Supporting Information

Ultrasensitive trace analysis for 2,4,6-trinitrotoluene using nano-dumbbell surface-enhanced Raman scattering hot spots

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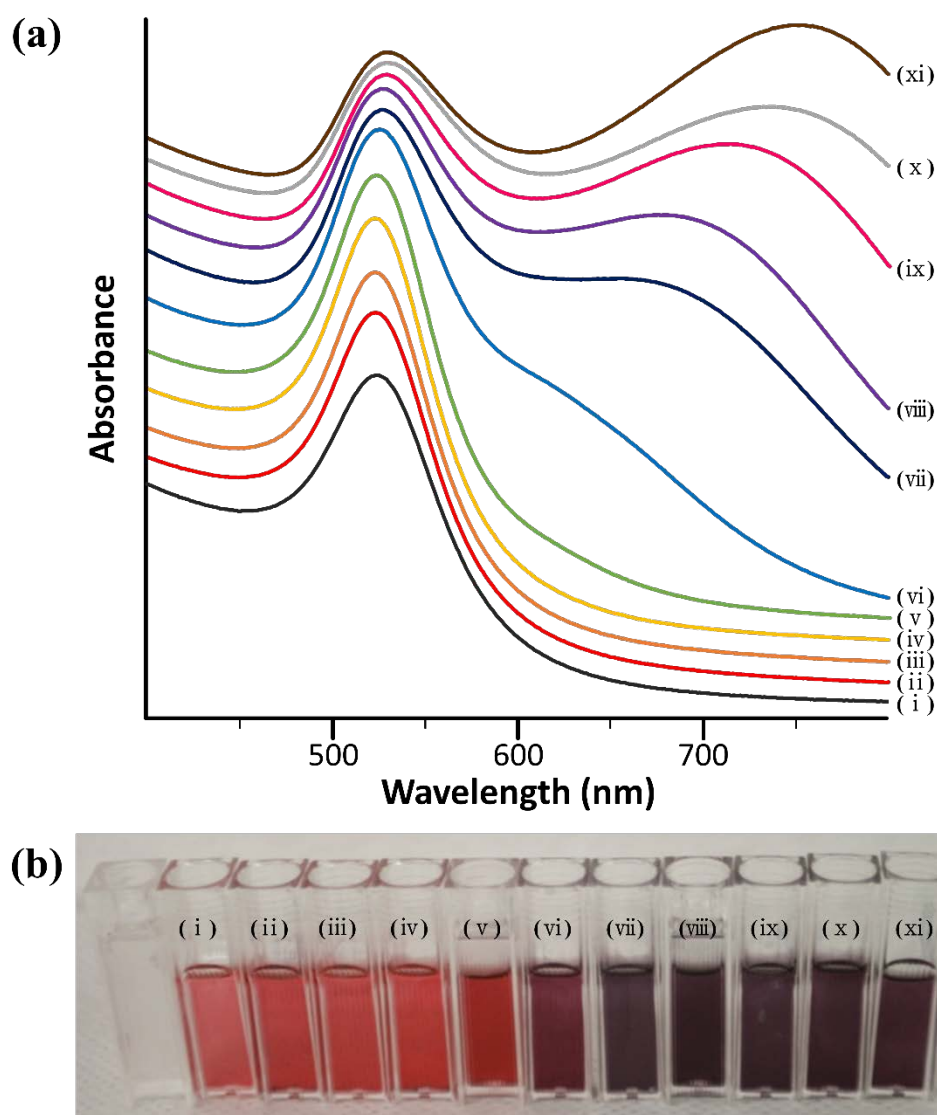Tel.: +82-31-400-5201; fax: +82-31-436-8188; e-mail: jbchoo@hanyang.ac.kr (J. Choo)

