

Preferential Face Deposition of Gold Nanoparticles on Silicon Nanowires by Galvanic Displacement

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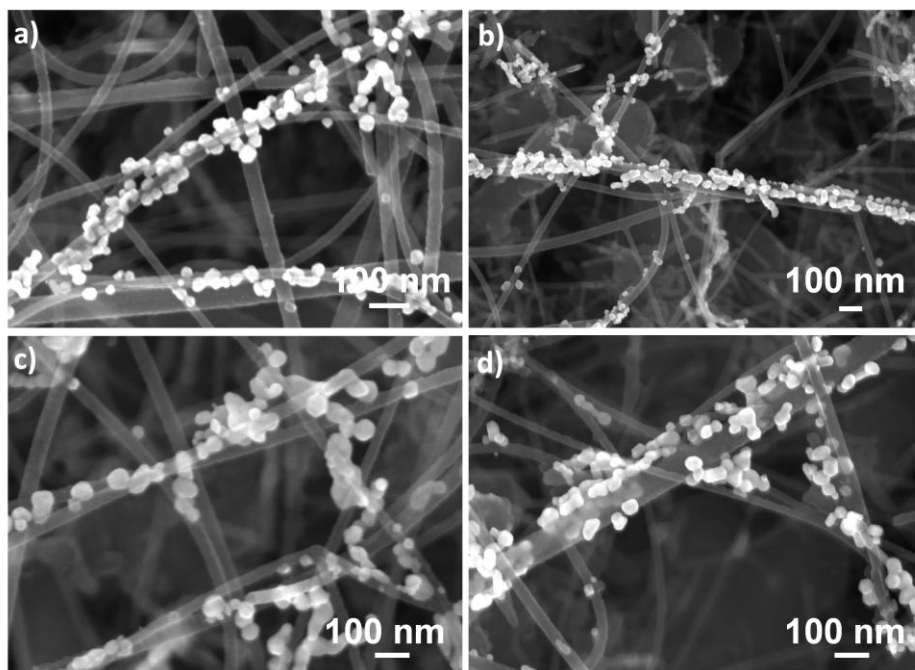


Figure S1. Scanning electron micrographs for Au galvanically displaced on Si NWs with 1 mM KAuCl_4 (aq) for 30 s (a), 60 s (b), 90 s (c), and 120 s (d).

