

Electronic Supplementary Information (ESI) for

(Gold triangular nanoplate core)@(silver shell) nanostructures as highly sensitive and selective plasmonic nanoprobess for hydrogen sulfide detection

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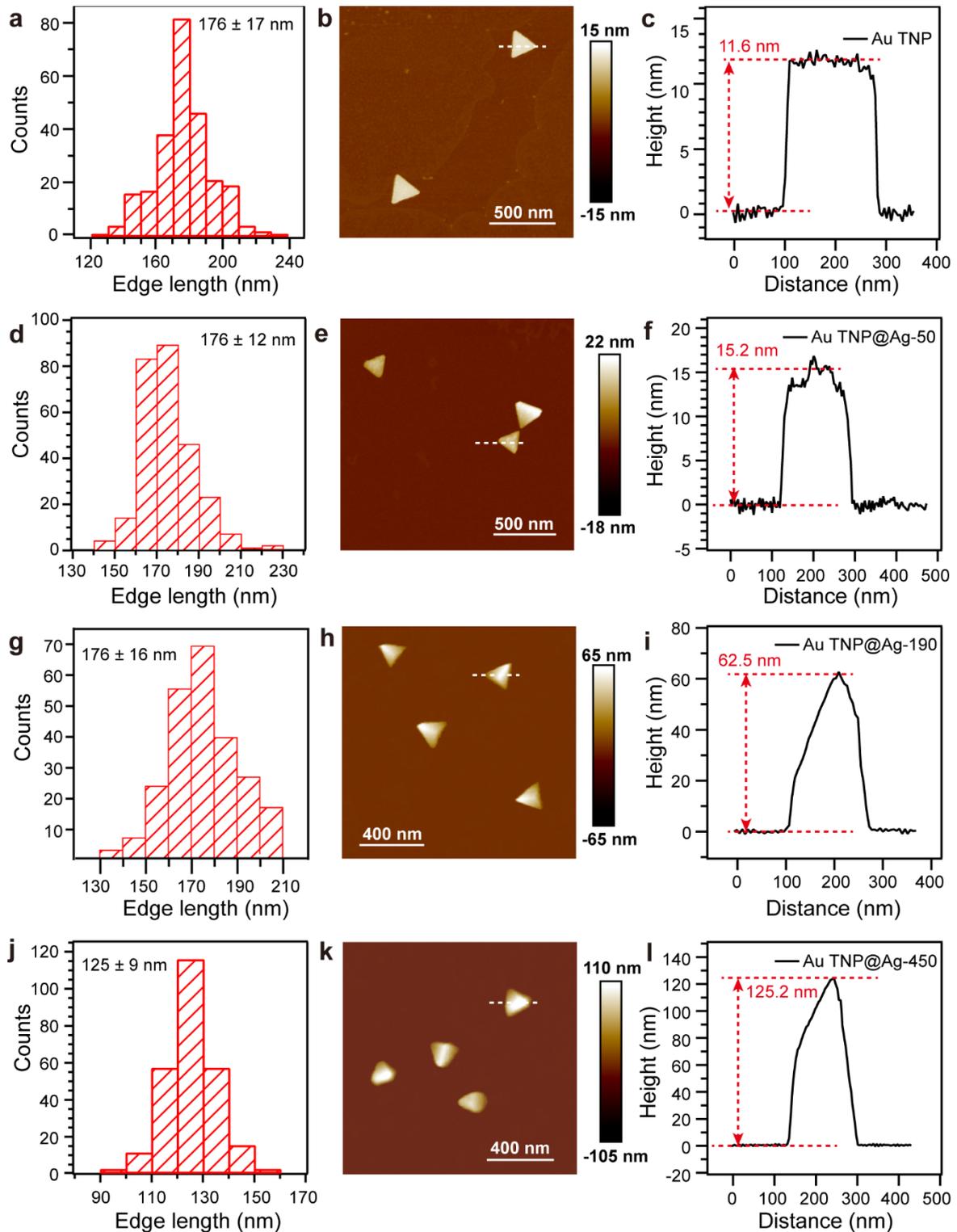


Figure S1. a–c) Histogram, AFM image, and height profile of Au TNPs, respectively. d–f) Histogram, AFM image, and height profile of Au TNP@Ag-50 sample, respectively. g–i) Histogram, AFM image, and height profile of Au TNP@Ag-190 sample, respectively. j–l) Histogram, AFM image, and height profile of Au TNP@Ag-450 sample, respectively.

