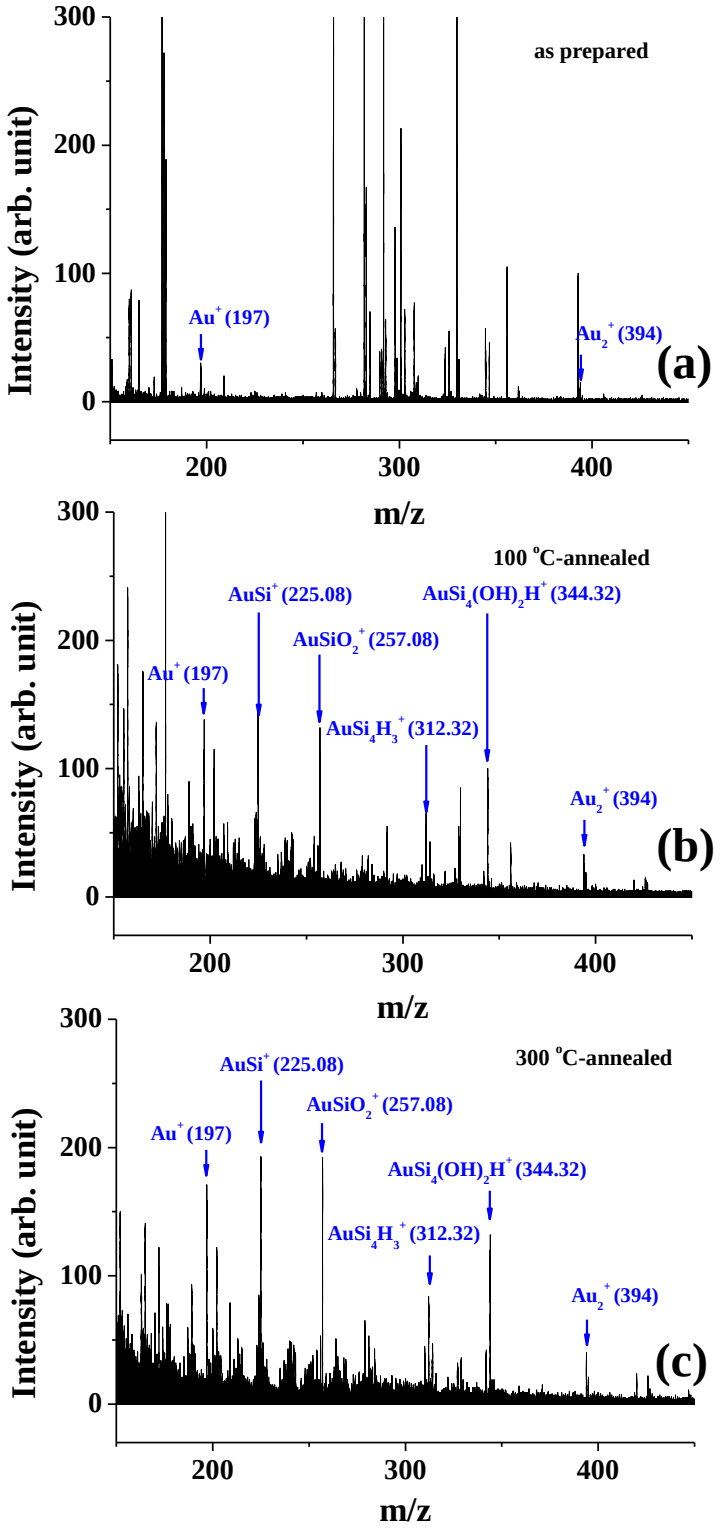

Figure S4. SIMS spectra of (a) as-prepared Au/Si, (b) 100°C and (c) 300°C annealed Au/Si samples using Bi_3^+ as a primary ion are displayed in m/z range between 100 and 400. Please note that these spectra are identical with those in Figure 3, but more detailed peak assignments are given here.

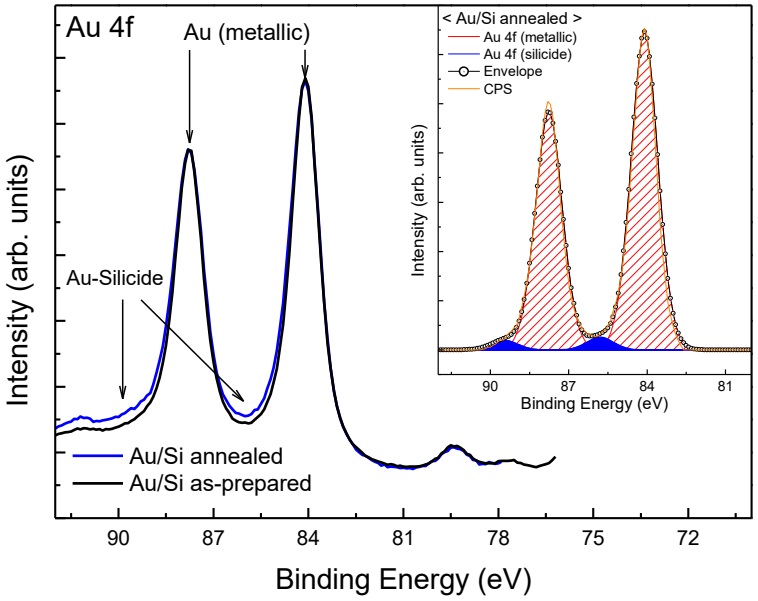

Figure S5. Au 4f XP spectra of as-prepared Au/Si and annealed Au/Si samples are displayed. In inset graph, de-convoluted Au 4f spectrum of annealed Au/Si is given. For XPS analysis, a concentric hemispherical analyzer (PHOIBOS-Has 2500, SPECS) and Mg K-alpha line (1253.6 eV, natural line width of 0.7 eV) were used under UHV condition. Binding energies were calibrated with metallic Au $4f_{7/2}$ (84.1 eV) and intensities were normalized by Au $4f_{7/2}$.

Table S1. Information for the de-convolution of Au 4f spectrum of annealed Au/Si.

	Au $4f_{7/2}$ (metallic)	Au $4f_{7/2}$ (metallic)	Au $4f_{7/2}$ (Au-silicide)	Au $4f_{5/2}$ (Au-silicide)
Binding Energy (eV)	84.1	87.76	85.8	89.46
FWHM	1.2	1.2	1.2	1.2
Area	42000	31500	1700	1275