Electronic Supplementary Material (ESI)

One pot synthesis of hollow hydrangea Au nanoparticle as a dual catalyst with SERS activity for in-suit monitoring reduction reaction

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Fig. S1 SEM image of hollow flower-like Au crystals.



Fig. S2 HRTEM image of hollow flower-like Au crystals.





Fig. S3 Absorption spectra of 4-NTP with $NaBH_4$.



Fig. S5 The optimized structure and the calculate UV-vis spectra analysis of *trans*-DMAB.



Fig. S6 Absorption spectra of 4-NTP with $NaBH_4$ in the presence of 1.0 mg Au nanoparticles.



Fig. S7 Absorption spectra of 4-NTP with $NaBH_4$ in the presence of 1.5 mg Au nanoparticles.



Fig. S8 Absorption spectra of 4-NTP with $NaBH_4$ in the presence of 2.0 mg Au nanoparticles.