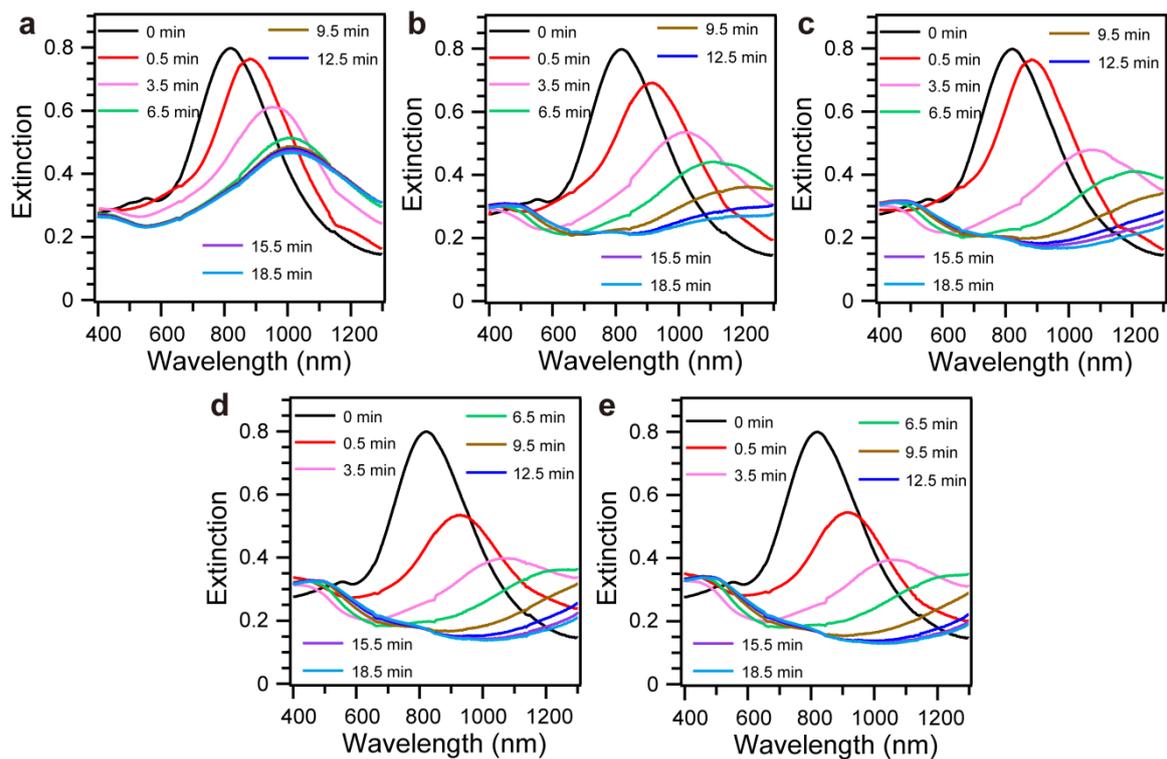


Figure S2. a–e) Time-dependent extinction spectra of AuTNP@Ag nanocrystals sulfurized by 40, 70, 100, 120 and 140 μM sodium sulfide, respectively.

