Electronic Supplementary Material (ESI) for RSC Advances

Supporting Information

Spontaneous Formation of Branched Nanochains From Room Temperature Molten Amides: Visible and Near – IR Active, SERS Substrates for Non-Fluorescent and Fluorescent Analytes

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Figure S1. Schematic of preparation of SERS substrate.

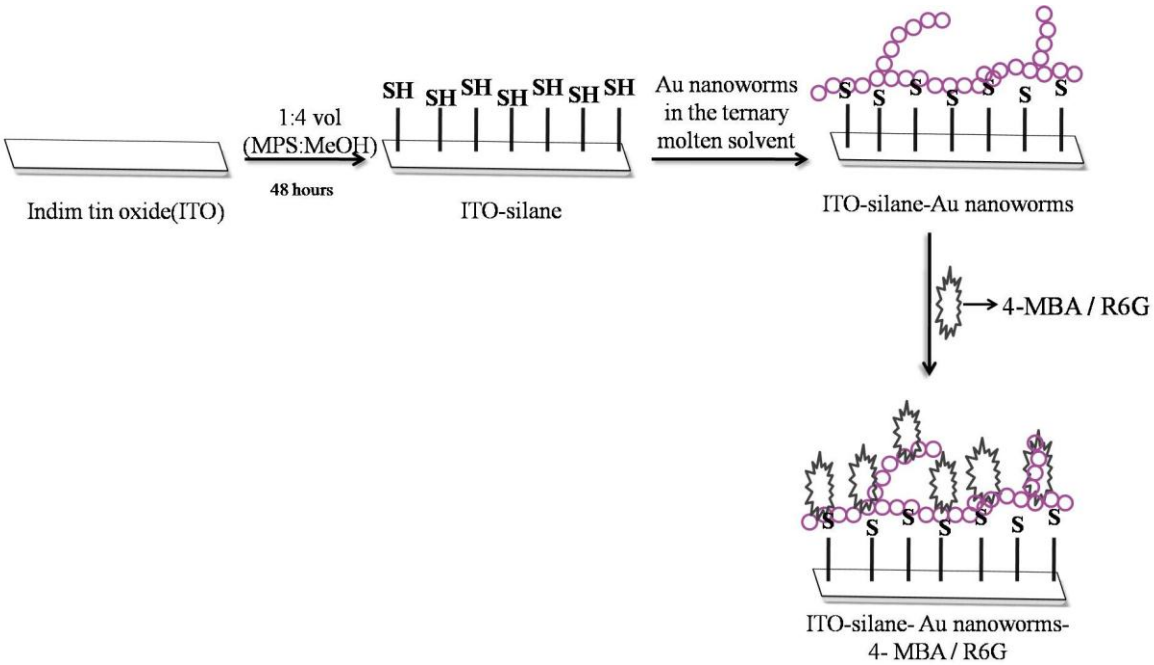


Figure S2. SEM of gold nanoworms separated, and re-dispersed in ethanol.

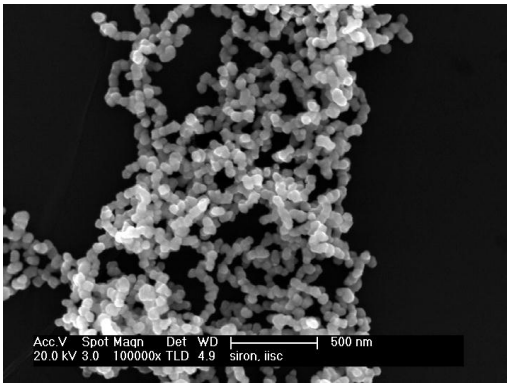


Figure S3. EDX spectrum of gold nanoparticles.

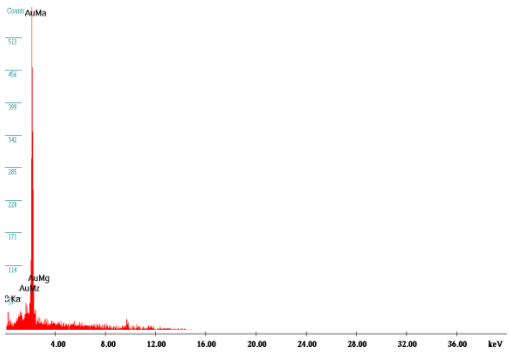


Figure S4. XRD pattern for gold nanoparticles.

