

Supporting Information for

Galvanic-Replacement-Assisted Synthesis of Nanostructured Silver-Surface for SERS Characterization of Two-Dimensional Polymers

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Supporting Figures

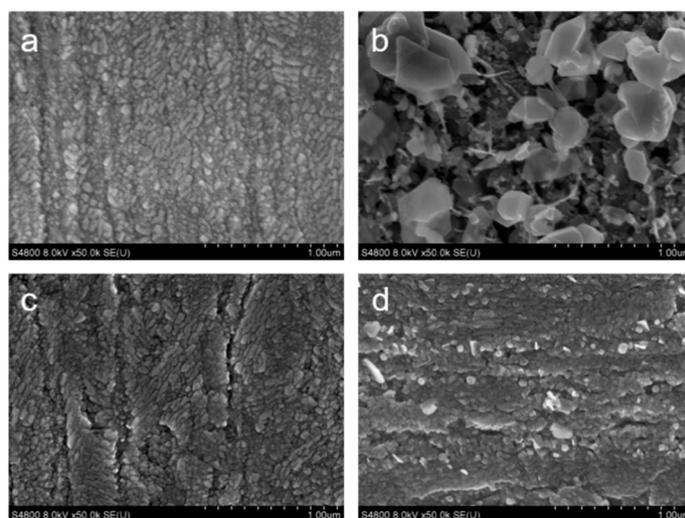


Figure S1. Effect of ultrasound process on the morphology of nanoAg@Cu. SEM images of treated Cu(0) surface (a) and nanoAg@Cu (b) without ultrasound. SEM images of treated Cu(0) surface (c) and nanoAg@Cu (d) after ultrasound for 2 minutes and stand still for 8 minutes in deionized water.

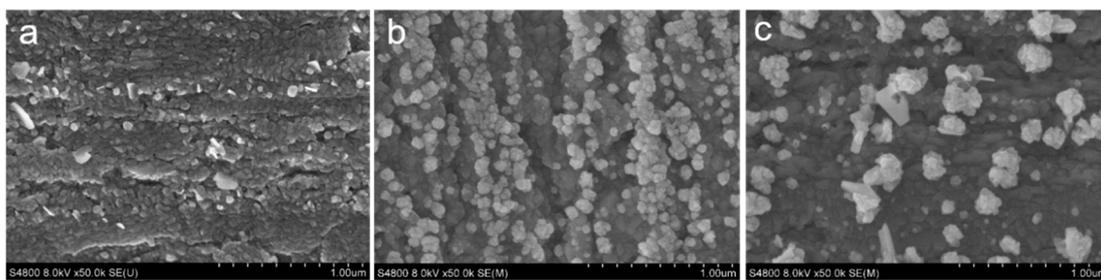


Figure S2. Effect of the adding rate of AgNO_3 solution on the formation of nanoAg@Cu. From a to c the adding rates are one-time join (a), $120 \mu\text{L}/\text{min}$ (b) and $60 \mu\text{L}/\text{min}$ (c), respectively.

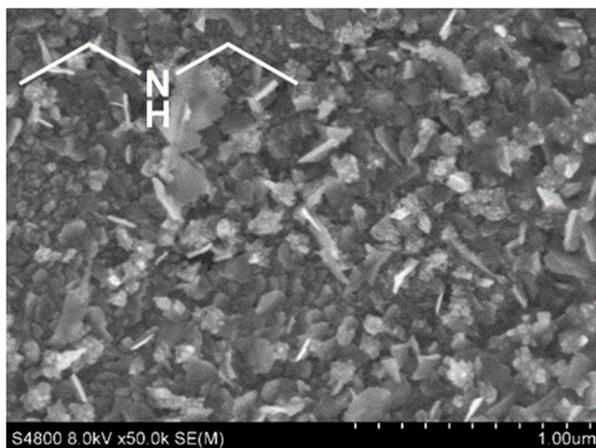


Figure S3. SEM image of nanoAg@Cu obtained by adding diethylamine (DEA) in growth solution.

