Electronic Supplementary Material (ESI) for Nanoscale.

Supporting information

Facile Synthesis of Enzyme-Embedded Magnetic Metal-organic Frameworks as Reusable Mimic Multi-enzyme System: Mimetic Peroxidase Properties and Colorimetric Sensor

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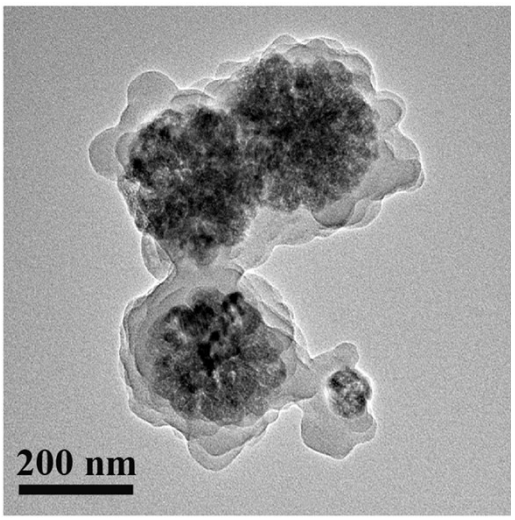

Fig. S1 TEM image of mZIF-8 without PVP addition.

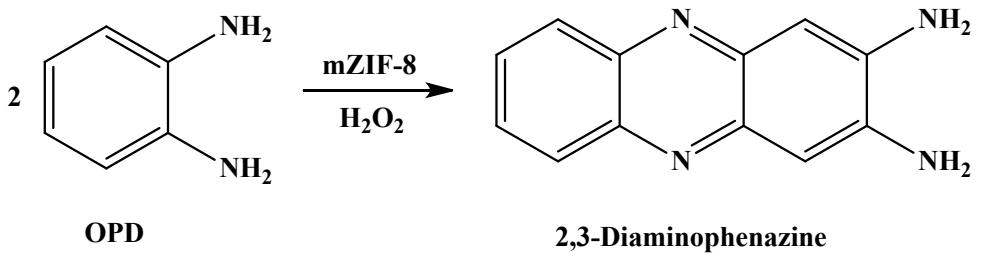

Fig. S2 The oxidation reaction of OPD catalyzed by mZIF-8 in the presence of H_2O_2.

