

Supporting Information

Assembly of gold nanowires by sedimentation from suspension: Experiments and simulation

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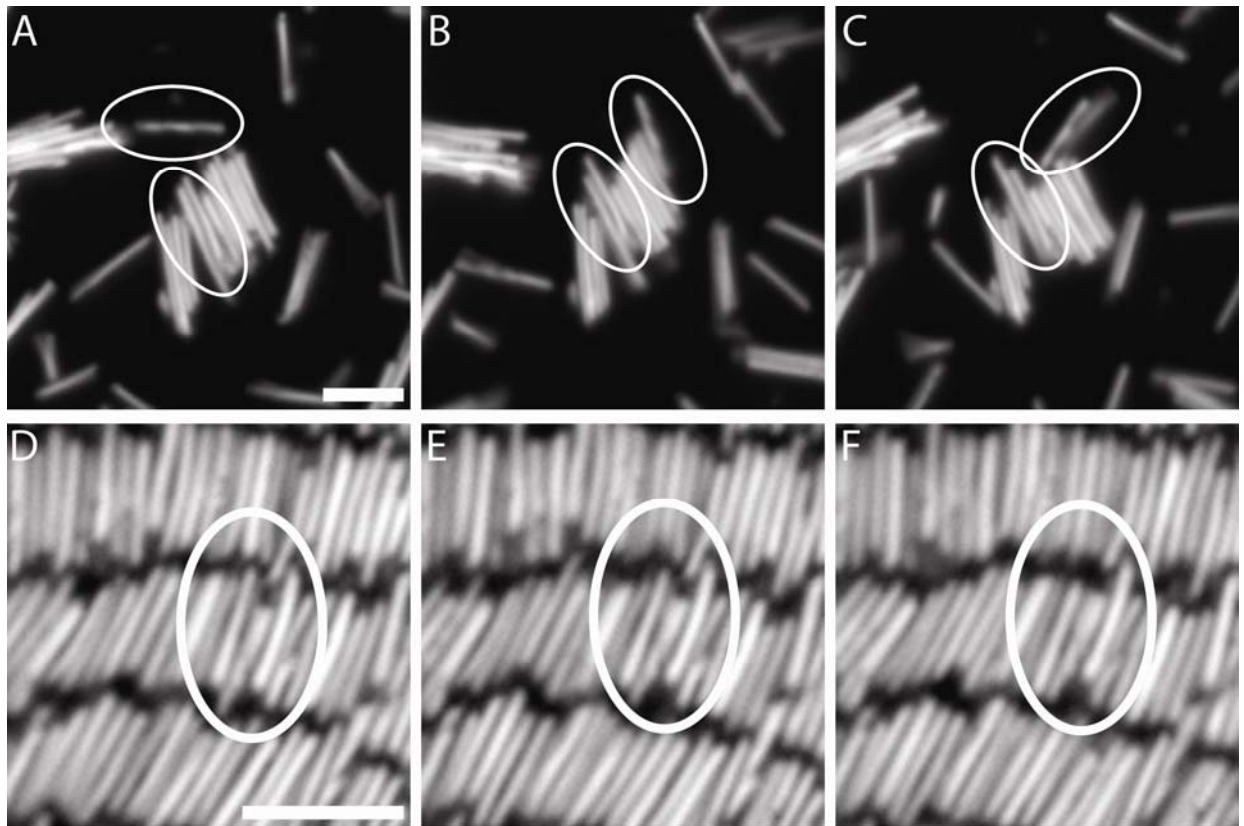
