

Supporting Information

One-pot synthesis affords perfectly six-fold symmetric Au microsnowflakes for excellent electrochemical biosensing and surface-enhanced raman scattering assay

Yan Zhang^a, Yonghai Yue^a, Yi peng^a, ChengCheng Huang^a, Lidong Li^{a}, Lin Guo^{a*} and*

Shihe Yang^{a,b}*

^a School of Chemistry and Environment, Beihang University, Beijing 100191,

PR China.

^bDepartment of Chemistry, The Hongkong University of Science and Technology,

Clear Water Bay, Kowloon, HongKong, China .

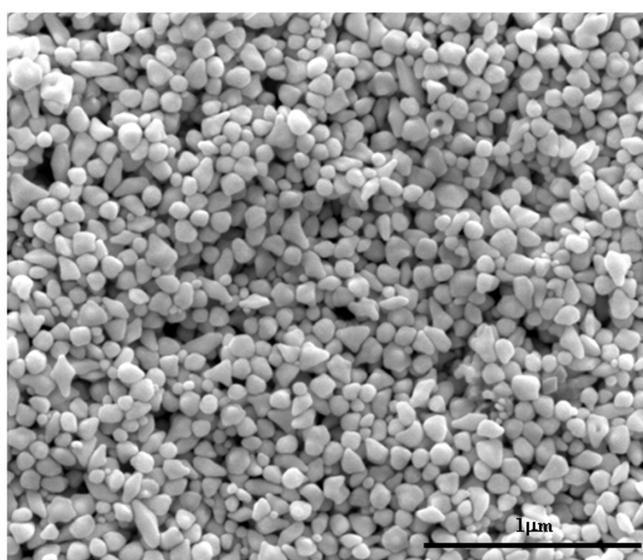


Figure S1 SEM of the prepared Au products without NaBr.

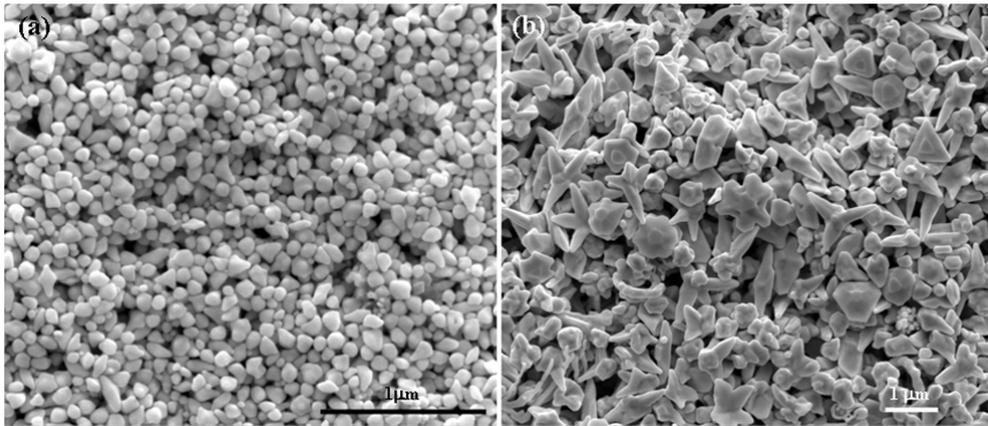


Figure S2 SEM of the prepared Au products by different additions, instead of NaBr: (a) NaCl, (b) KBr.

