

Supplementary Information for

**Pd nanoparticles-decorated graphitic C₃N₄ nanosheets with
bifunctional peroxidase mimicking and ON-OFF fluorescence
enable naked-eye and fluorescent dual-readout sensing of
glucose**

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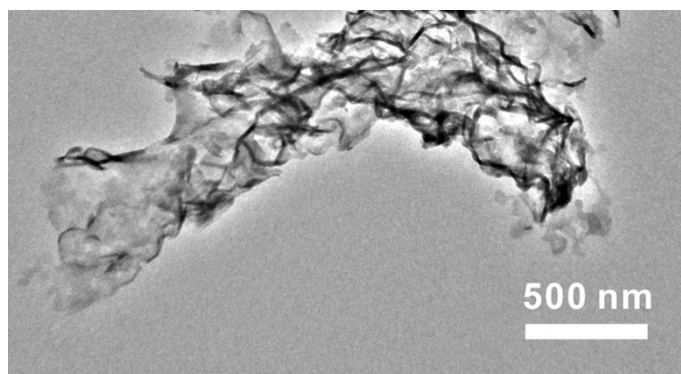


Figure S1. TEM image of the synthesized g-C₃N₄ nanosheets.

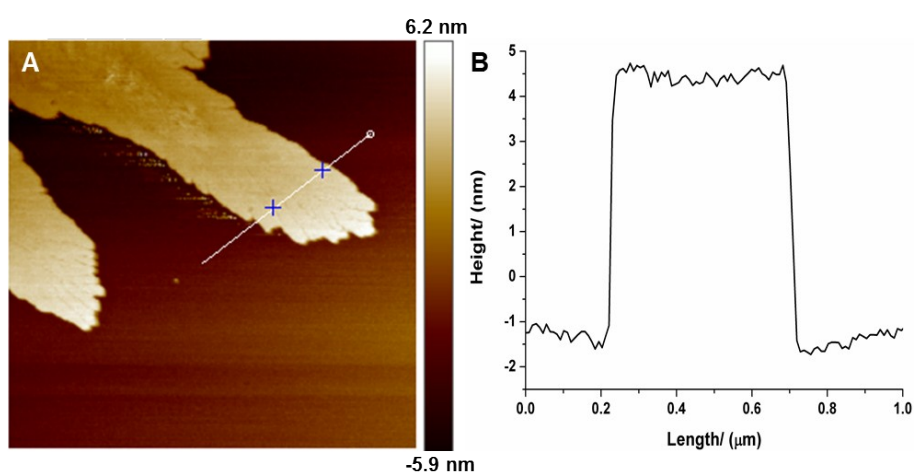


Figure S2. AFM image of the synthesized g-C₃N₄ nanosheets.

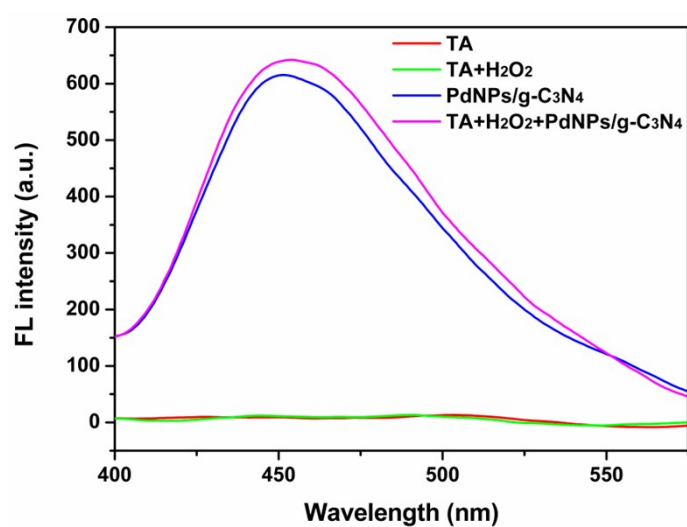


Figure S3. Fluorescence spectra for the capture of hydroxyl radicals generated in

systems. The excitation wavelength was 330 nm.

