Electronic Supplementary Information (ESI)

For

Investigations on the Synthesis, SERS Performance and Application in Glucose Sensing of Hierarchical 3D Silver Nanostructures

Huan Chen, Jianyong Luo, Tian Zeng, Long Jiang, Yuyang Sun, Zhifeng Jiao, Yong Jin, Xiaosong Sun*

College of Materials Science & Engineering, Sichuan University, Chengdu 610064, China
*Corresponding author: sunxs@scu.edu.cn

Fig. S1 XRD pattern of the pre-deposited Cu$_2$O membrane.
Fig. S2 FESEM image of the pre-deposited Cu$_2$O membrane.

Fig. S3 The UV-vis spectrum of the Ag nanojujubes film.
Fig. S4 FESEM images of Ag products synthesized with different concentrations of AgNO₃: (a) and (b) 4 mM; (c) and (d) 100 mM. The amount of TSC was kept constant at 3 g/L. The reaction was carried out at room temperature for 30 min.

Fig. S5 FESEM images of Ag products with different amount of TSC: (a) and (b) 0 g/L; (c) and (d) 6 g/L. The concentration of AgNO₃ was kept constant at 20 mM. The reaction was carried out at room temperature for 30 min.
Fig. S6 SERS spectra of 10⁻⁸ M R6G from three kinds of as-obtained substrates (Cu₂O, Cu and Ag). The exposure time of each measurement was 1s with a laser power (532nm) of 0.27 mW.

Fig. S7 SERS spectra of 10⁻⁶ M R6G from three different AgNSs substrates produced by the same method. The exposure time of each measurement was 1s with a laser power (532nm) of 0.27 mW.
Fig. S8 SERS spectra of $10^{-8}$ M R6G from time-dependent AgNSs substrates (3 min, 10 min and 30 min). The exposure time of each measurement was 1s with a laser power (532nm) of 0.27 mW.

Fig. S9 FESEM images of Ag products with different morphologies: (a) Ag aggregates of AgNPs prepared directly on a Cu foil via galvanic reaction and (b) Ag dendrites deposited on a Si substrate via an electrochemical method.