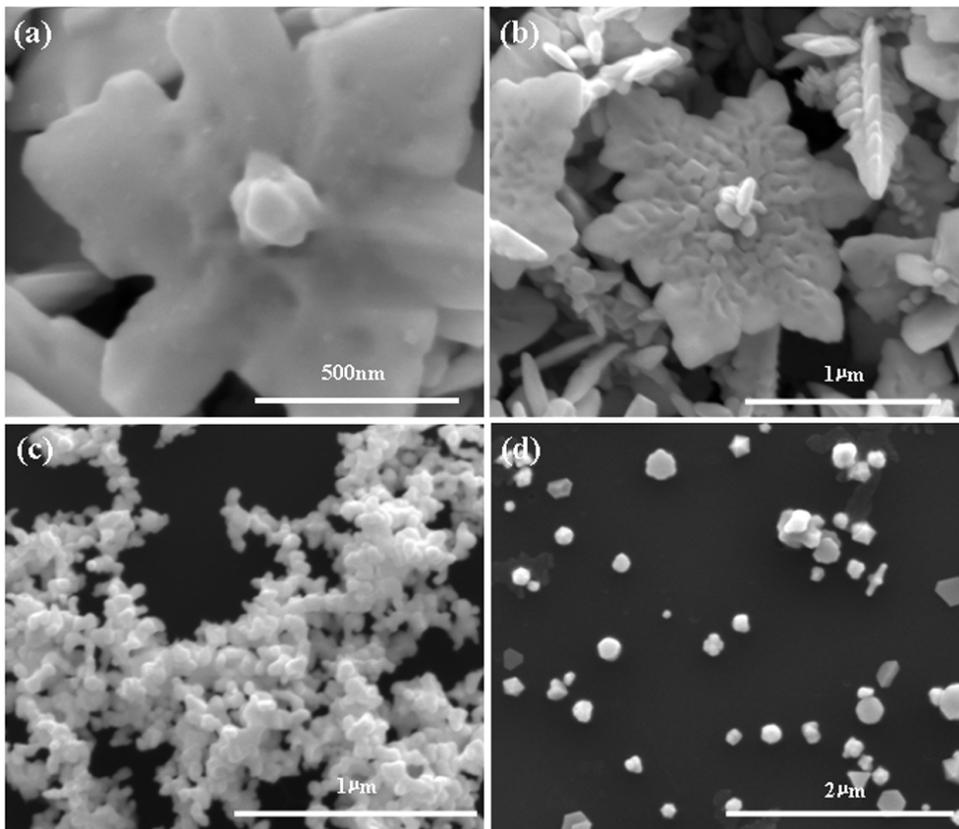


Figure S3 SEM of the prepared Au products by different surfactants, instead of CTAC: (a) OTAC, (b) CTAB, (c) SDBS, (d) PVP.

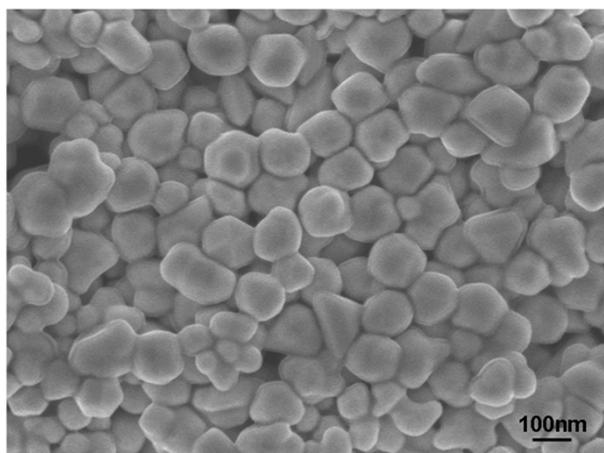


Figure S4. The SEM of the final Au structures by using CTAB.

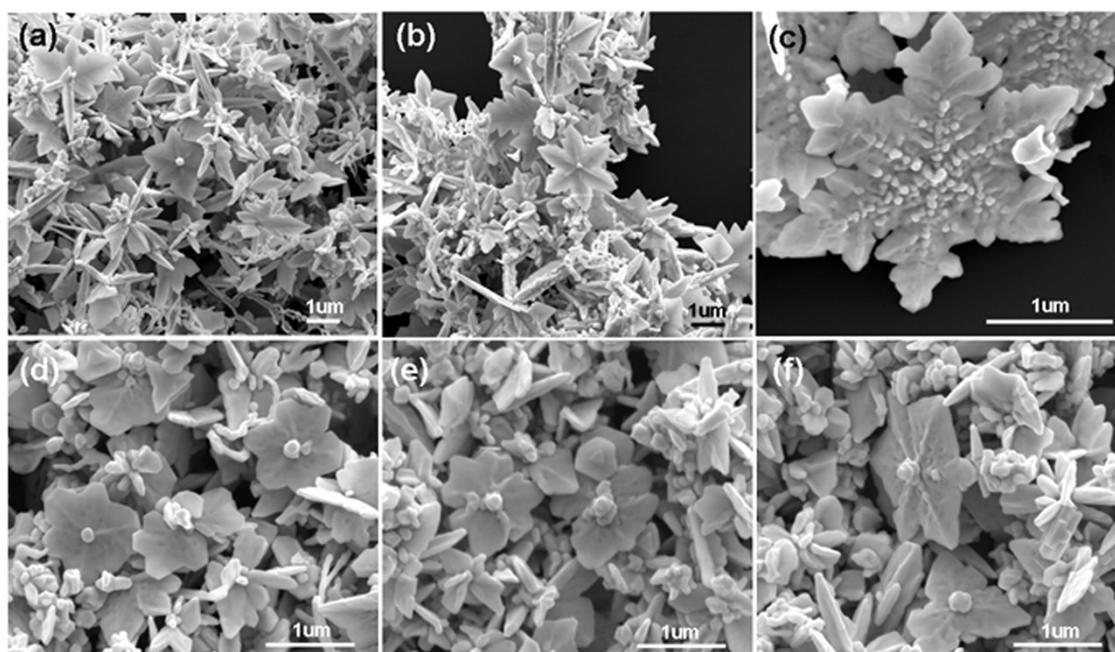


Figure S5. The SEM of the Au microstructures by using different concentrations of CTAC (a) CTAC (0.008M), (b) CTAC (0.009M), (c) CTAC (0.01M), (d) CTAC (0.015M), (e) CTAC (0.02M), (f) CTAC (0.025M) (the NaBr concentration was controlled at 3M)

