Supporting Information

Gas-Diffusion Microfluidic Paper-Based Analytical Device (*μ*PAD) Coupled with Portable Surface-Enhanced Raman Scattering (SERS): Facile Determination of Sulphite in Wines

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Supplementary Figures

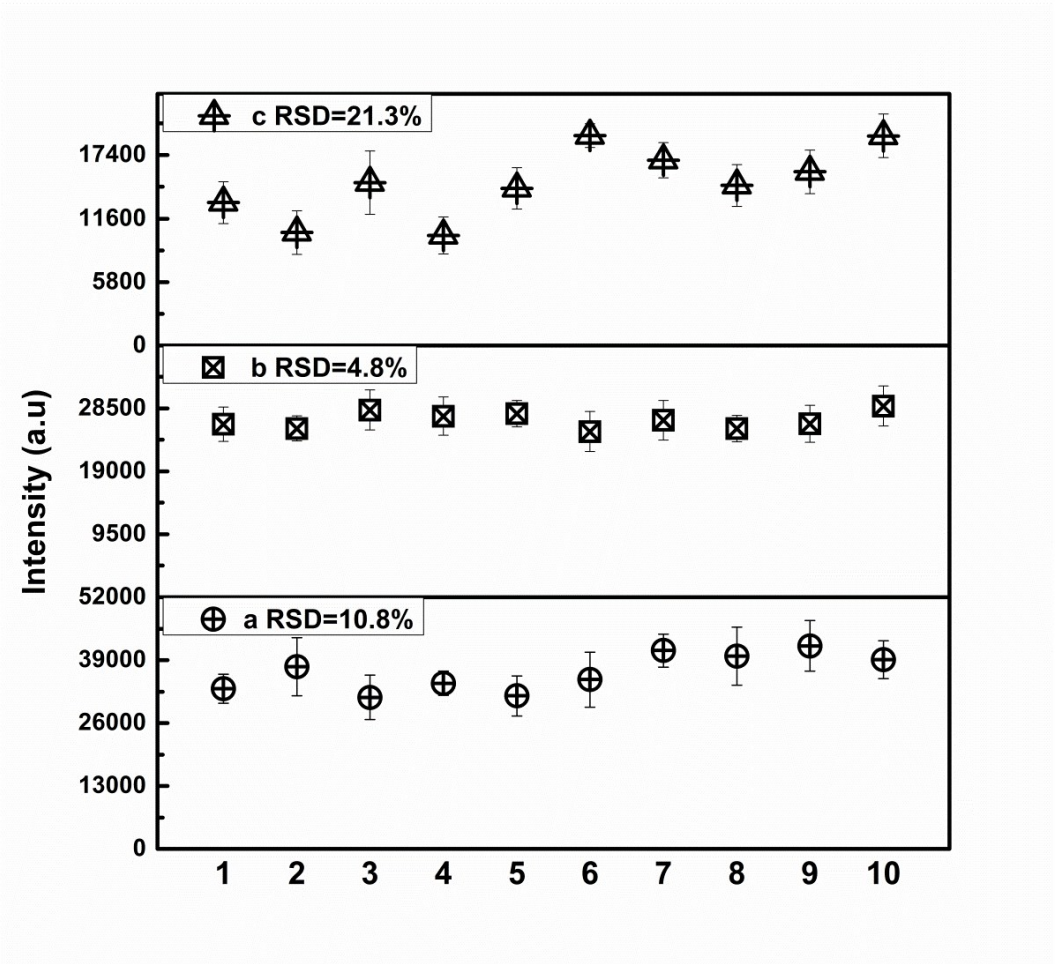

Figure S1. The Raman signal intensities of the papers recorded from 10 randomly selected positions within the substrate area. (a) $Zn(NO_3)_2$ coated paper. (b) ZnO-paper synthesized by the proposed two-step reaction method. (c) ZnO-paper synthesized through the sea urchin-like nano ZnO deposited on the paper directly.

