

Supporting Information for

Single nucleotide polymorphism detection using Au-decorated single-walled carbon nanotube field effect transistors

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Fig. S1. The effect of Au nanoparticles decoration on SWNT-FET. (a) Optical micrographs (top row) and AFM images (bottom row) of Au-decorated SWNT-FET (b) I - V_g characteristics of the device before (red curve) and after (blue curve) the Au decoration.

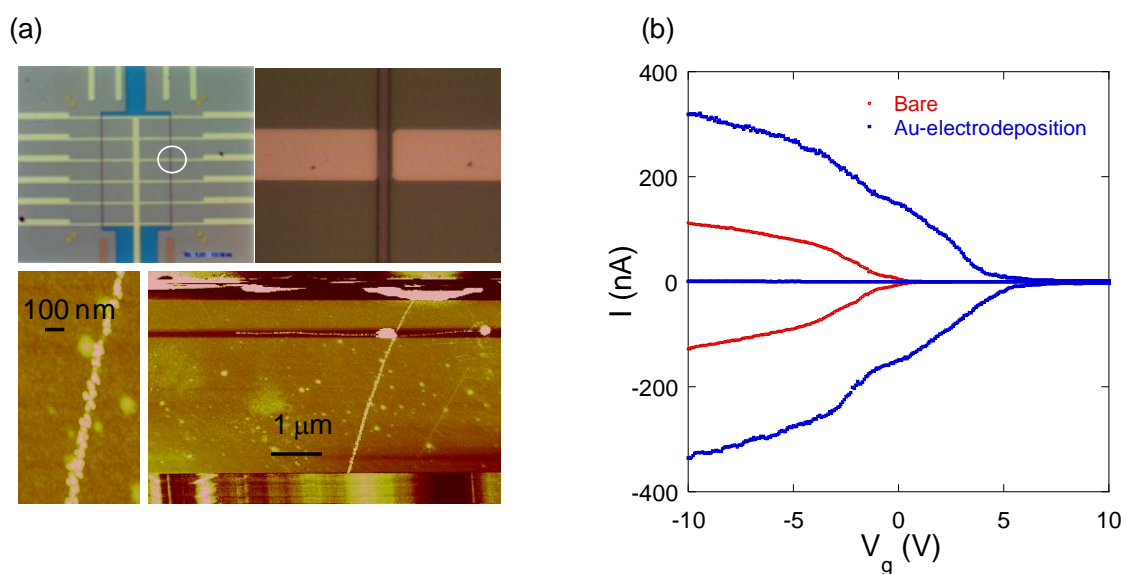


Fig. S2. Confocal microscope images of an ultra-long nanotube decorated with Au nanoparticles after Cy3-labeled probe PNA immobilization. One could get a highly specific immobilization of probe PNA on Au nanoparticles after 6 hrs incubation with PNA and thorough washing. (a) Image taken after 3hrs incubation with PNA. (b) Image taken after 6hrs incubation with PNA. (c) Image taken after extra washing steps.

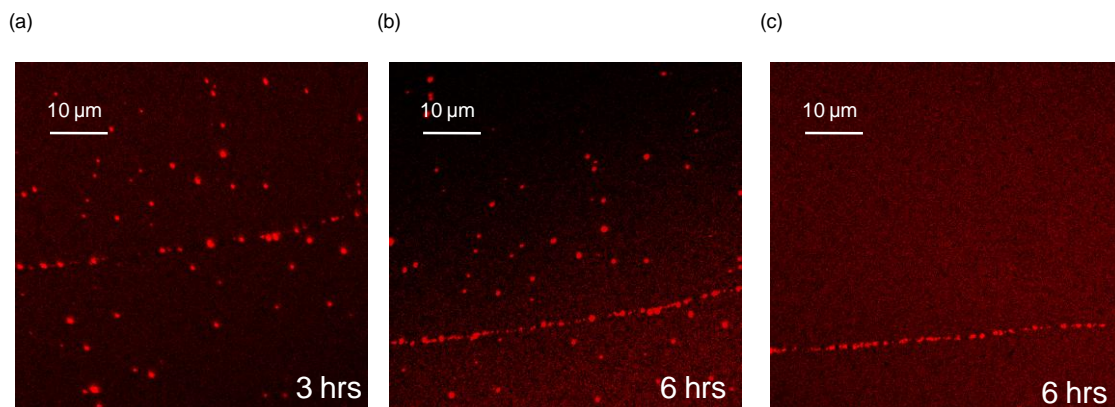


Fig. S3. Confocal microscope image and SEM image of Au-decorated ultra-long nanotubes. Confocal microscope image was taken after the hybridization of target DNA labeled with Cy3. Note for the absence of fluorescent signal from bare nanotubes.

