Supporting Information

Explosives Sensing Using Ag-Cu alloy Nanoparticles Synthesized by Femtosecond Laser Ablation and Irradiation

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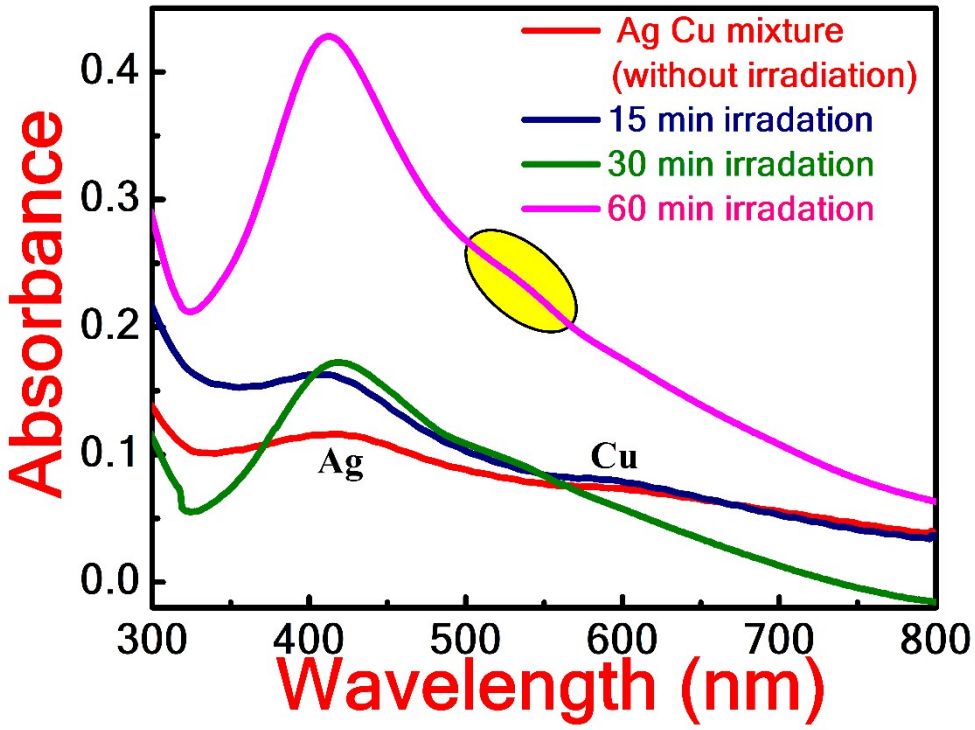

Figure S1. UV-visible absorption spectra of non-irradiated Ag and Cu NPs mixer and Ag-Cu NPs at different laser irradiation times 15, 30 and 60 minutes.

