Electronic Supplementary Material (ESI) for CrystEngComm

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Top-Down Chemical Etching to Complex Ag Microstructures

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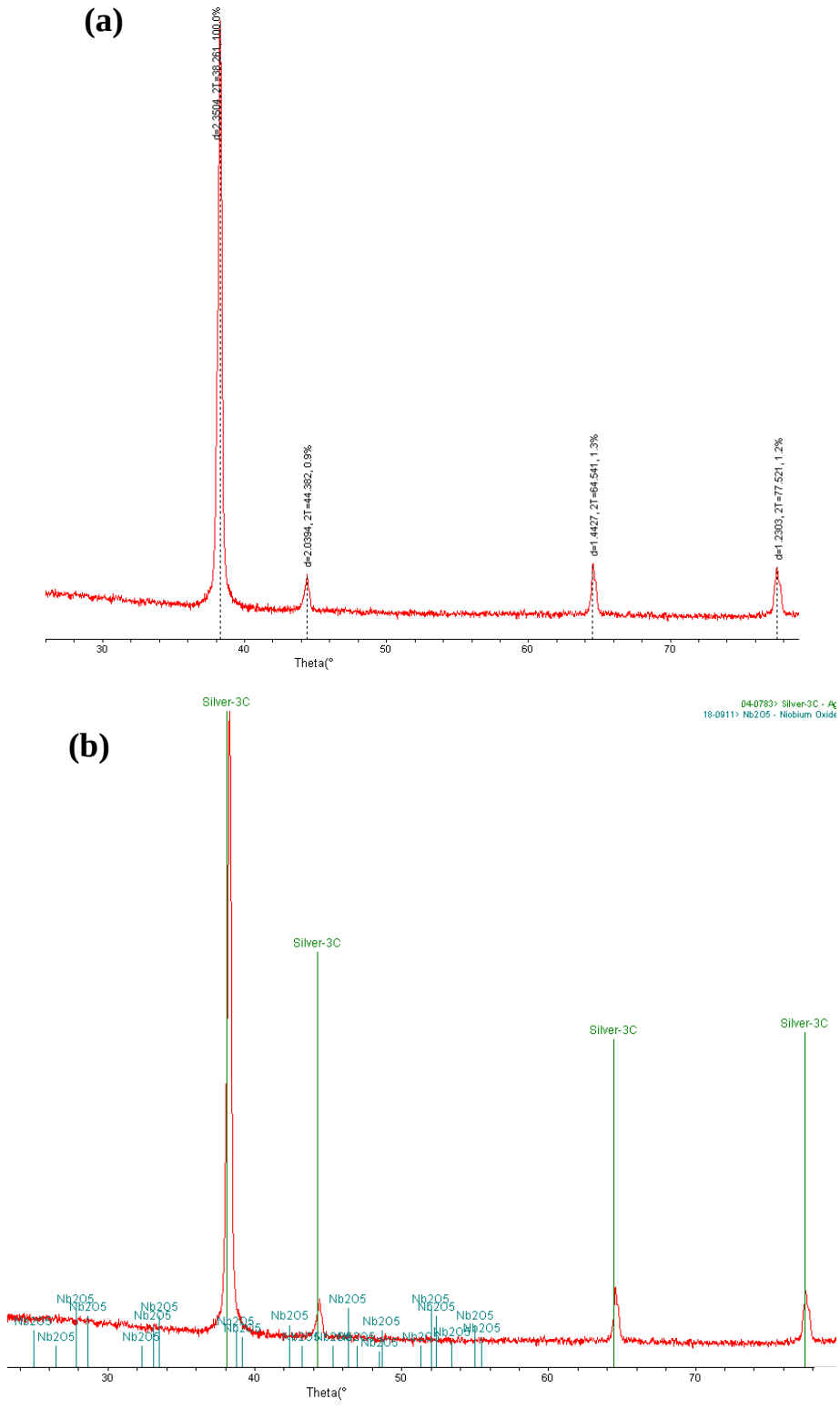

Fig. S1. Two additional analysis of XRD result shown in Fig. 1D. (a) *d* values of different diffraction peaks. (b) XRD pattern showing no Nb_2O_5 impurity in Ag products.

