Electronic Supplementary Information

for

Single-Particle Correlation Study: Chemical Interface Damping Induced by Biotinylated Proteins with Sulfur in Plasmonic Gold Nanorods

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This document contains additional supplementary figures (Fig. S1 to S6).

Supplementary Figures

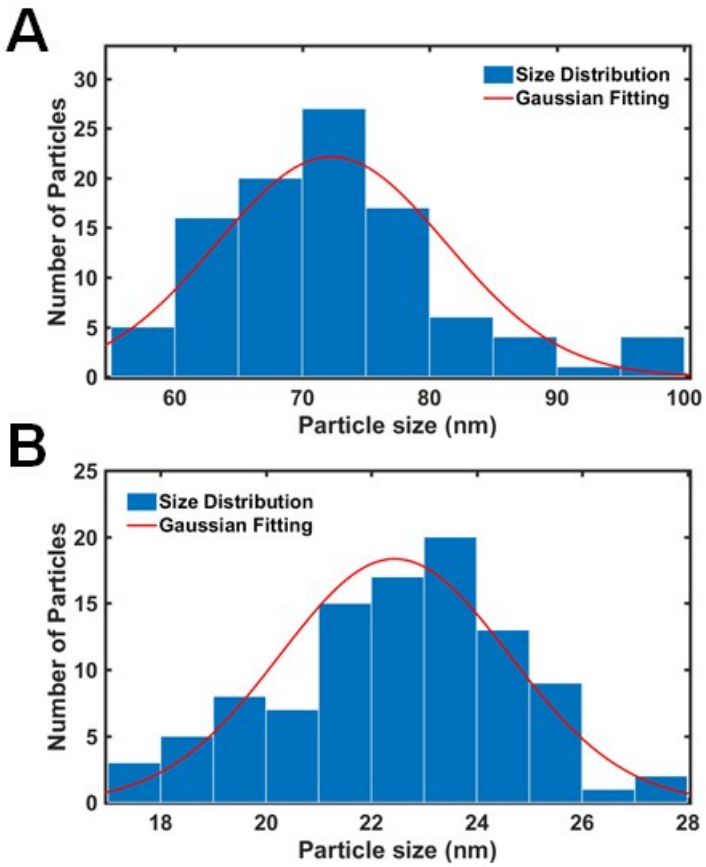

Fig. S1 (A) Histogram to show the size distribution in the length of AuNRs. **(B)** Histogram to show the size distribution in the width of AuNRs

