

## MULTIPLEXED DETECTION OF STEROIDS WITH SILICON NANOWIRE FIELD EFFECT TRANSISTORS

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The simultaneous detection of multiple targets within one sample on a portable point-of-care device is attracting great attention in bio- and nanotechnology for more than a decade [1]. Here, we demonstrate a multiplexed, label-free and real-time sensing platform for detection of small molecules based on silicon nanowire field effect transistors [2]. We particularly focus on the sensitive recognition of the stress hormone cortisol by using aptamers as receptors. Figure 1 shows structure and electrical response of an individual FET upon cortisol injection.

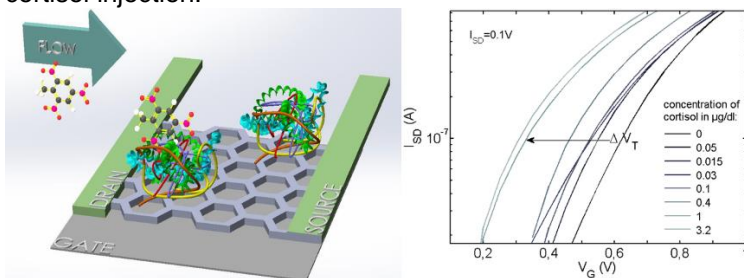
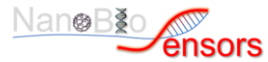


Figure 1: Schematic drawing of honeycomb structured FET and its electrical response upon injection of target cortisol at various concentrations.

### REFERENCES:

- [1] Patolsky, F., Zheng, G., Lieber, C.M., Nanowire sensors for medicine and the life sciences. *Nanomed.* **1**, 51–65. (2006.)

NanoBioSensors Conference  
Dresden, 4<sup>th</sup> – 5<sup>th</sup> September



- [2] Voitsekhivska, T., Suthau, E., Wolter, K.-J., CMOS multiplexer for portable biosensing system with integrated microfluidic interface. *IEEE*, pp. 173–178.(2014)