Electronic Supplementary Information

A Novel Electrochemiluminescence Immunosensor Based on CdS-Coated ZnO Nanorods array for HepG2Cell Detection

Danqing Liu, [a,b,#] Lei Wang, [a,#] Shenghua Ma, [a] Zhaohua Jiang, [a] Bin Yang, [c*] Xiaojun Han, [a*] Shaoqin Liu[a,b*]

[a]*State Key Laboratory of Urban Water Resource and Environment, School of Chemical Engineering and Technology, Harbin Institute of Technology, Harbin 150001, China; Email: hanxiaojun@hit.edu.cn; Tel: +86-451-86413708*

[b]*Center for Micro and Nanotechnology, Harbin Institute of Technology, Harbin 150080, China; E-mail: shaoqinliu@hit.edu.cn; Tel: +86-451-86403493*

[c]*Condensed Matter Science and Technology Institute, Harbin Institute of Technology, Harbin 150080, China; E-mail: binyang@hit.edu.cn; Tel: +86-451-86402771*

# These two authors contribute equally to this work.

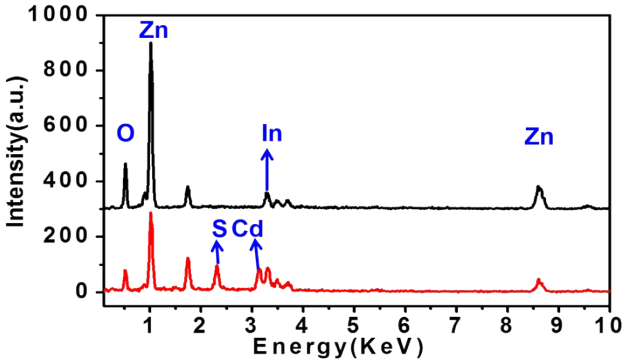

Figure S1 EDX spectrum of pure ZnO nanorod array (upper) and CdS-coated ZnO nanorod array (bottom).

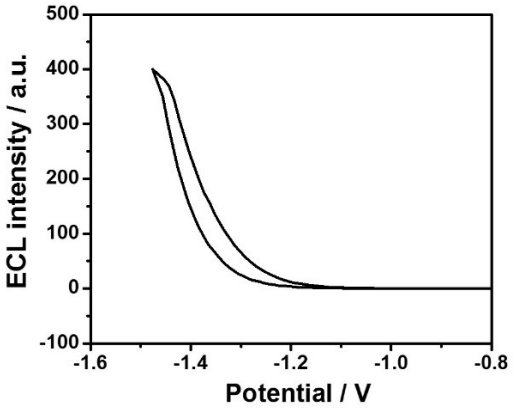

Figure S2 ECL-potential curve of CdS QD modified electrode in 0.1 M PBS (pH 7.4) containing 0.1 M KCl and 0.05 M $K_2S_2O_8$. Scan rate is 100 mV s^{-1} and the photomultiplier tube (PMT) voltage is set to be -800 V.

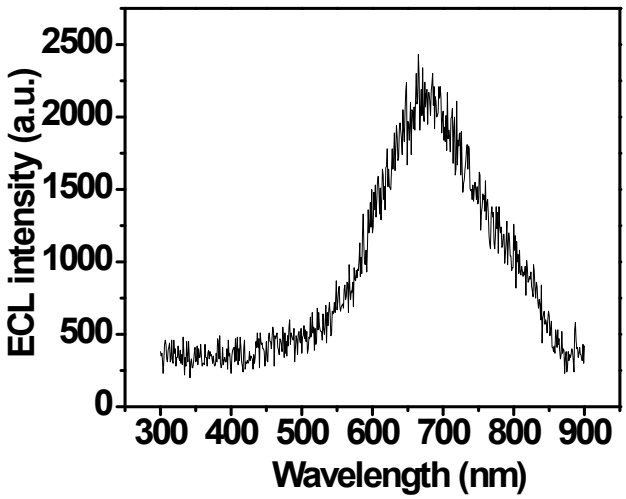

Figure S3 ECL spectrum of Au/APTES/CdS-coated-ZnO modified electrode in 0.1 M PBS (pH 7.4) containing 0.1 M KCl and 0.05 M $K_2S_2O_8$.