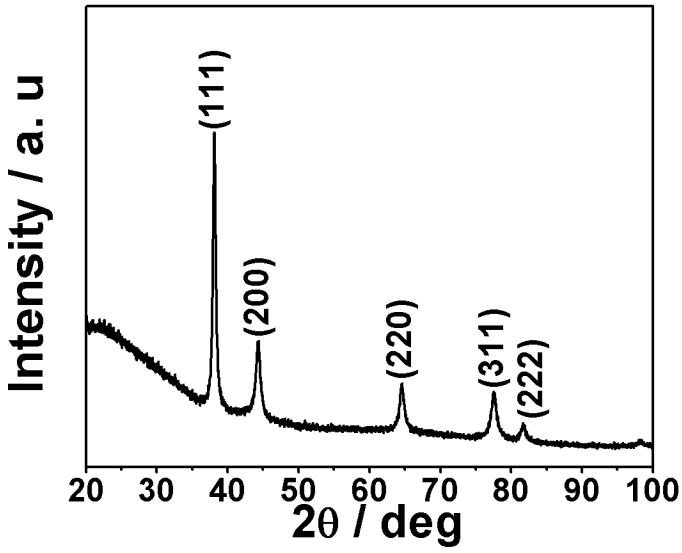


Figure S5. Absorbance spectra for Au colloid in the ternary molten solvent.

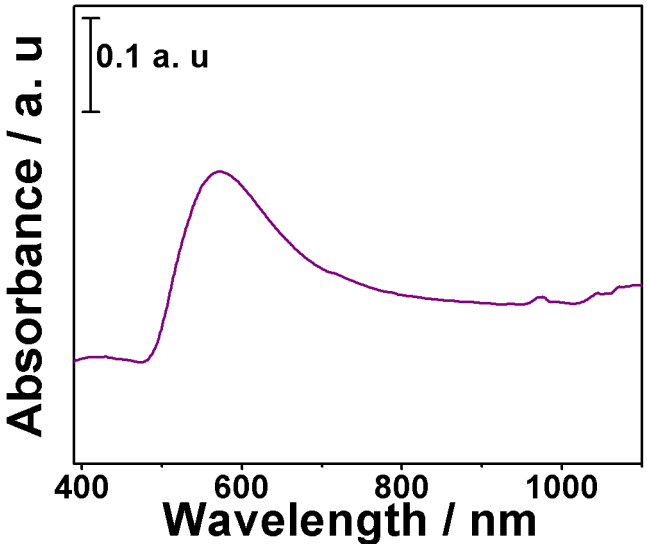


Figure S6. SERS spectrum for 4-MBA adsorbed on Au nanoworms in full spectral range.

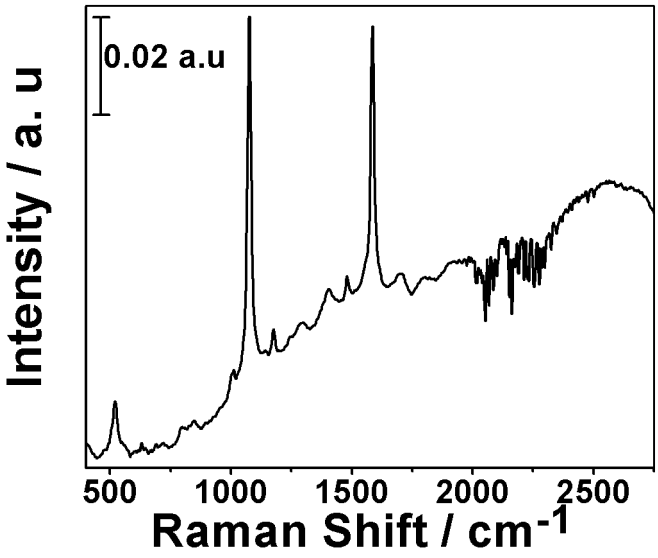


Figure S7. DFT calculated spectra for 4-MBA adsorbed on gold surface at different orientation angles (a) 30 ° (b) 70 ° and (c) 80 °.

