Electronic Supplementary Information

In situ dispersion of oil-based Ag nanocolloids by microdroplet coalescence and their applicaions in SERS detection

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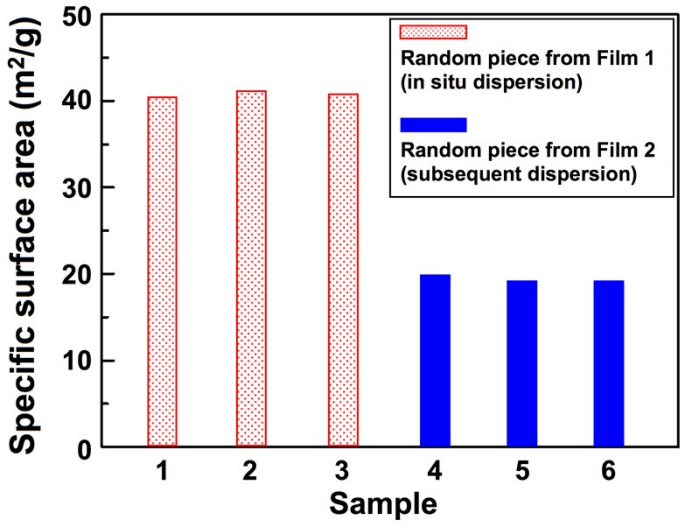

Fig. S1 Specific surface areas (using the five-point BET method) of the samples from the two particle-coated films (each sample was a 3 mm × 3 mm piece, which was randomly cut from the particle-coated film: Film 1 represents the film with in situ dispersed 4.7g/L particles and Film 2 represents the film with subsequent dispersed 4.7g/L particles).

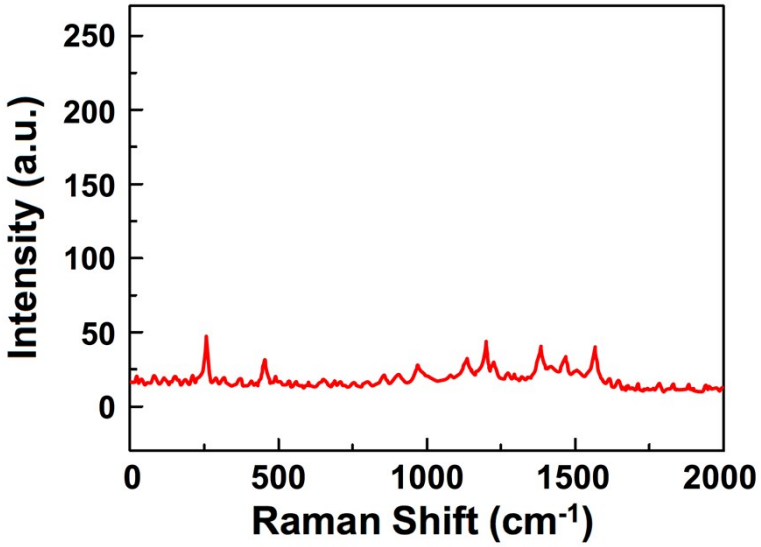

Fig. S2 Raman spectra of 1.0×10^{-8} mol/L R6G solution on the PDMS film coated with the in situ dispersed 4.7 g/L nano-Ag suspension.

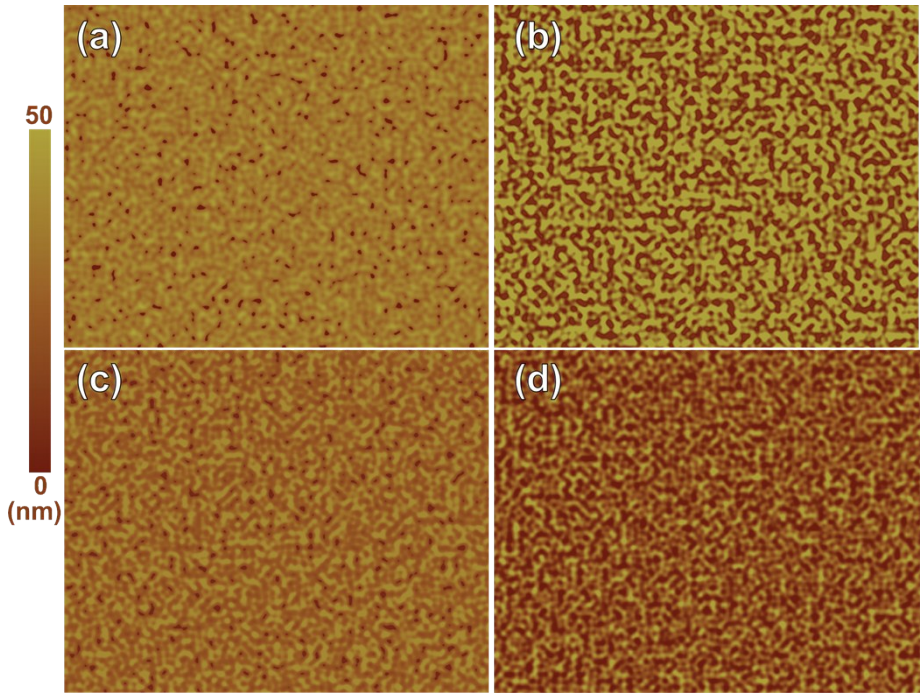

Fig. S3 AFM images of the PDMS films in the stability experiments: (a) the initial PDMS film coated with the nano-Ag suspension of 4.7 g/L obtained by in situ dispersion; (b) the initial PDMS film coated with the nano-Ag suspension of 4.7 g/L obtained by subsequent dispersion; (c) after 15 cycles of solvent washing, the PDMS film coated with the nano-Ag suspension of 4.7 g/L obtained by in situ dispersion; (d) after 15 cycles of solvent washing, the PDMS film coated with the nano-Ag suspension of 4.7 g/L obtained by subsequent dispersion.

