

Three-Dimensional Au/Ag Nanoparticle/Crossed Carbon Nanotube SERS Substrate for the Detection of Mixed Toxic Molecules

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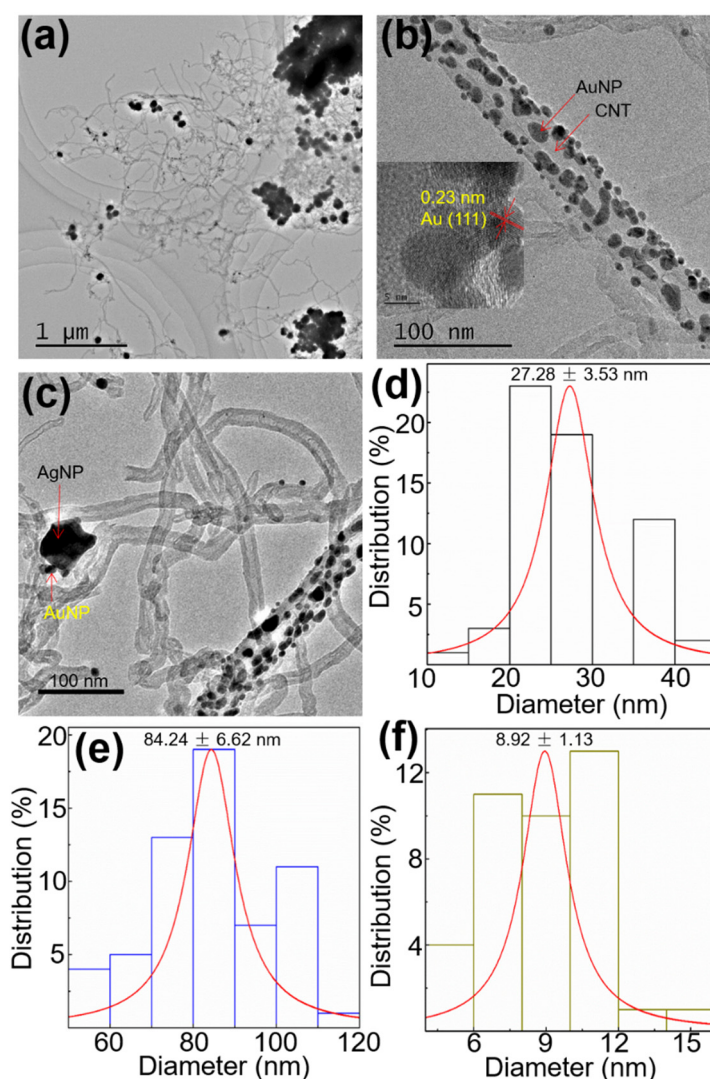


Figure S1. (a), (b) and (c) TEM images of the Au/AgNPs/crossed CNTs film. (c) Diameter distribution of (d) CNTs, (e) AgNPs and (f) AuNPs, respectively.