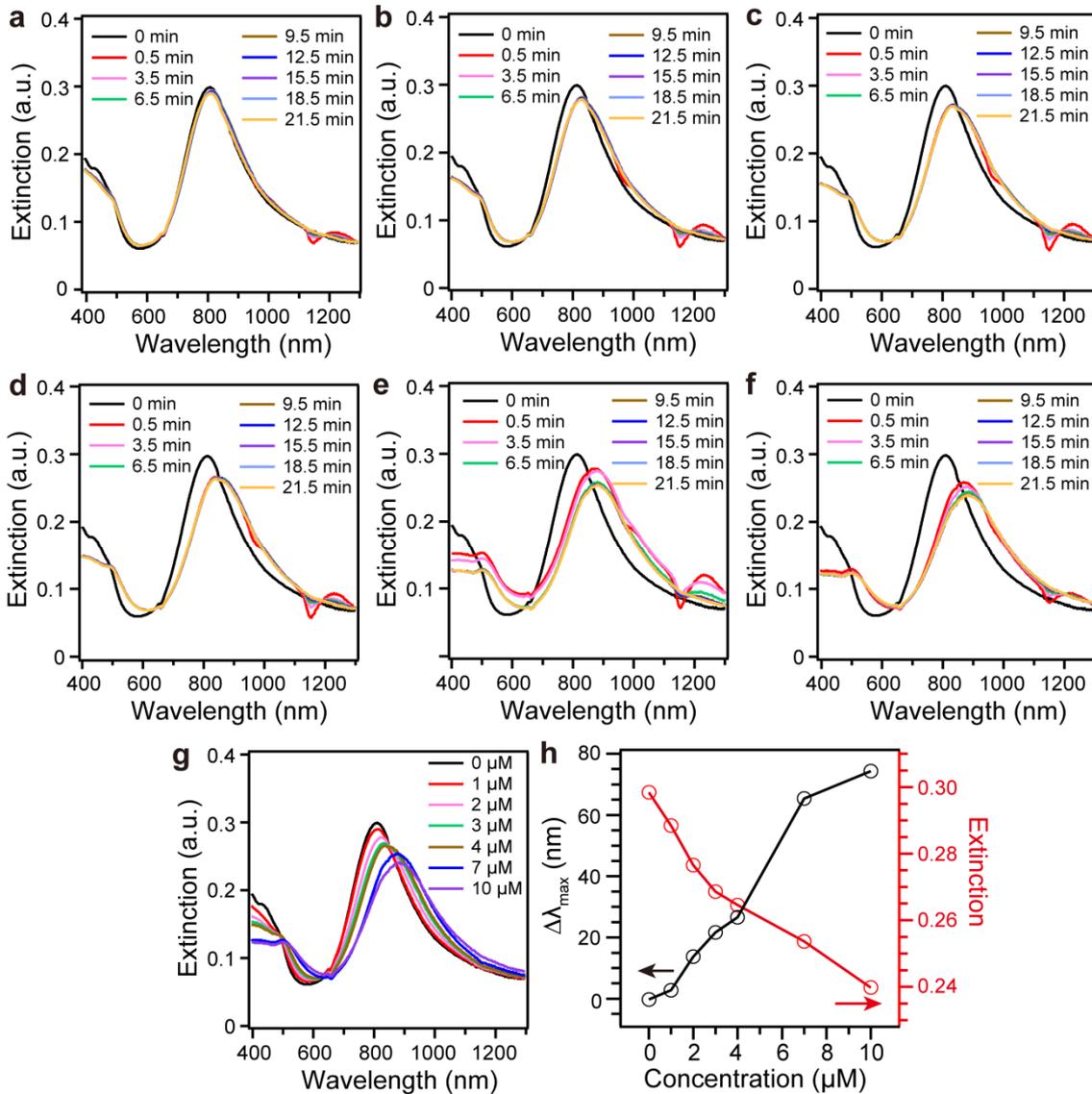


Figure S3. a–f) Time-dependent extinction spectra of pure Au NR@Ag nanocrystals sulfurized by 1, 2, 3, 4, 7, and 10 μM sodium sulfide, respectively. g) Extinction spectra of pure Au NR nanocrystals sulfurized by 1, 2, 3, 4, 7, and 10 μM sodium sulfide for 21.5 min. h) Corresponding wavelength and extinction changes of spectra shown in (g). To facilitate the comparison of sensing performance, the concentration of Au NR@Ag nanocrystals is tuned to be the same as the concentration of Au TNP@Ag in the sensing measurements, which can ensure that every nanocrystal reacts with the same number of sulfur ions.