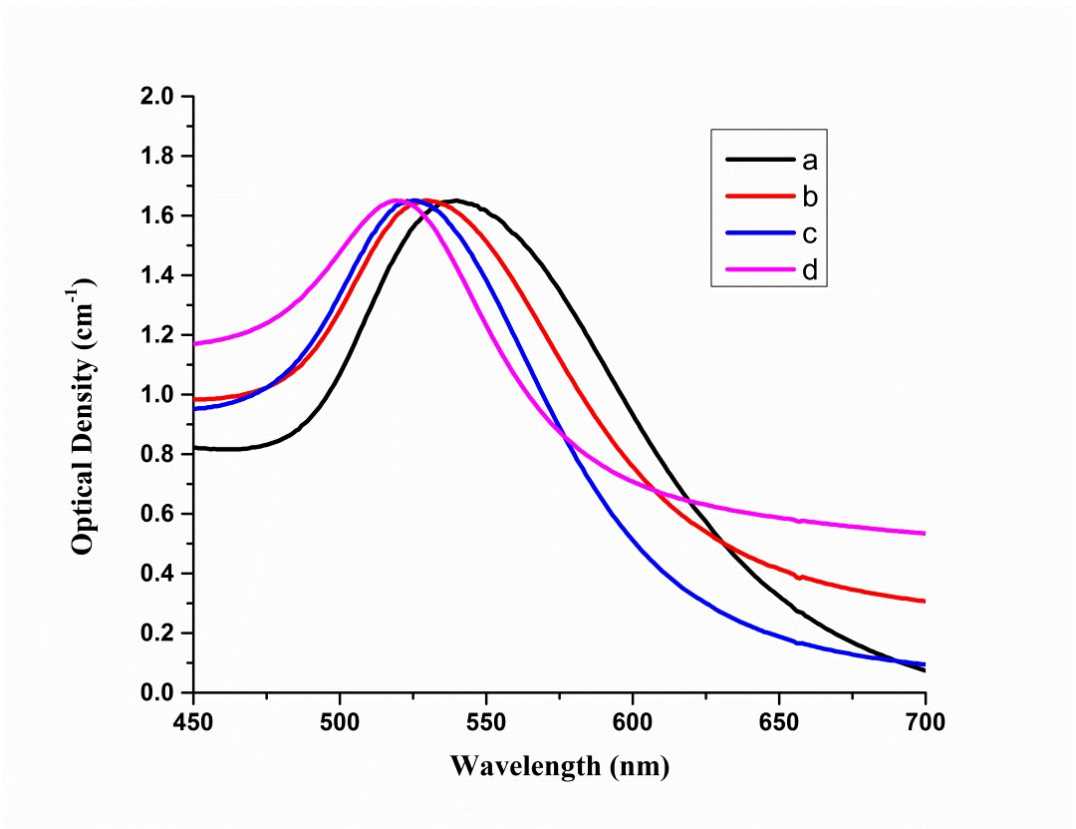

Figure S2. UV-Vis absorbance spectra of different sized gold nanoparticles. a: 70 nm. b: 50 nm. c: 25 nm d: 15 nm.

