

Supporting information to

Anisotropic electroless deposition on DNA origami templates to form small-diameter conductive nanowires

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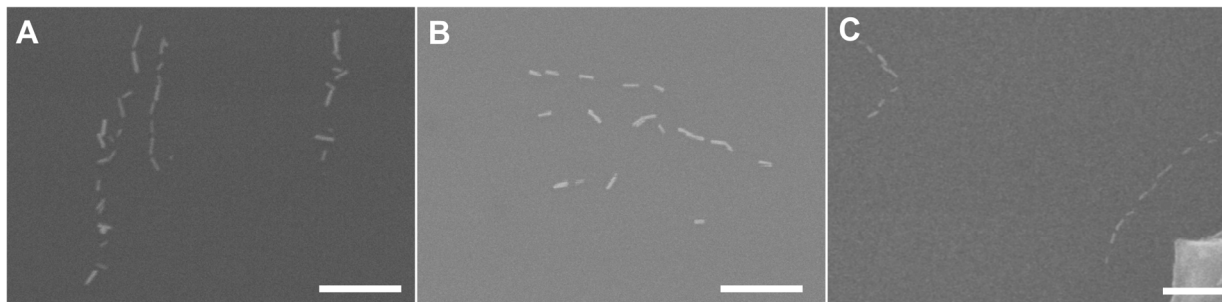


Figure S1: SEM images of DNA origami seeded with (A) Mg^{2+} , (B) Cu^{2+} and (C) Ca^{2+} solutions (concentration = 125 mM). Scale bar is 200 nm.

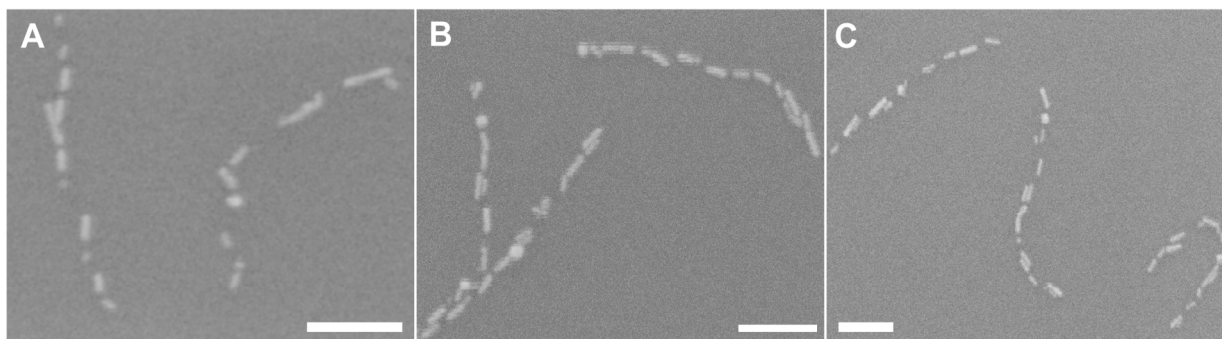


Figure S2: SEM images of DNA origami seeded for (A) 10 min, (B) 1 hr and (C) 3hr. Scale bar is 100 nm.