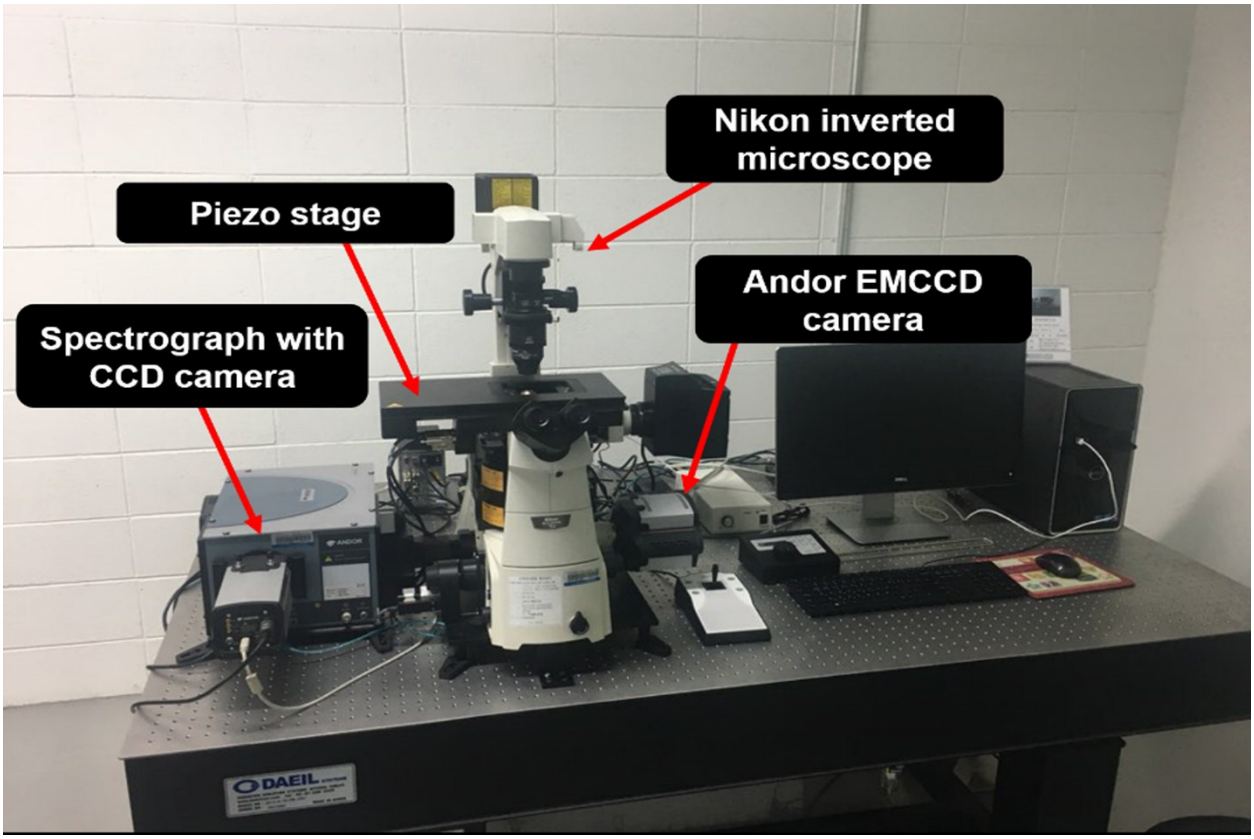

Fig. S2 A photograph to show the experimental setup for DF microscopy and spectroscopy.

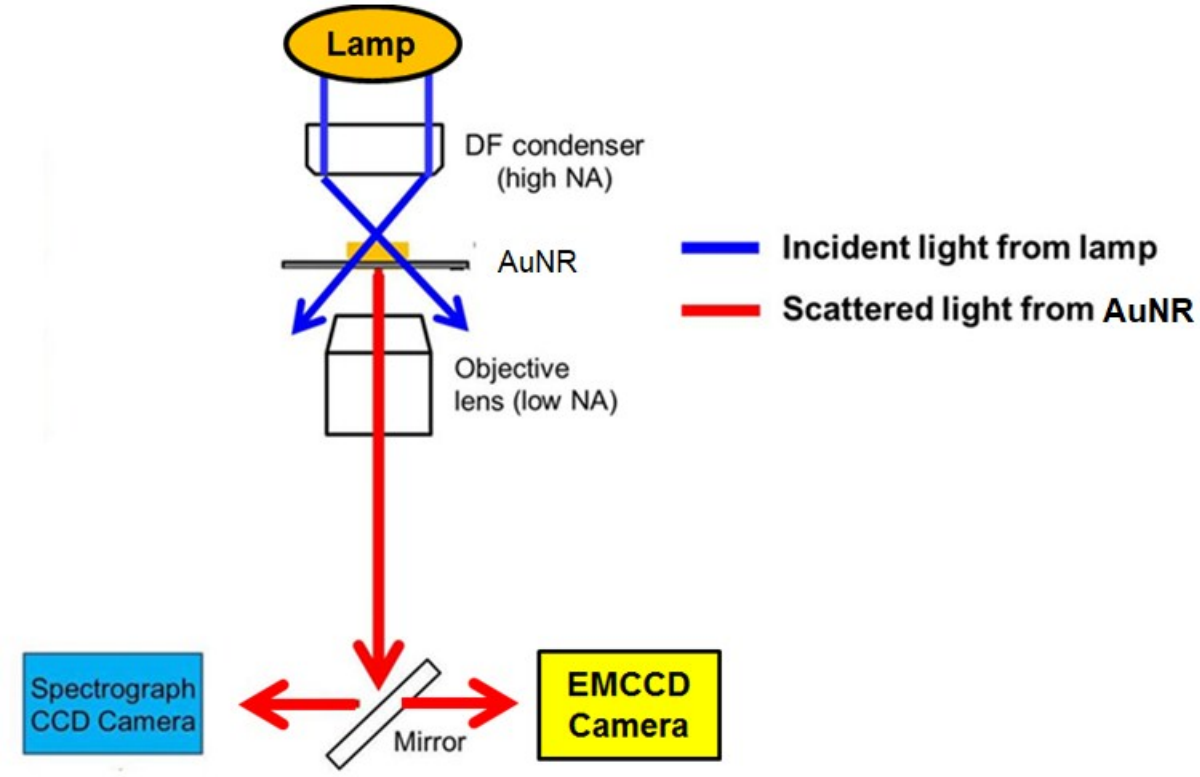

Fig. S3 The working principle of scattering-based DF microscopy and spectroscopy.