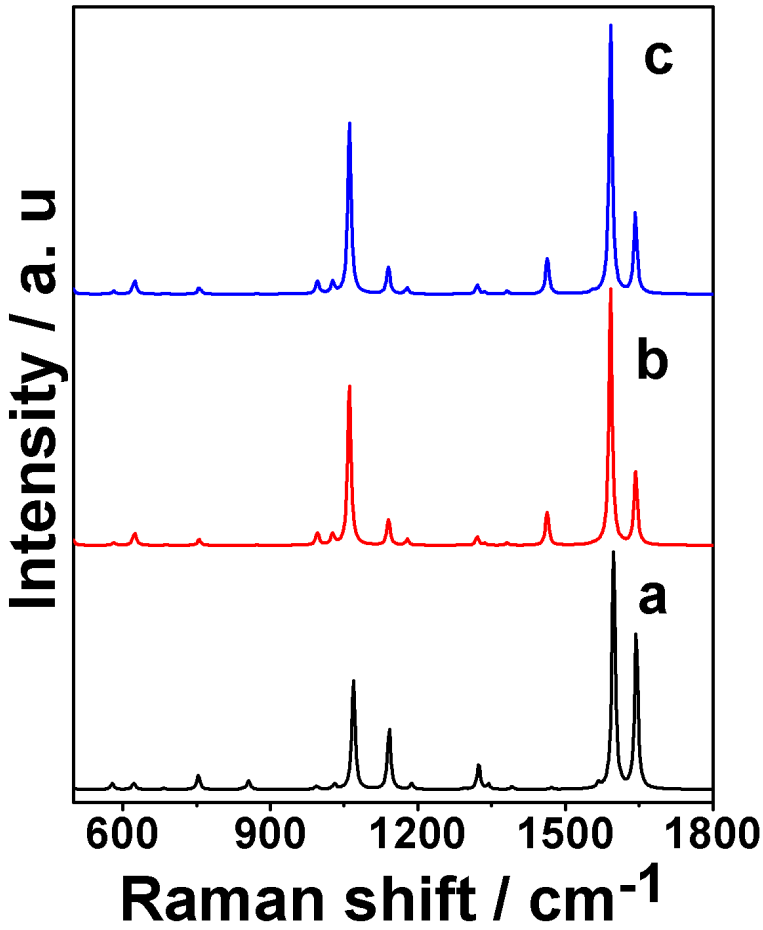


Figure S8. SERS spectra of 4-MBA adsorbed on Au nanoworms on ITO from 10^{-6} M ethanolic solution at fifteen randomly selected regions with 1064 nm laser excitation.

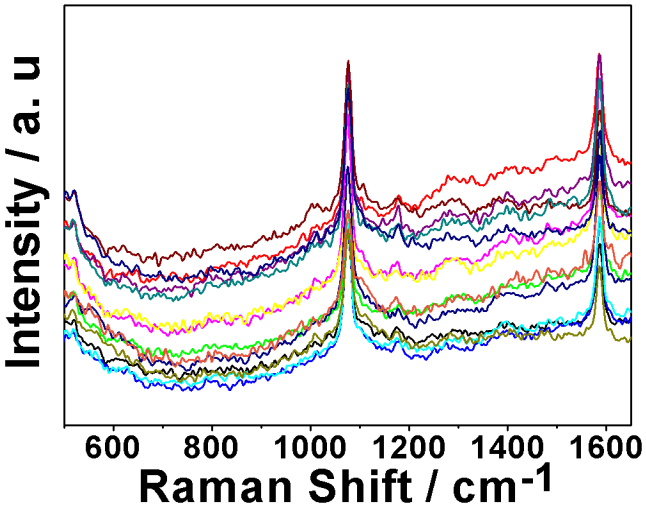
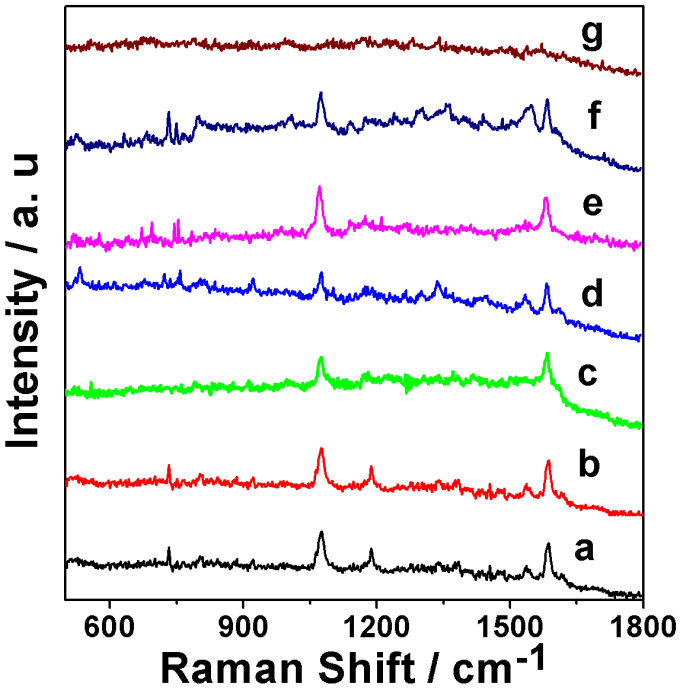