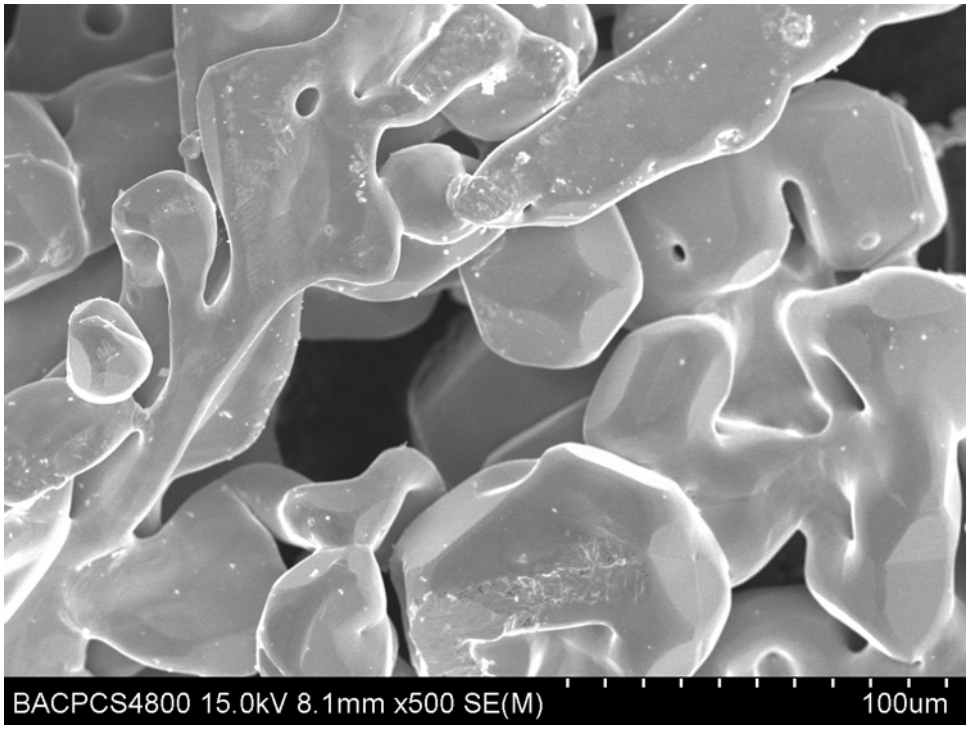

Fig. S2. The as-obtained Ag structures grown in $AgNO_3$ aqueous solution with no surface pretreatment in our designed acidic-oxidative solution.

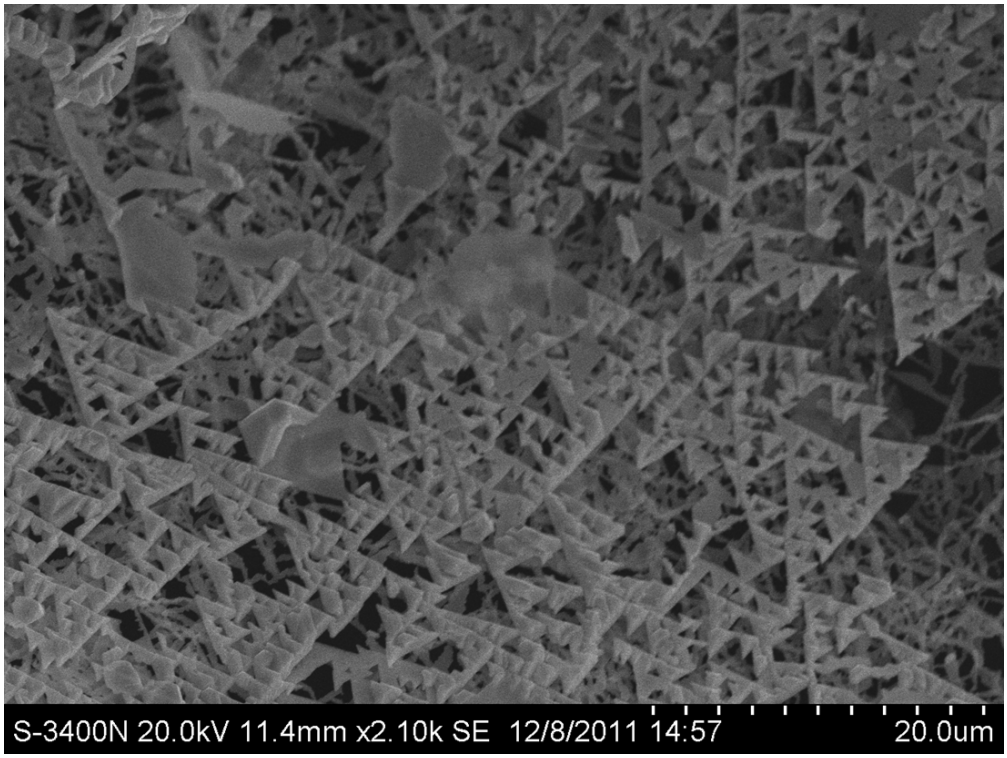

Fig. S3. SEM image of Ag trigonal microframe intermediate via etching reactions for 6–7 h, which evolves into sawtooth-like nanowires finally.