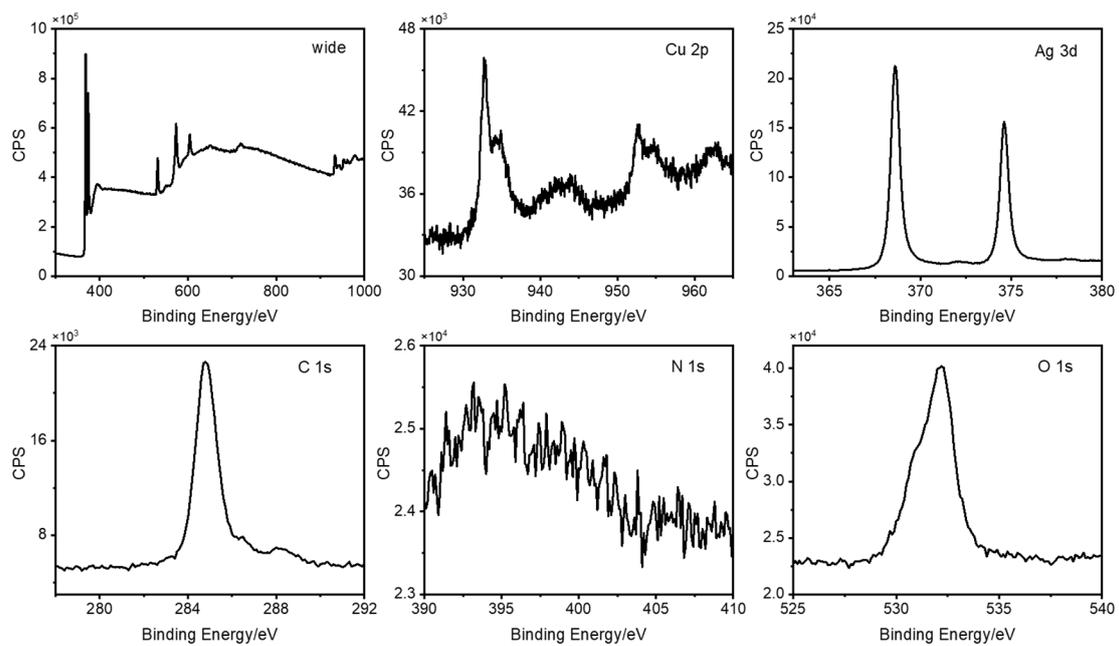


Figure S4. The X-ray photoelectron spectroscopy of nanoAg@Cu tuned by HS-PEG-NH₂.

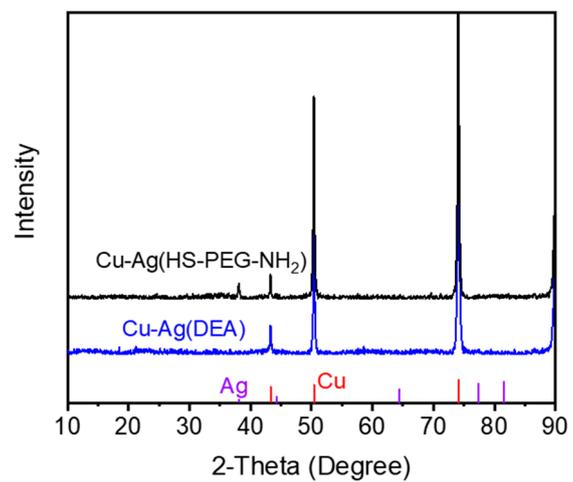


Figure S5. The XRD characteristic of nanoAg@Cu adjusted by DEA and HS-PEG-NH₂.

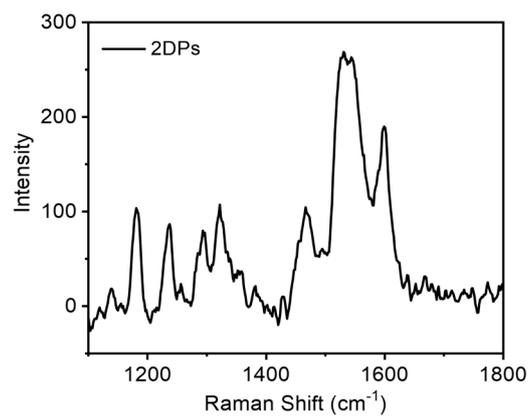


Figure S6. The Raman spectrum of 2DPs.