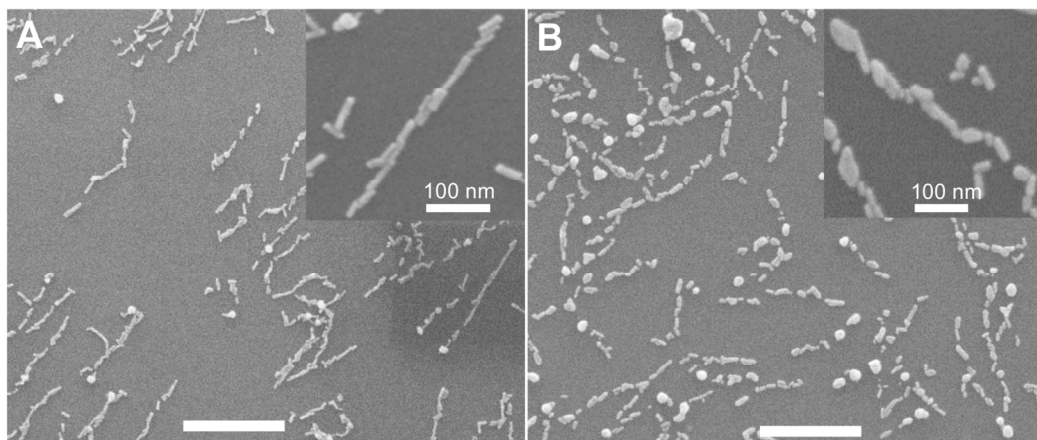


Figure S3: SEM images of DNA origami plated with double the reagent concentration ($[\text{Au}] = 2 \text{ mM}$, $[\text{Ag}] = 8 \text{ mM}$, $[\text{CTAB}] = 200 \text{ mM}$, $[\text{Ascorbic acid}] = 157.6 \text{ mM}$). (A) 20 min plating and (B) 40 min plating. Scale bar is 500 nm. Inset shows a single linear DNA wire.

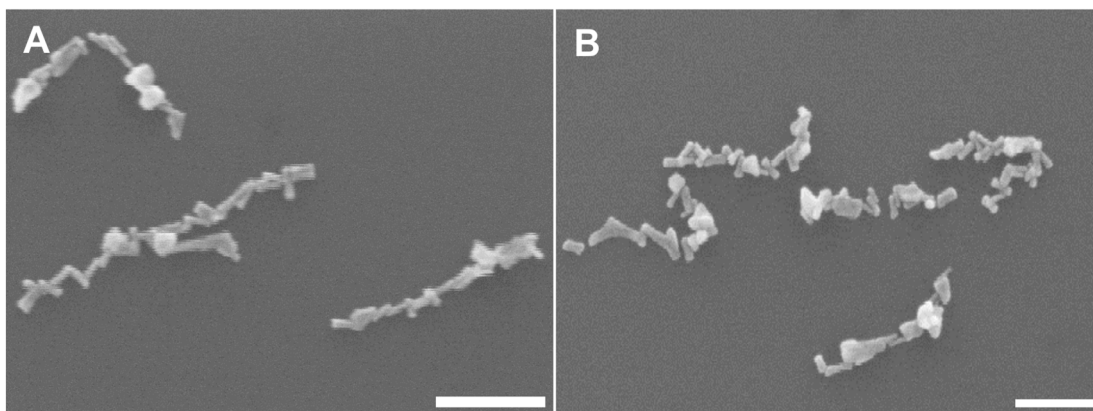


Figure S4: SEM images of gold nanorod seeded linear DNA template plated with a solution containing 4.0 times more moles of ascorbic acid than gold ions. Samples plated for (A) 20 min and (B) 30 min. Scale bar is 200 nm.