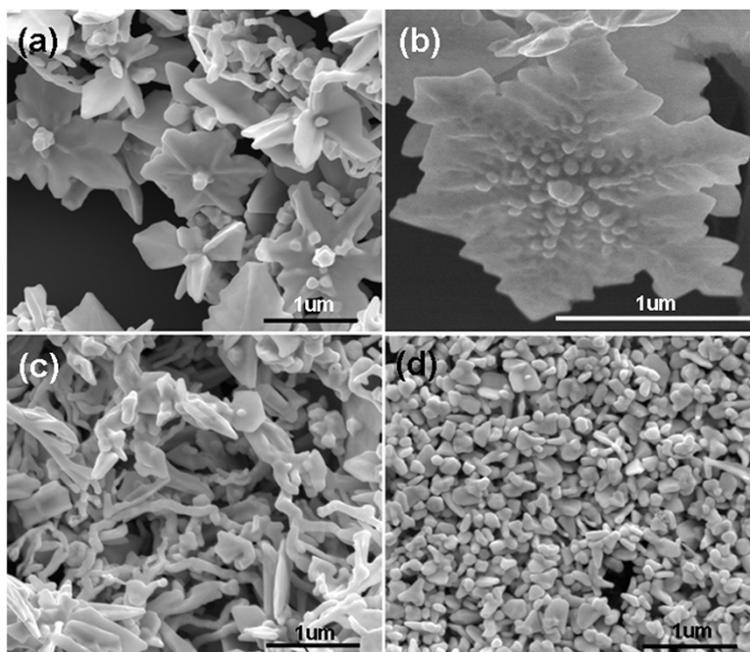


Figure S6. The SEM of the Au microstructures by using different concentration of NaBr (a) 4.0M, (b) 3.0M, (c) 2.5M, (d) 2.0M (the concentration of CTAC was controlled at 0.01 M)

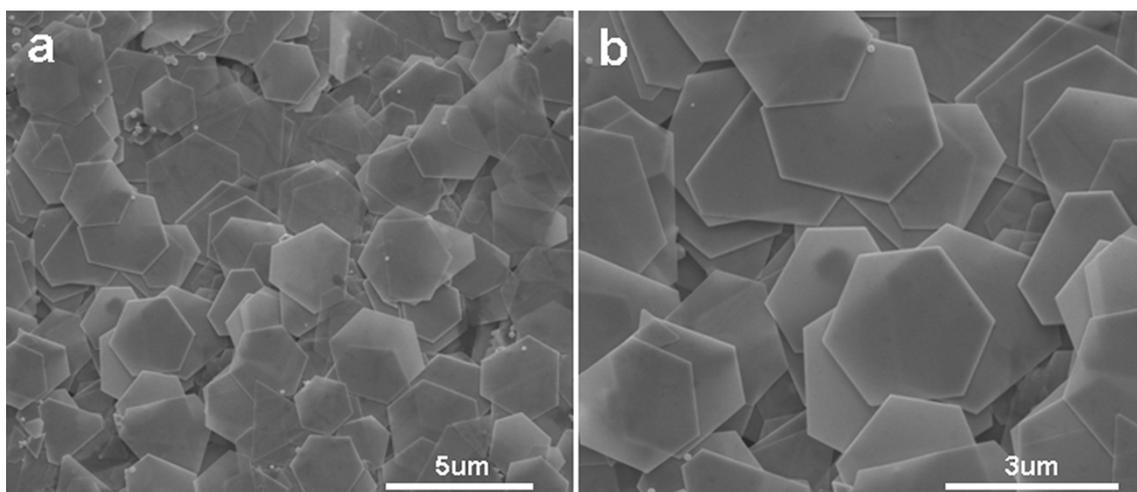


Figure S7. SEM image of microprisms with $\sim 35\text{nm}$ thickness: (a) Low magnification SEM of microprisms, (b) High magnification SEM of microprisms.

Some of literature were added in the supporting information as below:

Ref.	substrate	method	Limitation of detection
21	gold nanoparticles	an aptamer is engineered to consist of two pieces of random-coil like ssDNA, which are attached to AuNPs through 5'-thiol-modified.	2.5×10^5 nM
22	gold nanoparticles	The electrode was modified with gold nanoparticles (AuNPs), thiolated capture probe was immobilized onto the Electrode via sulfur-gold affinity. A “sandwich-type” strategy was employed.	0.18 nM
23	protein-encapsulated gold nanoclusters	the AuNCs@ew-Cu ²⁺ was used conjugates as switch-on sensing probes for the detection of phosphate containing metabolites such as adenosine-5'-triphosphate (ATP).	1.9×10^4 nM
24	Au–Ag core–shell nanoparticles	The substrates with Au–Ag core–shell NPs can also be used to detect adenosine by a structure-switch aptamer.	0.1 nM