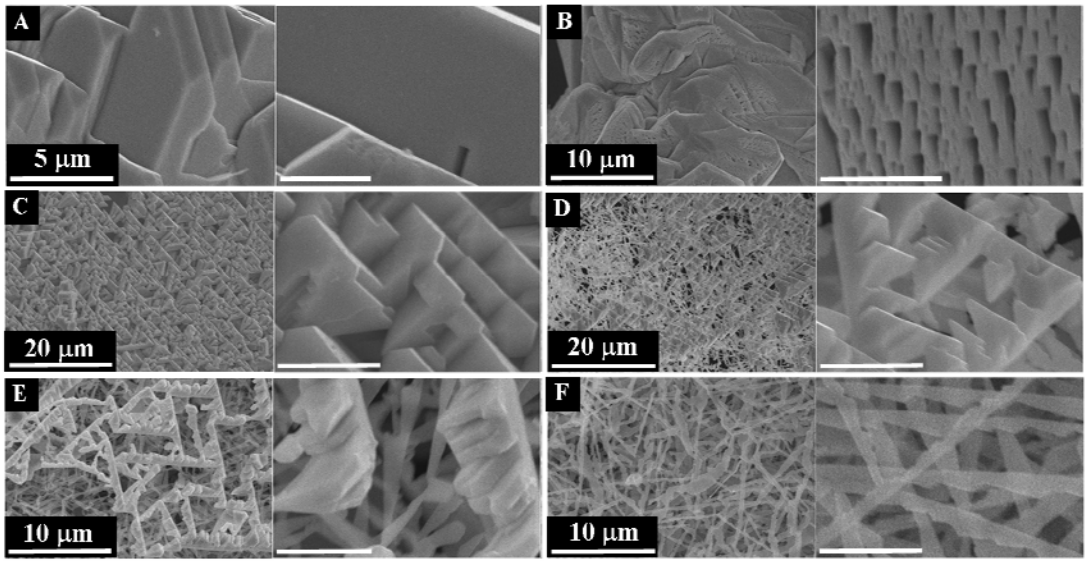

Fig. S4. (A–F) Morphology transformation process of Ag structures from porous Ag microcrystals to Ag nanowires with reaction time. (A) 2–3 h, (B) 3–4 h, (C) 4–5 h, (D) 5–6 h, (E) 6–7 h, (F) 7–8 h. The scale bar of the inset in A–F is 2 μm.

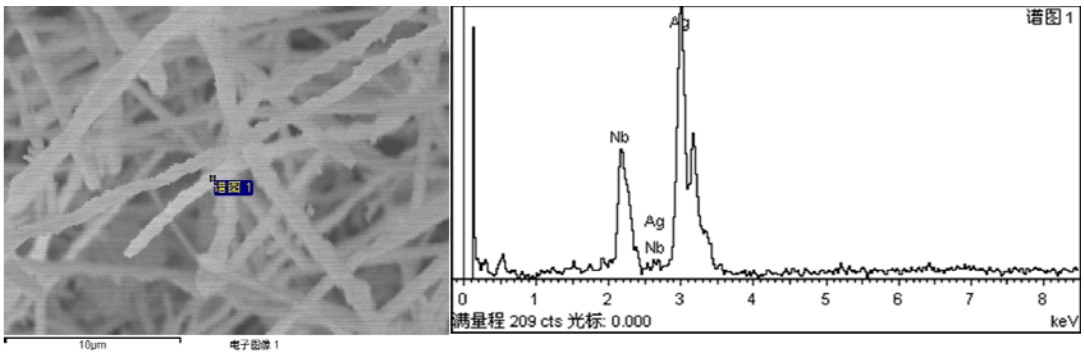

Fig. S5. EDX analysis of hierarchical Ag nannowires showing that only Ag peaks are observed, together with the Nb peaks generated by the unreacted Nb foil. (Nb foil substrate was not removed during the composition characterization of the Ag nanowires).

