

Electronic Supplementary Information

Plasmonic and catalytic Au NBP@Pd nanoframes for highly efficient photocatalytic reactions

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Supplementary figures

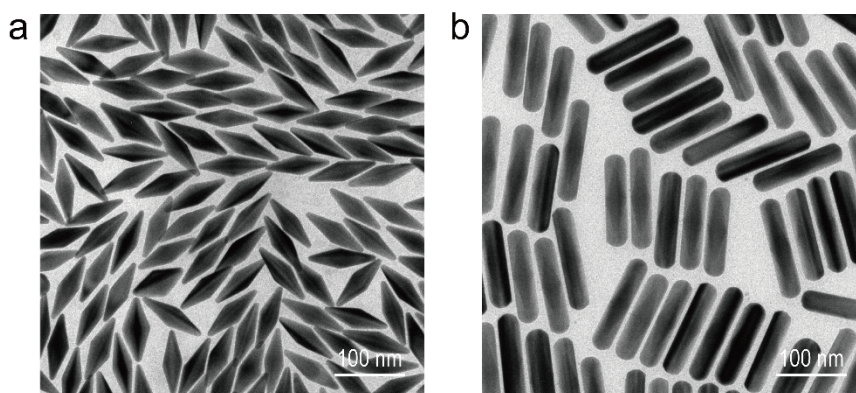


Fig. S1 (a) TEM image of Au NBPs with average waist width of 21 ± 1 nm and length of 69 ± 3 nm. (b) TEM image of the Au NBP@Ag nanorods with average diameter of 24 ± 1 nm and length of 105 ± 4 nm.

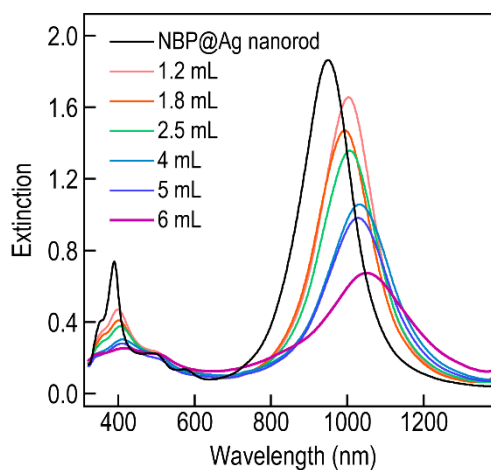


Fig. S2 Extinction spectra of the Au NBP@Ag nanorods (black) and Au NBP@Ag@Pd nanorods samples that fabricated with different volume of Pd precursor.

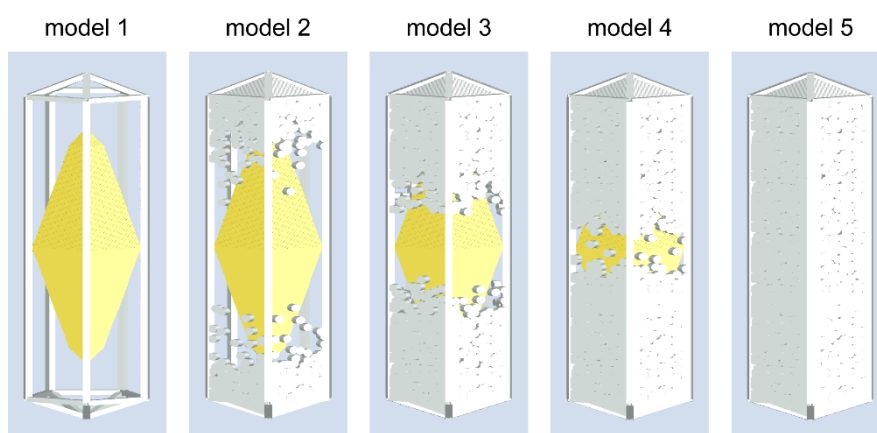


Fig. S3 Schematic models utilized in the FDTD simulations.