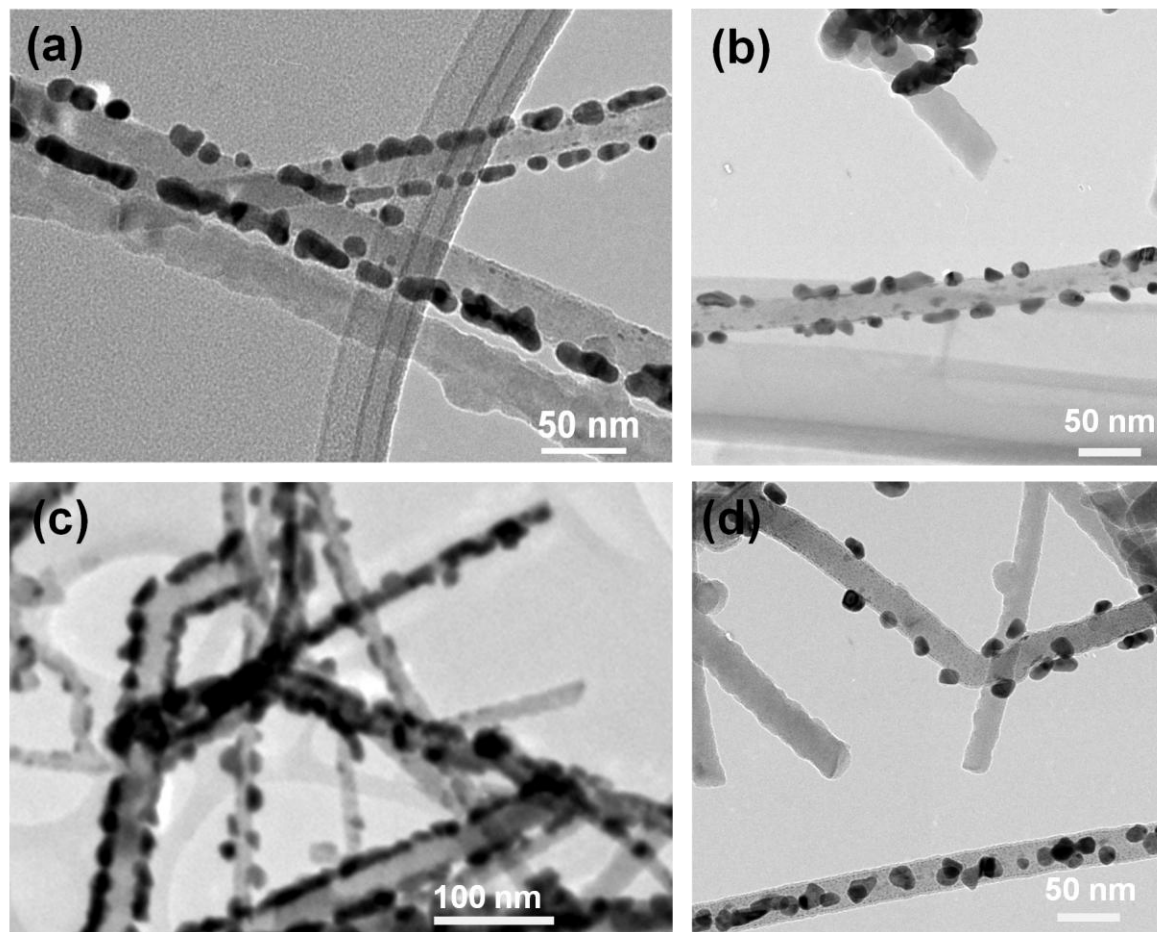


Figure S2. Bright field TEM images for gold nanoparticles grown, by galvanic displacement, on Si NWs after being in contact to a drop containing [1 mM KAuCl_4 (aq) + 1% HF (aq)] for 30 s.

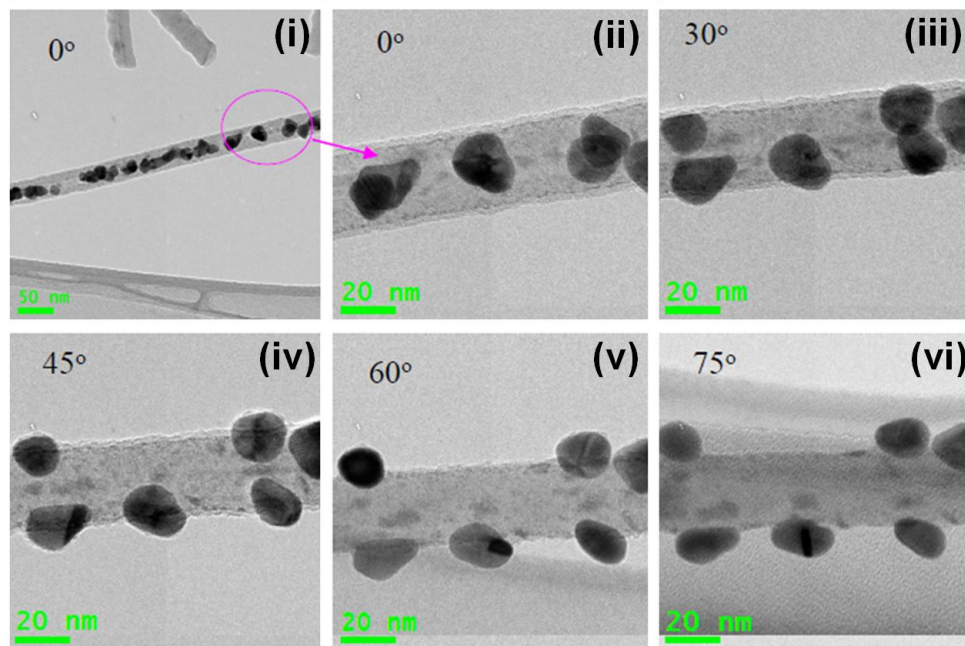


Figure S3. Bright-field TEM micrographs of Au nanoparticles on a Si nanowire at different degrees of sample tilting starting from 0° to 75° at 15° tilting steps.

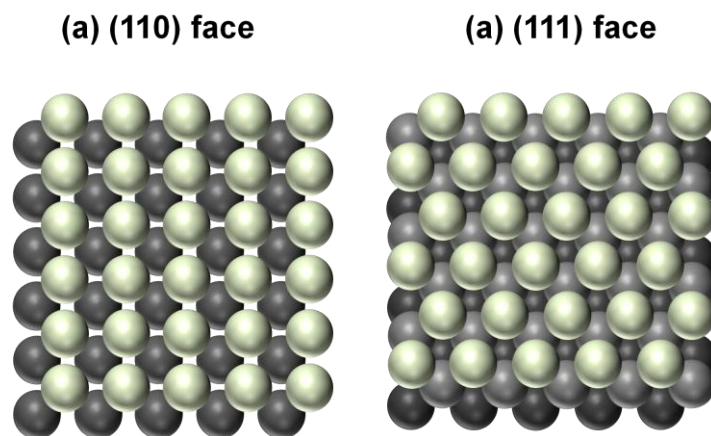


Figure S4. (a), and (b) Atomic models for Si(110) and Si(111) surfaces, respectively.

