

Supporting Information

Concerted catalysis on *Tanghulu*-like Cu@zeolitic imidazolate framework-8 (ZIF-8) nanowires with tuning catalytic performances for 4-nitrophenol reduction

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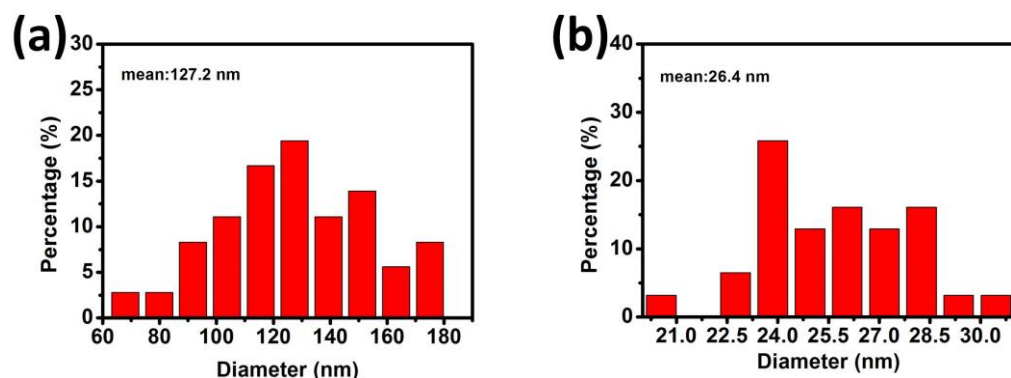


Figure S1. The size distribution diagrams (a, b) of ZIF-8 and Cu NWs in beaded Cu@ZIF-8 NWs.

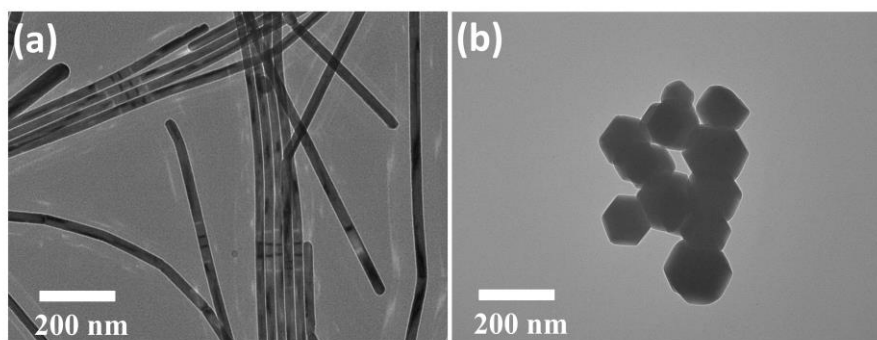


Figure S2. TEM images of (a) Cu NWs and (b) free ZIF-8 particles.

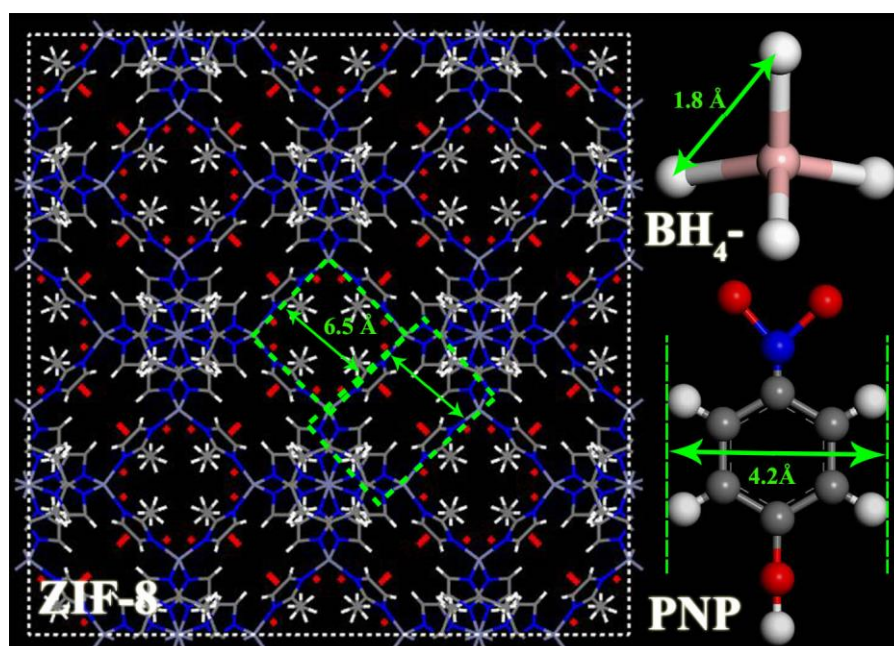


Figure S3. Ball-and-stick models of ZIF-8, BH₄⁻ and PNP obtained from the Inorganic Crystal Structure Database.

Table S1. Comparison of apparent reaction rate (k_{app}) and active factor (k_{nor}) of different catalysts toward the reduction of p-nitrophenol reported in recent years.

Catalyst	$k_{app}(s^{-1})$	$k_{nor}(s^{-1} \text{ mg}^{-1})$	Reference
Beaded Cu@ZIF-8 NWs	0.0224	1.9912	This Work
Cu NWs	0.0083	0.3005	This Work
Cu-MnO ₂	0.0114	0.5710	1
Cu NWs-Ag	0.0067	0.0740	2
Cu NCs	0.0101	-	3
Pt-Au pNDs/RGOs	0.0038	0.9260	4
Ag@Pd-Graphene	0.0087	0.0867	5
PtPdBi nanowire	0.0043	0.2870	6

References

- 1 C. Du, S. He, X. Gao, W. Chen, *Chemcatchem*, 2016, **8**, 2885-2889.
- 2 Y. Sun, F. Zhang, L. Xu, Z. Yin, X. Song, *J. Mater. Chem. A*, 2014, **2**, 18583-18592.
- 3 P. Zhang, Y. Sui, G. Xiao, Y. Wang, C. Wang, B. Liu, G. Zou, B. Zou, *J. Mater. Chem. A*, 2013, **1**, 1632-1638.
- 4 J.J. Lv, A.J. Wang, X. Ma, R.Y. Xiang, J.R. Chen, J.J. Feng, *J. Mater. Chem. A*, 2014, **3**, 290-296.
- 5 C.H. Liu, X.Q. Chen, Y.F. Hu, T.K. Sham, Q.J. Sun, J.B. Chang, X. Gao, X.H. Sun, S.D. Wang, *Acs Appl. Mater. Inter.*, 2013, **5**, 5072.
- 6 Y.Y. Shen, Y. Sun, L.N. Zhou, Y.J. Li, E.S. Yeung, *J. Mater. Chem. A*, 2014, **2**, 2977-2984.