

Ultra-high SERS Detection of Consumable Coloring Agents Using Plasmonic Gold Nanostars with High Aspect-ratio Spikes

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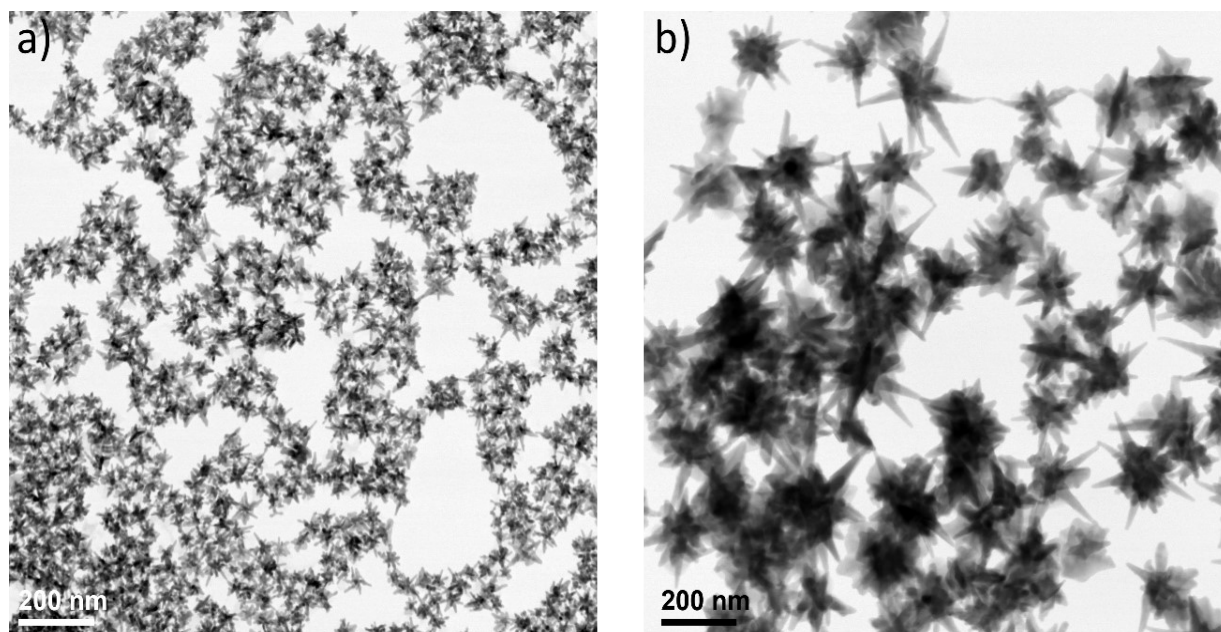


Figure S1. TEM image of GNS-2 (a). TEM image of GNS-4 (b).

