Electronic supplementary information

Fabrication of Cu_2O/Ag composite nanoframes surface-enhanced Raman scattering substrates in a successive one-pot procedure

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Synthesis of Ag nanoparticles (NPs)

The Ag NPs with an average size of 100 nm were prepared by sodium citrate reducing $AgNO_3$ aqueous solution. Typically, 0.12g $AgNO_3$ was dispersed in 76 mL of deionized water, followed by addition of 4 ml of sodium mixture solution (0.74 M sodium citrate and 1.2 M sodium carbonate mixed solution) slowly. After the mixture was stirred for 10 min, 6 g PVP (K-30; Mw=30 000) was mixed with vigorous stirring in a round-bottomed glass flask. After the complete dissolution of the PVP powder, the solution was kept in a water bath at a temperature of 80 ^oC for 20 min, yielding the gray Ag NPs.

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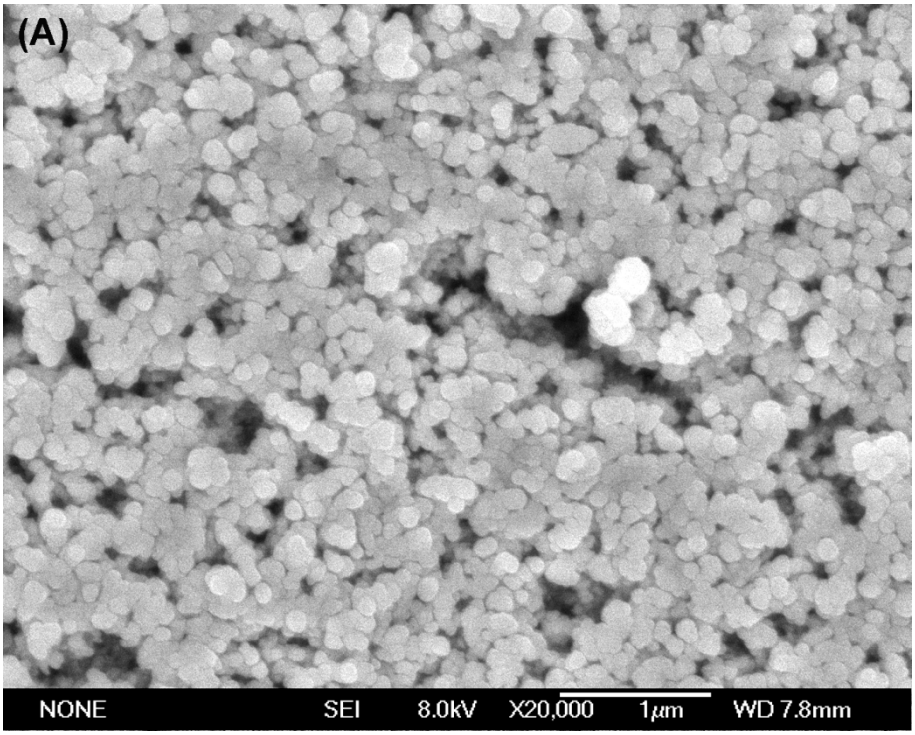
Figure S1. (A) FESEM and (B) XRD of the bare Ag NPs prepared by reduction of silver nitrate with trisodium citrate



