

Supplementary Information for

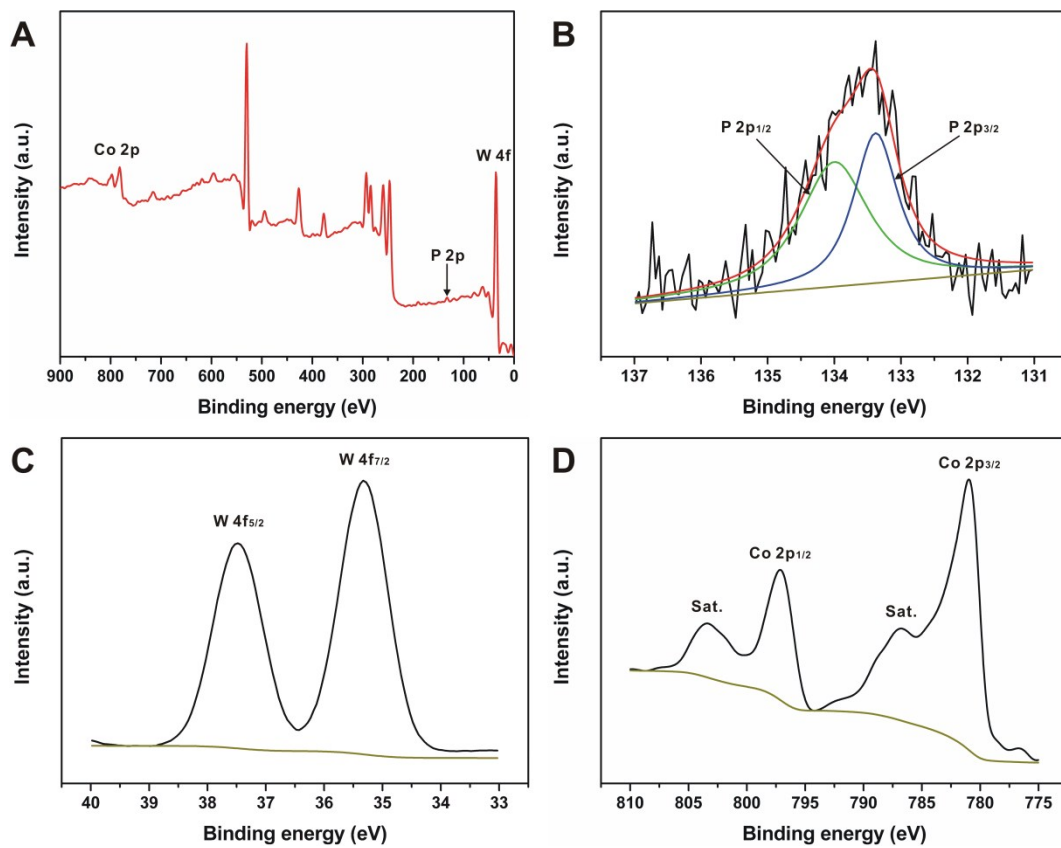
**A cobalt-based polyoxometalate nanozyme with high  
peroxidase-mimicking activity at neutral pH for one-pot  
colorimetric analysis of glucose**

Yanfang He,<sup>a,b</sup> Xin Li,<sup>a</sup> Xuechao Xu,<sup>a</sup> Jianming Pan,<sup>a</sup> Xiangheng Niu<sup>a,\*</sup>

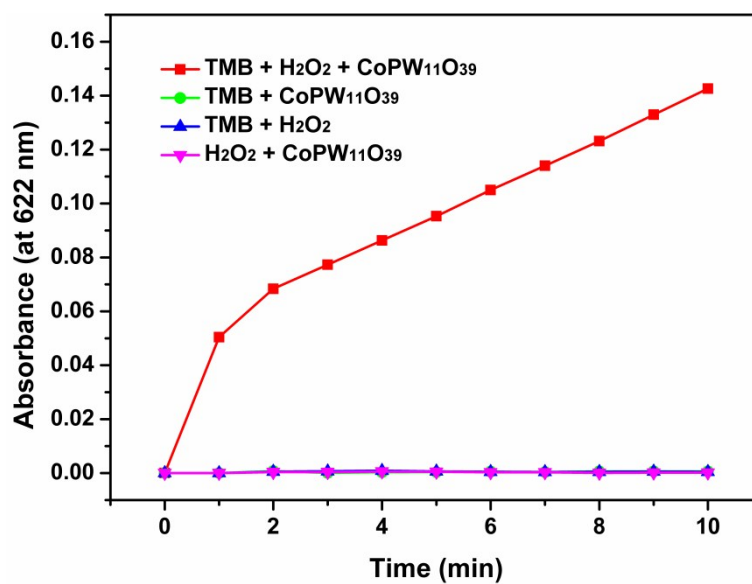
<sup>a</sup> Institute of Green Chemistry and Chemical Technology, School of Chemistry and  
Chemical Engineering, Jiangsu University, Zhenjiang 212013, China

