

Supporting Information

Adjustable metal particle grid formed through upward directed solid-state dewetting using silicon nanowires

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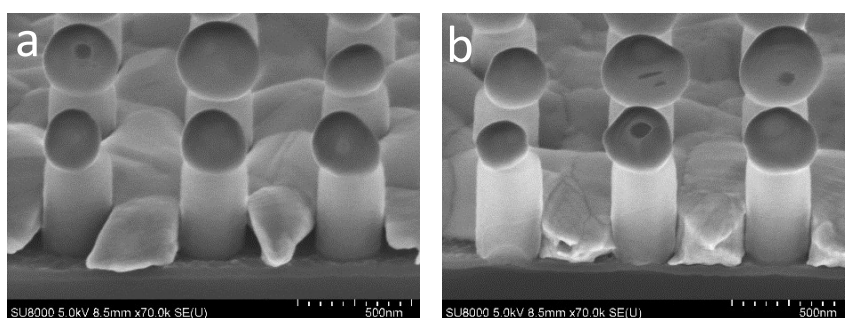


Figure S1. Sample orientation experiment. 200 nm_{planar} Ag deposited on the same size SiNWs annealed at the same temperature while the sample was oriented **(a)** up-side-up **(b)** up-side-down. No significant difference in particle formation was discernable.

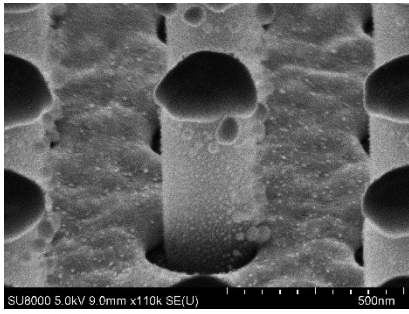


Figure S2. Thermal Evaporation Experiment. 63nm_{planar} Au metal deposited on SiNWs and annealed at 800 °C for 2.5 minutes. The perpendicular deposition angle forms small particles on the SiNW sides which remain mostly stationary.

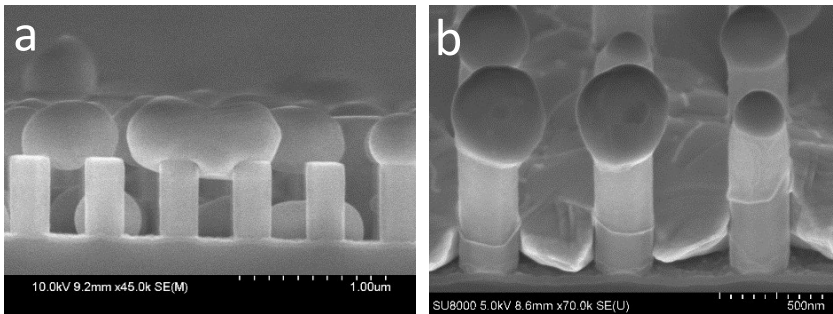


Figure S3. Examples of irregularities caused by overly high temperature annealing. (a) 200 nm_{planar} Ag annealed at 900 °C shows a large number of the metal particles converging and stretching over multiple SiNWs. (b) 250 nm_{planar} Ag annealed at 900 °C showing visible deformation of the SiO₂ near the NW base caused by the metal at high temperature.

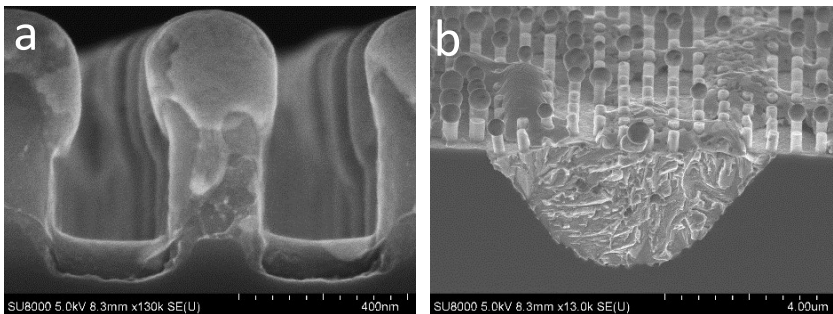


Figure S4. Examples of damaged caused by reactive substrate material. (a) Au on Si formed alloy films on the NWs and gold particle surface (b) Cu, Ag alloy on thin SiO₂ was able to quickly penetrate the oxide layer and etch into the silicon substrate.