

SUPPORTING INFORMATION

Formation of Different Gold Nanocrystal Core–Resin Shell Structures through the Control of the Core Assembly and Shell Polymerization

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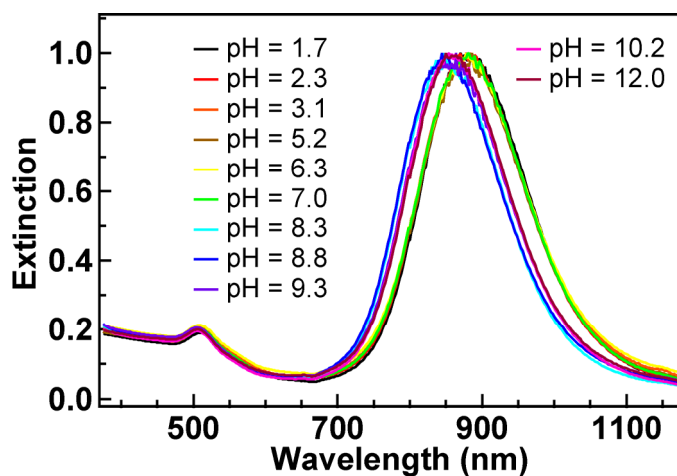


Figure S1. Normalized extinction spectra of the Au nanorod sample recorded at varying pH values in the absence of MP.

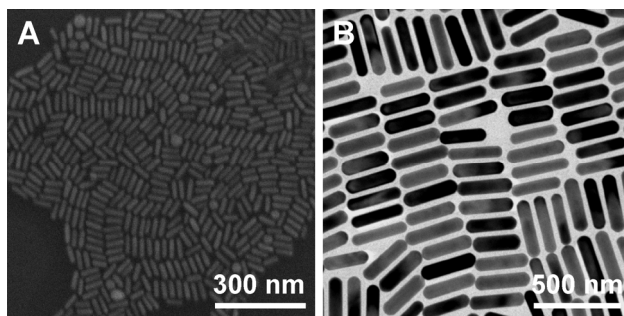


Figure S2. (A) SEM and (B) TEM images of the Au nanorod sample after the hydrothermal treatment at pH = 1.7 in the presence of MP and formaldehyde.

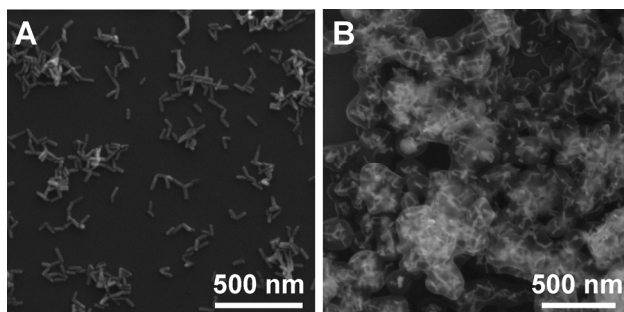


Figure S3. SEM images of the fused Au nanorods that are coated with (A) a thin resin shell and (B) a thick resin shell. The hydrothermal treatment was carried out with the pH adjusted between 8–9.

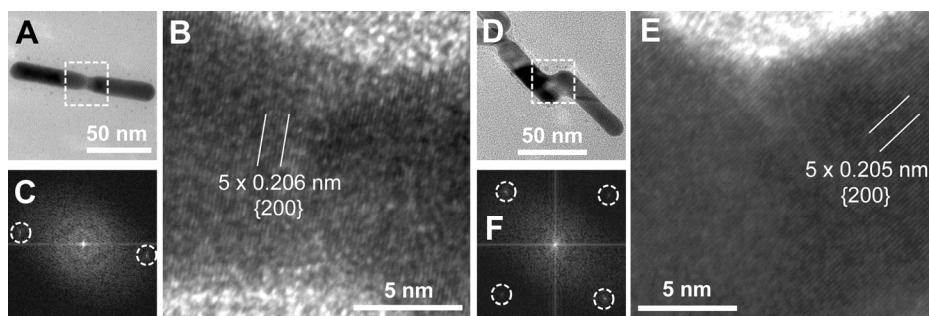


Figure S4. (A) TEM image of two Au nanorods that are linearly fused together at the ends. (B) HRTEM image of the boxed region in (A). The {200} lattice planes are indicated. (C) FFT pattern of the image in (B). The two spots enclosed by the dashed circles correspond to the {200} lattice planes. (D) TEM image of two Au nanorods that are fused together in a shoulder-to-shoulder manner and

parallel to each other. (E) HRTEM image of the boxed region in (D). The $\{200\}$ lattice planes are indicated. (F) FFT pattern of the image in (E). The four spots enclosed by the dashed circles correspond to the $\{200\}$ lattice planes.