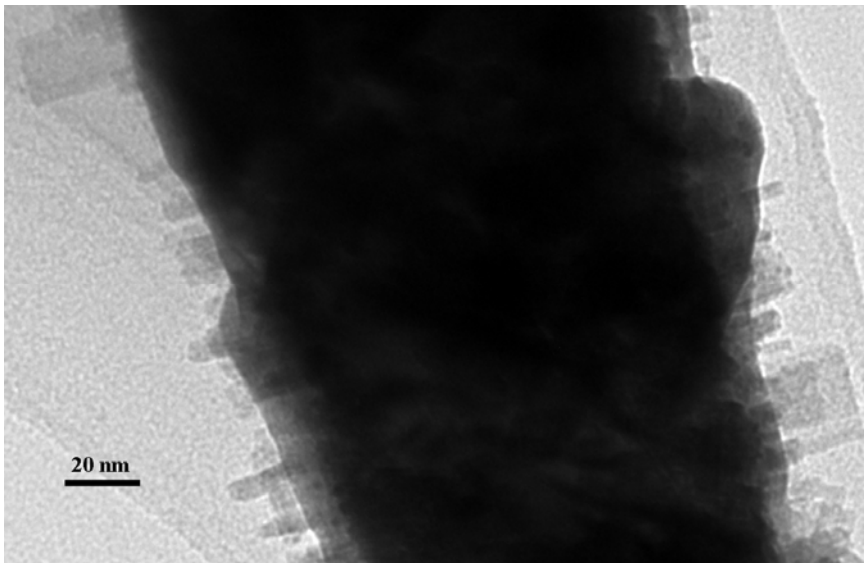

Fig. S6. The as-obtained hierarchical Ag nanowires, showing no Ag nanoparticles on the top surface of Ag nanorod branches.

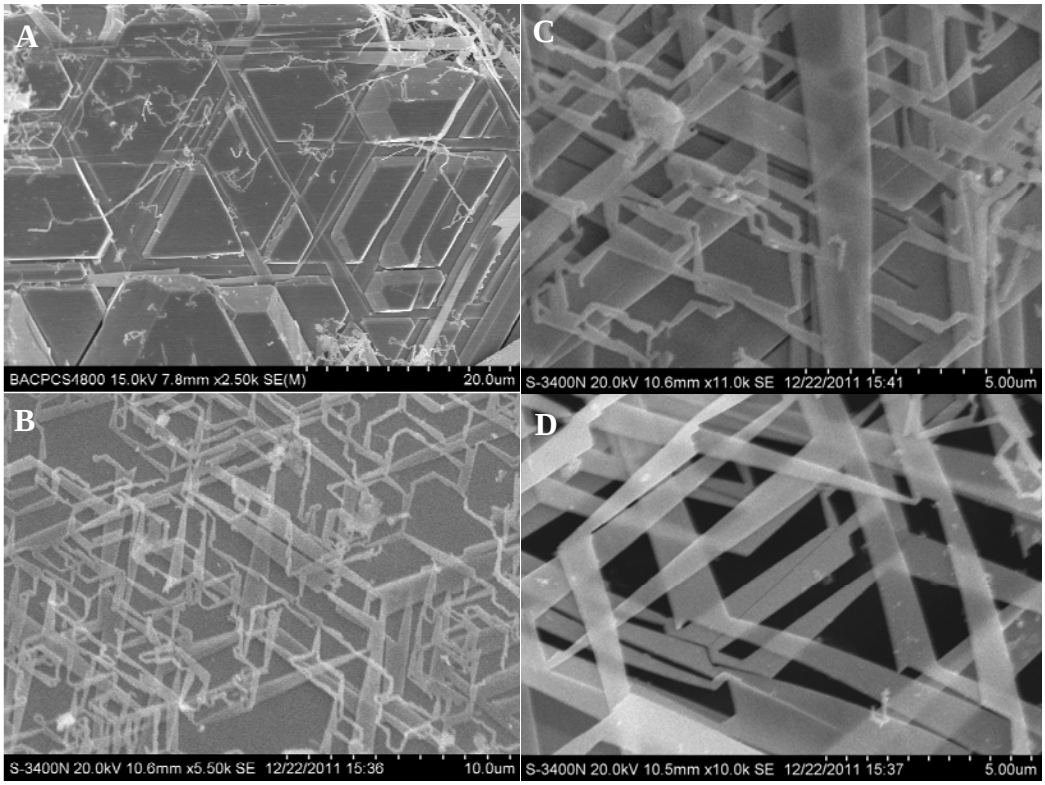

Fig. S7. (A–C) Intermediates of Ag nanobelt networks, showing a superficial etching layer in a early etching stage. (D) Complex 2D Ag nanobelt networks.