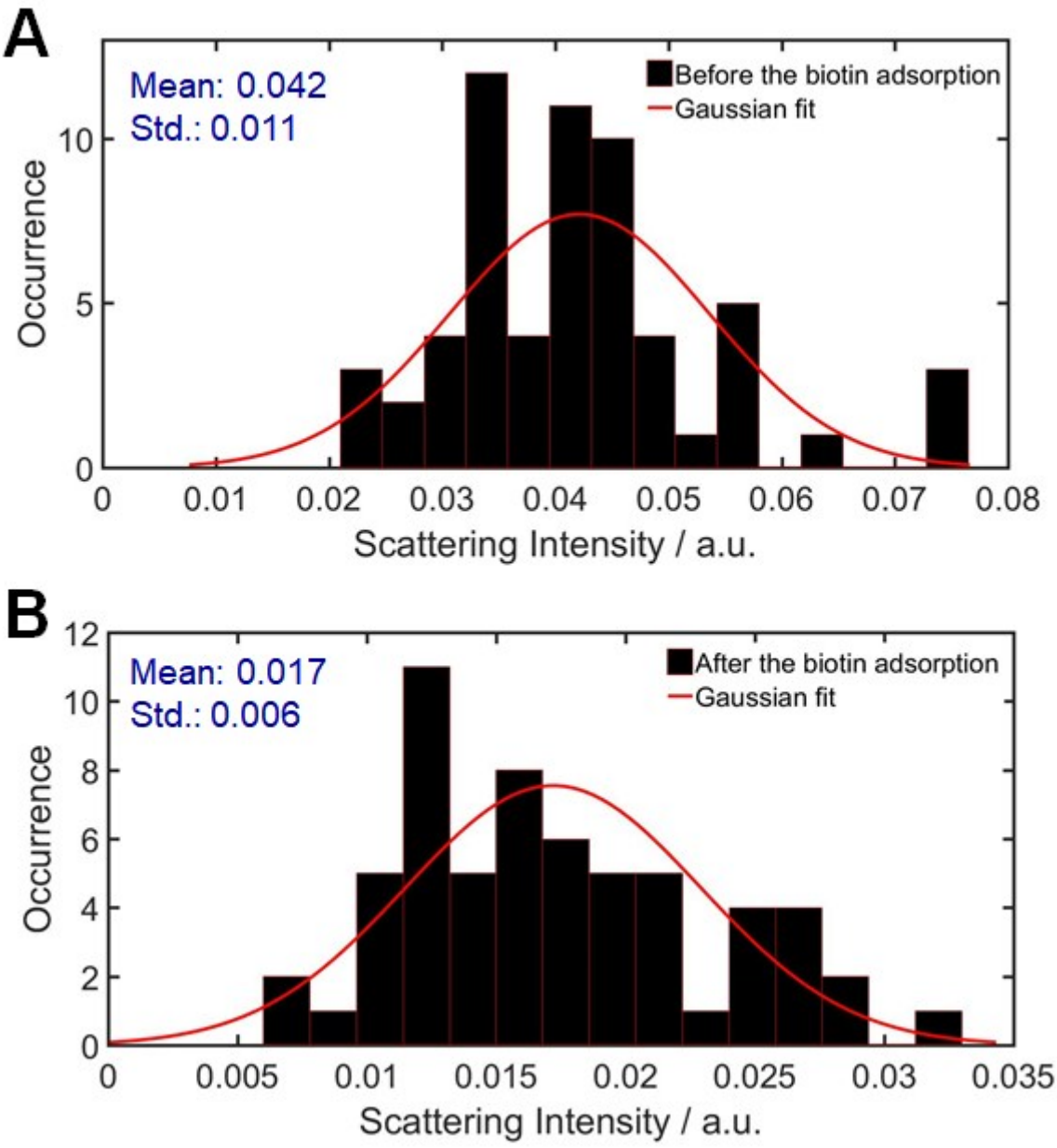

Fig. S4 (A) Histogram of scattering intensity before adding the biotin molecules. (B) Histogram of scattering intensity after the biotin adsorption. 60 AuNRs were used to construct the intensity histograms in each case.

