Supporting Information

Versatile Silver Nanoparticles-Based SERS Substrate with High Sensitivity and Stability

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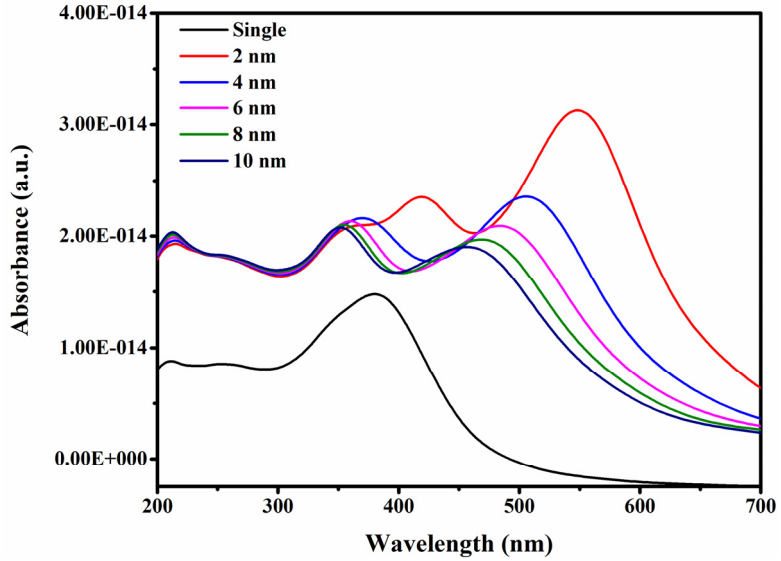

Figure S 1. (a) FDTD simulated absorption cross-sections of single Ag NP with radius of 45 nm and double Ag NPs with NP-NP-spacing of 2, 4, 6, 8, and 10 nm.

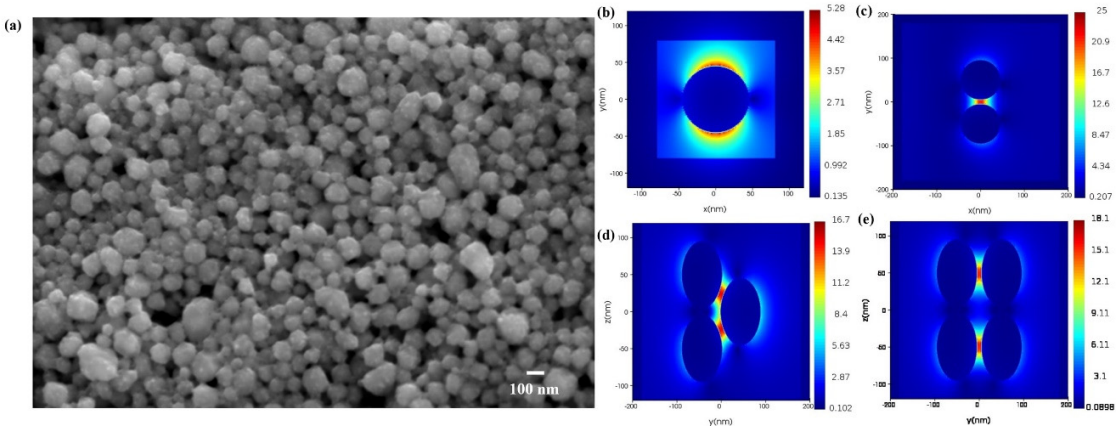

Figure S 2. (a) SEM image of Ag nanoparticles on PET-Print-based substrate. (b-e) FDTD simulated the electric field with the excitation wavelength of 532.6 nm for single Ag NP, 2 NPs, 3 NPs, and 4NPs.

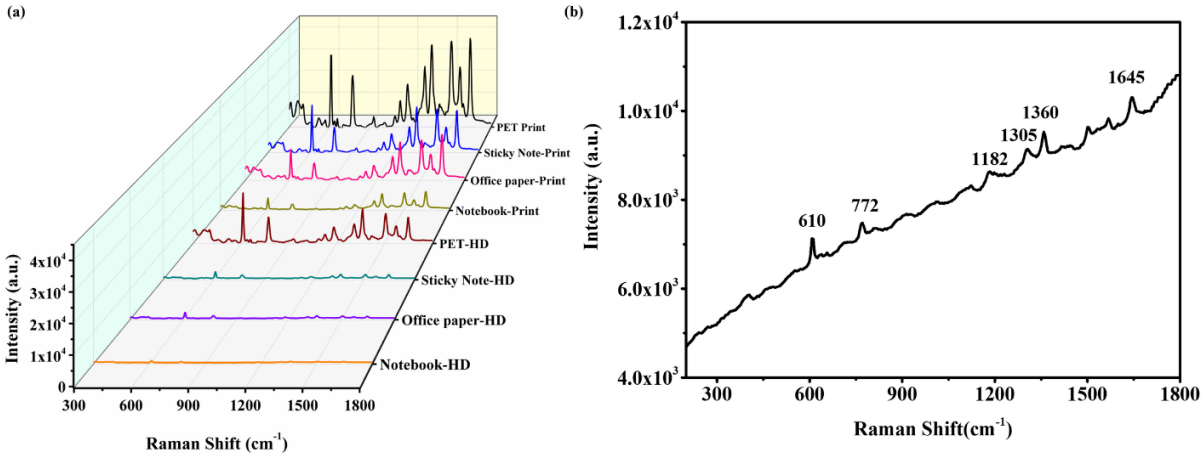

Figure S 3. (a) SERS spectra of 1μM R6G on different SERS substrates. (b) Raman spectrum of 0.1 M R6G on bare glass.

Table S 1 Detection of R6G employing SERS-based approach.

Analyte	Enhancing material	Substrate	Fabrication Method	Enhancement Factor	Reference
R6G	Mesoporous Ag NPs	Glass slide	Sputter coating. Chemical reduction of oxidized silver films	5×10^5	Tastekova 2018 [1]
R6G	Ag	PET sheet	Ion sputtering system	3×10^6	Zuo 2016 [2]
R6G	Ag-MoS_2	Si substrate	Spin- coating method	2.6×10^6	Li 2018 [3]
R6G	Ag	Silicon wafer coated with polystyrene nanosphere	Thermal evaporation	5.1×10^6	Zhang 2019 [4]
R6G	Ag	Metal liquid-like films (MeLLFs) with polyacrylamide hydrogels (PAAG)	Self-assembly	8×10^6	Huo 2021 [5]

References

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