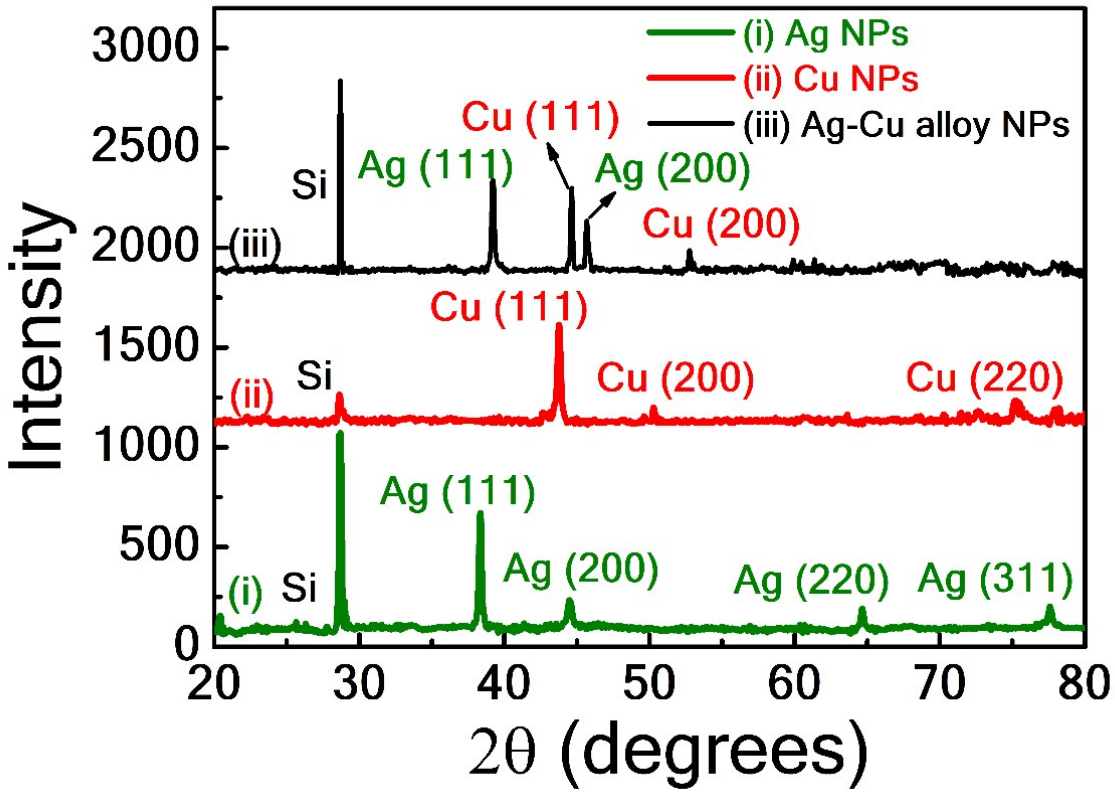

Figure S2: XRD pattern of (i) Ag NPs (green), (ii) Cu NPs (Red) and (iii) Ag-Cu NPs (Black)

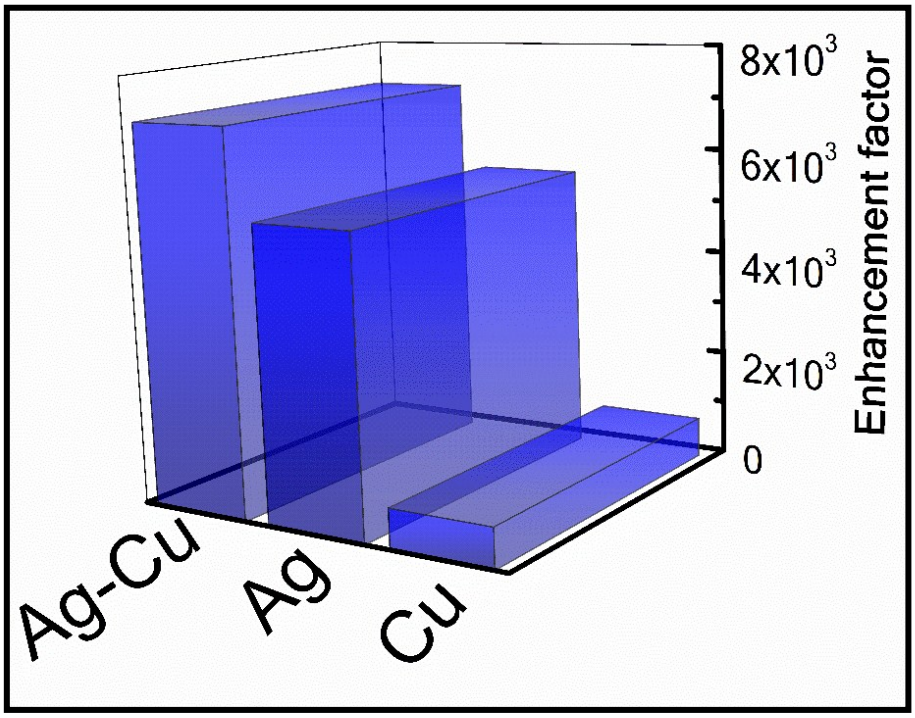

Figure S3 . Enhancement factor comparison histogram for MB (5 μM) by using Ag, Cu and Ag-Cu alloy NP substrates.