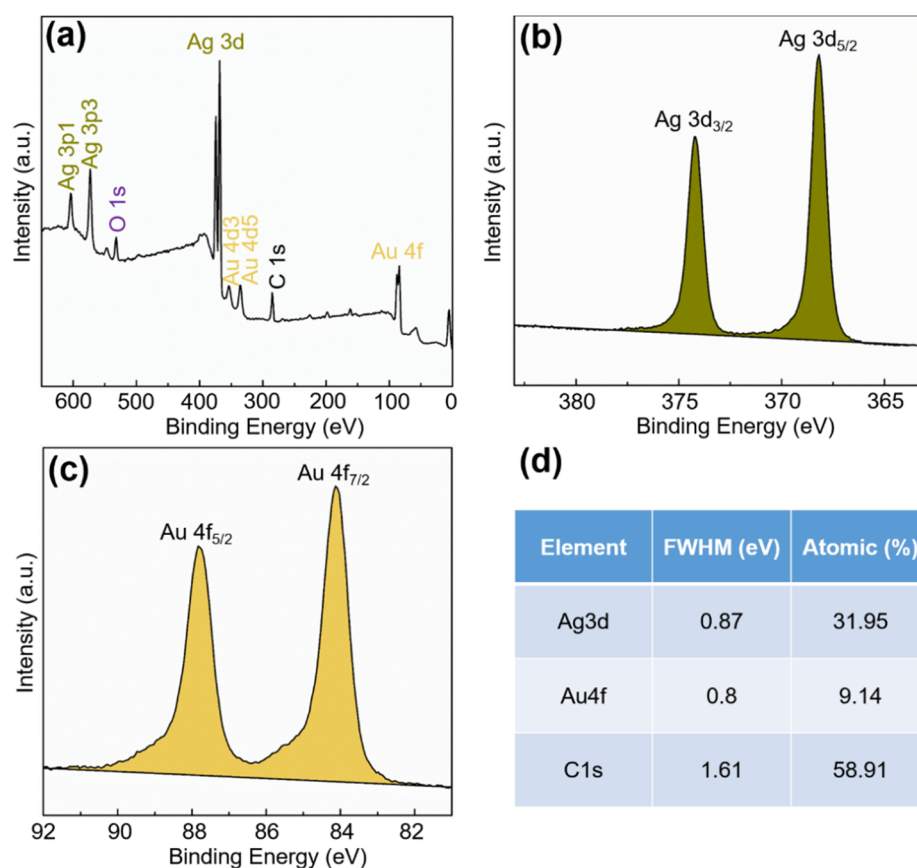


Figure S2. XPS spectra of (a) survey, (b) Ag 3d, (c) Au 4f of Au/AgNPs/crossed CNTs film, (d) the corresponding percentage of element content.

