Long-term longevity of the biosensor is proved by continuous monitoring every day. After detection of glucose per day for 21 days in 0.1 M PB solution (pH 7.4), the biosensor showed a good stability and a 13% loss of activity. The monitoring data of the GOx/CNT/AuNPs/ZnS HSs/gold electrode are shown below (Fig. S1). As shown, the response current decreased modestly in first fifteen day, and then dropped rapidly in last six day. Thus, GOx are immobilized tightly by positively charged CNT, which can retain the electrocatalytic activity of GOx.

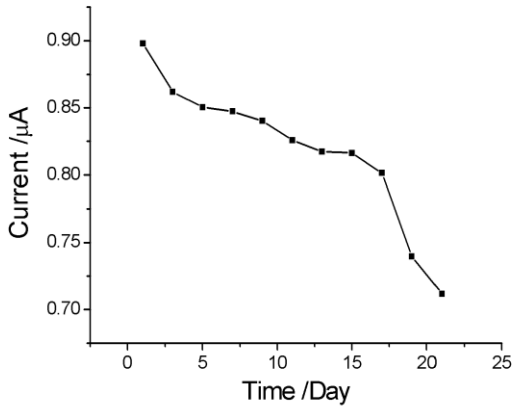

Fig.S1 the response current of the biosensor tested every day in 0.1 M PB solution (pH 7.4) with 0.5 mM glucose using amperometric measurements (to pick out the data on Day 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21)

The analytical performance of the GOx/CNT/AuNPs/ZnS HSs/gold electrode was compared with other glucose biosensors, as displayed in Table S1. It can be seen that the linear range of this glucose biosensor close to normal blood glucose value (4.4 - 6.6 mM). Meanwhile, the prepared electrode creatively uses ZnS hollow spheres (ZnS HSs) as peroxidase-like to cooperate with glucose oxidase (GOx) for glucose determinations. It provides a new perspective for the study of the blood glucose test.

Table S1 Comparison of several enzyme electrodes.

Sensor	**linear range (mM)**	**Detection limit (μM)**	**Ref.**
GOx/CNT/AuNPs/ZnS HSs	0.020-7.0	10	This work
GOx/AgNP-MWNT	0.025-1.0	10	1
GOx/Celestine blue /MWCNTs	0.010-6.0	0.3	2
GOD/ZnO nanowire	0.001- 0.076	1	3
GOx/Fe_3O_4-GNPs-CS	0.003-0.57	1.2	4
GOD-CS/AgNWs	0.010-0.8	2.83	5
nafion/CHIT/GOx@PtNCs	0.001-5	0.5	6
GNP/MWNTs/GOD	0.128-9.0	128	7

[1] L. F Chen, H. Q. Xie and J. Li, *J Solid State Electrochem.* 2012, **16**, 3323 – 3329.

[2] A. Noorbakhsh, A. Salimi and E Sharifi, *Electroanalysis* 2008, **16**, 1788 – 1797.

[3] J. F. Zang, C. M. Li, X. Q. Cui, J. X. Wang, X. W. Sun, H. Dong and C. Q. Sun. *Electroanalysis*, 2007, **9**, 1008 – 1014.

[4] J. J. Li, R. Yuan and Y. Q. Chai, *Microchim Acta* 2011, **173**, 369 – 374.

[5] L. S. Wang, X. Gao, L. Y. Jin, Q. Wu, Z. C. Chen and X. F. Lin, *Sensors and Actuators B.* 2013. **176**, 9 – 14

[6] J. Ren, W. T. Shi, K. Li and Z. F. Ma, *Sensors and Actuators B.* 2012, **163,** 115 – 120.

[7] Y. Liu, S. Wu, H. X. Ju and L. Xu, *Electroanalysis*, 2007, **9**, 986 – 992.