

Supplementary Material (ESI) for Chemical Communications
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Electronic Supplementary Information

Determination of ferric ions by surface-enhanced Raman scattering based on desferrioxamine-functionalized silver nanoparticles

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SEM characterization of silver nanoparticles. To prepare the samples for scanning electron microscopy (SEM) studies, a drop of the silver metal colloids was placed on a piece of silicon wafer substrate (100 mm 500 μm SSP MECH GRADE from University Wafer, Boston, MA) and dried over night at room temperature. The sample was then observed using a Nova NanoSEM 630 (FEI) field emission scanning electron microscope to assess the particle size and shape.

Raman Measurements: Raman spectra were obtained with a DeltaNu Advantage 200A (DeltaNu, Laramie, WY) equipped with a HeNe laser emitting at 633 nm. The laser power was 3 mW and the spectral resolution was 10 cm^{-1} . Raman spectra were obtained in backscatter directly from an NMR glass tube (with an integration time of 1 s), and baseline-corrected using the software came with the system. Each sample was measured three times consecutively.

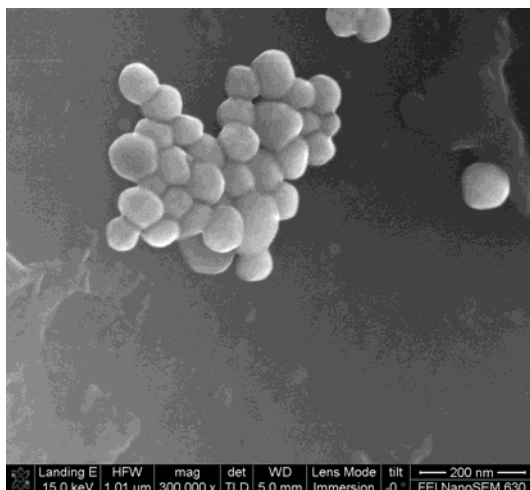


Fig. 1S. SEM image of Ag NPs prepared by reduction of silver nitrate with hydroxylamine hydrochloride at room temperature

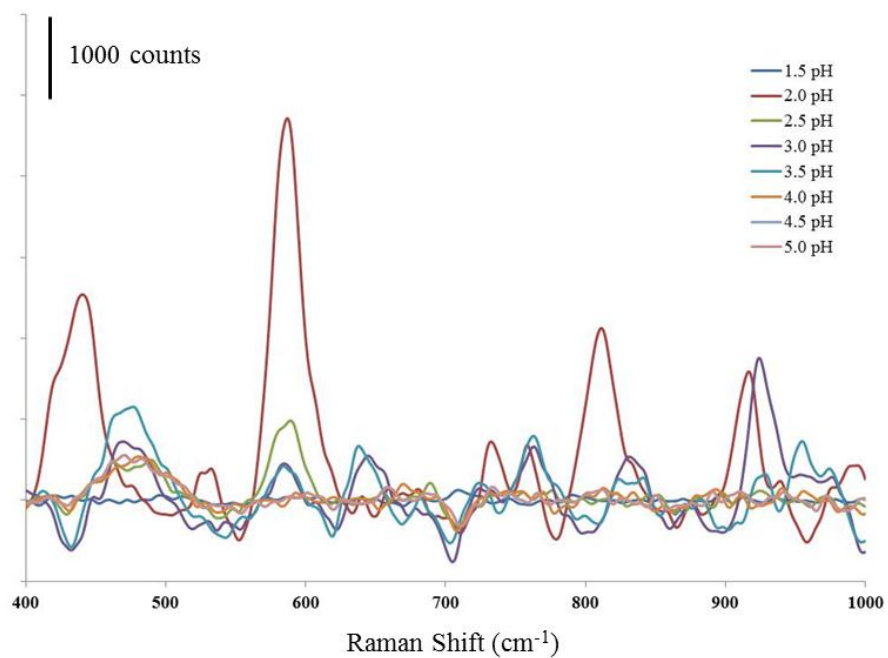


Fig. 2S. Raman spectra of DFB-Fe³⁺ complex at different pHs. Each mixture consists of 600 μL Ag NPs, 120 μL DFB (1 mg/mL) and 120 μL of Fe³⁺ solutions (1 mM).