

Supporting Information

Capping Modes in PVP-Directed Silver Nanocrystal Growth: Multi-Twinned

Nanorods versus Single-Crystalline Nano-Hexapods

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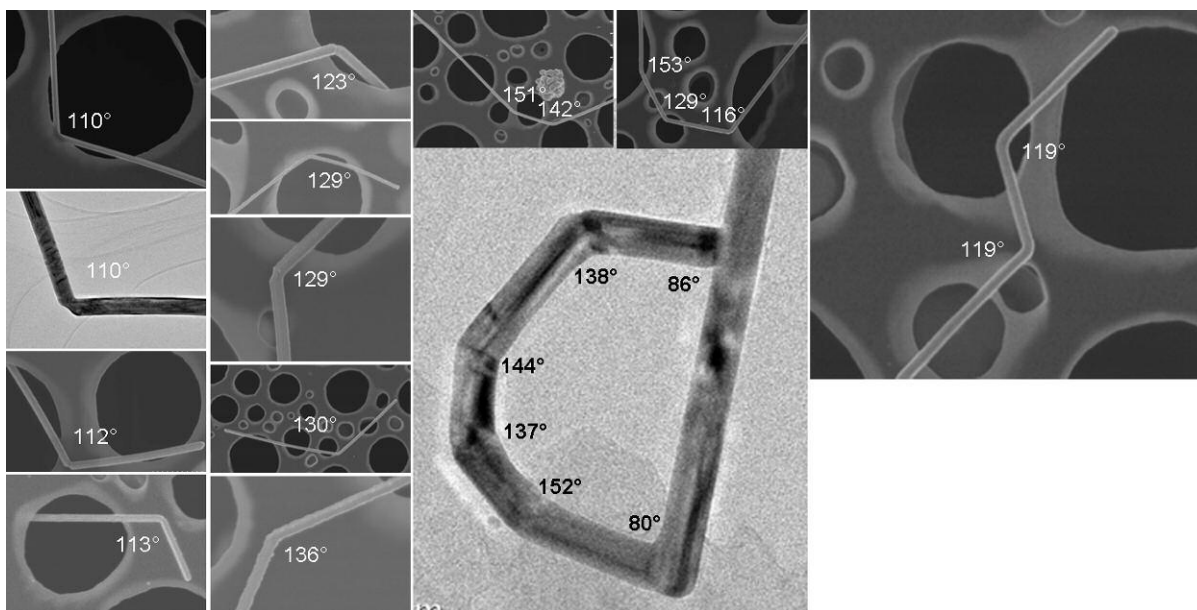


Figure S1. Zigzag FCC-Ag nanorods with various turning angles.

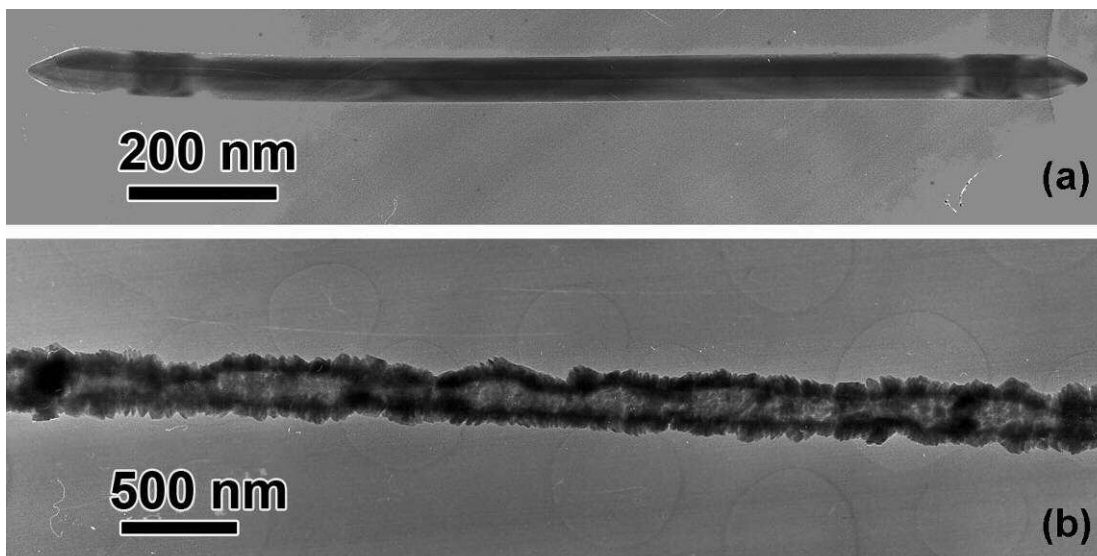


Figure S2. Sulfidation test showing the presence of PVP layers on the surfaces of the FCC-Ag nanorod.

(a) A newly prepared FCC-Ag nanorod with smooth surfaces and tapering ends. (b) After exposure in the open air for 3 weeks, an Ag₂S nanotube is formed due to Ag atoms transfer to the reaction interface, indicating assembly of PVP layers on the nanorod's surface and the outer capping mode. Note that these nanorod and nanotube are typical ones and do not correspond to each other.

