Supplementary information

A solution to the fabrication and tarnishing problems of surface-enhanced Raman spectroscopy (SERS) fiber probes

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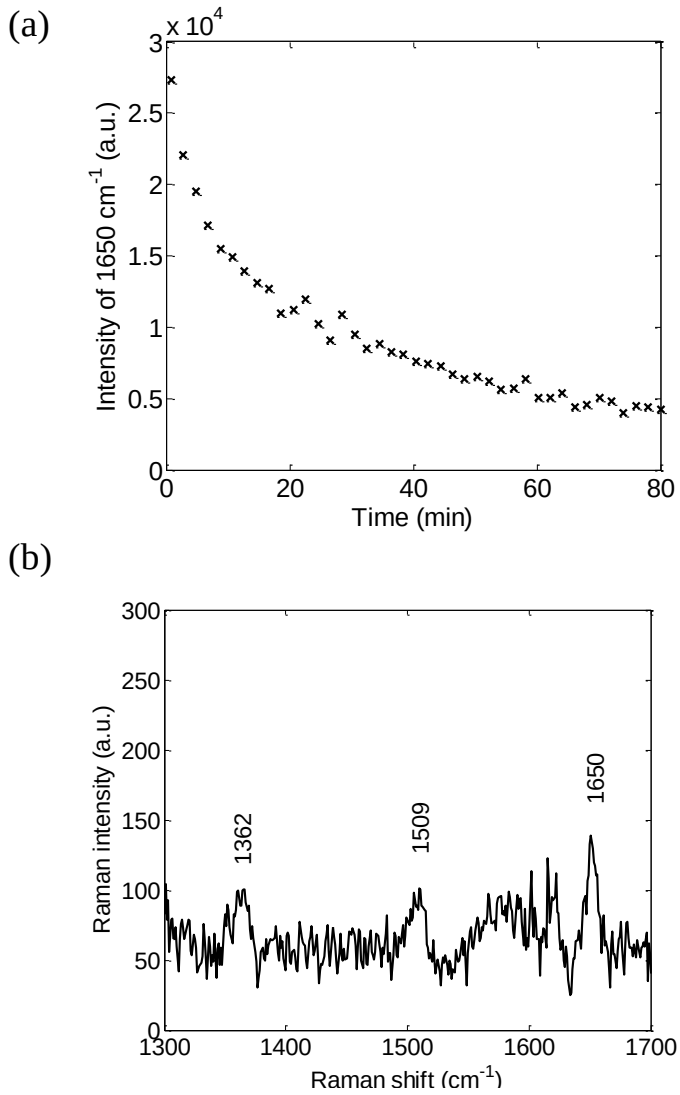
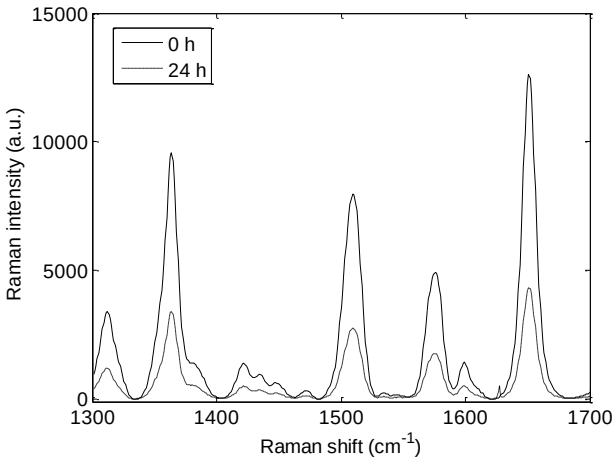
Supplermentary Table S1: Mean diameter d_μ and the number density of the crystals n_c, and the signal-to-noise ratio *S/N* of the SERS measurements on planar silicon substrates and silica fiber probes as a function growth cycles

Number of cycles	d_μ (nm)	n_c (crystals/μm^2)	*S/N* (dB)
Silica fiber probe			
0	-	-	~ 0
25	59 ± 29	8 ± 11	24 ± 2
50	79 ± 38	47 ± 5	37 ± 2
100	110 ± 52	30 ± 3	42 ± 3
Silicon substrate			
0	-	-	~ 0
25	92 ± 39	16 ± 1	20 ± 7
50	133 ± 53	10 ± 2	36 ± 4
100	154 ± 66	12 ± 3	38 ± 3



Supplementary Figure S1: SERS signals from aqueous solutions with decreased concentrations of Rh6G. (a) Raman signal level evolution when the concentration was dropped (0 minutes) from 200 nM to 20 nM. (b) Raman spectrum obtained with a probe submerged to solution of 5 nM Rh6G. Activated, fresh probes, made with 100 growth cycles were used for each experiment.



Supplementary Figure S2: Aging of silver in the activated stage. The Raman spectra of Rh6G are measured from the activated surfaces when stored 0 h or 24 h in the activated stage before the Rh6G deposition and measurements. Unlike those stored in the non-activated stage (AgCl) this sample (24 h) is the subject of atmospheric oxidation typical of metallic silver. Samples made with 100 growth cycles were used for this experiment.