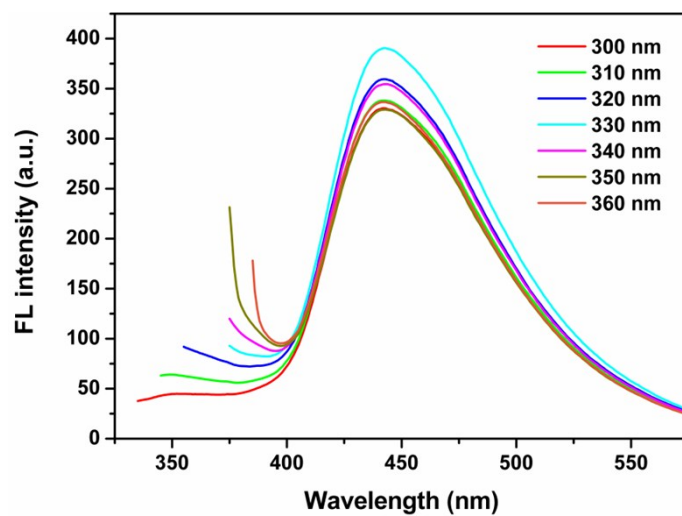


Figure S4. Fluorescence spectra of the synthesized PdNPs/g-C₃N₄ with different excitation wavelengths.

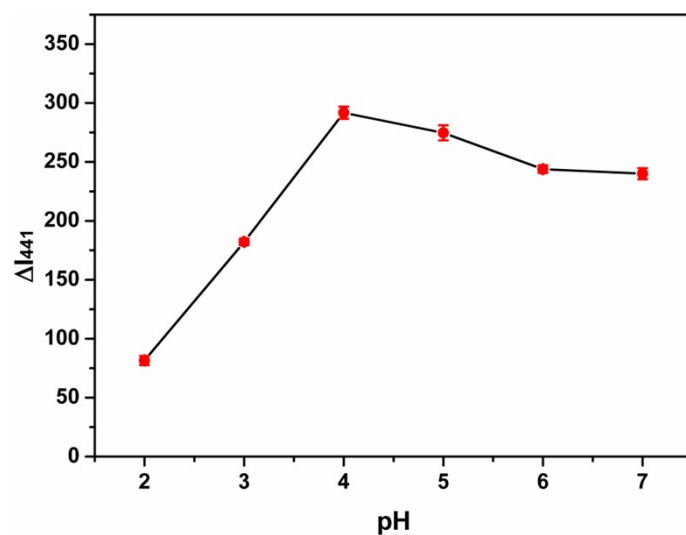


Figure S5. Fluorescence responses of the GOx+glucose+PdNPs/g-C₃N₄+OPD system in buffers with different pH values.

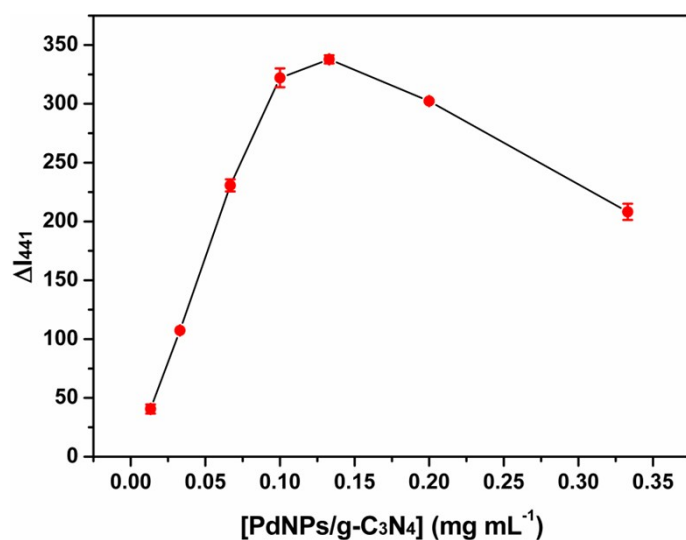


Figure S6. Fluorescence responses of the GO_x+glucose+PdNPs/g-C₃N₄+OPD system with different concentrations of PdNPs/g-C₃N₄.