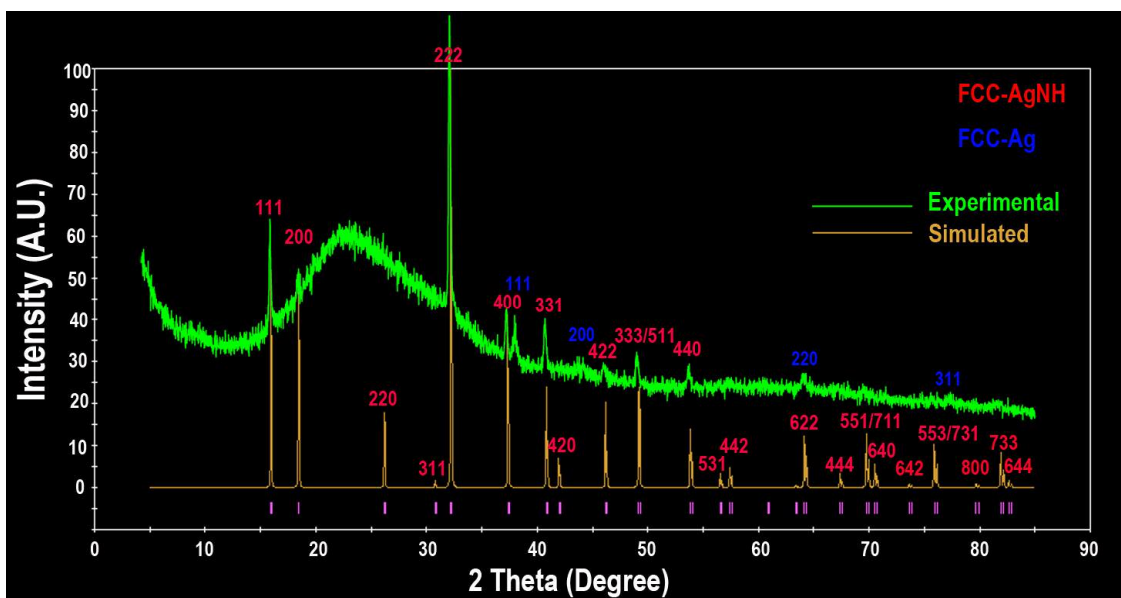


Figure S3. Experimental (green line) and simulated (yellow line) XRD spectra of the AgNHs. The diffraction peaks indicated by the red indices are from the FCC-AgNHs ($a = 9.6193 \text{ \AA}$). The peaks indicated by the blue indices are from the FCC-Ag ($a = 4.0862 \text{ \AA}$) nanocrystals decayed from the metastable AgNHs. Detailed structure analyses are presented in Ref. [23]. The XRD results prove the AgNH's crystal structure in consistence with the electron diffraction results.

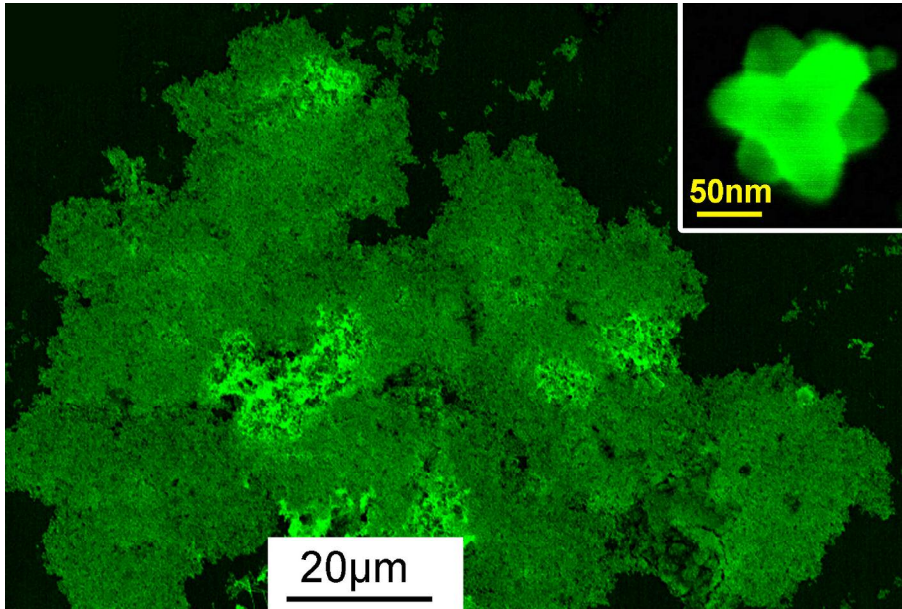


Figure S4. Low-magnification SEM image showing high yield of the AgNHs produced by the polyol process using the PVP-L molecules as capping agents. The inset shows the high-magnification image of an AgNH.