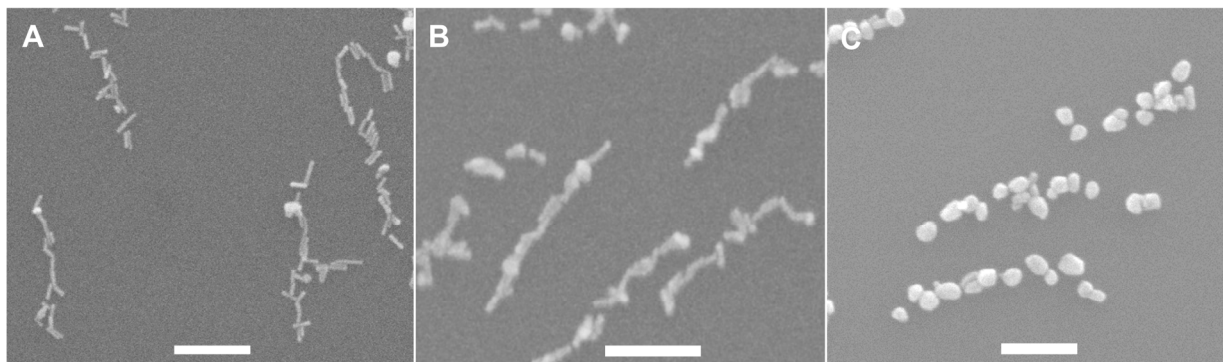


Figure S5: SEM images of linear DNA origami seeded with gold nanorods and plated with the addition of iodine in the plating solution. Iodine concentrations of (A) 0 μM (B) 0.5 μM and (C) 5 μM . All other conditions for electroless plating were kept the same. Scale bar is 200 nm.