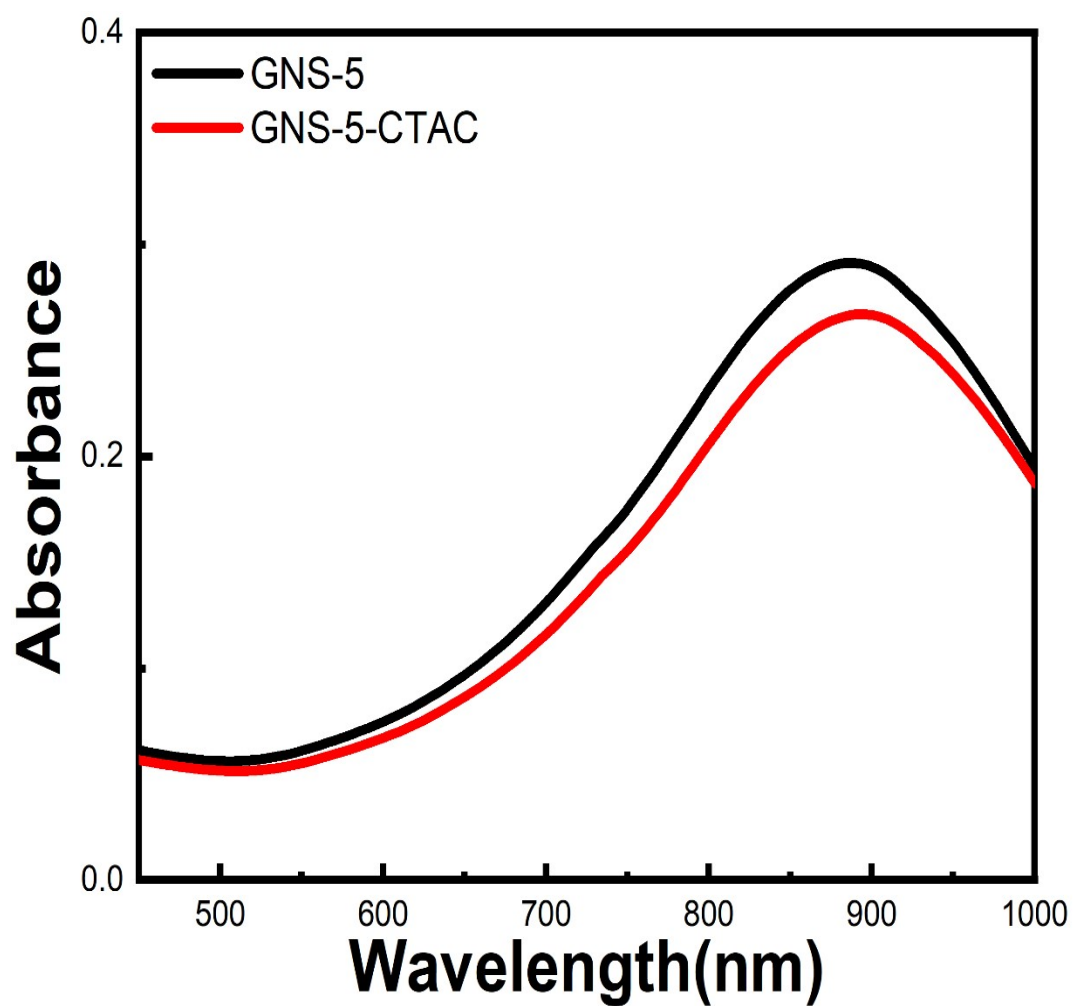


Figure S2. UV-Vis absorbance spectra of surfactant-free GNS-5 (black) and CTAC capped GNS-5 (red).

