

Abstract Submitted  
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**Guiding *E.coli* to nanosensors** DONG-WON PARK, HYE-MI SO, KRICT, BEOM SOO KIM, Chungbuk National University, KI-JEONG KONG, HYUNJU CHANG, JEONG-O LEE, KRICT — Electronic nanosensors based on nanomaterials such as carbon nanotubes and nanowires are expected to have ultimate sensitivity. However, as an inherent problem of nanosensors, they have extremely small sensor surface for reaction. Therefore, simple diffusion of target biomolecules is not enough for such nanosensors, and the problem is even more serious in the case of motile bacteria. Previously, we have shown that we could estimate the titer of *E.coli* with arrays of single-walled carbon nanotube field effect transistors (SWNT-FET) combined with statistical method. Still, sensitivity of our method is inferior compared with incubation method, due to the limited sensor surface area. In this work, we actively guide *E.coli* to the sensor surface using micro-fabricated channels. Arrow-shaped and funnel shaped microstructures were fabricated in the channel to guide *E. coli* to the sensor surface, and we used green fluorescent protein expressed *E.coli* to monitor the guiding of *E.coli*.

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