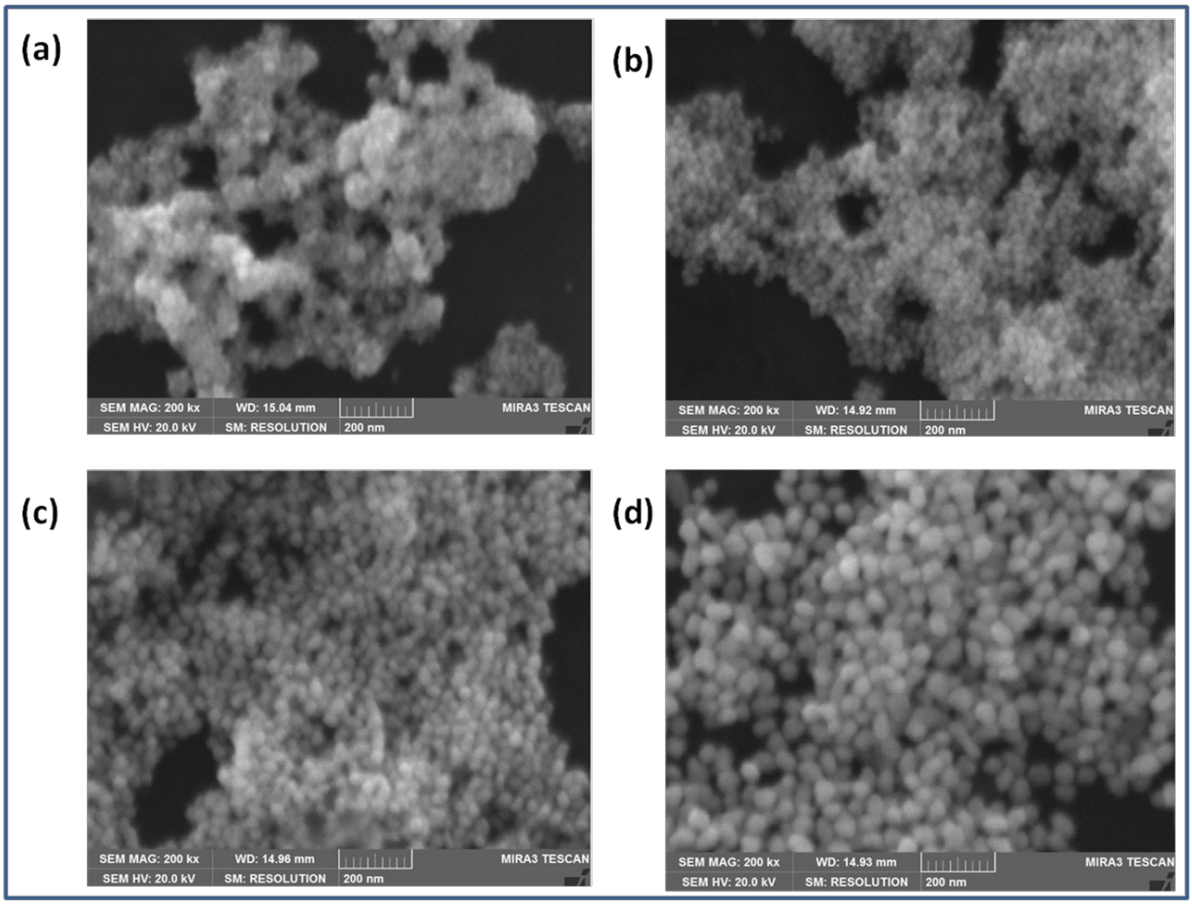

Figure S3. Scanning electron microscope (SEM) images of different size gold nanoparticles. a: 70 nm. b: 50 nm. c: 25 nm d: 15 nm.

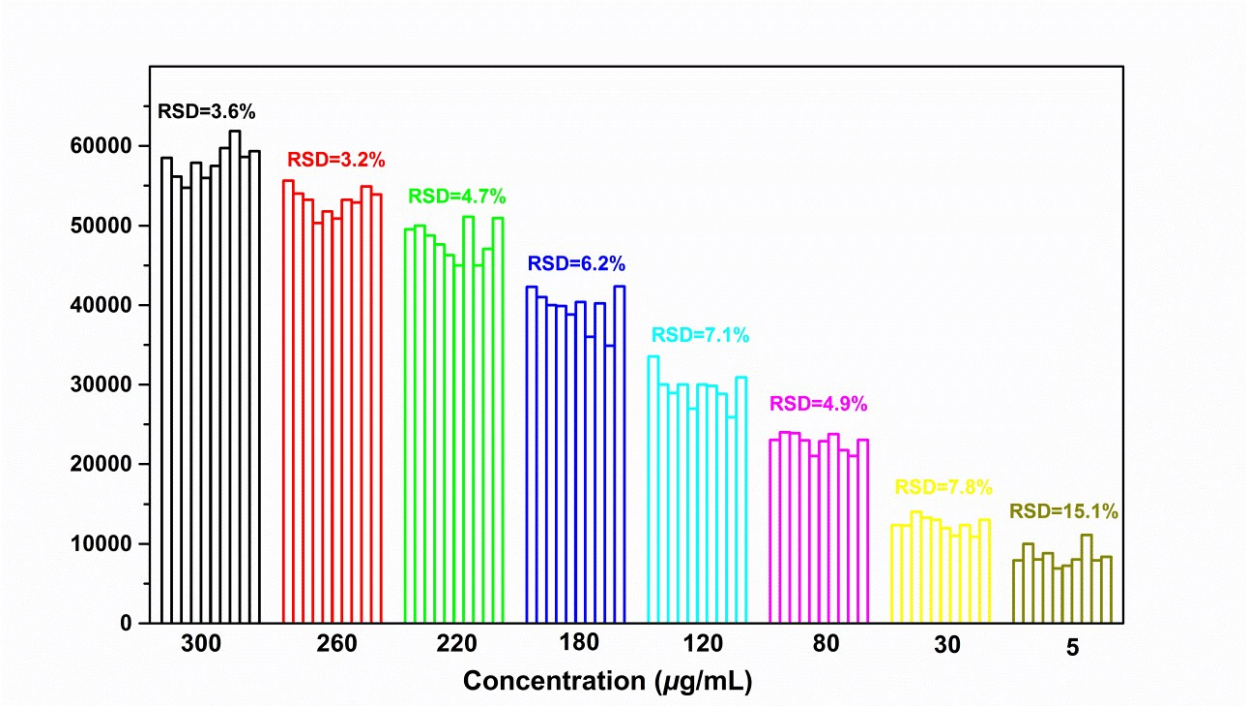

Figure S4. SERS signal of SO_2 at 620 cm^{-1} with different concentrations of Na_2SO_3 (5, 30, 80, 120, 180, 220, 260 and 300 μg/mL). Data were collected at 3-4 randomly chosen positions on each ZnO-paper substrate.

