

Electronic Supplementary Information

Multilayer sensing platform: gold nanoparticles/prussian blue decorated graphite paper for NADH and H₂O₂ detection

Meng Wang, Xianwen Kan*

College of Chemistry and Materials Science, Anhui Normal University, Wuhu 241000, P.R. China; The Key Laboratory of Functional Molecular Solids, Ministry of Education; Anhui Laboratory of Molecule-Based Materials, Anhui Key Laboratory of Chemo-Biosensing.

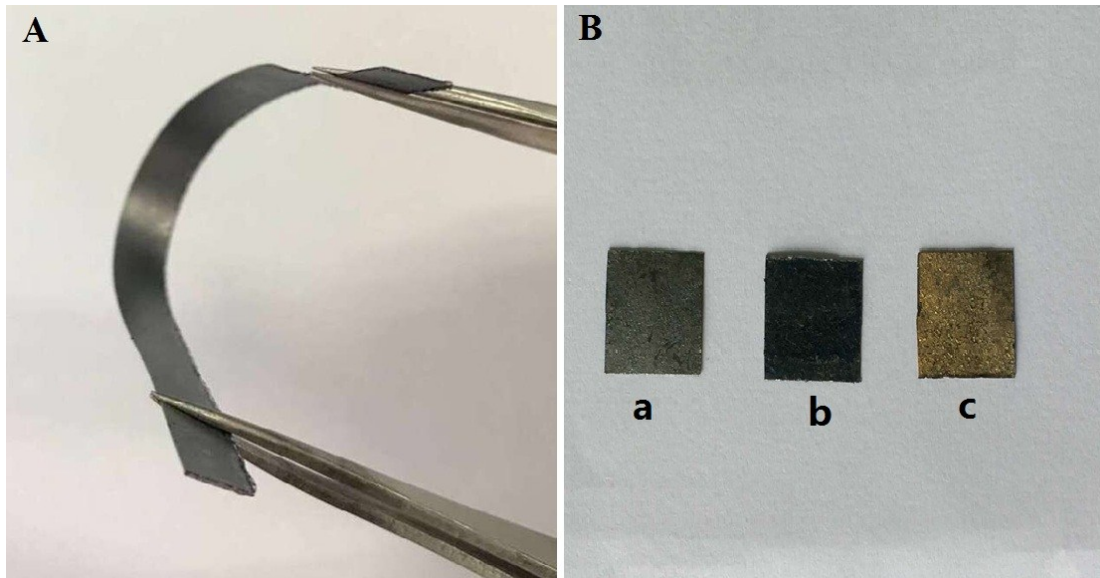


Fig. S1 (A) Photograph of the bent EGP. (B) Photographs of EGP (a), PB/EGP (b), and AuNPs/PB/EGP (c).

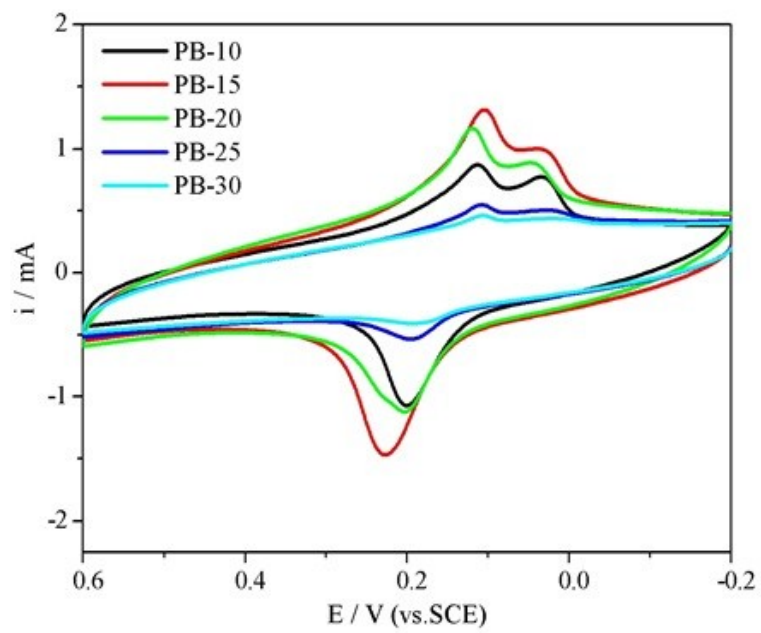


Fig. S2 CV curves of AuNPs/PB/EGP in blank electrolyte. (PB film was prepared under different electrosynthesis scan cycles.)

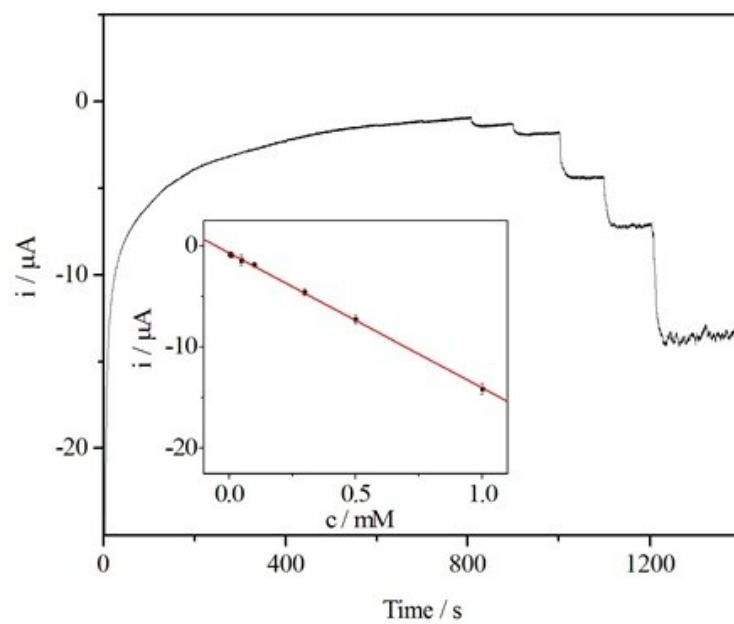


Fig. S3 Amperometric response of EGP for NADH detection. (Inset: the corresponding calibration curve.)