<sup>b</sup> School of Material Science and Engineering, Jiangsu University, Zhenjiang 212013,  
China

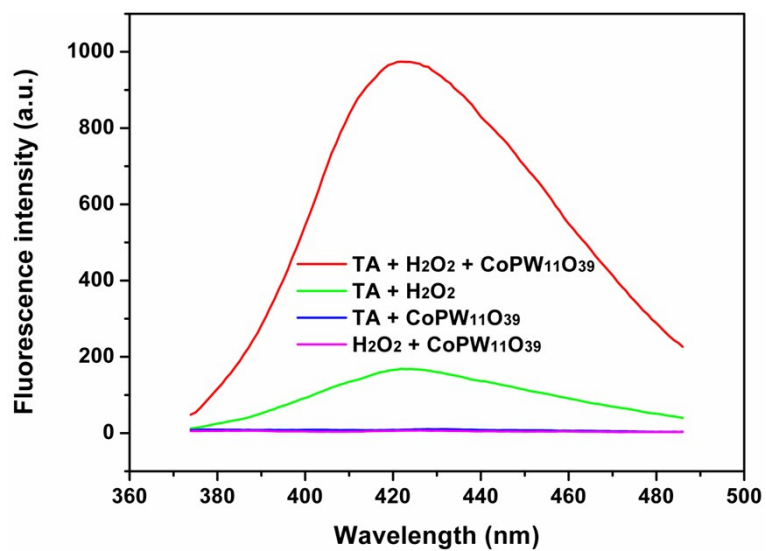
\* Corresponding author. E-mail: niuxiangheng@126.com



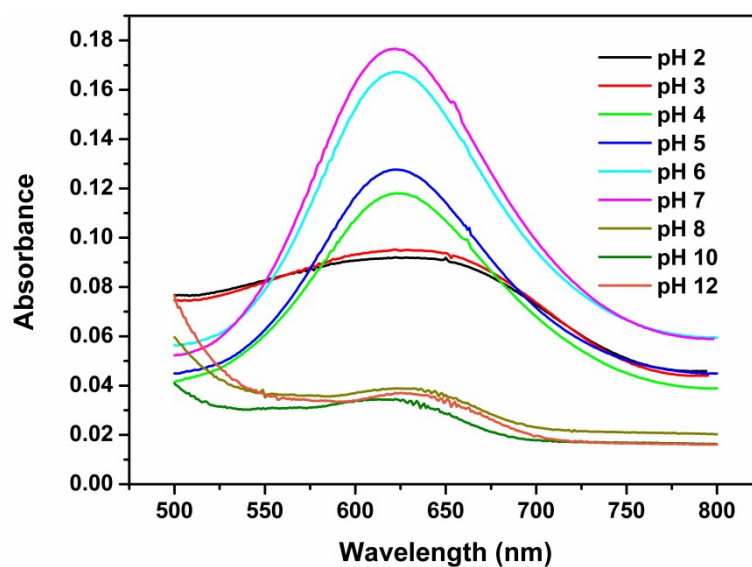
**Figure S1.** (A) shows the full XPS pattern of the  $\text{CoPW}_{11}\text{O}_{39}$  nanozyme. (B), (C), and (D) depict the fine P 2p, W 4f, and Co 2p XPS patterns, respectively.



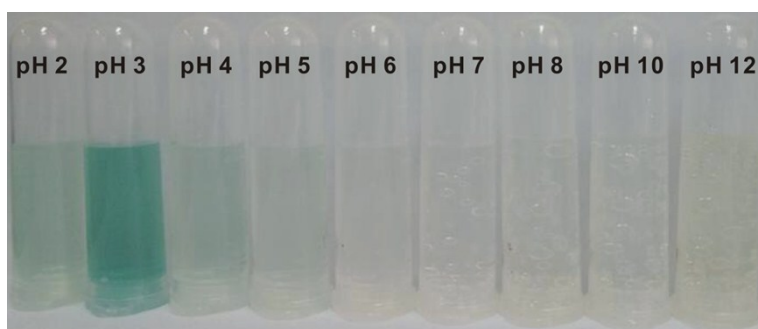
**Figure S2.** Absorbance changes of different systems upon reaction time.