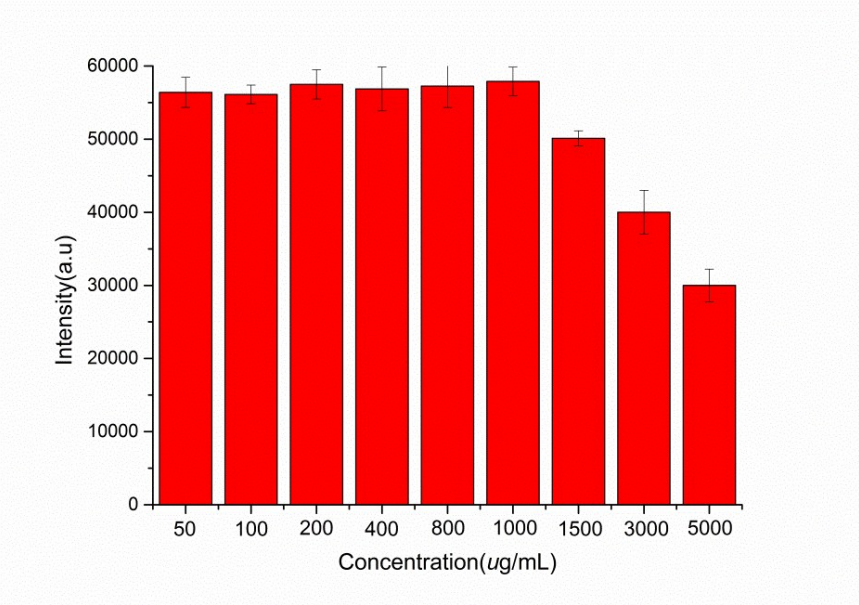

Figure S5. Different SERS peak intensities of SO_2 at 620 cm^{-1} when different concentrations acetic acid were added in 300 μg/mL Na_2SO_3 standard solutions before μPAD-SERS analysis.

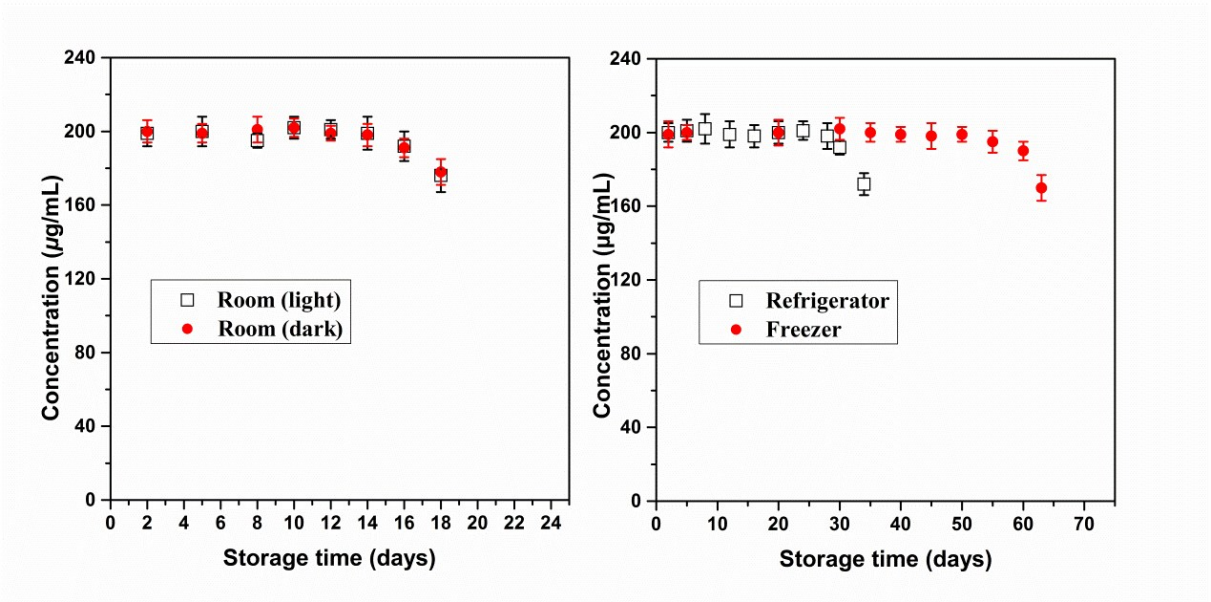

Figure S6. The effect of different storage conditions on the SERS signal of μPAD.