



Supplementary Materials

Graphene Templated DNA Arrays and Biotin-Streptavidin Sensitive Bio-Transistors Patterned by Dynamic Self-Assembly of Polymeric Films Confined within a Roll-on-Plate Geometry

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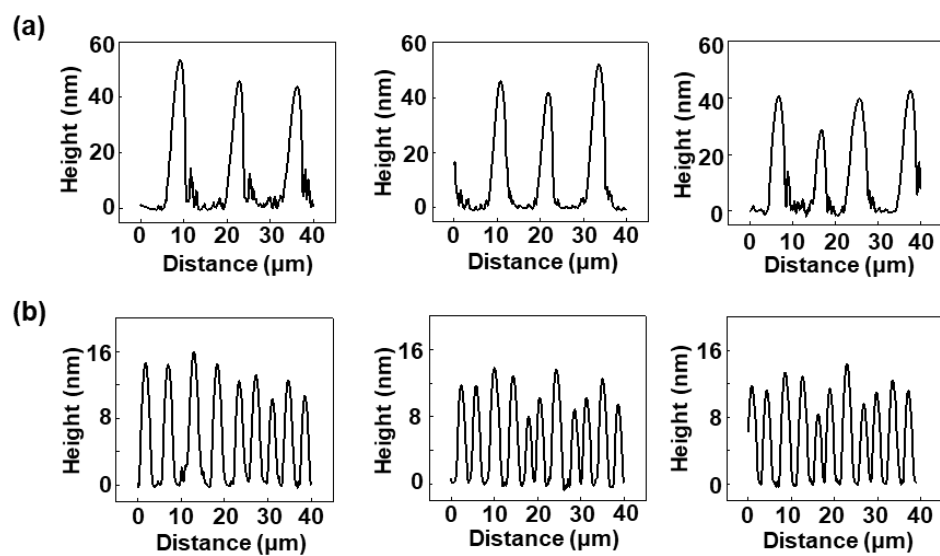


Figure S1. The height profiles of the periodic PMMA stripes obtained from different concentration, $C = 0.5 \text{ mg mL}^{-1}$ (a) and 0.125 mg mL^{-1} (b).

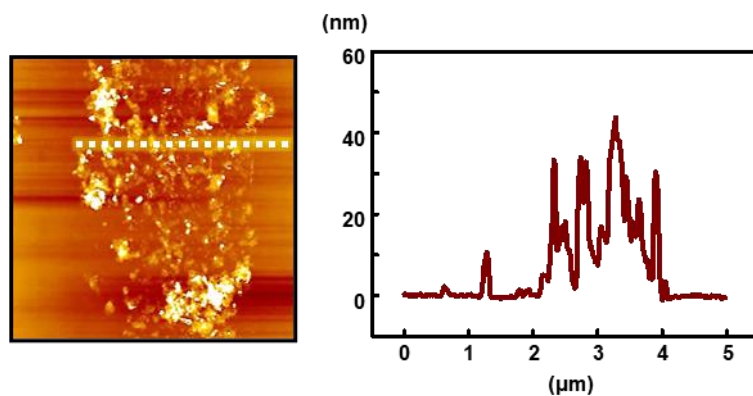


Figure S2. Close-up AFM images of GO-AuNPs stripe corresponding to the one portion of Figure 3e. The typical height of the GO-AuNPs stripe was $\sim 30 \text{ nm}$.

