

Electronic Supplementary Information for New J Chem

Cage-like Pores of a Metal-Organic Framework for Separations and Encapsulation of Pd Nanoparticles for Efficient Catalysis

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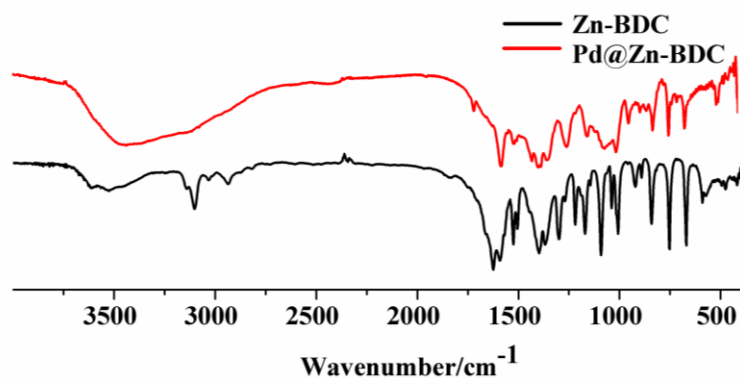


Fig. S1. IR spectra of Zn-BDC and Pd@Zn-BDC.

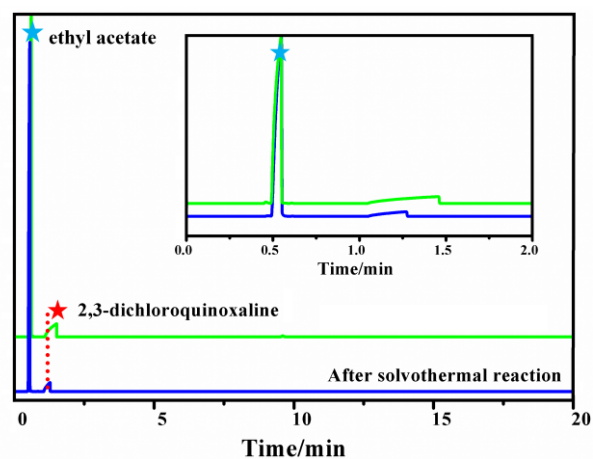


Fig. S2. Gas chromatograms which demonstrate the decomposition of 2, 3-di(1,2,4-triazole) quinoxaline to 2, 3-dichloroquinoxaline.

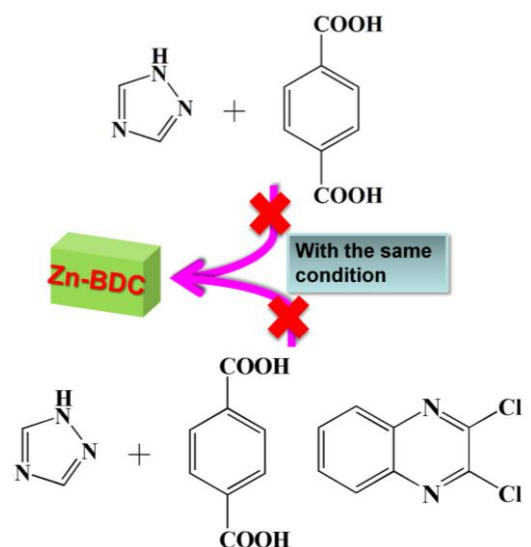


Fig. S3. Parallel experiments of the synthesis of Zn-BDC.

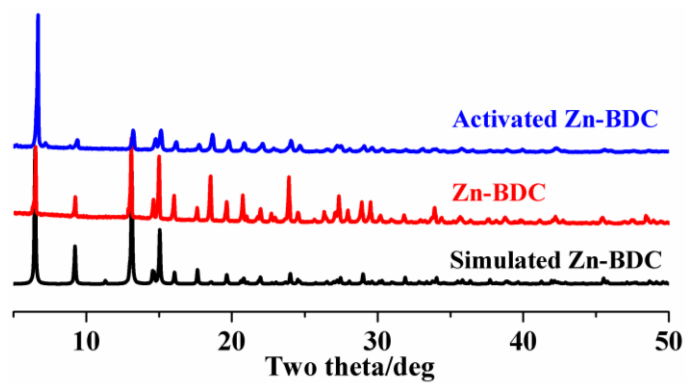


Fig. S4. PXRD patterns of Zn-BDC and activated Zn-BDC.