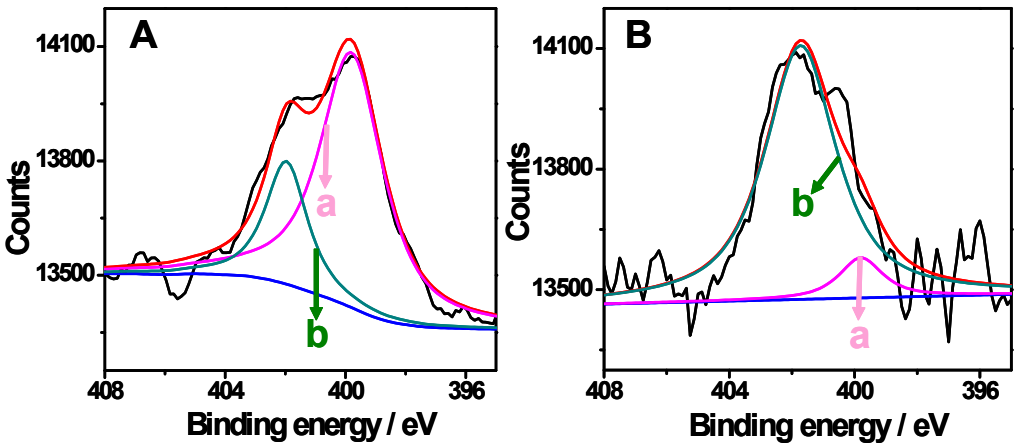

Figure S4 XPS spectra of N 1s before (A) and after (B) the ECL process for 20 min.

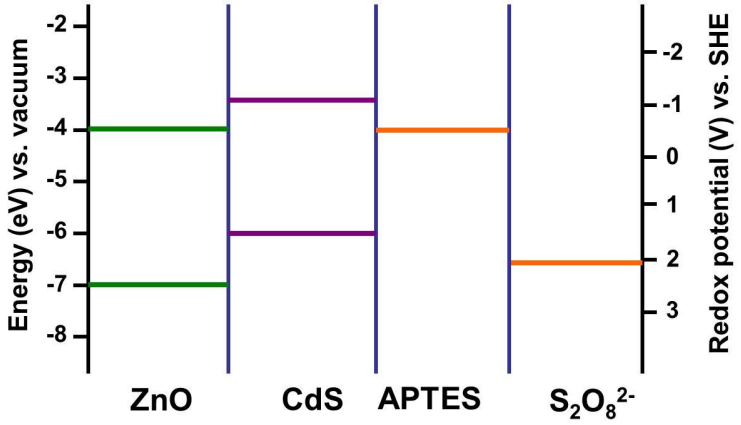

Figure S5 The band levels of ZnO, CdS, APTES and $S_2O_8^{2-}$.

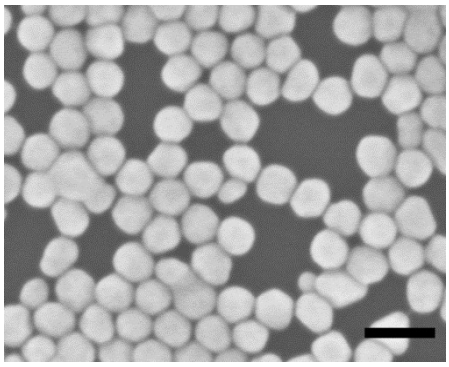

Figure S6 SEM of gold nanoparticles. All the SEM images are taken using a field-emission scanning electron microscopy (FESEM，FEI Quanta 200F). The scale bar is 100 nm.

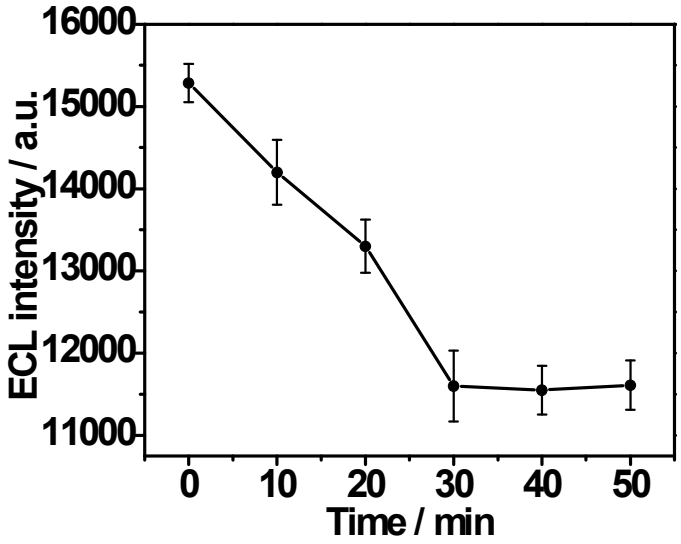

Figure S7 Effect of incubation time on the ECL response of the immunosensor.