

## Supplementary Material

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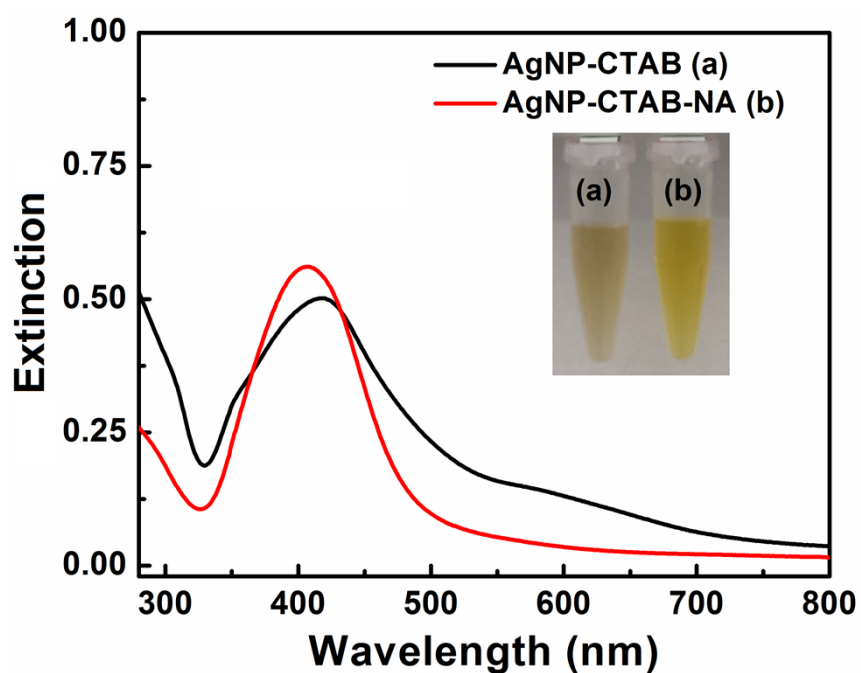
### Facile synthesis of silver and bimetallic silver-gold nanoparticles and their applications in surface-enhanced Raman scattering