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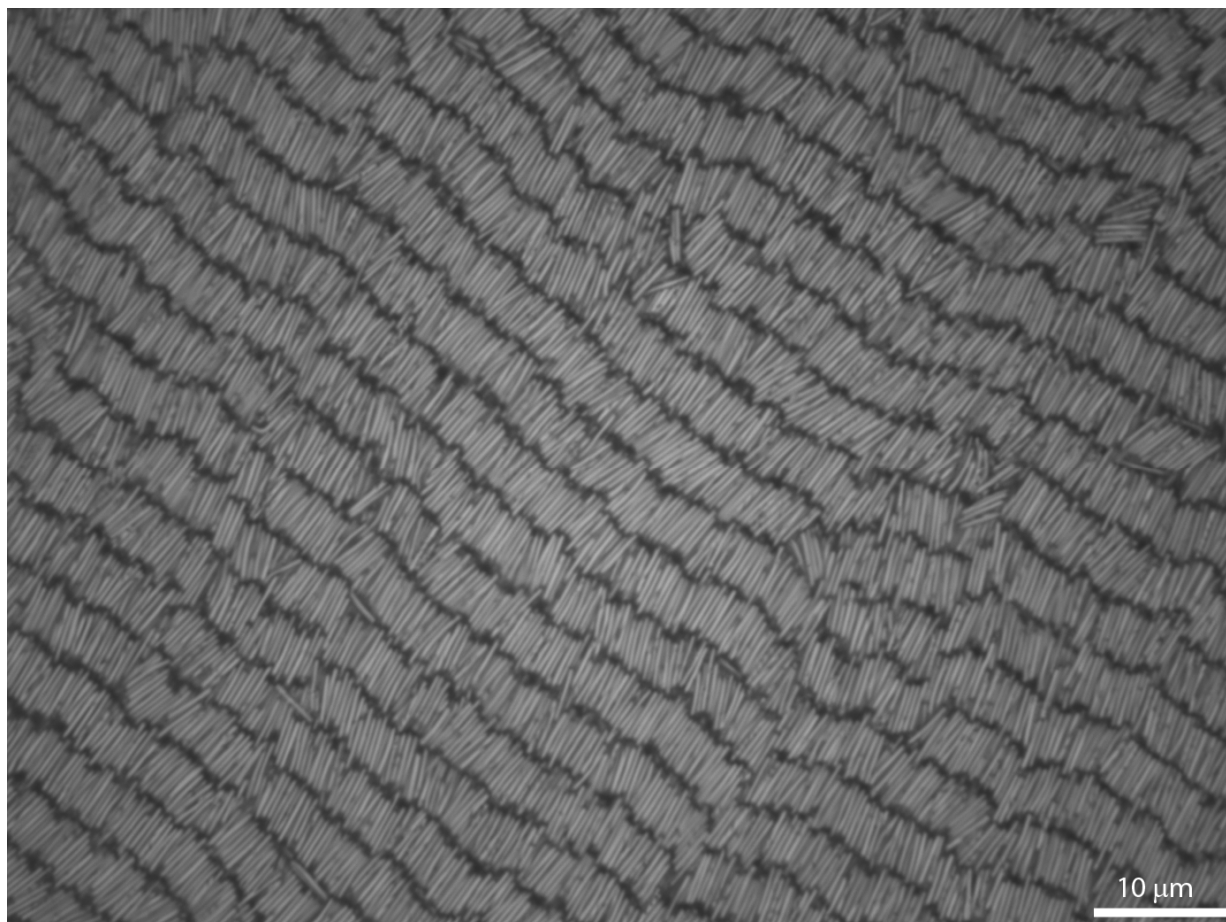
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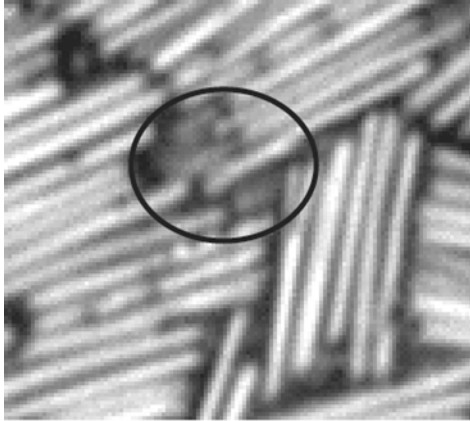
^{||} Department of Physics.



