## Enhancing Charge-Storage Capacity of Non-volatile Memory Device Using Template-Directed Assembly of Gold Nanoparticles

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## **Electronic Supplementary Information (ESI)**

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**Fig. S1** Tapping mode AFM images  $(5 \times 5 \ \mu m^2)$  of surface-attached gold nanoparticle arrays on Si substrate (A) surface topography, and (B) section analysis.



Fig. S2 Transmission electron microscope (TEM) image of pre-formed gold nanoparticles.



**Fig. S3** FESEM images for 25000 magnification for pre-formed gold nanoparticle clusters on surface-attached gold nanoparticle arrays for (A) 1 h, and (B) 6 h incubations.



**Fig. S4** Normalized C-V characteristics at 100 kHz under different scan voltage ranges for pre-formed gold nanoparticle clusters on surface-attached gold nanoparticle arrays for 1 h incubation.