

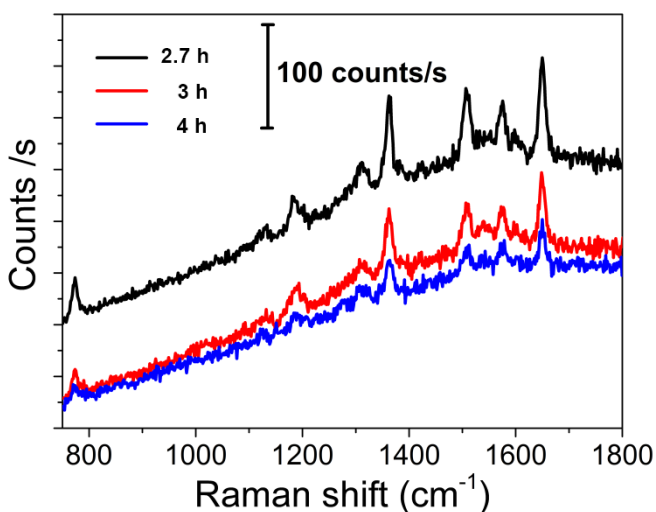
## Durable Surface-enhanced Raman Scattering Substrate: Ultrathin Carbon Layer Encapsulated Ag Nanoparticle Arrays on Indium-Tin-Oxide Glass

Juncao Bian,<sup>a</sup> Qian Li,<sup>b</sup> Chao Huang,<sup>a</sup> Yao Guo,<sup>a</sup> Myowin Zaw,<sup>a</sup> Rui-Qin Zhang<sup>\*a</sup>

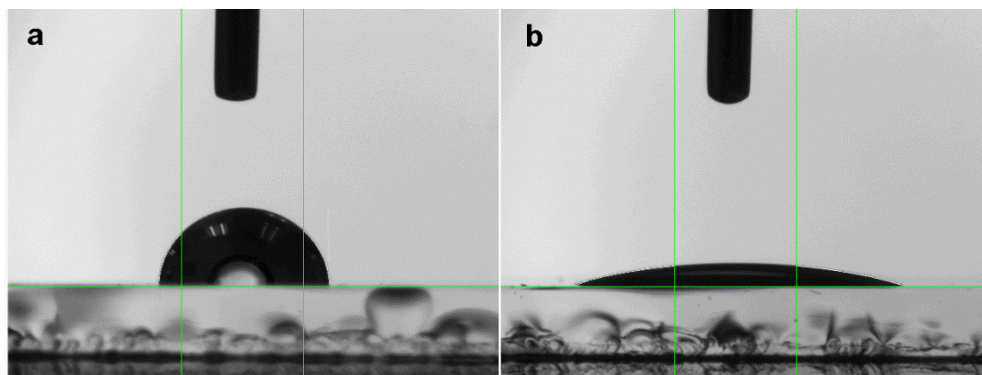
<sup>a</sup> Department of Physics and Materials Science and Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong SAR, China.

<sup>b</sup> Department of Physics, The Chinese University of Hong Kong, Hong Kong SAR, China.

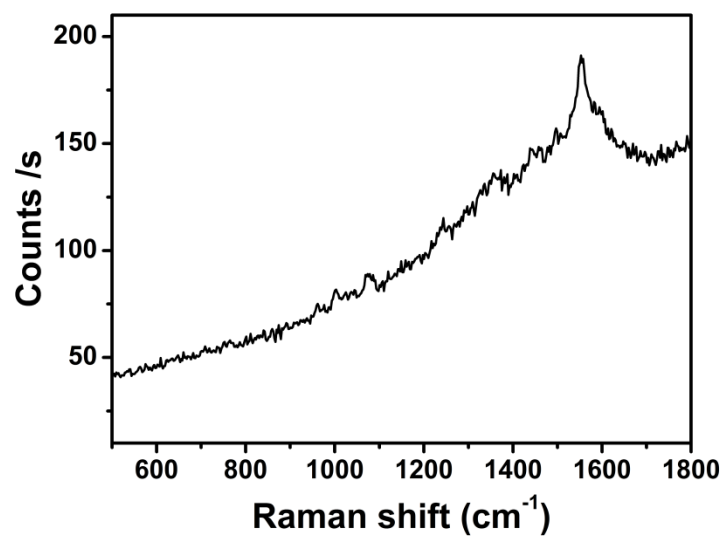
### Supplementary Information



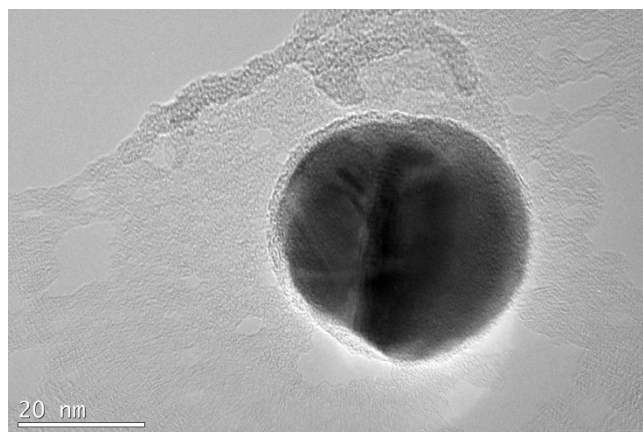
**Fig. S1** SERRS spectra of the R6G molecules adsorbed on the surface of the Ag NA growing for 2.7, 3, and 4 h without adding ZnO powders.



**Fig. S2** Optical images of a water droplet on (a) Ag NA and (b) UCL(4.5nm)-Ag-NA.



**Fig. S3** SERS spectrum of TPP adsorbed on the surface of UCL(4.5nm)-Ag-NA.



**Fig. S4** TEM image of a typical Ag nanoparticle after 180 days of storage.