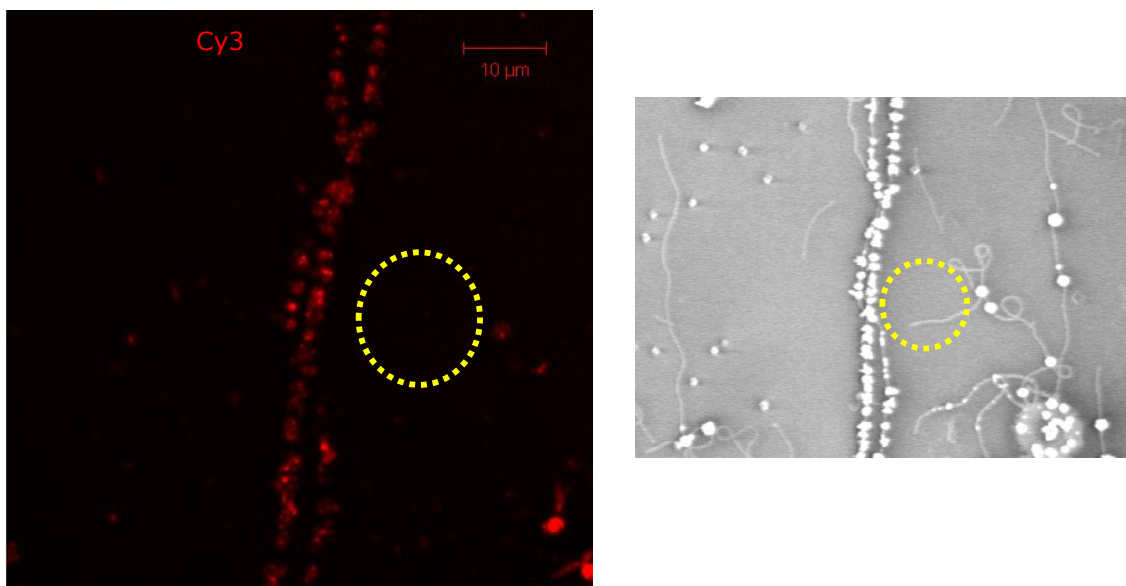
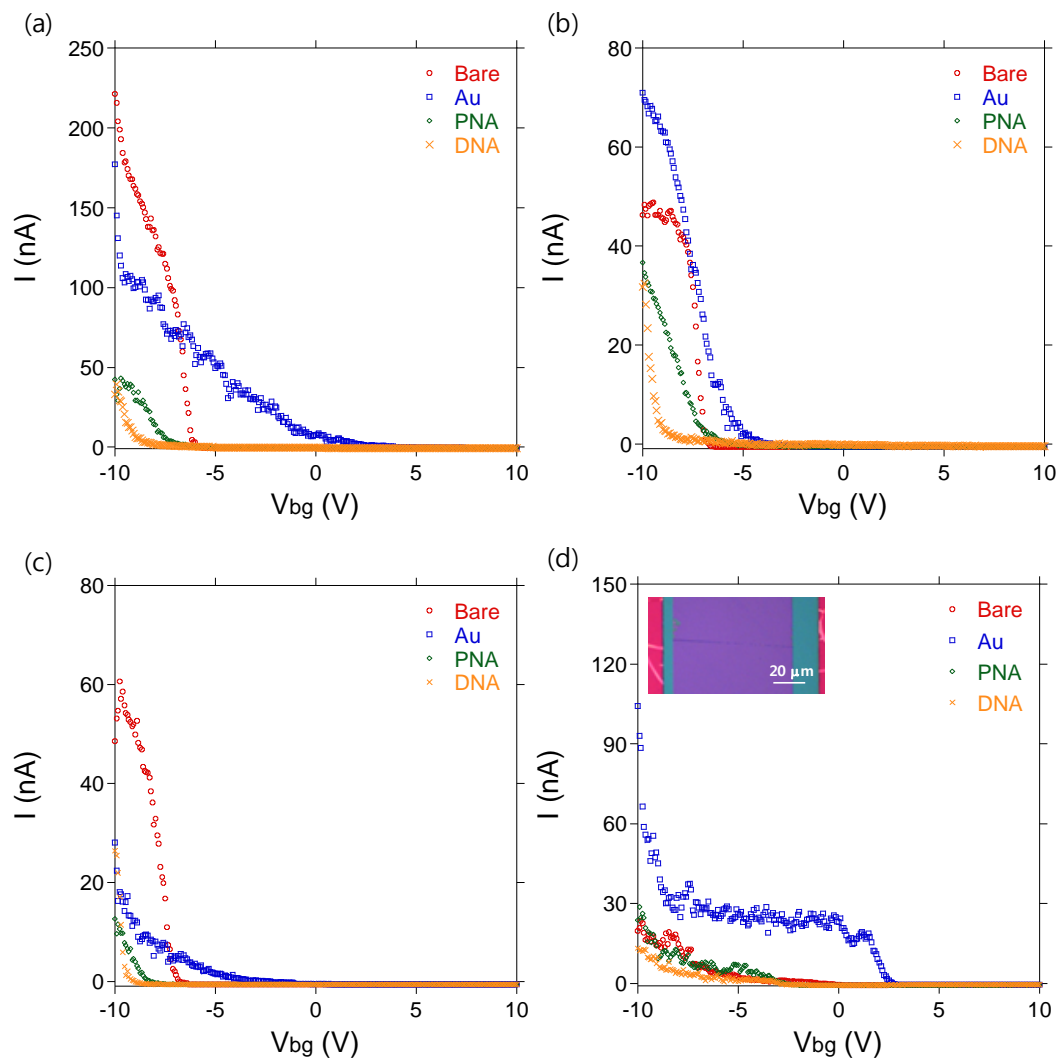