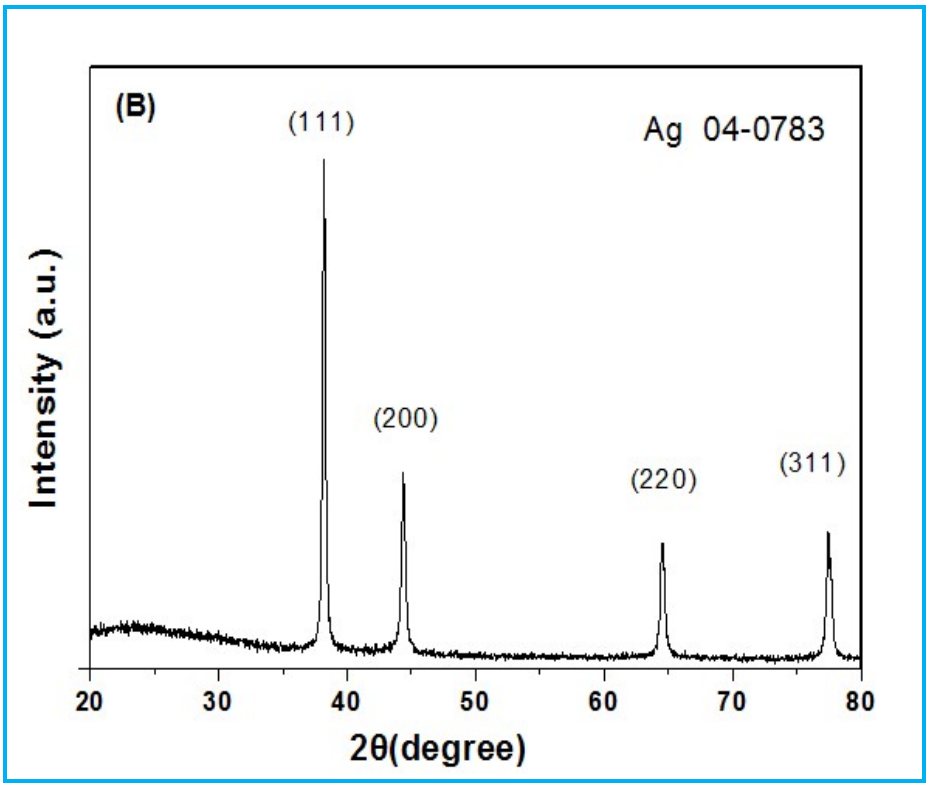


Figure S2. (A) TEM image of as-prepared Cu_2O/Ag(2) CNFs. (B) and (C) HRTEM images of Cu_2O/Ag(2) CNFs shown in (A), revealing Ag have grown on (111) and (110) of Cu_2O, respectively. (D), (E), (F) and (G) STEM images and STEM-EDX elemental mapping of the sample (Cu_2O/Ag(2) CNFs), revealing the homogeneous distribution of Ag elements over the Cu_2O/Ag(2) CNFs (the superabundant Cu elements in (F) arise from copper TEM grid).

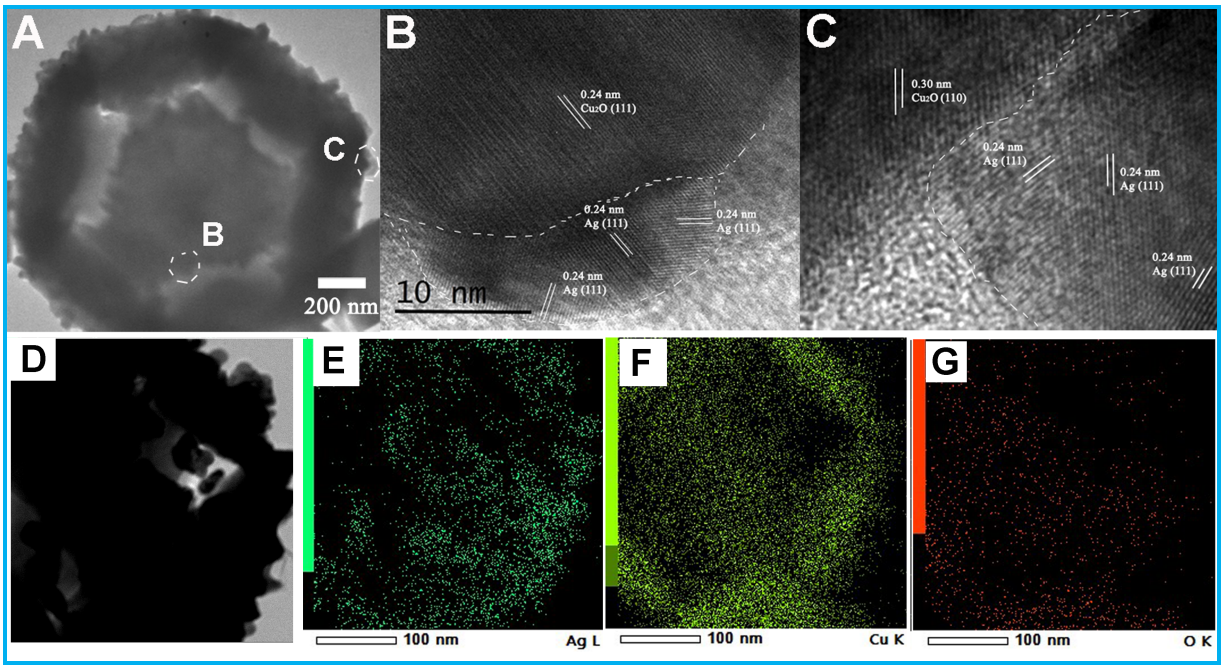


Figure S3. Raman spectra of (a) RB with concentration of 10^{-2} M and (b) RB with concentration of 10^{-8} M adsorbed on Cu_2O/Ag(2) CNFs.