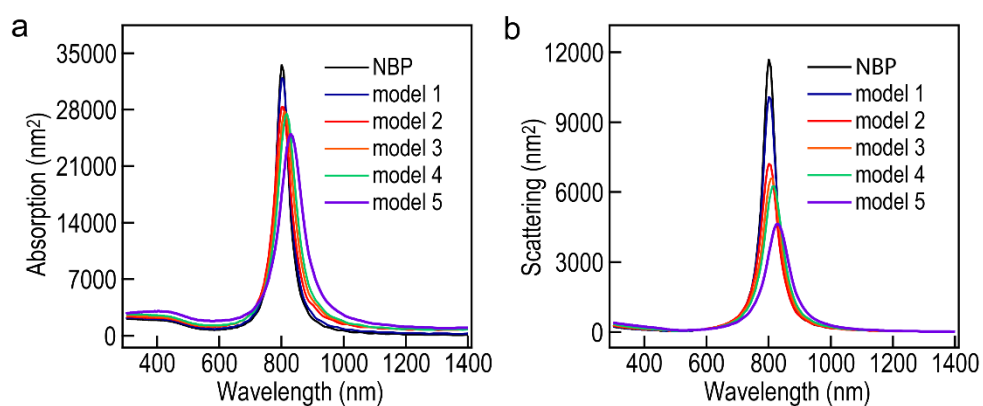


Fig. S4 Simulated (a) absorption and (b) scattering spectra of the Au NBP and the models.

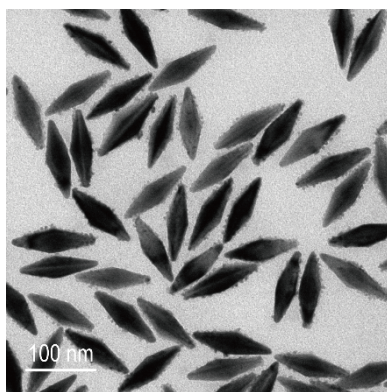


Fig. S5 TEM image of the Au NBP@AgPd core-shell nanoparticles.

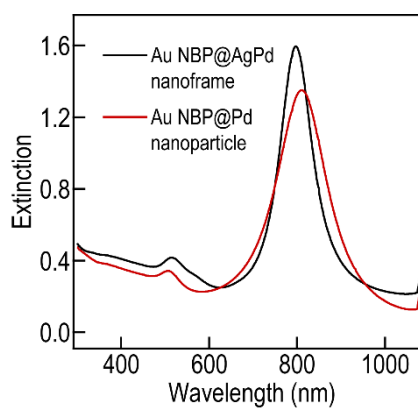


Fig. S6 Extinction spectra of the Au NBP@AgPd nanoframe (black) and Au NBP@Pd core-shell nanoparticle (red) samples.

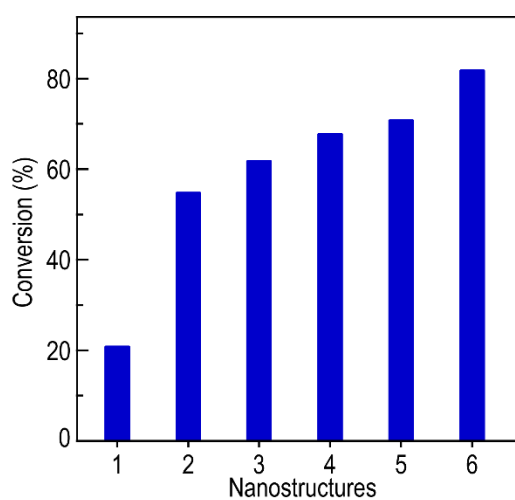


Fig. S7 Plasmonic photocatalytic activities of the Au NBP@Pd nanostructures under the irradiation of an 808 nm laser with same optical intensity of 6W. The 1 to 6 nanostructure samples were corresponding to the Au NBP@AgPd nanostructures in Fig. 1c-h.

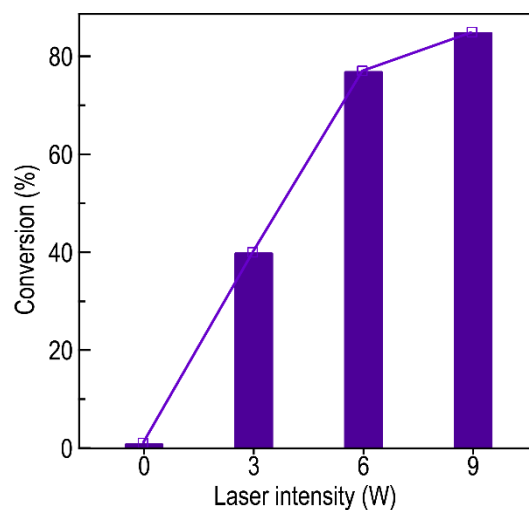


Fig. S8 Plasmonic photocatalytic activities of the Au NBP@AgPd nanoframe under the irradiation of an 808 nm laser at different optical intensities.

Table S1 The content of Au and Pd elements in Au NBP@AgPd nanoframe and Au NBP@Pd nanoparticle samples

	Au ($\mu\text{g mL}^{-1}$)	Pd ($\mu\text{g mL}^{-1}$)
Au NBP@AgPd nanoframe	0.14	0.15
Au NBP@Pd nanoparticle	0.83	0.48