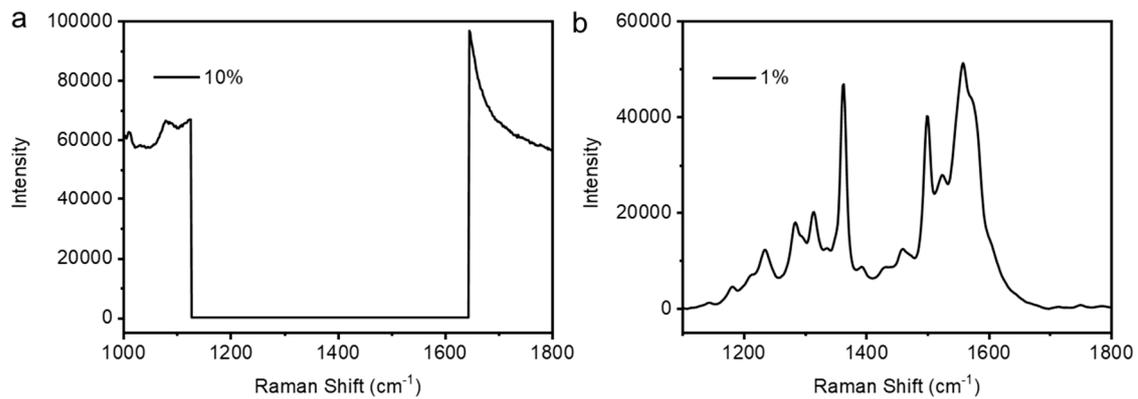


Figure S7. The Raman spectrum of 2DPs on the nanoAg@Cu obtained with the AgNO₃ concentration of 5 mM in the presence of 1 mM HS-PEG-NH₂ at laser power of 10 % (a) and 1 % (b).