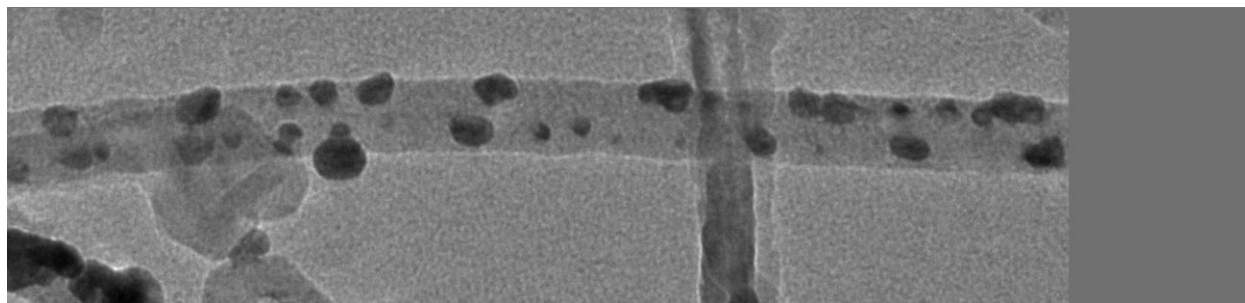


Figure S5. Image from the accompanying video showing observed by reconstruction of data taken from TEM tomography showing the preferential deposition of gold nanoparticles on specific sides of Si NWs

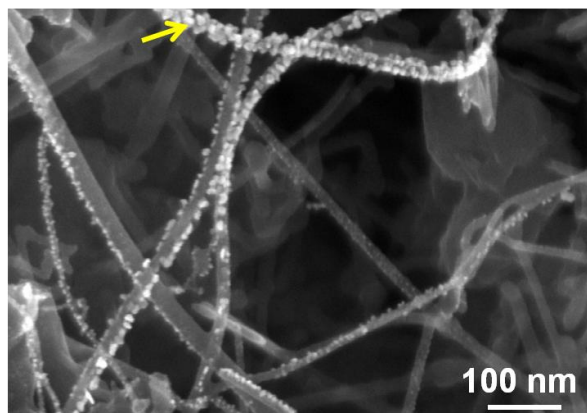


Figure S6. Scanning electron micrograph for gold nanoparticles grown by galvanic displacement on Si NWs after 30 s exposure to a mixture of 1 mM KAuCl_4 (aq) and 1% HF (aq). Yellow arrow refers to a Si nanowire showing no preferential gold deposition.