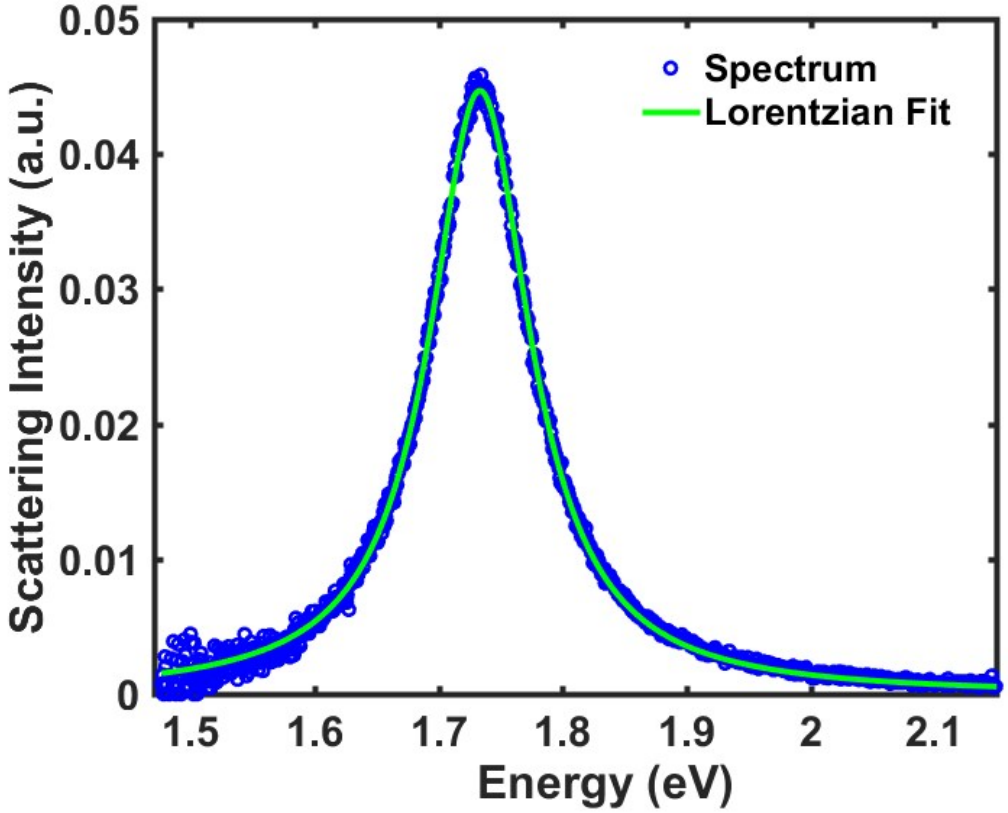

Fig. S5 Fitting of experimental data with a Lorentzian function to calculate the LSPR linewidth Γ in eV. The scattering spectrum of a AuNR (AR=3.22, blue-color) was well fitted with the function (green-color).

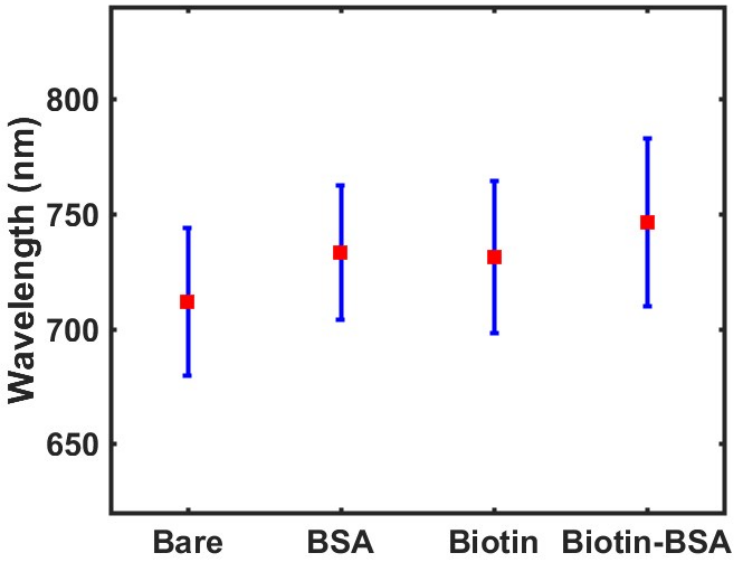

Fig. S6 LSPR wavelength shifts caused by the adsorption of BSA, Biotin, Biotinylated BSA (Biotin-BSA) on single AuNRs. In this study, the bare AuNRs mean the absence of thiol and sulfur groups on their surfaces.