Figure S9. Concentration dependant SERS spectra for 4-MBA adsorbed on Au nanoworms on ITO from 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}, 10^{-7}, 10^{-8} and 10^{-9} M (from a to g) ethanolic solutions with 632.8 (i) and 785 (ii) nm laser excitations. The spectra are stacked for clarity.

(i)



(ii)

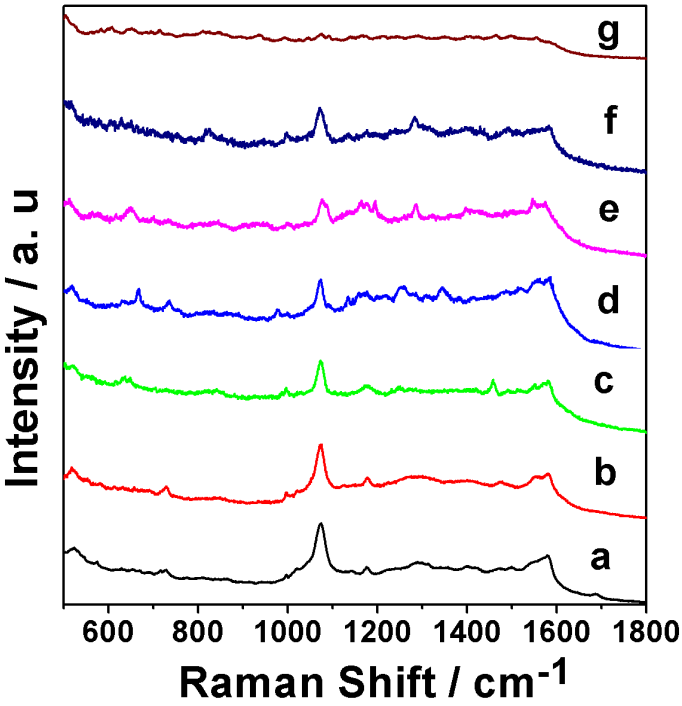
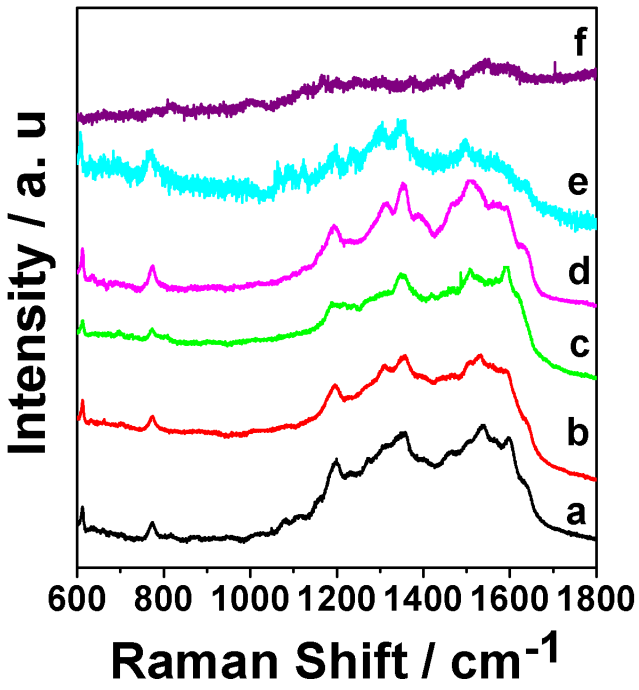


Figure S10 Concentration dependant SERS spectra for R6G adsorbed on Au nanoworms on ITO from 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}, 10^{-7} and 10^{-8} M (from a to f) aqueous solutions with (i) 632.8 and (ii)1064 nm laser excitations. The spectra are stacked for clarity.

(i)



(ii)