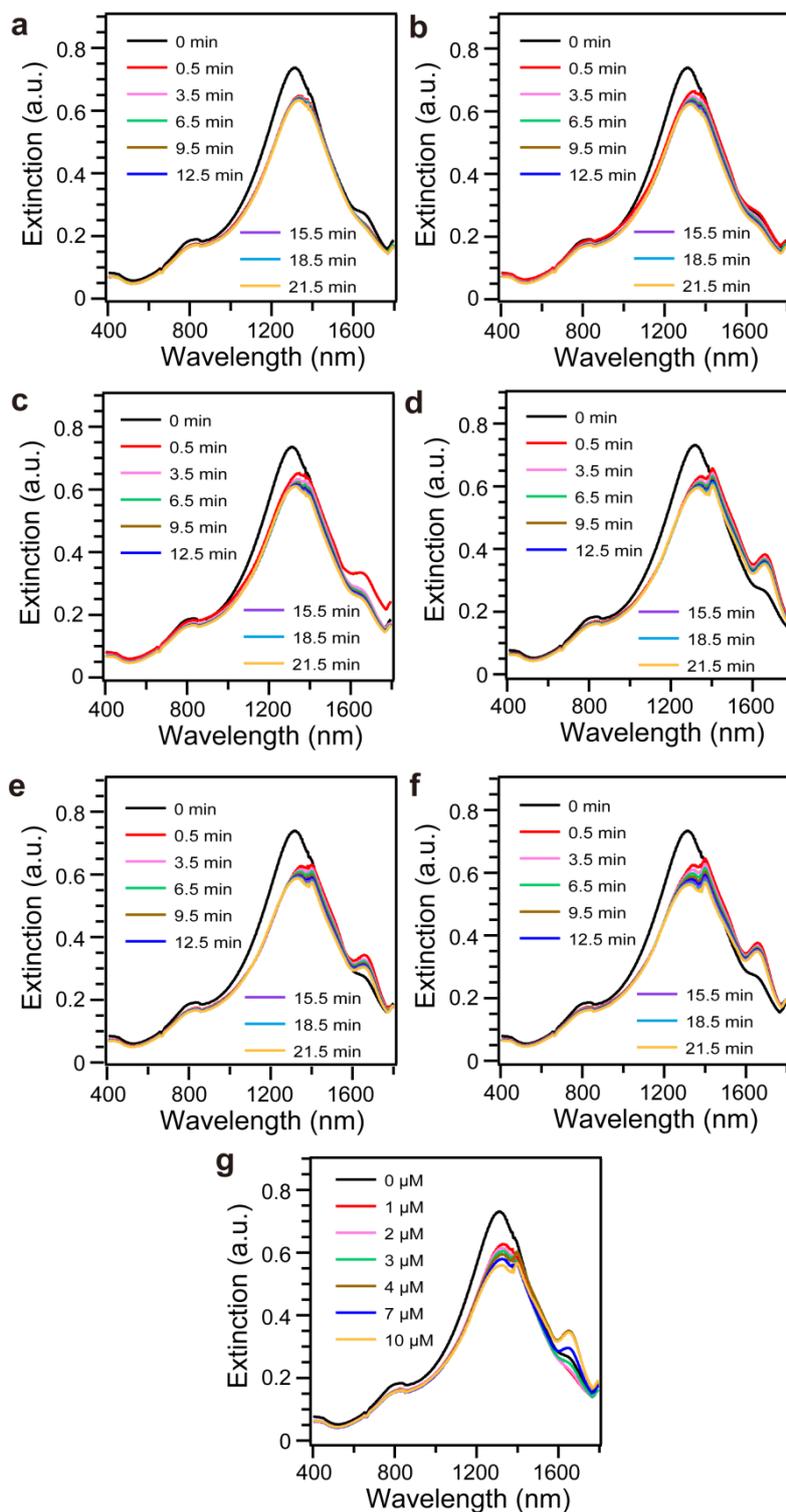


Figure S4. a–f) Time-dependent extinction spectra of pure Au TNP nanocrystals sulfurized by 1, 2, 3, 4, 7, and 10 μM sodium sulfide, respectively. g) Extinction spectra of pure AuTNP nanocrystals sulfurized by 1, 2, 3, 4, 7, and 10 μM sodium sulfide for 21.5 min.

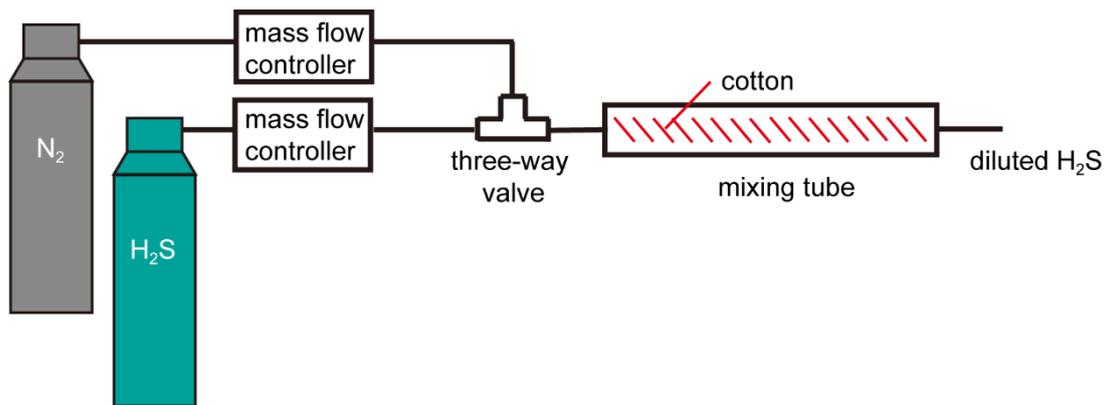


Figure S5. Schematic of the home-made system for gas mixing.