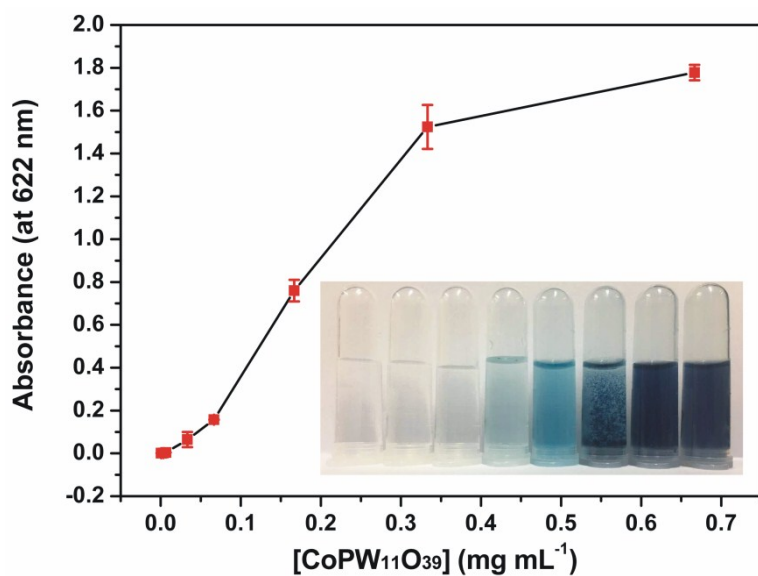
**Figure S3.** Fluorescence spectra of different systems. The excitation wavelength was 314 nm.



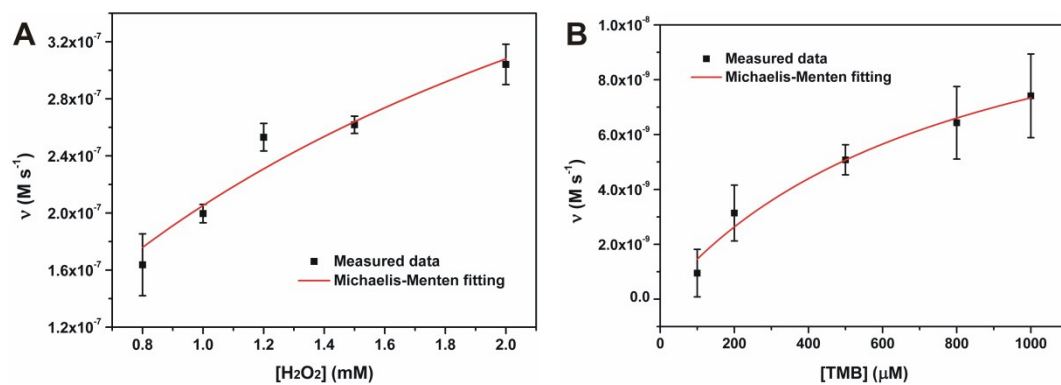
**Figure S4.** UV-Vis spectra of the  $\text{CoPW}_{11}\text{O}_{39} + \text{H}_2\text{O}_2 + \text{TMB}$  system in 0.1 M buffers with different pH values.



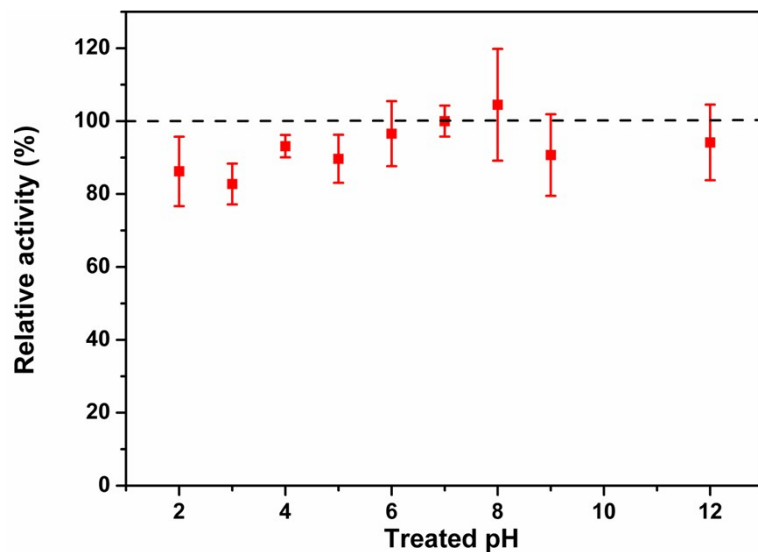
**Figure S5.** Photograph of the  $\text{CoPW}_{11}\text{O}_{39}+\text{H}_2\text{O}_2+\text{ABTS}$  system in 0.1 M buffers with different pH values.