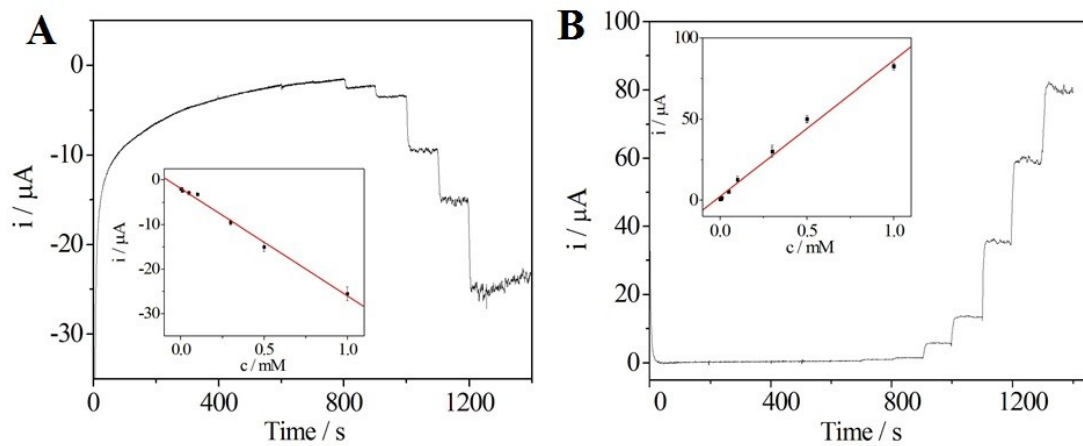


Fig. S4 Amperometric responses of PB/EGP for NADH (A) and H_2O_2 detection (B).

(Inset: the corresponding calibration curves.)

Table S1 Comparison of other electrochemical methods for NADH detection with our work.

Modified Electrode	Linear range ($\mu\text{mol/L}$)	LOD ($\mu\text{mol/L}$)	References
GCE/CuWO ₄	0.2-380.0	0.2	1
GCE/NDG	0.5-12.0	0.4	2
GCE/GN-AuNRs	20.0-160.0	6.0	3
GCE/nPEDOT	5.0-45.0	3.8	4
GCE/NiONPs	0.11-1000	0.106	5
InGaN/GaN NW	5-10000	1.9	6
GCE/APBA/MWCNTs	0.5-1000	0.16	7
GCE/Au-AgNPs/P(L-Cys)/ERGO	0.082-73.0	0.009	8
AuNPs/PB/EGP	0.5-1000	0.2	This work

References

- 1 K. Aneesh, C. vusa and S. Berchmans, *Sens. Actuators, B.*, 2017, **253**, 723.
- 2 M.Sankararao and M.Jayaraman, *J. Electroanal.Chem.*, 2016, **775**, 329.
- 3 L.Li, H. Lu and L. Deng, *Talanta* , 2013, **113**, 1.
- 4 R. Rajaram, S. Anandhakumar and J. Mathiyarasu, *J. Electroanal. Chem.*,2015, **746**, 75.
- 5 E. Sharifia, A. Salimi and E. Shamsa, *Biosens. Bioelectron.*, 2013, **45**, 260.
- 6 M. Riedel, S. Holzel, P. Hille, J. Schormann, M. Eickhoff and F. Lisdat, *Biosens. Bioelectron.*, 2017, **94**, 298.
- 7 J. Li, Q. Sun, Y. Mao, Z. Bai, X. Ning and J. Zheng, *J. Electroanal. Chem.*, 2017,**794**, 1.
- 8 G. Aydođdu Tiđ, *Talanta*, 2017, **175**, 382.

Table S2 Comparison of other electrochemical methods for H₂O₂ detection with our work.

Modified Electrode	Linear range ($\mu\text{mol/L}$)	LOD ($\mu\text{mol/L}$)	References
GCE/CuWO ₄	24.87-36000	207.64	1
GCE/Ag NSs	5-6000	0.17	2
GCE/Pt-ZnO	20-5000	1.5	3
GCE/Mb-ZnO	4.8-200	2.0	4
GCE/Pt/GN	2.5-6650	0.8	5
CFEs/PDA/PB/CNT	1-1400	0.7	6
AuNPs/PB/EGP	0.05-1000	0.00483	This work

References

- 1 K. Aneesh, C. vusa and S. Berchmans, *Sens. Actuators, B.*, 2017, **253**, 723.
- 2 B. Ma, C. Kong, X. Hu, K. Liu, Q. Huang, J. Lv, W. Lu, X. Zhang, Z. Yang and S. Yang, *Biosens. Bioelectron.*, 2018, **106**, 29.
- 3 X. Ke, G. Zhu, Y. Dai, Y. Shen, J. Yang and J. Liu, *J. Electroanal. Chem.*, 2018, **817**, 176.
- 4 G. Zhao, J. Xu and H. Chen, *Anal. Biochem.*, 2006, **350**, 145.
- 5 F. Zhang, Z. Wang, Y. Zhang, Z. Zheng, C. Wang, Y. Du and W. Ye, *Int. J. Electrochem. Sci.*, 2012, **7**, 1968.
- 6 R. Li, X. Liu, W. Qiu and M. Zhang, *Anal. Chem.*, 2016, **88**, 7769.