

Supporting information

Size-Tunable Synthesis of High-Quality Gold Nanorods under Basic Conditions by Using H₂O₂ as the Reducing Agent

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SUPPLEMENTARY FIGURES AND CAPTIONS

Table S1. The standard potentials in GNR formation

Half reaction	Standard potential (V)
Au ³⁺ /Au ⁺	
$\text{AuBr}_4^- + 2\text{e}^- \rightarrow \text{AuBr}_2^- + 2\text{Br}^-$	+0.805
Au ⁺ /Au ⁰	
$\text{AuBr}_2^- + \text{e}^- \rightarrow \text{Au}^0 + 2\text{Br}^-$	+0.962
O ₂ /H ₂ O ₂	
$\text{O}_2 + 2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2\text{O}_2$	+0.682
Ascorbic acid	
$\text{C}_6\text{H}_6\text{O}_6 + 2\text{H}^+ + 2\text{e}^- \rightarrow \text{C}_6\text{H}_8\text{O}_6$	+0.13

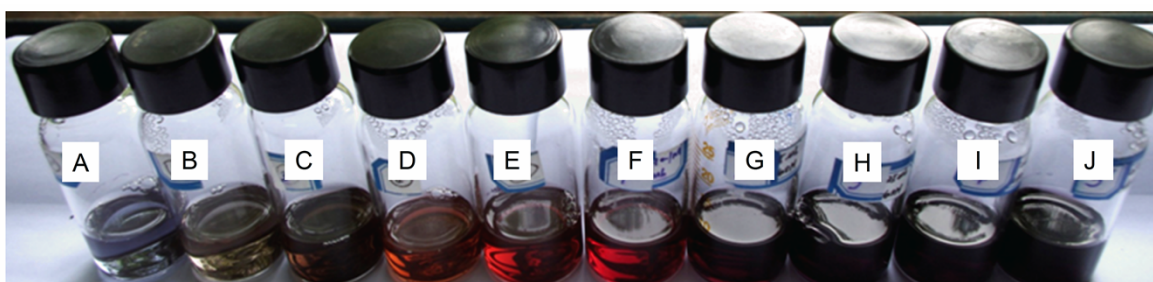


Figure S1. Photos of GNR solutions with increasing amount of NaOH addition. From A to J:

17.5 μ l, 22.5 μ l, 27.5 μ l, 32.5 μ l, 37.5 μ l, 50 μ l, 100 μ l, 150 μ l, 200 μ l, 350 μ l.

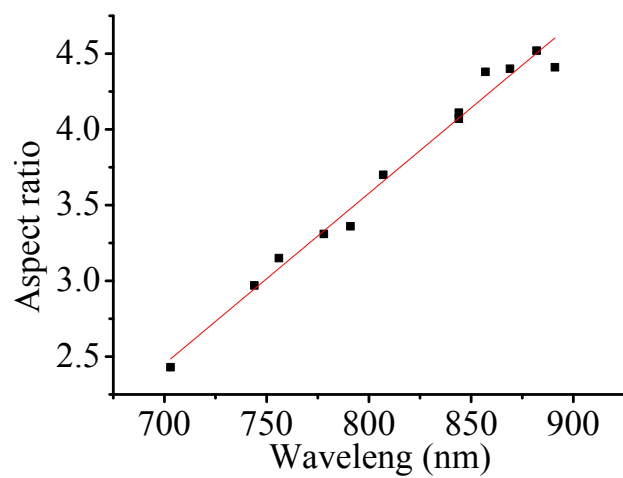


Figure S2. The aspect ratio of the GNRs versus longitudinal surface plasmon peak.

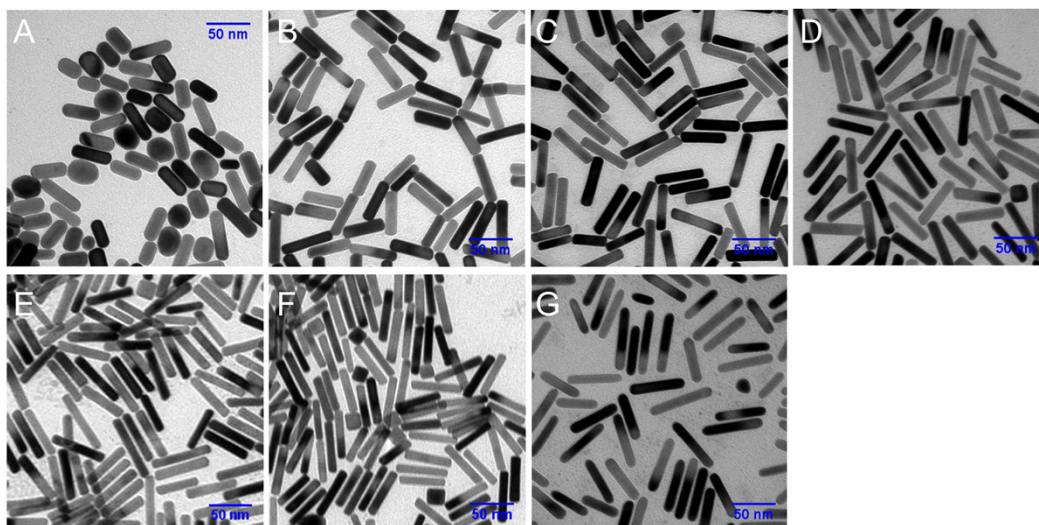


Figure S3. TEM images of the GNRs obtained with different Ag^+ concentrations. (A) $2 \times 10^{-5} \text{M}$, (B) $4 \times 10^{-5} \text{M}$ (C) $6 \times 10^{-5} \text{M}$, (D) $8 \times 10^{-5} \text{M}$, (E) $1 \times 10^{-4} \text{M}$, (F) $1.2 \times 10^{-4} \text{M}$, (G) $1.4 \times 10^{-4} \text{M}$.