

Supplementary Information

Portable Immunosensor Directly and Rapidly Detects

Mycobacterium tuberculosis in Sputum

Jinbiao Ma^{a,b}, **Guanyu Jiang**^{a,b}, **Qingqing Ma**^e, **Manman Du**^{a,b}, **Hao Wang**^{c,f},
Jianguo Wu^{c,f}, **Can Wang**^{a,b,*}, **Xinwu Xie**^{c,d,*}, **Tie Li**^{g,h}, **Shixing Chen**^{g,h}, **Lixia
Zhang**ⁱ, **Min Wu**ⁱ

^a School of Environmental Science and Engineering, Tianjin University, Tianjin, 300072, PR China

^b Tianjin Key Lab of Indoor Air Environmental Quality Control, Tianjin, 300072, PR China

^c Institute of Medical Support Technology, Academy of Military Science, Tianjin, 300161, PR China

^d National Bio-Protection Engineering Center, Tianjin, 300161, PR China

^e Department of Respiratory Medicine, Shandong public Health Clinical Center (Shandong Province Chest Hospital), Jinan, 250013, PR China

^f School of Electronic Information and Automation, Tianjin University of Science and Technology, Tianjin, 300222, PR China

^g Science and Technology on Micro-system Laboratory, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, PR China

^h State Key Laboratories of Transducer Technology, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai, 200050, PR China

ⁱ Tianjin Haihe Hospital, Tianjin, 300350, PR China

*Corresponding authors

E-mail addresses: wangcan@tju.edu.cn (Can Wang); xinwuxie@163.com (Xinwu Xie)

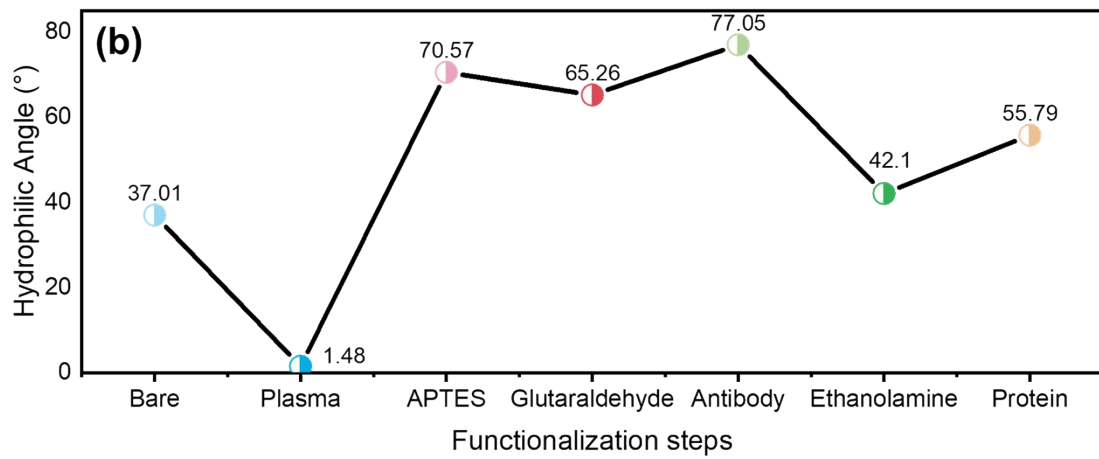
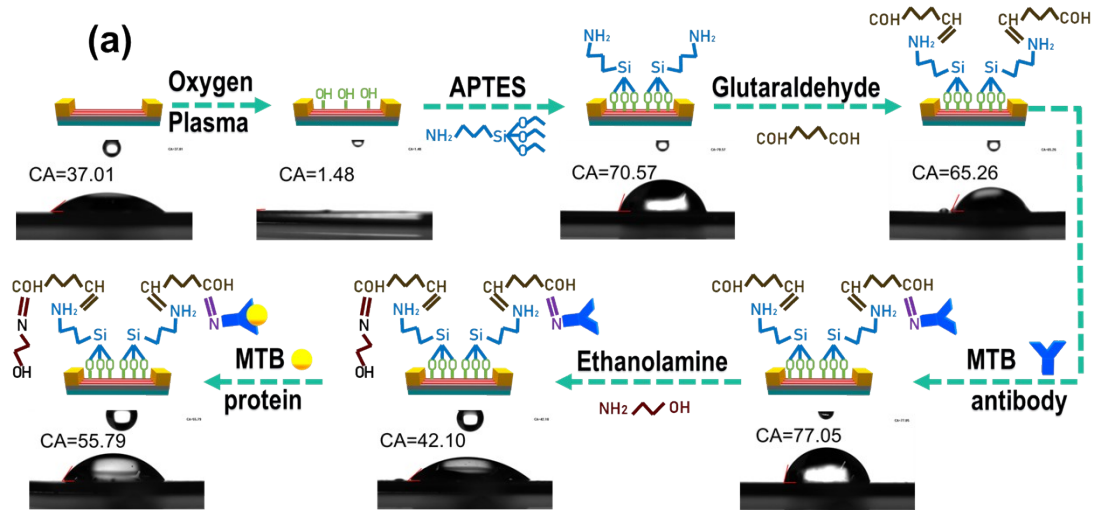


Figure. S1. Changes in hydrophilic angle during functionalization: (a) Optical image and (b) Diagram of changes in hydrophilic angle value with functionalization.

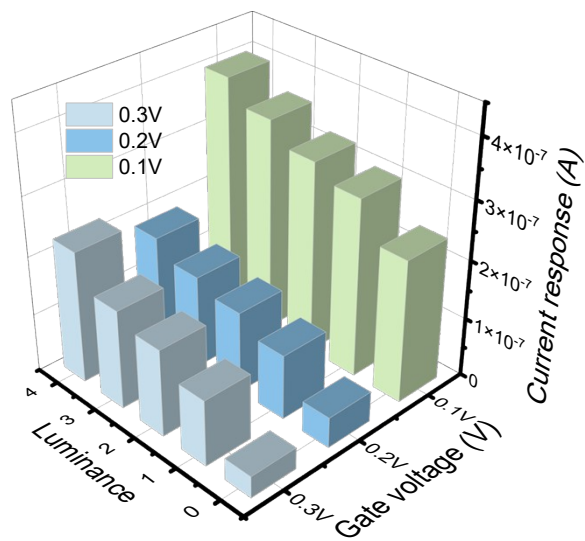


Figure. S2. Current response of the sensor to the luminance under different gate voltages.

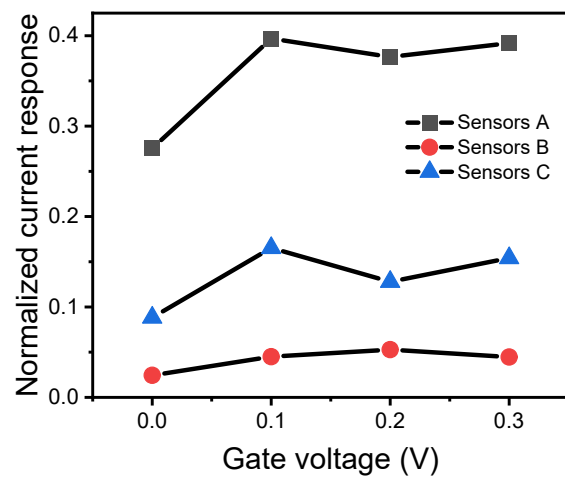


Figure. S3. Normalized current response of the applied gate voltage to the sensor detection target.