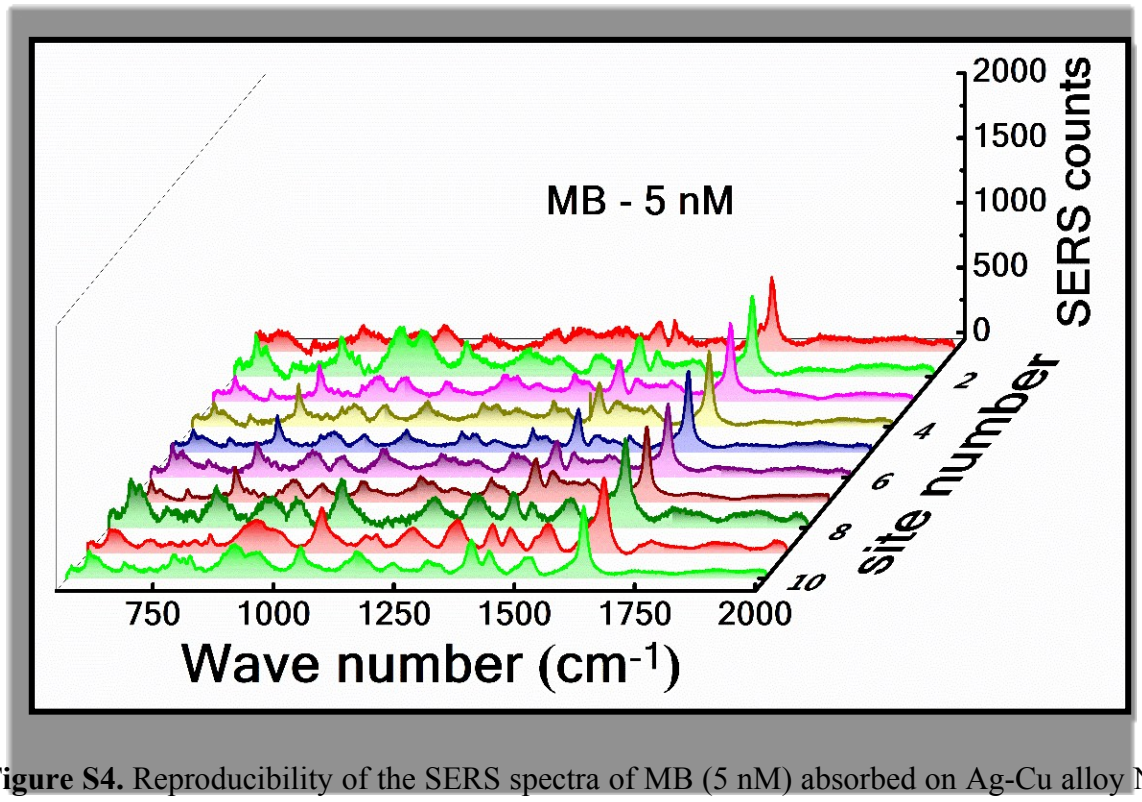

Figure S4. Reproducibility of the SERS spectra of MB (5 nM) absorbed on Ag-Cu alloy NPs recorded from 10 different positions.