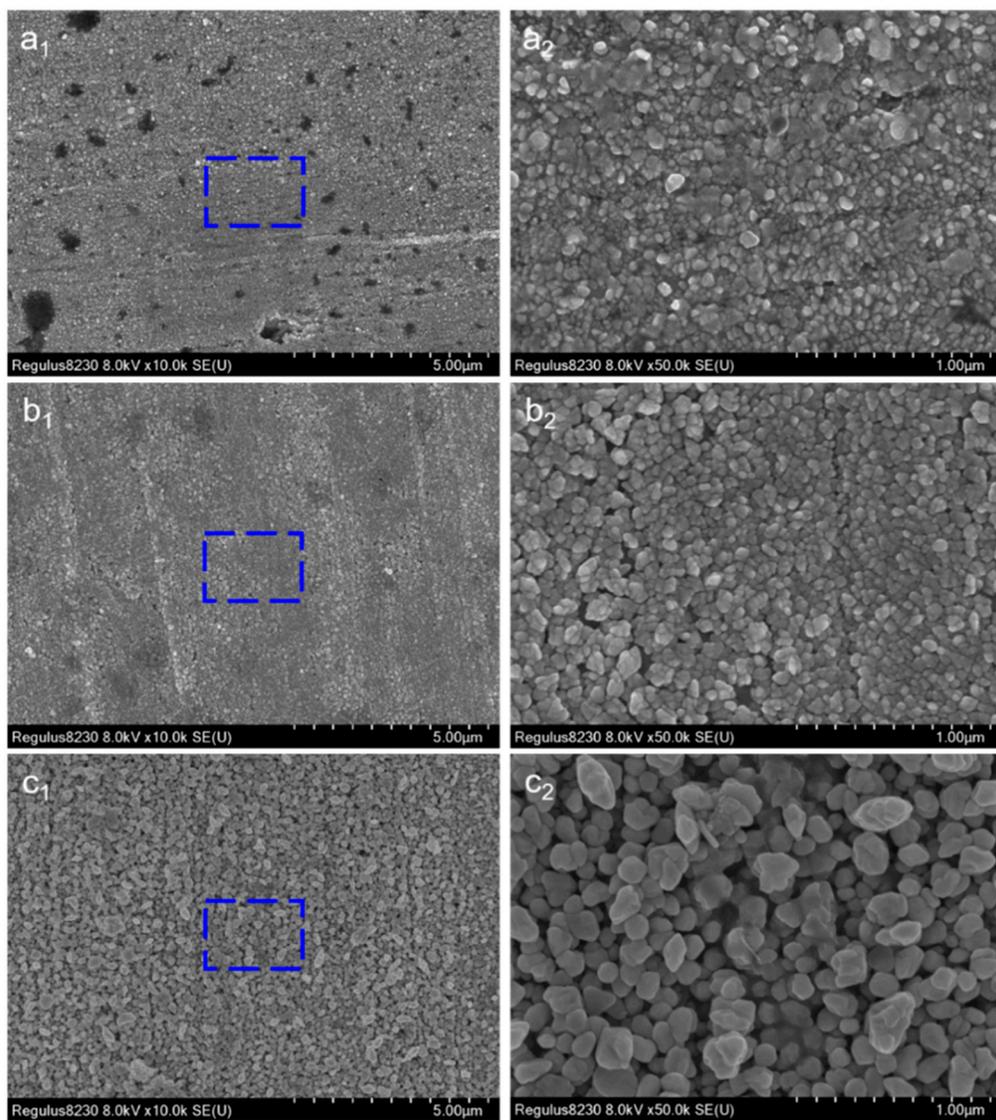


Figure S8. The SEM images of nanoAg@Cu by adjusting with HS-PEG-NH₂ and increasing the concentration of AgNO₃. The concentration of AgNO₃ are 1 mM (a), 5 mM (b) and 10 mM (c), respectively.

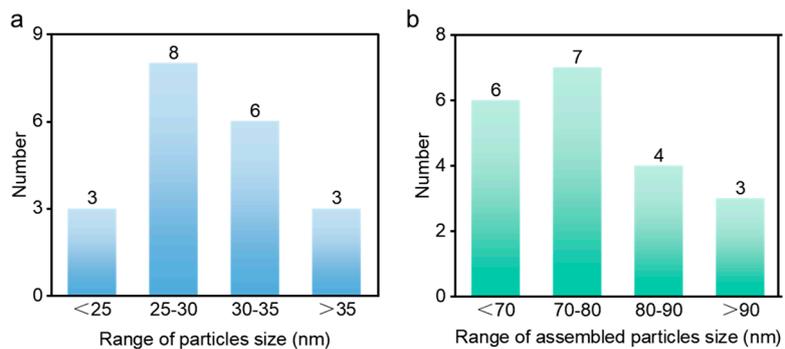


Figure S9. Distribution of diameter of Ag nanoparticles (a) and assembled particles (b) obtained from effecting of 5 mM AgNO₃ under the influence of 1 mM HS-PEG-NH₂.

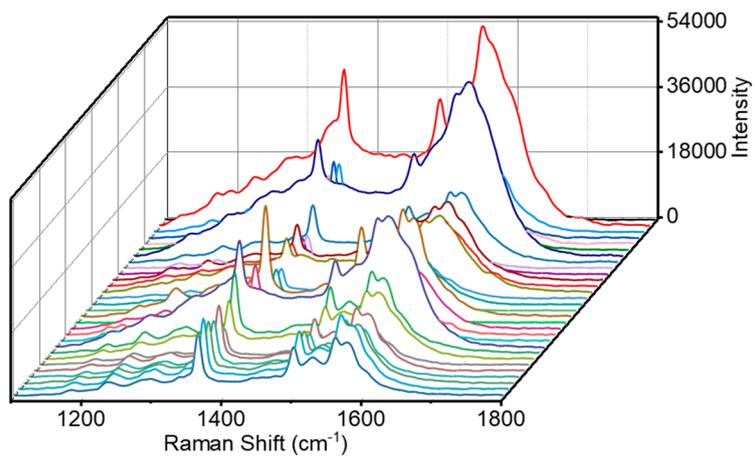


Figure S10. The repeatability test results of the SERS signals from 30 points of one sample with the nanoAg@Cu obtained from 10 mM AgNO₃ solution.