Fig. S4. Electronic transfer characteristics of 5 different devices (hybridization of matching DNA)



(e)

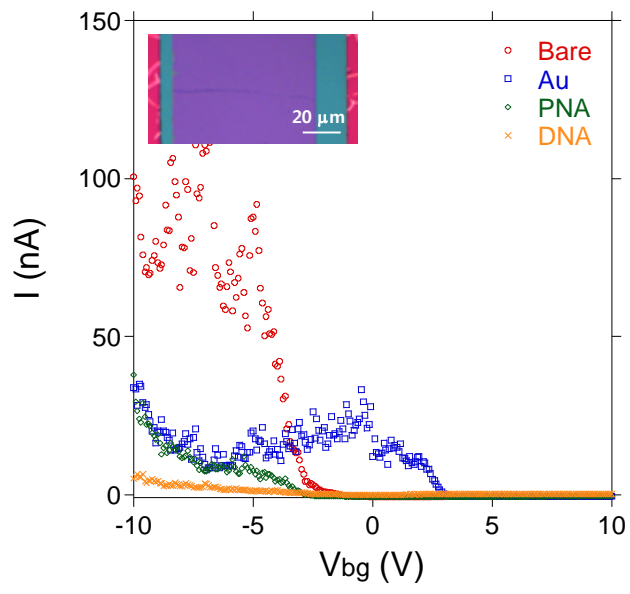
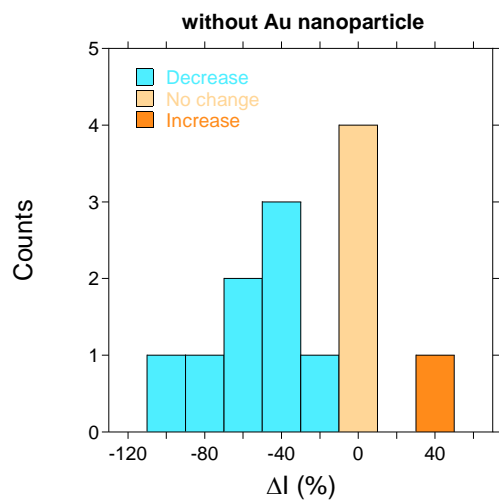


Fig. S5. (a) Statistic of SWNT-FET with non-specifically bound PNA after the hybridization with 100 pmole/ μ l matching DNA. (b) One example that shows no change of conductance upon hybridization with matching DNA.

(a)



(b)