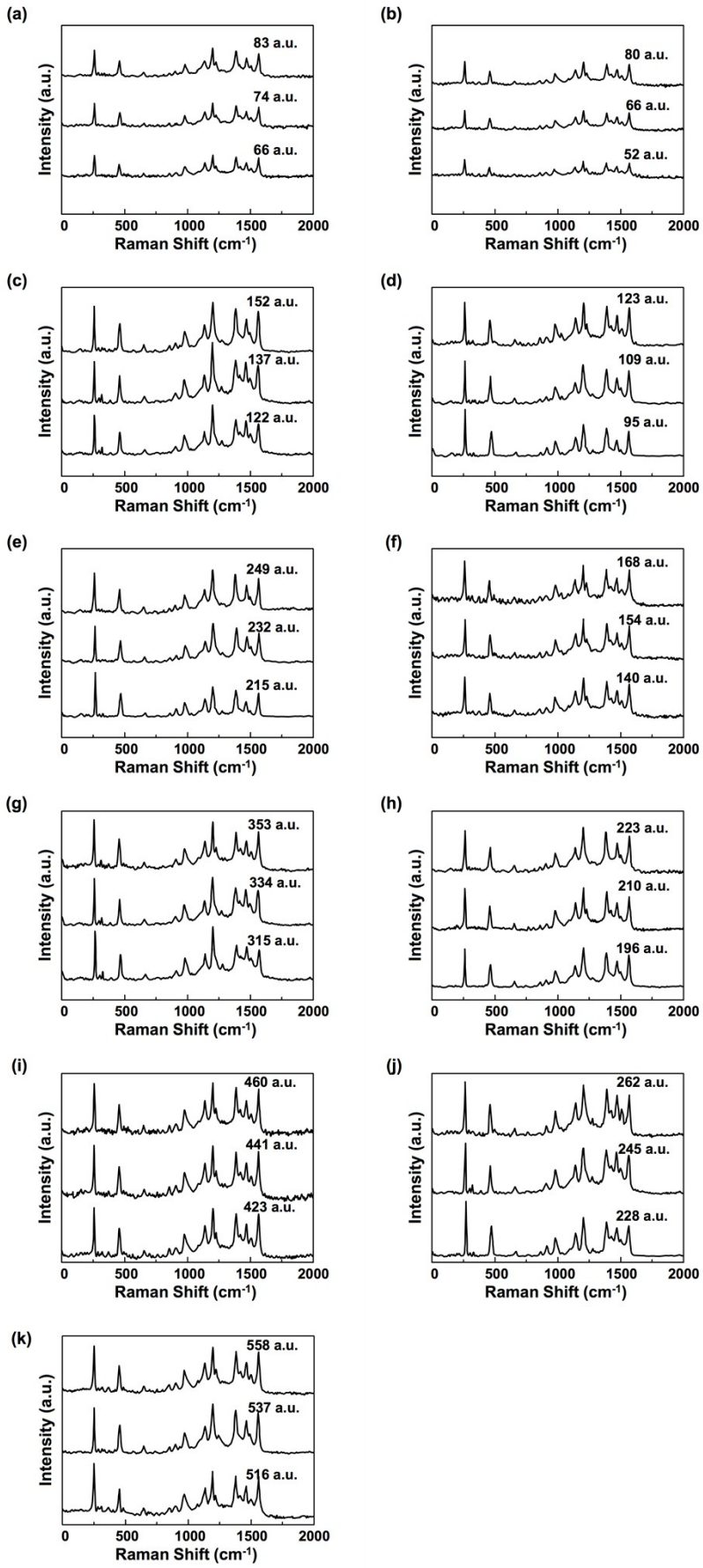

Fig. S4 SERS responses on the PDMS film coated with nano-Ag suspension of 4.7

g/L obtained by in situ dispersion at varying R6G concentrations: (a) 1.1×10^{-8} mol/L, (c) 2.2×10^{-8} mol/L, (e) 5.0×10^{-8} mol/L, (g) 1.05×10^{-7} mol/L, (i) 2.82×10^{-7}, (k) 6.08×10^{-7} mol/L; SERS responses on the PDMS film coated with nano-Ag suspension of 4.7 g/L obtained by subsequent dispersion at varying R6G concentrations: (b) 2.2×10^{-8} mol/L, (d) 5.0×10^{-8} mol/L, (f) 1.05×10^{-7} mol/L, (h) 2.82×10^{-7} mol/L, (j) 6.08×10^{-7} mol/L.