Fig. S1. (a) UV/Vis absorption spectra and (b) corresponding photographs of positively charged gold nanoparticle colloids for different concentrations of 4-MPY: (i) gold nanoparticles only, (ii) 1×10^{-3} M, (iii) 2×10^{-3} M, (iv) 3×10^{-3} M, (v) 4×10^{-3} M, (vi) 5×10^{-3}M, (vii) 6×10^{-3}M, (viii) 7×10^{-3}M, (ix) 8×10^{-3}M, (x) 9×10^{-3}M and (xi) 10×10^{-3}M.
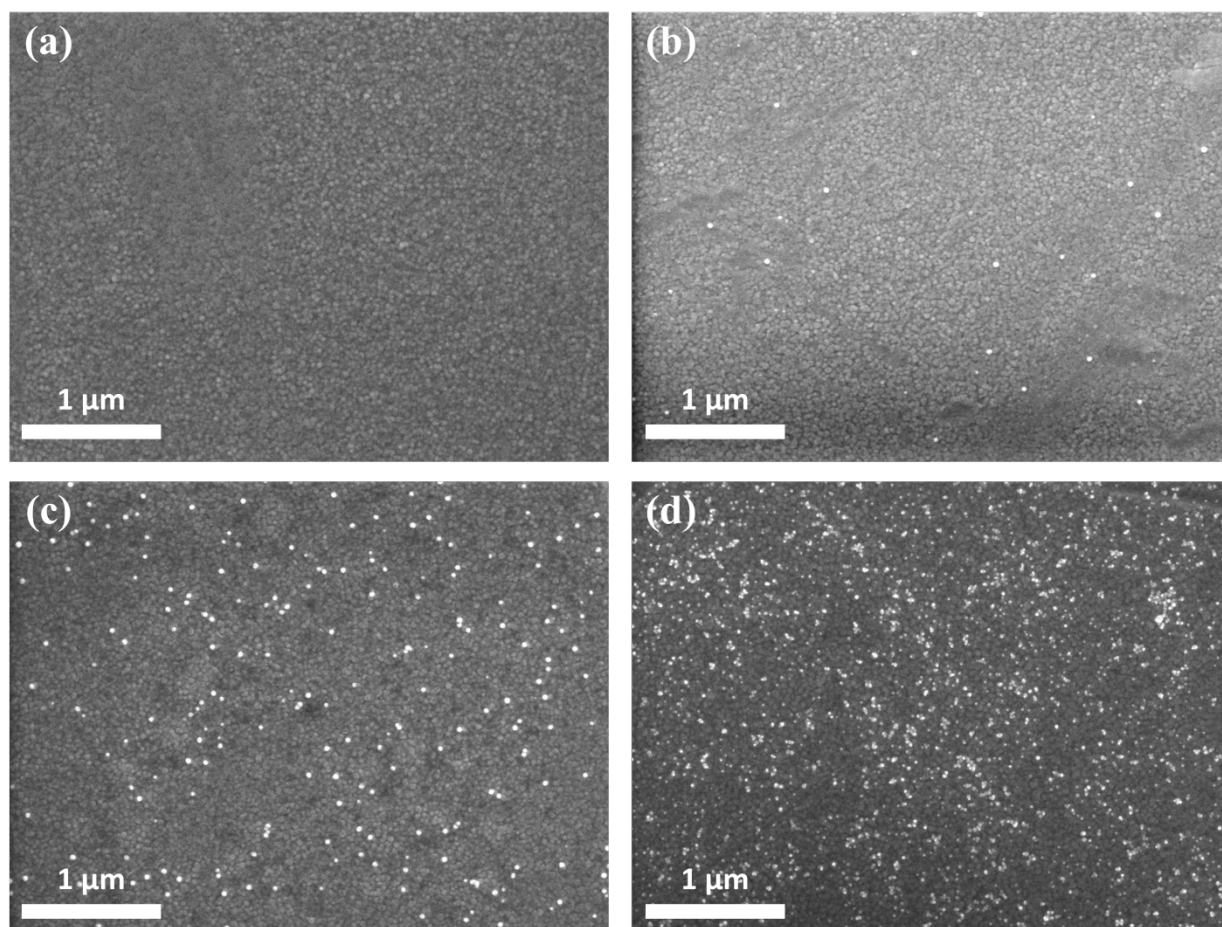
Fig. S2. SEM images for (a) bare gold substrate, (b) positively charged nanoparticle-immobilized gold substrate without TNT (negative control), (c) positively charged gold nanoparticle immobilized gold substrate with 10^{-9} M TNT solution, and (d) nano-dumbbell immobilized gold substrate.