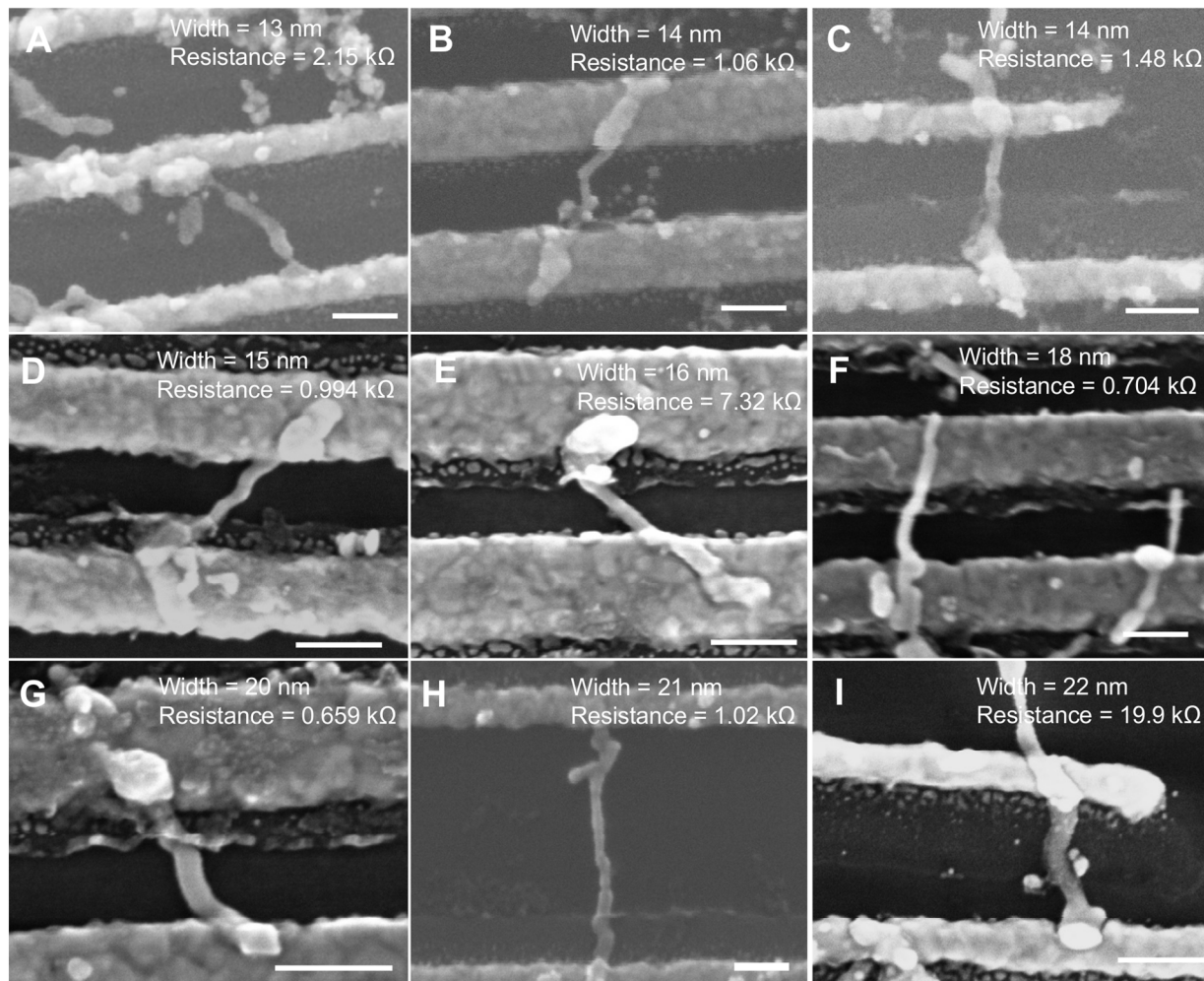


Figure S6: SEM images of gold metallized linear DNA origami nanowires between electrode pairs. Scale bars are 100 nm.

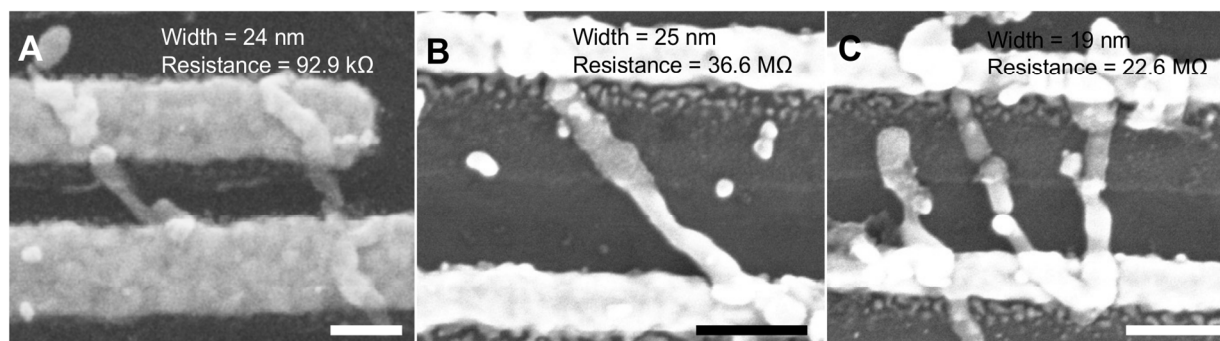


Figure S7: SEM images of gold metallized linear DNA origami nanowires with very high resistances. Scale bars are 100 nm.

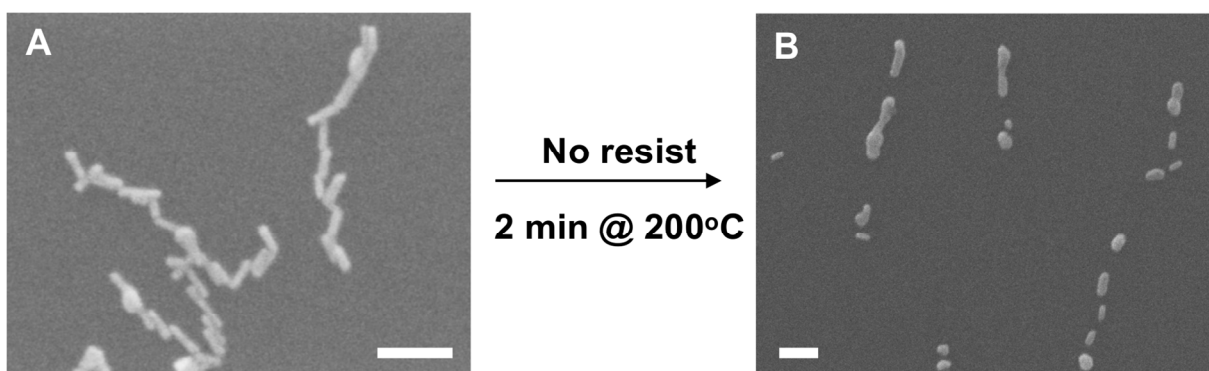


Figure S8: SEM images of gold nanorod nanowires (A) before and (B) after annealing without the resist at 200 °C. The nanowires in (A) were plated according to the optimized plating solutions mentioned in the text. Scale bar is 100 nm.

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