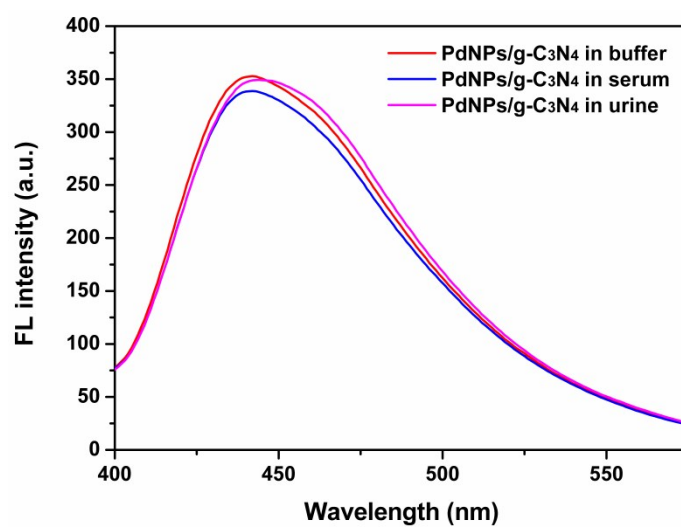


Figure S7. Fluorescence spectra of the synthesized PdNPs/g-C₃N₄ in different matrices.

Table S1. Performance comparison of different peroxidase mimics coupled with GO_x for glucose sensing.

Peroxidase mimic	Method	Linear	LOD	Ref.
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range				
Fe ₃ O ₄ MNPs	Colorimetric	50~1,000	30	1
WSe ₂ nanosheets	Colorimetric	10~60	10	2
Co ₃ O ₄ /rGO	Colorimetric	1~100	1	3
VS ₂ nanosheets	Colorimetric	5~250	1.54	4
GO	Colorimetric	1~20	1	5
MnO ₂ NWs	Colorimetric	10~2,000	2	6
(+)-Au NPs	Colorimetric	18~1,100	4	7
MnO ₂ -modified UCNPs	Fluorescent	0~250	3.7	8
PdNPs/g-C ₃ N ₄	Naked-eye	50~2,000	50	This work
	Fluorescent	1~1,000	0.4	

References

1. H. Wei and E. K. Wang, *Anal. Chem.*, 2008, **80**, 2250-2254.
2. T. M. Chen, X. J. Wu, J. X. Wang and G. W. Yang, *Nanoscale*, 2017, **9**, 11806-11813.
3. J. X. Xie, H. Y. Cao, H. Jiang, Y. J. Chen, W. B. Shi, H. Z. Zheng and Y. M. Huang, *Anal. Chim. Acta*, 2013, **796**, 92-100.
4. L. J. Huang, W. X. Zhu, W. T. Zhang, K. Chen, J. Wang, R. Wang, Q. F. Yang, N. Hu, Y. R. Suo and J. L. Wang, *Microchim. Acta*, 2018, **185**, 7.
5. Y. J. Song, K. G. Qu, C. Zhao, J. S. Ren and X. G. Qu, *Adv. Mater.*, 2010, **22**, 2206-2210.

6. L. Han, J. G. Shi and A. H. Liu, *Sens. Actuators, B*, 2017, **252**, 919-926.
7. Y. Jv, B. X. Li and R. Cao, *Chem. Commun.*, 2011, **46**, 8017-8019.
8. J. Yuan, Y. Cen, X. J. Kong, S. Wu, C. L. Liu, R. Q. Yu and X. Chu, *ACS Appl. Mater. Interfaces*, 2015, **7**, 10548-10555.