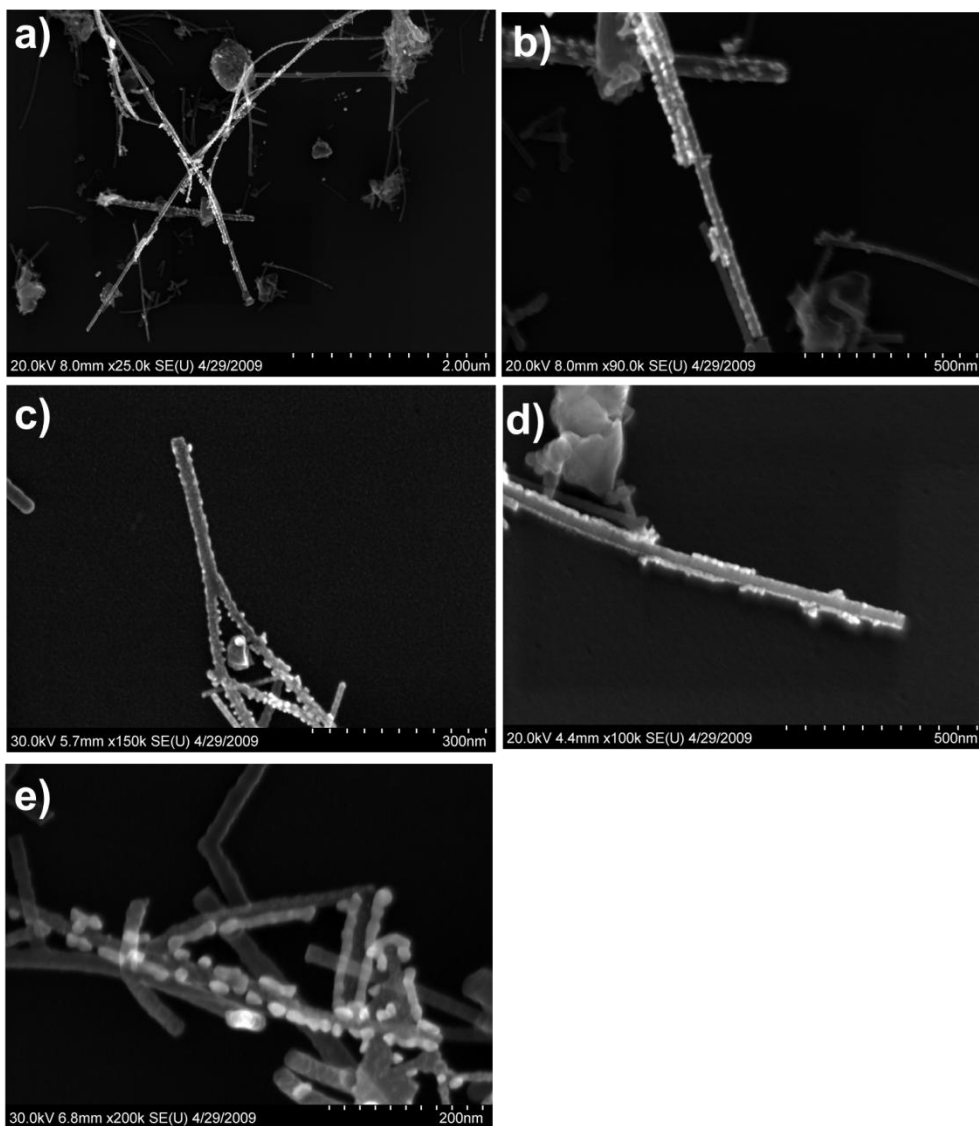


Figure S7. Scanning electron micrograph for gold nanoparticles grown by galvanic displacement on Si NWs after 20 s exposure to a mixture of 1 mM KAuCl₄ (aq) and 1% HF (aq).

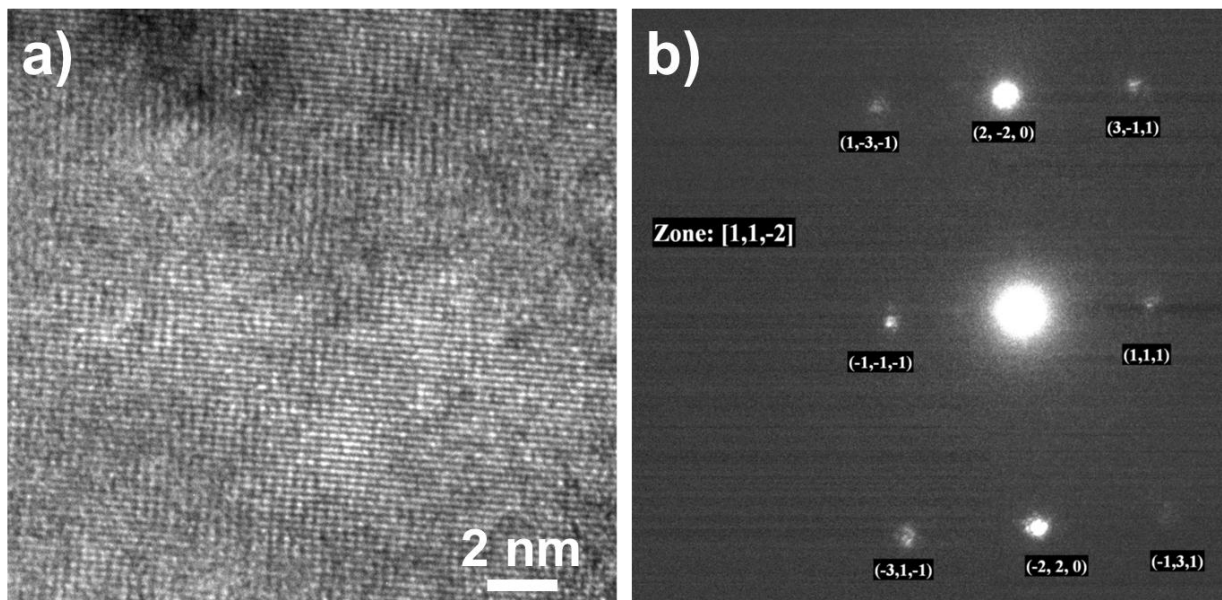


Figure S8. a) Cross-sectional high resolution TEM image for a Si NW taken along the $[11\bar{2}]$ zone axis. b) Selected area electron diffraction (SAED) pattern taken along $[11\bar{2}]$ zone axis.