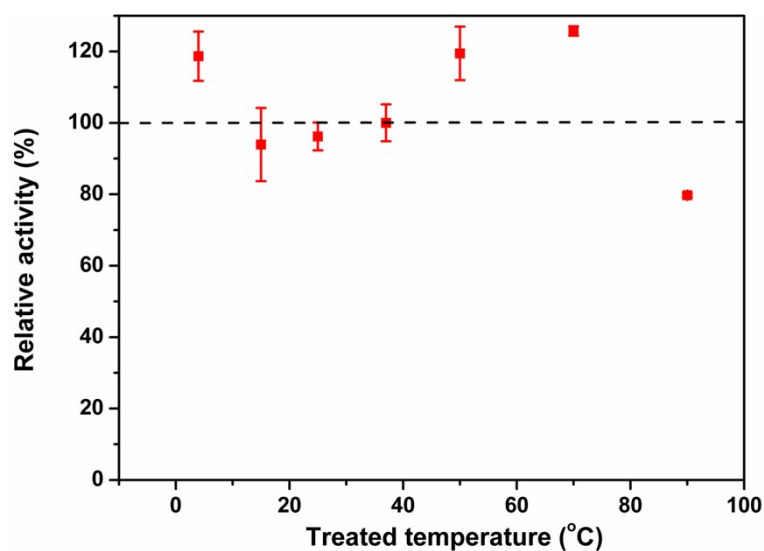
**Figure S6.** Effect of nanozyme concentration on the catalyzed color reaction.



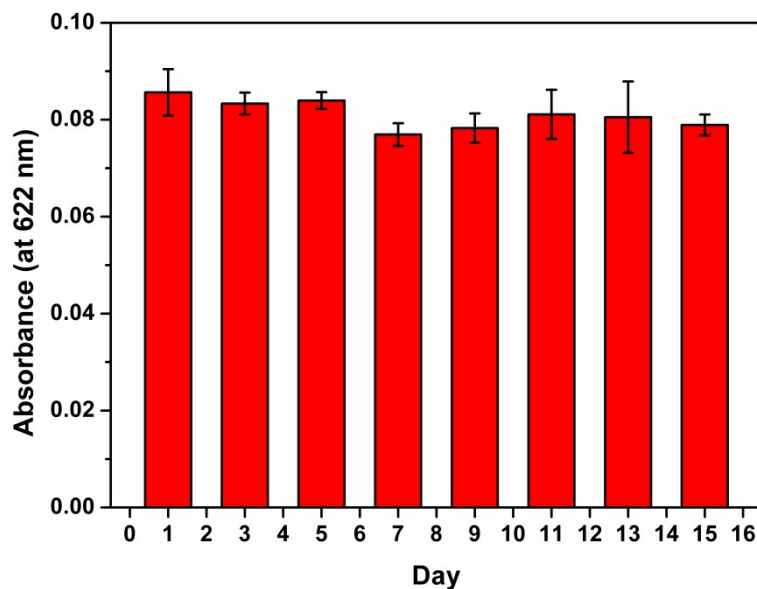
**Figure S7.** Steady-state kinetic measurements of the  $\text{CoPW}_{11}\text{O}_{39}$  nanozyme toward (A)  $\text{H}_2\text{O}_2$  and (B) TMB, respectively.



**Figure S8.** Robustness of the CoPW<sub>11</sub>O<sub>39</sub> nanozyme against harsh pH. The nanozyme was first treated by incubating it in 0.1 M buffers with different pH values for 2 h, and then its activity was measured under standard conditions.



**Figure S9.** Robustness of the CoPW<sub>11</sub>O<sub>39</sub> nanozyme against harsh temperature. The nanozyme was first treated by incubating it in 0.1 M buffer (pH 7.0) at various temperatures for 2 h, and then its activity was measured under standard conditions.



**Figure S10.** Stability of the CoPW<sub>11</sub>O<sub>39</sub> nanozyme for glucose detection.

**Table S1.** Comparison of our peroxidase mimic with other peroxidase-mimicking nanozymes for colorimetric detection of glucose.

Peroxidase mimic	Linear range (mM)	LOD ( $\mu$ M)	Ref.
Fe <sub>3</sub> O <sub>4</sub> MNPs	0.05~1	30	1
MNP/NG	Up to 18	57.9	2
FeNPs@Co <sub>3</sub> O <sub>4</sub> HNCs	0.0005~0.03	50	3
WSe <sub>2</sub> nanosheets	0.01~0.06	10	4
Fe-MIL-88NH <sub>2</sub>	0.002~0.3	0.48	5
Cu <sub>0.89</sub> Zn <sub>0.11</sub> O	0.025~0.5	1.5	6
3D GH-5	0.005~0.5	0.8	7
GO-COOH	0.001~0.02	1	8

## References

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