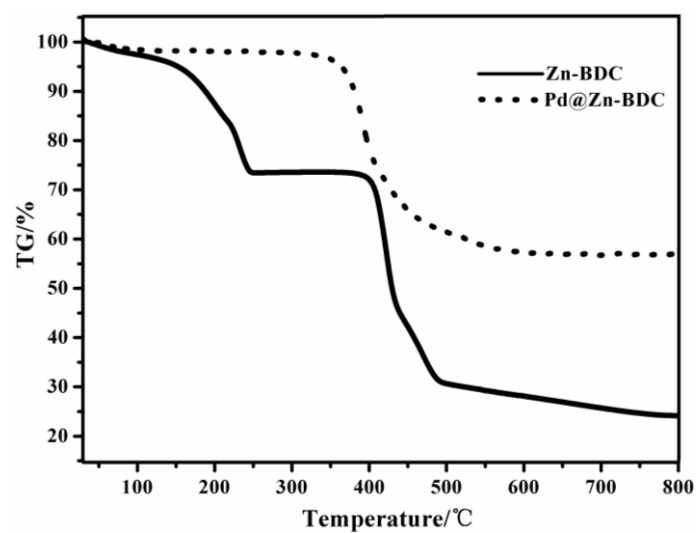


Fig S5. TGA profiles of Zn-BDC and Pd@Zn-BDC

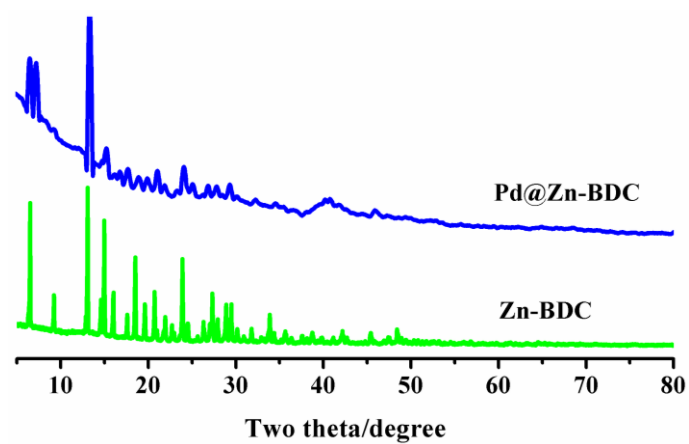


Fig S6. PXRD patterns of Pd@Zn-BDC.

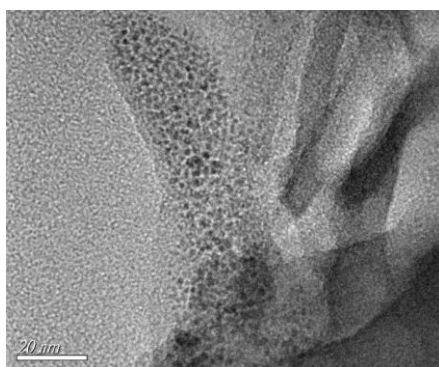


Fig S7. PXRD patterns of Pd@Zn-BDC after catalytic reduction of 4-NP.

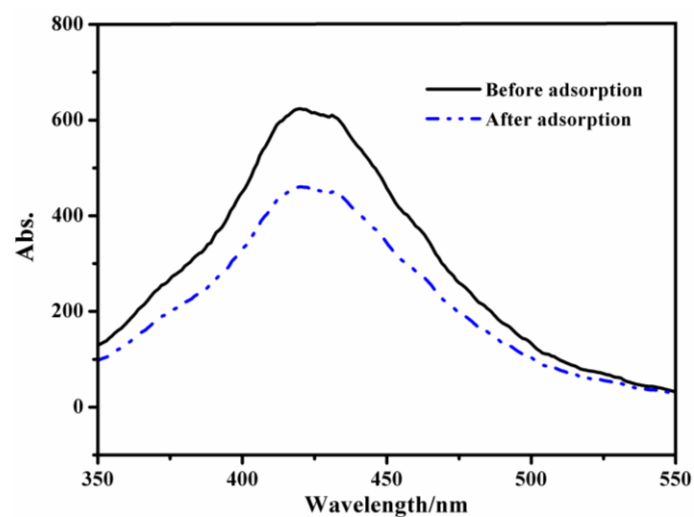


Fig S8. Luminescence spectra of 5-FU after adsorbed by activated Zn-BDC.

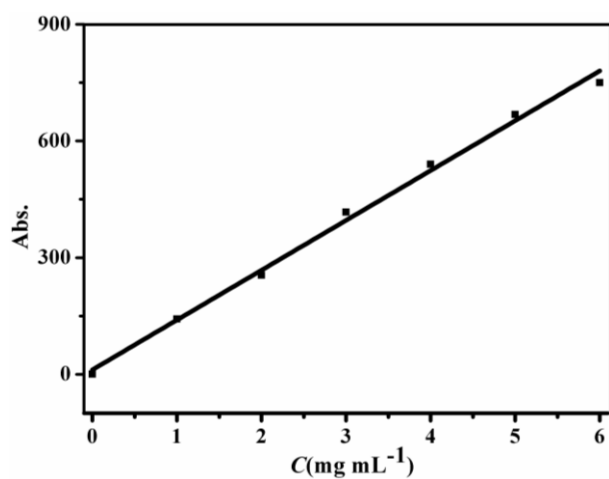


Fig S9. The fitting of the concentration of 5-FU versus absorption in methanol solution.