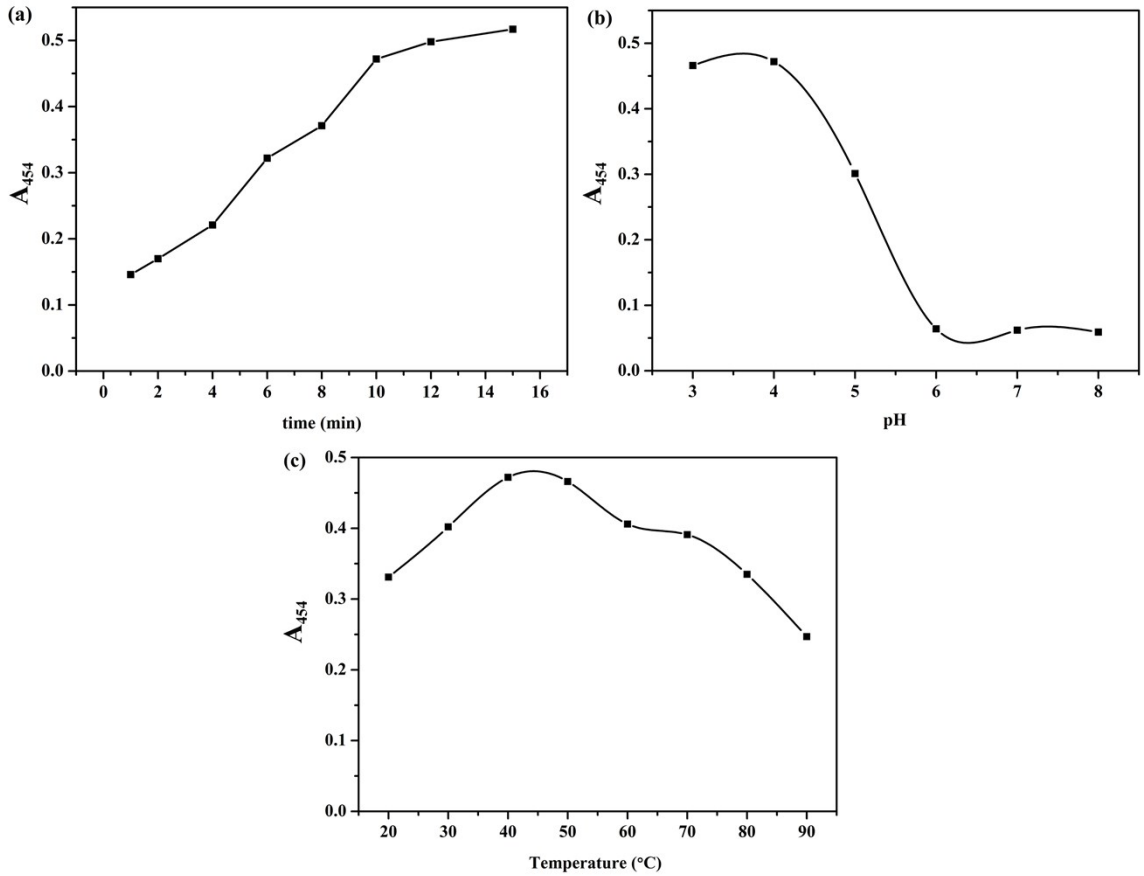

Fig. S3 Effects of (a) time, (b) pH, and (c) temperature on the absorbance changes at 454 nm of OPD oxidation by mZIF-8.

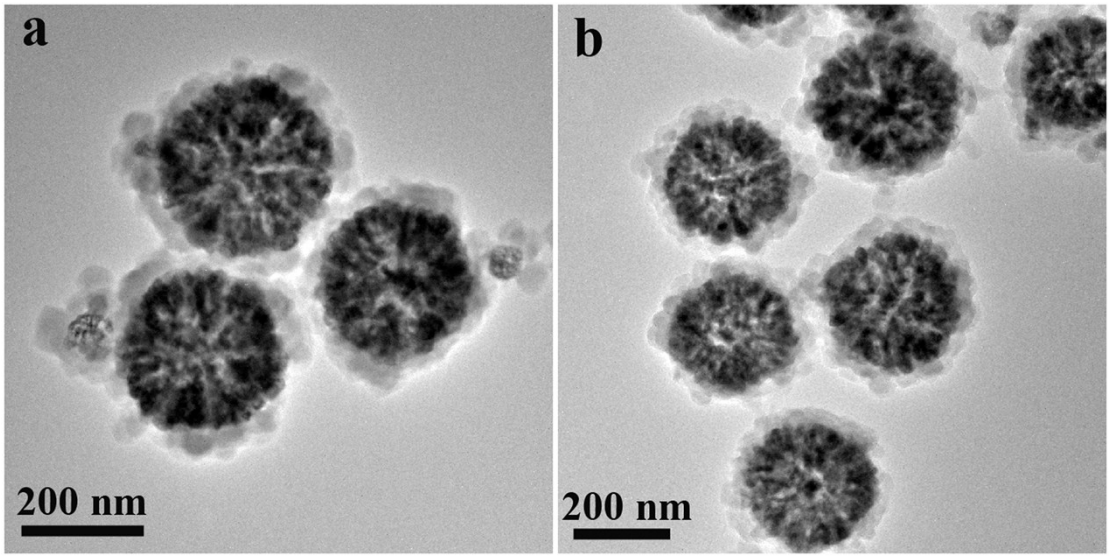

Fig. S4 TEM images of mZIF-8 without the acid treatment (a) and after the acid treatment at pH=2.0 (b).

Table S1 Comparison of K_m and V_{max} of mZIF-8 and reported HRP.

Catalyst	**Substrate**	**K_m (mM)**	**V_{max} (10^{-8} M s^{-1})**
HRP[1]	H_2O_2	3.7	8.71
HRP[2]	OPD	7.3	2.58
mZIF-8	H_2O_2	2.42	5.87
mZIF-8	OPD	0.62	8.72

Table S2 Comparison of colorimetric glucose sensors based enzyme-like nanomaterials for glucose detection through two-step reaction.

Materials	LOD for glucose	Ref
GOx&HRP-$Cu_3(PO_4)_2$•$3H_2O$ nanoflowers	0.2 μM	4
$ZnFe_2O_4$ nanoparticles	0.3 μM	17
Fe_3O_4 nanoparticles	30 μM	30
Co_3O_4 nanoparticles	5 μM	31
C_{60}-Carboxyfullerenes	0.4 μM	32
CeO_2 nanoparticles	0.5 mM	33
Grapheneoxide	1 μM	34
Luminescent carbonnano particles	20 μM	35
mZIF-8	1.9 μM	Present work

References

1. L. Gao, J. Zhuang, L. Nie, J. Zhang, Y. Zhang, N. Gu, T. Wang, J. Feng, D. Yang, S. Perrett and X. Yan, *Nat. Nano.*, 2007, **2**, 577-583.

2. H. D. Li, Dissertation, University of Liaoning Normal, 2009.