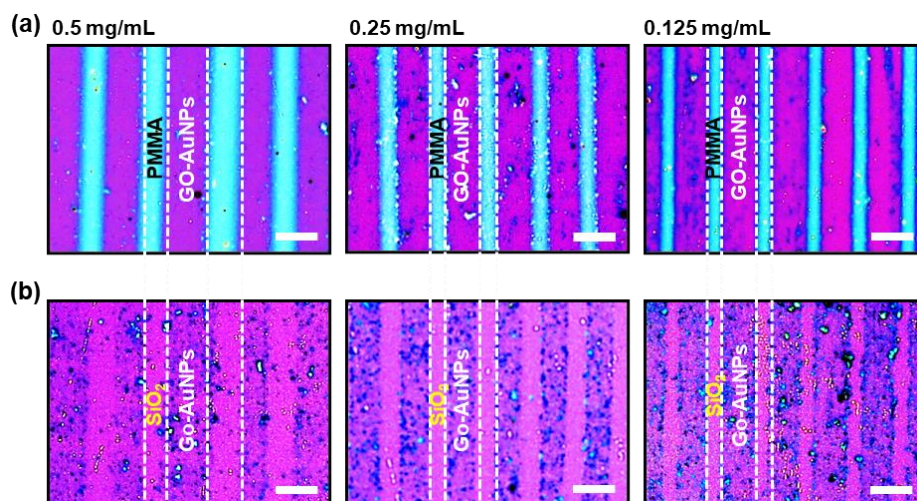


Figure S3. Patterned arrays of GO/AuNPs by lift-off process of PMMA after the template-assisted deposition on the SiO₂/Si substrate. (a) Optical micrographs after the GO/AuNPs deposition on the patterned PMMA stripes with different concentrations of 0.5, 0.25, and 0.125 mg mL⁻¹. (b) After the removal of PMMA using an organic solvent. The scale bars are 10 μ m.

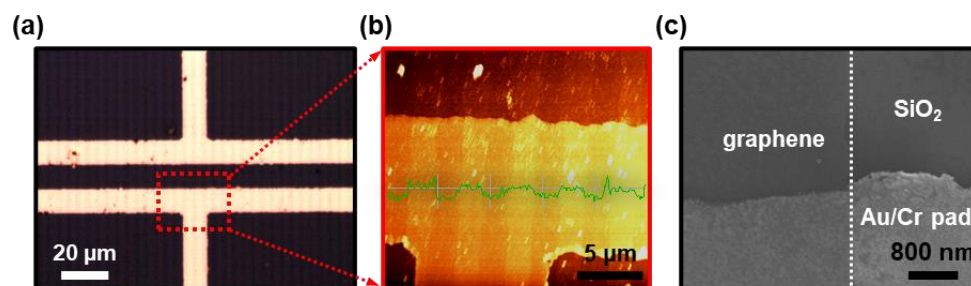


Figure S4. (a) Typical optical micrograph of micropatterned graphene channels on pair of Au/Cr electrodes, in which the back-gated multichannel GFET was built on the SiO₂/Si substrate. (b) AFM image and height profile of micropatterned graphene, measured from the marked area in (a). (c) A magnified SEM image shows the graphene conformably integrated on the electric pads after the oxygen plasma and the removal of PMMA etch masks.

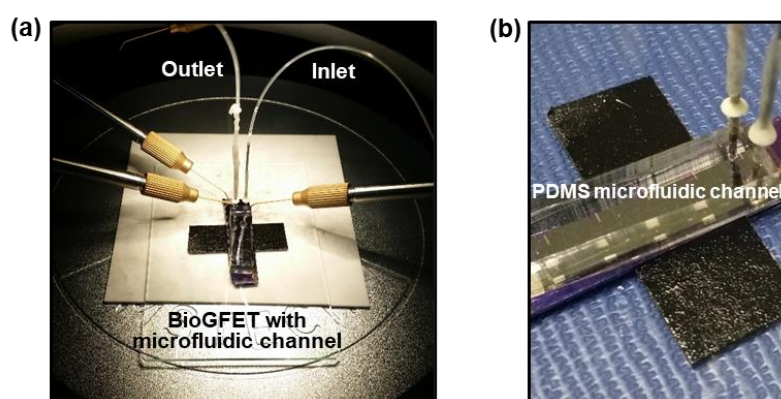


Figure S5. (a) A photograph of the BioGFET integrated with a microfluidic system and the probing accesses. (b) A magnified view of the BioGFET as illustrated in Figure 6c.

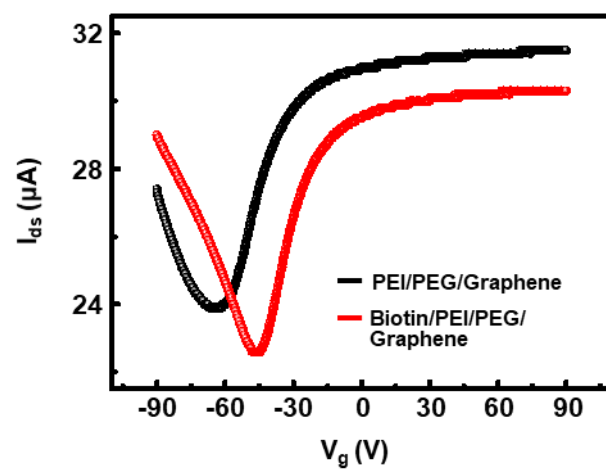


Figure S6. Transfer characteristics after the PEI/PEG polymer coating on the graphene channels (black), and transfer characteristics after the biotinylation on the active channels in BioGFET (red).