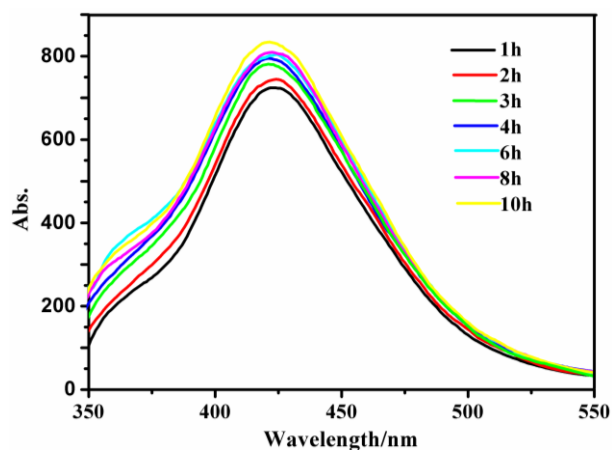


Fig S10. Luminescence spectra of 5-FU released from Zn-BDC.

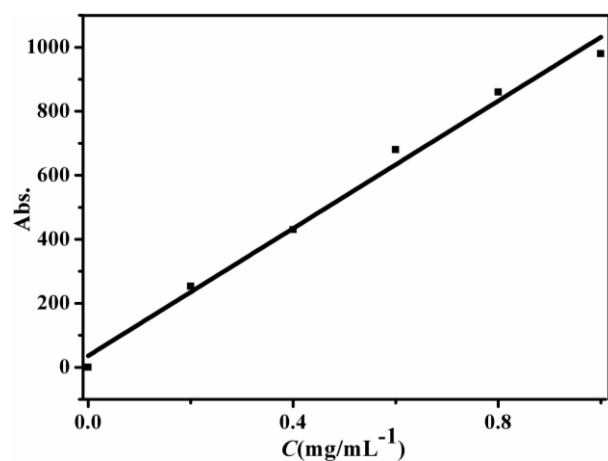


Fig S11. The fitting of the concentration of 5-FU versus absorption in PBS solution.

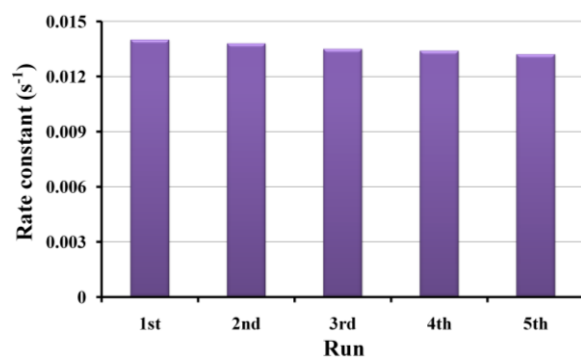


Fig S12. The results of the reduction catalyzed by recycled Pd@Zn-BDC.

Table S1. Crystal data and structure refinements for Zn-BDC

Compound	Zn-BDC
Formula	C ₁₀ H ₁₃ N ₄ O ₃ Zn
Formula weight	302.61
Crystal size / mm	0.30 × 0.28 × 0.25
Crystal system	Tetragonal
Space group	<i>P4</i> _{<i>ncc</i>}
<i>a</i> (Å)	13.4761(19)
<i>b</i> (Å)	13.4761(19)
<i>c</i> (Å)	27.254(5)
$\alpha=\beta=\gamma$ (°)	90.00
<i>D</i> _c (g cm ⁻³)	1.624
<i>Z</i>	16
<i>F</i> (000)	2480
Reflections collected	12413
Unique reflections	2084
μ (mm ⁻¹)	1.991
<i>R</i> ₁ [<i>I</i> > 2σ(<i>I</i>)]	0.0520
<i>wR</i> ₂ [<i>I</i> > 2σ(<i>I</i>)]	0.1573
max/min (e Å ⁻³)	0.491/-0.372
Goodness-of-fit on <i>F</i> ²	1.089

Table S2. Selected bond lengths (Å) and angles (°) for the three compounds

Zn1-O2	1.961(4)	Zn1-N1	2.010(4)	Zn1-N2	2.034(4)
Zn1-N3	2.019(4)				
O2-Zn1-N1	120.91(17)	O2-Zn1-N3	114.58(16)	N1-Zn1-N3	107.22(15)
O2-Zn1-N2	104.66(17)	N1-Zn1-N2	101.52(15)	N3-Zn1-N2	106.13(15)