

Supporting Information

Ultrathin Free-Standing Close-packed Gold Nanoparticle Films: Conductivity and Raman Scattering Enhancement

Qing Yu, Hongwen Huang, Xinsheng Peng*, Zhizhen Ye

State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou, 310027, P. R. China,

1. SEM images and photo of the films prepared from 20 nm gold nanoparticles after treated at 400 °C

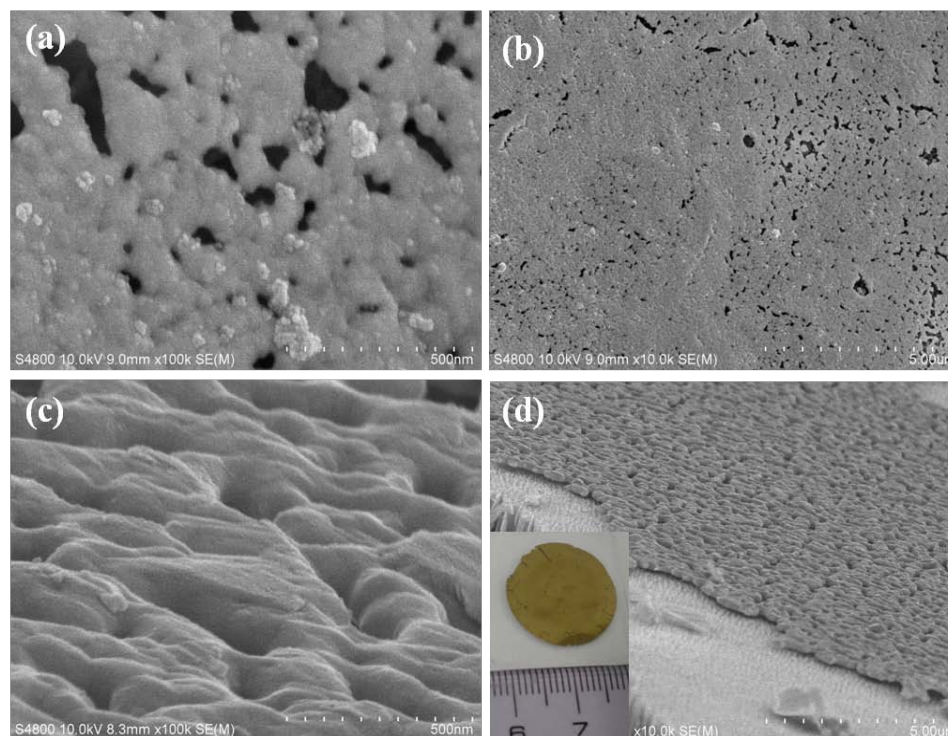


Figure S1. SEM images of the sample prepared from (a)-(b) 5 ml, and (c)-(d) 10 ml, 20 nm gold nanoparticles solution after treating at 400 °C and removing away nanostrands. The inserts are the corresponding photo image of the corresponding film after transferred on a quartz substrate.

2. Transferring to porous substrate

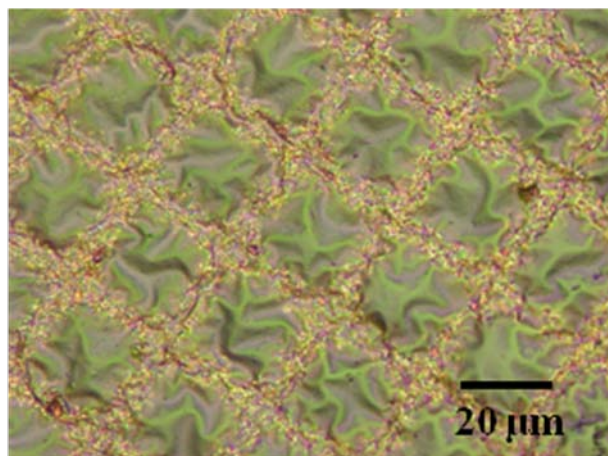
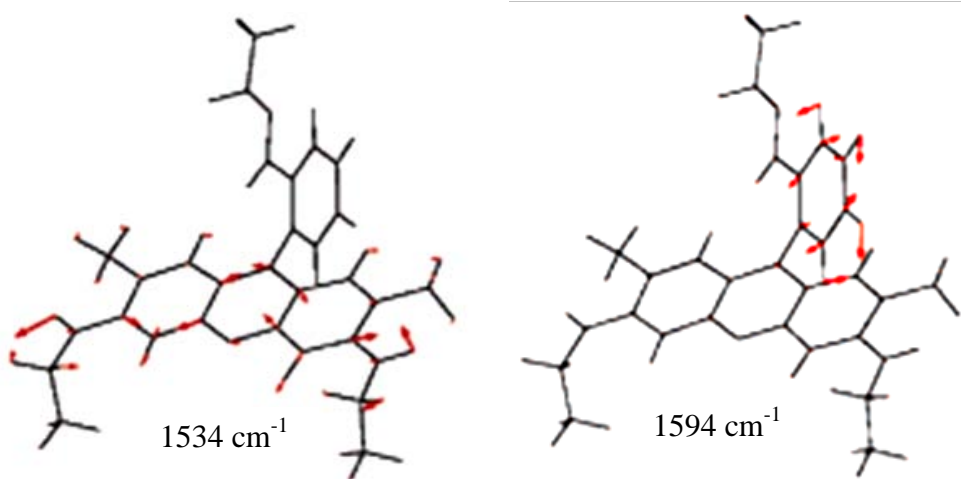


Figure S2 Microphoto image of the 100 nm thick gold film prepared from 40 nm gold nanoparticles after transferred on a copper mesh with hole of 20 micrometers.

3. Illustrations of the vibrations of 1534 and 1594 cm^{-1} of R6G¹



Scheme S1 the vibration modes of R6G at of 1534 and 1594 cm^{-1} adapted from Watanabe et. al.¹

Reference

- (1) H. Watanabe, N. Hayazawa, Y. Inouye, S. Kawata, *J. Phys. Chem. B* 2005, **109**(11), 5012-5020.