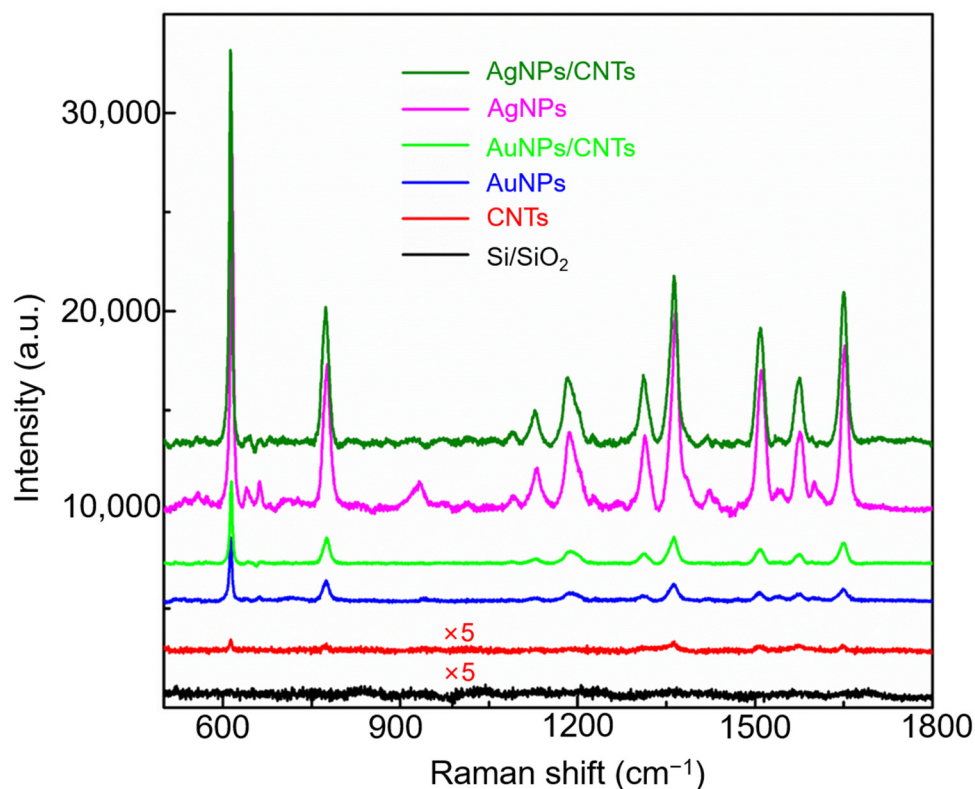


Figure S3. Raman spectra of R6G molecules (10^{-5} M) detected on Si/SiO₂, CNTs/Si/SiO₂, AuNPs/Si/SiO₂, AuNPs/crossed CNTs film, AgNPs/Si/SiO₂, AgNPs/crossed CNTs film.

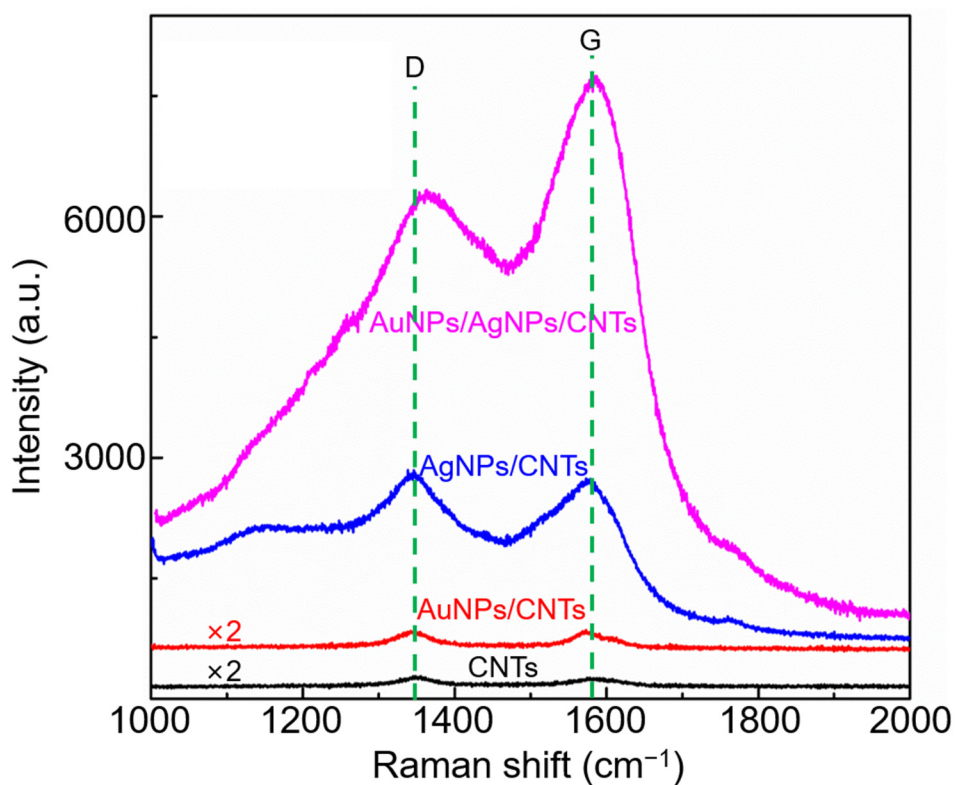


Figure S4. Raman spectra of CNTs on the crossed CNTs film, AuNPs/crossed CNTs film, AgNPs/crossed CNTs film and Au/AgNPs/crossed CNTs film.

Table S1. The vibrational mode of various peaks for R6G.

Raman shifts (cm ⁻¹)	Vibrational mode
614	C-C-C ring in-plane bending mode
774	C-H out-of-plane bending mode
1182	C-H in-plane bending mode
1310	aromatic C-C stretching mode
1363	
1509	
1651	