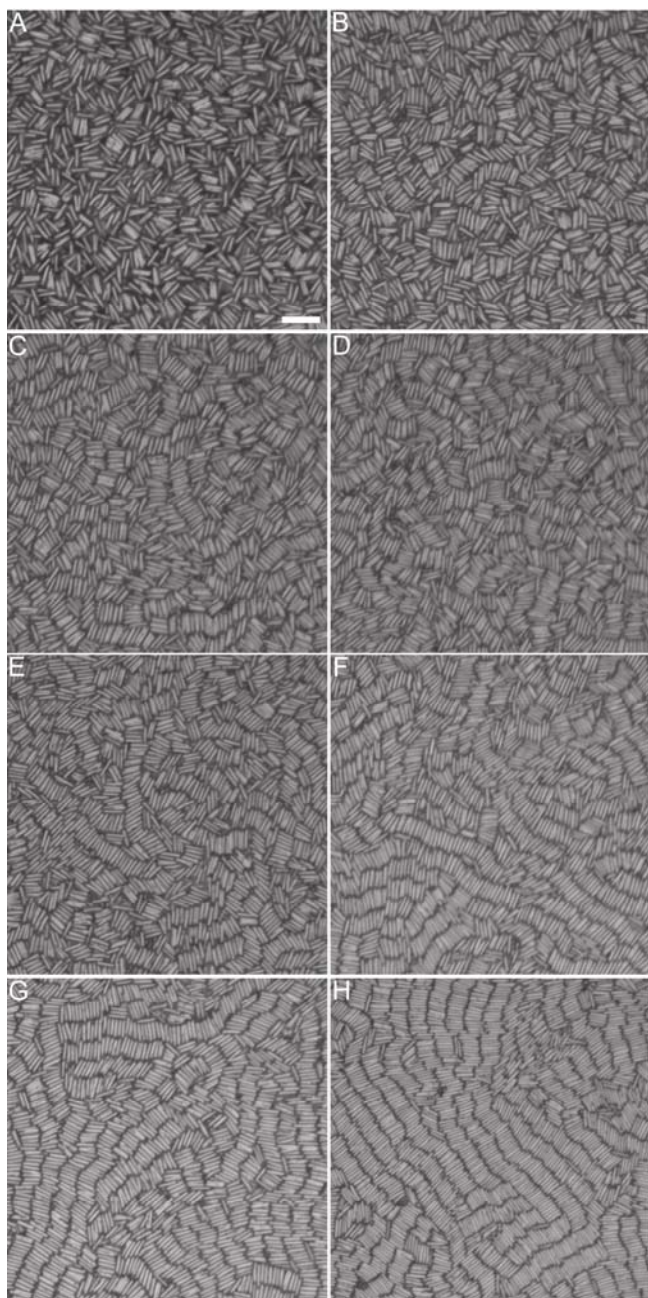
Supporting Figure 1. Nanowires are mobile in the assemblies. Brightfield reflectance microscope image sequences for assemblies of MESA-coated Au nanowires at different concentrations. Images (a) to (c) are from 26 hours after wire addition of a dilute (10^7 nanowires/mL) solution, while (d) to (f) are from the normal batch concentration (10^9 nanowires/mL) assembled overnight. Circles highlight sets of individual wires to better follow their motion. Approximately 4.5 seconds elapse between each image in (a)-(c), while approximately 1 second elapses between images in (d)-(f). Scale bar in (a) and (d) is $4\ \mu\text{m}$ and applies to all images in each set.



Supporting Figure 2. Brightfield reflectance microscope image showing assembly of 3.9 ± 0.2 μm long Au nanowires coated with a single-stranded DNA oligonucleotide. Scale bar is 10 μm .



Supporting Figure 3. Brightfield reflectance microscope image showing presence of multilayers in assemblies of MESA-coated 4 μm long Au nanowires. The circle indicates region where nanowires can be seen extending out above the bottom layer of the assembly. Inhomogeneity along the length of some of the nanowires can be seen as darker regions in this image. These features can occur along the sides of the nanowires due to partial branching of the pores in the alumina template.



Supporting Figure 4. Brightfield reflectance optical microscope images of 3 μm (3.03 ± 0.34 μm) gold nanowires settling from suspension and organizing over time. Wires are viewed from below. Images show the same spot in the same and were taken at 1.5 (**a**), 3.0 (**b**), 5.5 (**c**), 9.75 (**d**), 15.5 (**e**), 34.5 (**f**), 147.5 (**g**), and 2796.5 (**h**) minutes after injection of the nanowires into the cell. Scale bar in (**a**) is 4 μm long and applies to all subsequent images.