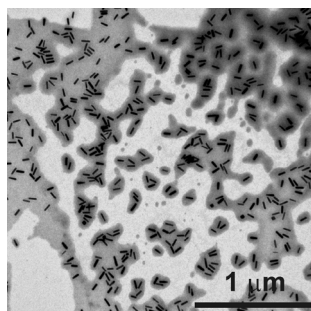


Figure S5. TEM image of the product obtained from the hydrothermal treatment with MP replaced by phenol. The pH was adjusted between 8–9 and the reactant weight ratio was controlled at nanorod : phenol : formaldehyde = 1 : 4.86 : 6.96.

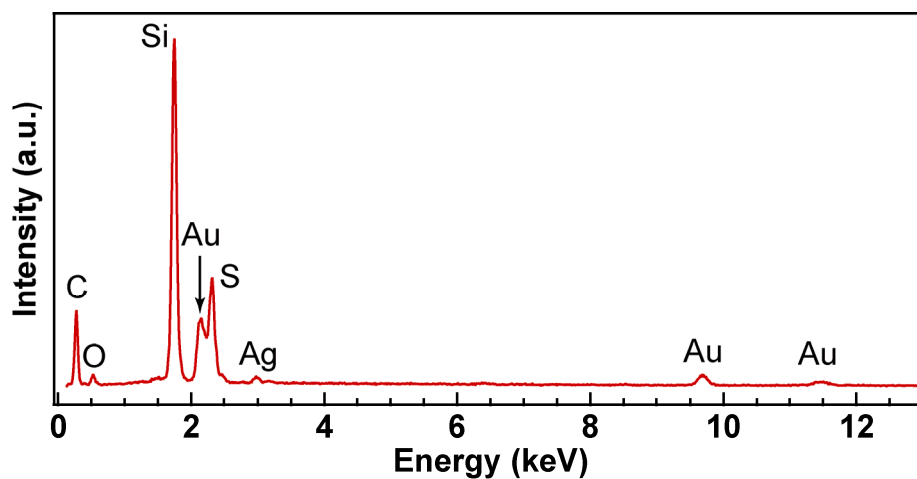


Figure S6. Energy-dispersive X-ray spectrum of the Au nanorod core-thick resin shell structures prepared at pH = 10.

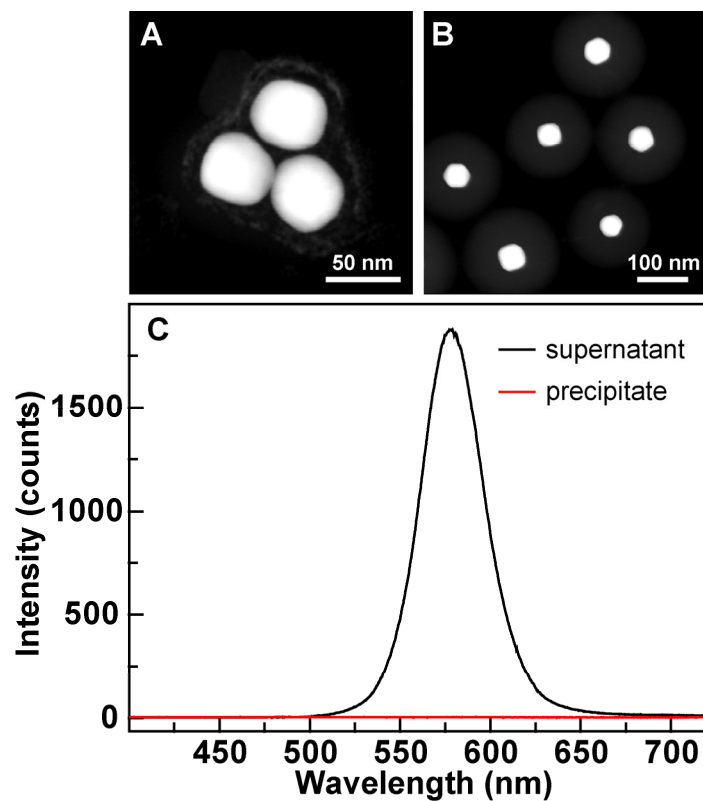


Figure S7. (A) STEM image of the Au nanopolyhedron–resin–CdTe nanocrystal hybrid nanostructures. (B) STEM image of the Au nanopolyhedron core–resin shell nanostructures after the control experiment of adsorbing pre-prepared CdTe nanocrystals. (C) Fluorescence emission spectra of the supernatant containing the pre-prepared CdTe nanocrystals and the precipitate containing the Au nanopolyhedron core–resin shell nanostructures.