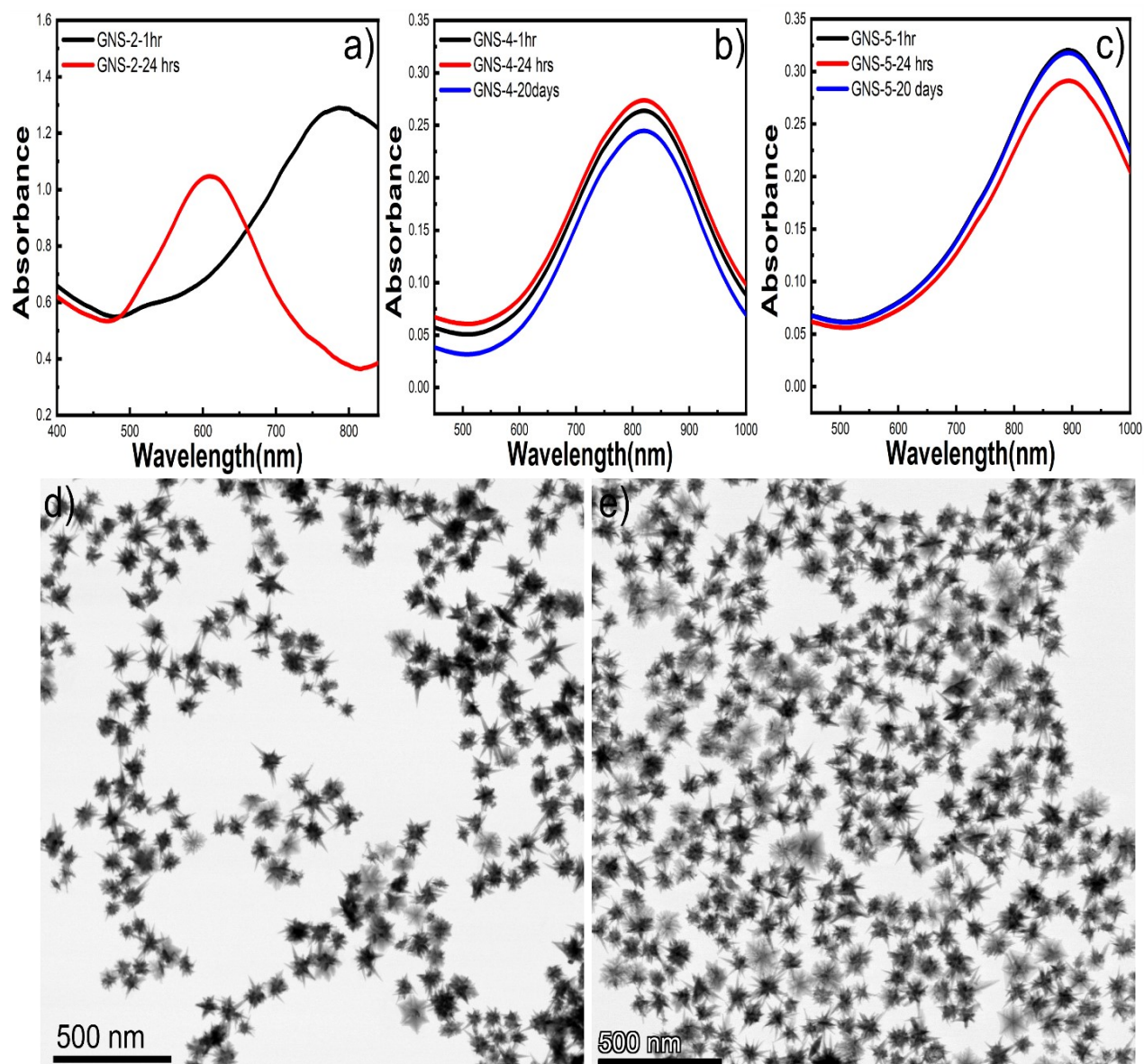


Figure S3. UV-Vis absorbance spectra of GNS-2 which shows that the plasmon resonance was blue shifted from 780 nm to 610 nm after 24 hours (a). UV-Vis absorbance spectra of GNS-4 which shows that the plasmon resonance remained constant at 820 nm after 20 days of synthesis (b). UV-Vis absorbance spectra of GNS-5 which shows that the plasmon resonance remained constant at 890 nm after 20 days of synthesis (c). TEM images of CTAC capped GNS-4 and GNS-5 after 20 days which further confirms that the morphology remains same after 20 days of synthesis (d-e).

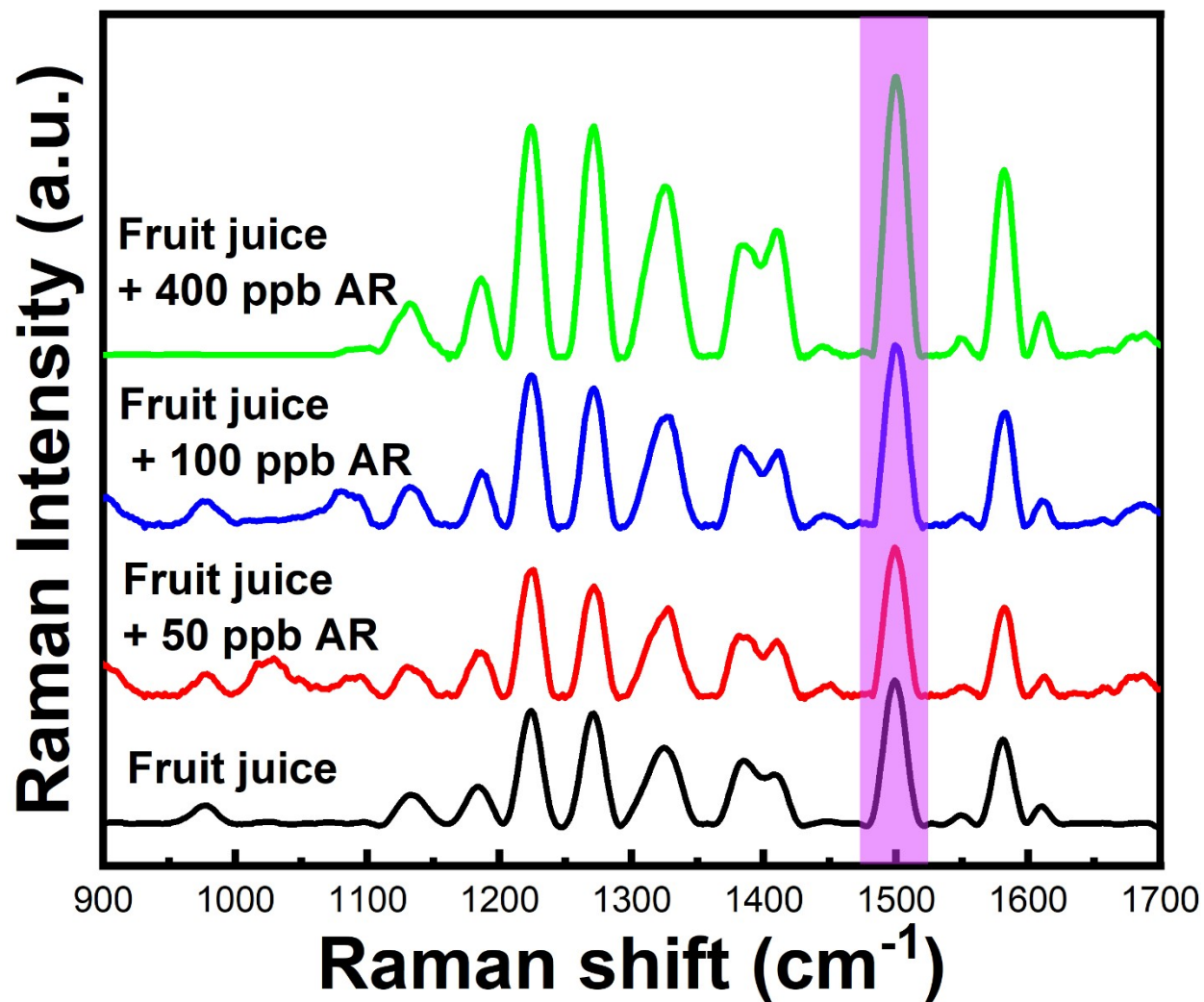


Figure S4. Representative SERS spectra of fruit juice sample where GNS-5 was utilized as a SERS probe and a various concentration of AR (50, 100, and 400 ppb) were added to the solution mixture.