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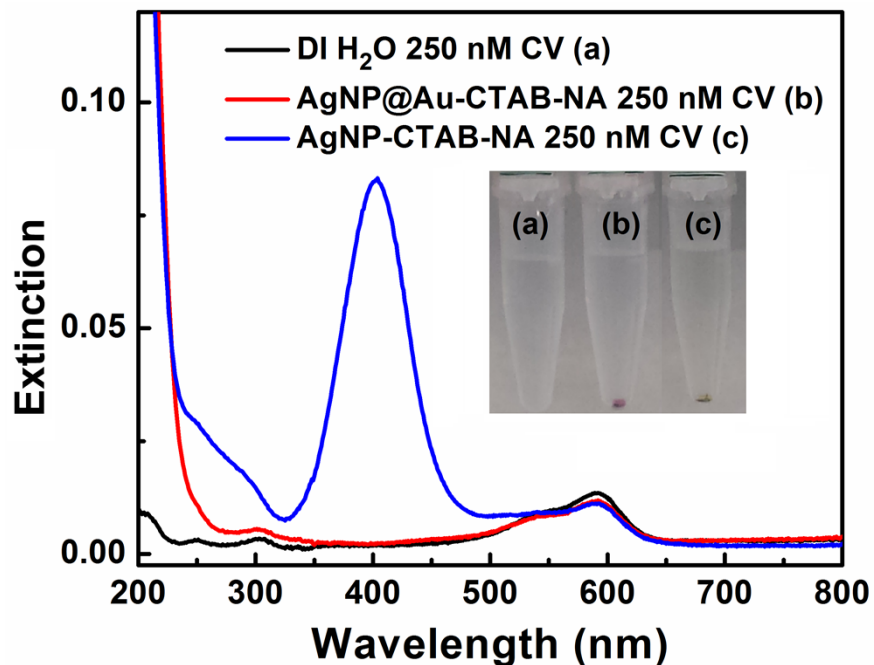
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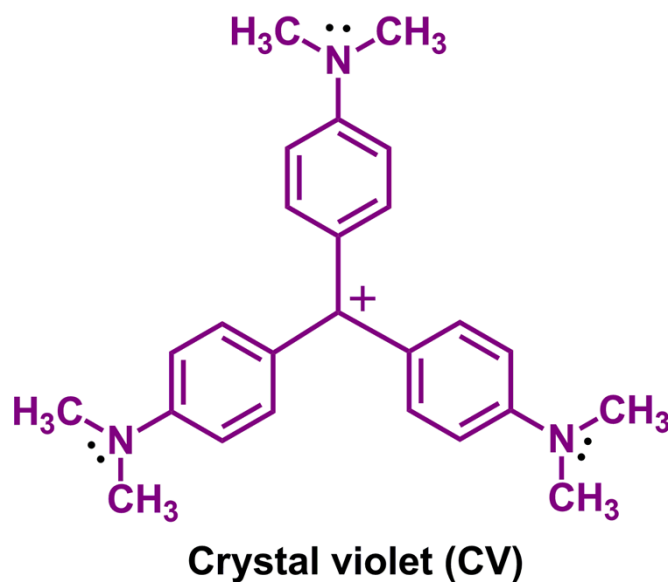
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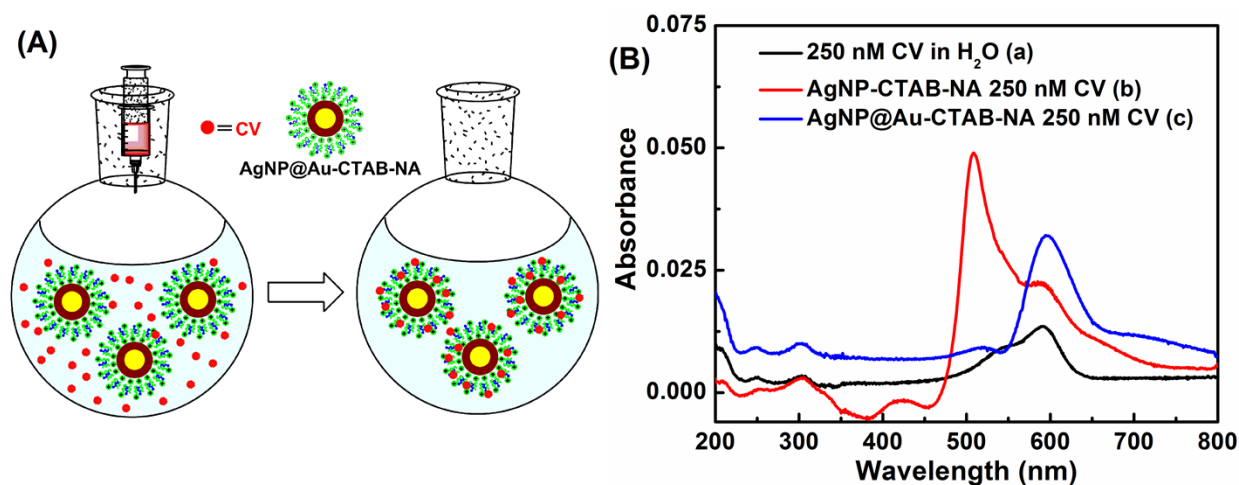
**Figure S1.** UV-visible spectra of colloidal solutions: (a) AgNP-CTAB (black line), and (b) AgNP-CTAB-NA (red line). Inset shows the corresponding digital photographs of these colloids



**Figure S2.** UV-Visible spectra of (a) aqueous solution of crystal violet (black line) at 250 nM, (b) supernatant of AgNP@Au-CTAB-NA after centrifugation containing 250 nM crystal violet (red line) and (c) supernatant of AgNP-CTAB-NA after centrifugation containing 250 nM crystal violet (blue line). This supernatant also contains un-precipitated AgNP-CTAB-NA evident from signal at  $\sim 403$  nm. Inset shows the corresponding digital photographs of these colloids.



**Figure S3.** Molecular structure of crystal violet (CV).



**Figure S4.** (A) This cartoon represents adsorption of CV molecules into the CTAB bilayer of AgNP@Au-CTAB-NA colloids due to hydrophobic forces. (B) UV-visible spectra of (a) aqueous solution of crystal violet (black line) at 250 nM, (b) subtraction spectrum between AgNP-CTAB-NA with 0.0 nm CV and AgNP-CTAB-NA with 250 nm CV (red line), and (c) subtraction spectrum between AgNP@Au-CTAB-NA with 0.0 nm CV and AgNP@Au-CTAB-NA with 250 nm CV (blue line).