**Supporting information**

# Adjustable plasmonic optical properties of hollow gold nanospheres monolayers and LSPR-dependent surface-enhanced Raman scattering behavior of sandwiched hollow gold nanosphere/graphene oxide hybrids

Xue Gong, [a] Jian Tang, [a] Yixin Ji, [a] Bingbing Wu, [b] Huaping Wu [b] and Aiping Liu *[ac]

[a] *Center for Optoelectronics Materials and Devices, Zhejiang Sci-Tech University, Hangzhou 310018, China*

[b] *Key Laboratory of E&M (Zhejiang University of Technology), Ministry of Education & Zhejiang Province, Hangzhou 310014, China*

[c] *State Key Lab of Silicon Materials, Zhejiang University, Hangzhou 310027, China*

*Corresponding author. Tel.: +86 571 86843574; fax: +86 571 86843574.

E-mail address: liuaiping1979@gmail.com.

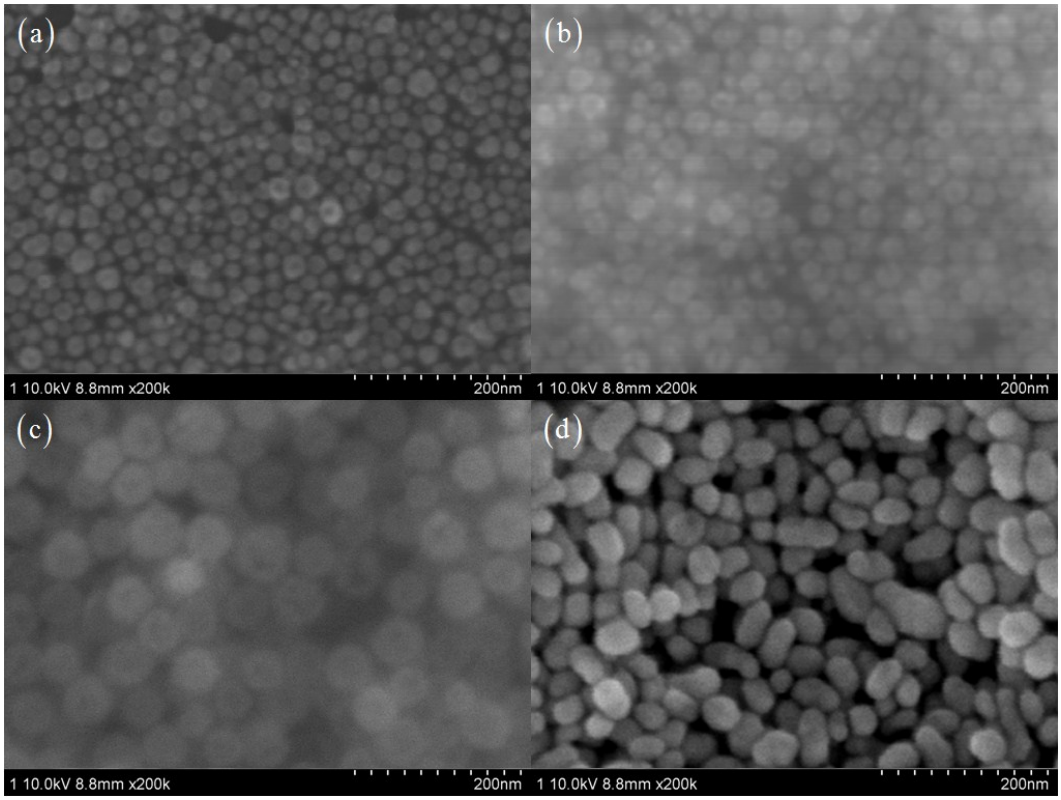


Fig. S1. SEM images of HGNs monolayers self-assembled on a DLC:N substrate: (a) HGN536, (b) HGN548, (c) HGN629 and (d) SGN524.

Fig. S1 shows the hollow structured HGNs monolayer with an interparticle spacing of about 2-10 nm. Some obvious voids and a few aggregates can be observed due to the disturbance of the oil/water interface after gradual addition of n-butanol and the competition of electrostatic repulsion of negative charged HGNs with TCD against the long-range van der Waals interactions

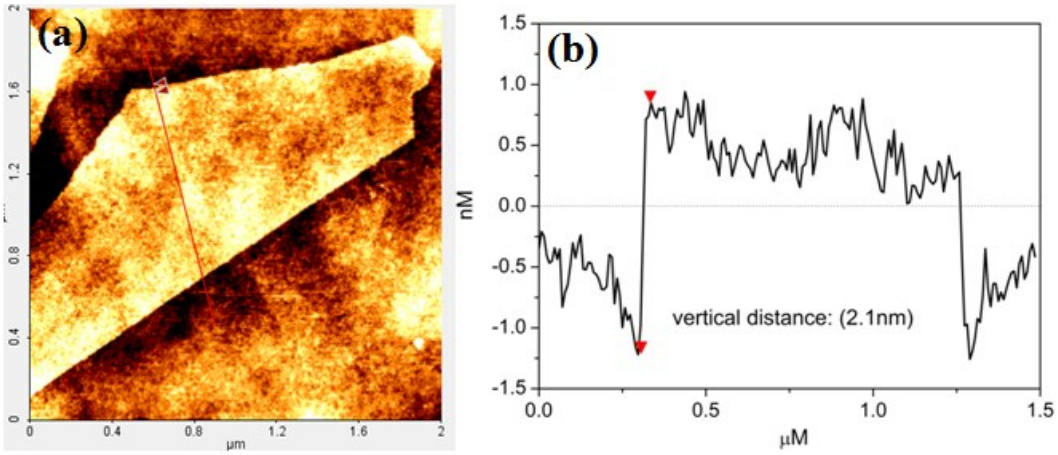


Fig. S2 AFM images of (a) spin-coated GO film and (b) its average thickness about 2.1 nm.