Supporting Information for:

A Tip-Gap Meshing like Bilayer SERS Substrate for Highly Sensitive Detection

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Fig. S1 Au NSs of aligned or misaligned configuration.
Fig. S2 TEM images of intermediate products of the CENCs, reaction for 30 min (a), 90 min (b), 120 min (c).
Fig. S3 SEM images of (a and c), CENCs monolayer, (b and d) Au NSs monolayer.
Fig. S4 Geometric calculation of the size of CENCs in condition of 60nm Au NSs
**Fig. S5** Images of CENCs monolayer, Au NSs monolayer and bilayer substrate
Fig. S6 SEM images of (a and c) “non-meshing” bilayer, substrates, b and d “tip-gap” bilayer substrate.
Fig. S7 SEM images of (a and c), Au NSs monolayer before dropping sample, (b and d) after dropping sample.
Fig. S8 SERS spectra of $10^{-7}$ and $10^{-11}$ M MG collected from ten different positions on the tip-gap meshing SERS substrate.
Fig. S9 Depict of the tip-gap meshing structure when the size of CENCs is much bigger than Au NSs.
Fig. S10 Enhancement factor distribution in a hot spot formed between two gold nanoparticles separated by 2 nm plotted on a logarithmic scale (a).\(^1\) Scheme illustration of SERS hot-spots of meshing structure (b), tip-gap meshing structure. Detection schematic diagram of the protocol we proposed (d).

References