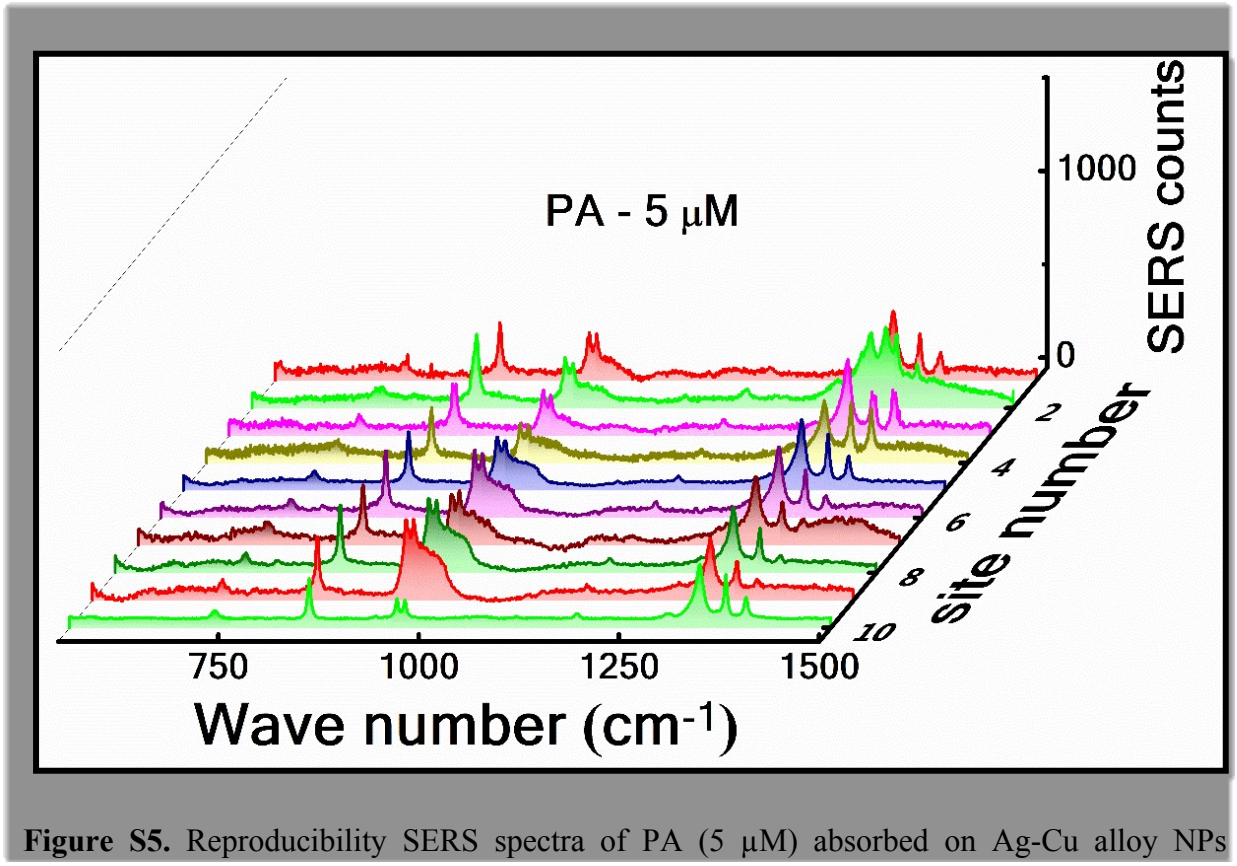

Figure S5. Reproducibility SERS spectra of PA (5 μM) absorbed on Ag-Cu alloy NPs recorded from 10 different positions.

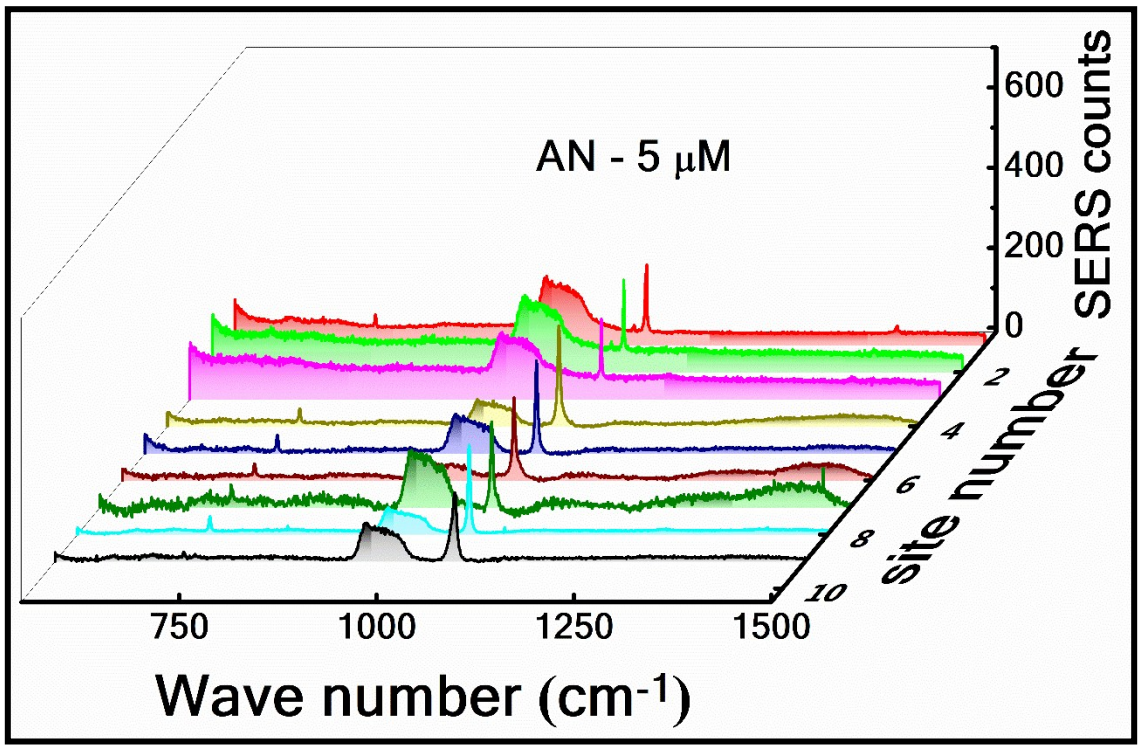

Figure S6. Reproducibility SERS spectra of AN 5 μM absorbed on Ag-Cu alloy NPs recorded from 10 different positions.

Table S1. Ammonium nitrate Raman shifts (cm^{-1}) and their assignments:[1]

S.NO	Reported (cm^{-1})	Observed for 0.1M on glass	Observed SERS	Peak Assignments
1	713	712	712	NO_3^- Deformation
2	1048	1045	1053	NO_3^- Symmetric stretch

References

1. M. E. Farrell, E. L. Holthoff and P. M. Pellegrino, *Applied Spectroscopy*, 2014, **68**, 287-296.