Supporting Information

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Table S1. Selected Distances and Bond Angles for Zn-MOF-1

		Distance/Å	
Zn1–N1	2.023(5)	Zn1–O3	1.941(4)
Zn1–N5[1]	1.992(5)	N5–Zn1	1.992(5)
Zn1–O1	1.961(4)		
		Angles/°	
N5[1]–Zn1–N1	107.9(2)	C9–N1– Zn1	132.4(4)
O1–Zn1–N1	97.9(2)	C11–N1– Zn1	123.3(4)
O1–Zn1-N5[1]	115.26(19)	C20–N5–Zn1[4]	124.2(4)
O3–Zn1–N1	108.15(19)	C21–N5– Zn1[4]	128.2(4)
O3–Zn1–N5[1]	121.0(2)	C1–O1– Zn1	110.6(4)
O3–Zn1–O1	104.10(17)	C5–N3– Zn1	115.3(4)

Symmetry code: [1]1/2–*X*, 1/2+*Y*, –*Z*; [2]1–*X*, +*Y*, 2–*Z*; [3]–*X*, +*Y*, 1–*Z*; [4]1/2–*X*, –1/2+*Y*, –*Z*;

Table S2. Selected Distances and Bond Angles for Zn-MOF-2

		Distance/Å	
Zn1–N1	2.006(6)	Zn1–O4’	1.927(6)
Zn1–N3	2.061(6)	Zn1–O2	2.022(4)
		Angles/°	
N1-Zn1-N3	107.9(2)	C17-N1-Zn1	125.9(5)
N1-Zn1-O2	129.8(3)	C22-N3-Zn1	132.2(6)
N1-Zn1-C14'[1]	97.7(5)	C11'-C14'-Zn1[2]	164.0(16)
N3-Zn1-C14'[1]	106.6(5)	O3'-C14'-Zn1[2]	80.1(11)
O2-Zn1-N3	93.2(3)	C20-N3-Zn1	116.1(6)
O2-Zn1-C14'[1]	119.9(6)	C20'-N3-Zn1	110.9(8)

O4[1]-Zn1-N1	111.0(3)	O4-C14'-Zn1[2]	39.3(10)
O41-Zn1-N3	112.8(3)	C1-O2-Zn1	110.6(4)
O41-Zn1-O2	101.2(4)	C14-O4-Zn1[2]	111.7(8)
O41-Zn1-C14'1	18.9(5)	C14'-O4-Zn1[2]	121.8(13)
C15-N1-Zn1	127.4(6)		

Symmetry code: [1]1-Y,+X-Y,-1+Z; [2]1+Y-X,1-X,1+Z; [3]1-Y,1+X-Y,+Z; [4]+Y-X,1-X,+Z; [5]-Y,+X-Y,+Z; [6]+Y-X,-X,+Z;

Table S3. Selected Distances and Bond Angles for Zn-MOF-3

	Distance/Å		
Zn1–N1	1.983(8)	Zn2–O4	1.933(9)
Zn1–N41	2.009(9)	Zn2–O8	1.885(9)
Zn1–O2	1.932(10)	Zn3–N10	2.030(10)
Zn1–O52	1.954(9)	Zn3–N123	2.012(10)
Zn2–N6	1.999(9)	Zn3–O9	1.961(11)
Zn2–N7	2.038(9)	Zn3–O11	1.865(9)
	Angles/°		
N1–Zn1–N4[1]	100.8(4)	C8–N1– Zn1	131.2(8)
O2–Zn1–N1	125.7(4)	C17–N4– Zn11	127.8(8)
O2–Zn1-N4[1]	100.0(4)	C18–N4–Zn1[1]	128.7(8)
O2–Zn1–O5[2]	101.4(4)	C21–N6– Zn2	126.3(8)
O5[2]–Zn1–N1	122.4(4)	C22–N6– Zn2	125.7(8)
O5[2]–Zn1–N4[1]	101.5(4)	C38–N7– Zn2	126.4(8)
N6–Zn2–N7	97.2(4)	C40–N7– Zn2	126.4(8)
O4–Zn2–N6	123.4(4)	C48–N10– Zn3	123.1(8)
O4–Zn2–N7	107.8(4)	C49–N10– Zn3	130.3(9)
O8–Zn2–N6	115.8(5)	C50–N12– Zn3[3]	124.3(8)
O8–Zn2–N7	101.9(4)	C51–N12– Zn3[3]	132.0(9)

O8–Zn2–O4	107.5(4)	C1–O2– Zn1	113.7(8)
N12[3]–Zn3–N10	100.8(5)	C23–O4– Zn2	113.9(7)
O9–Zn3– N10	119.2(4)	C30–O5– Zn1[4]	113.8(8)
O9–Zn3–N12[3]	110.3(5)	C31–O2– Zn2	115.6(11)
O11–Zn3–N10	95.5(4)	C53–O9– Zn3	115.5(11)
O11–Zn3–N12[3]	122.5(4)	C54–O11– Zn3	111.6(9)
O11–Zn3–O9	108.4(4)		

Symmetry code: [1]-X,-Y,+Z; [2]-1+X,-Y,1/2+Z; [3]-X,1-Y,+Z; [4]1+X,-Y,-1/2+Z; [5]-1-X,1-Y,+Z; [6]2-X,1-Y,+Z; [7]-1-X,-Y,+Z

Figure S1. The PXRD of Zn-MOF-1 for adsorption and desorption

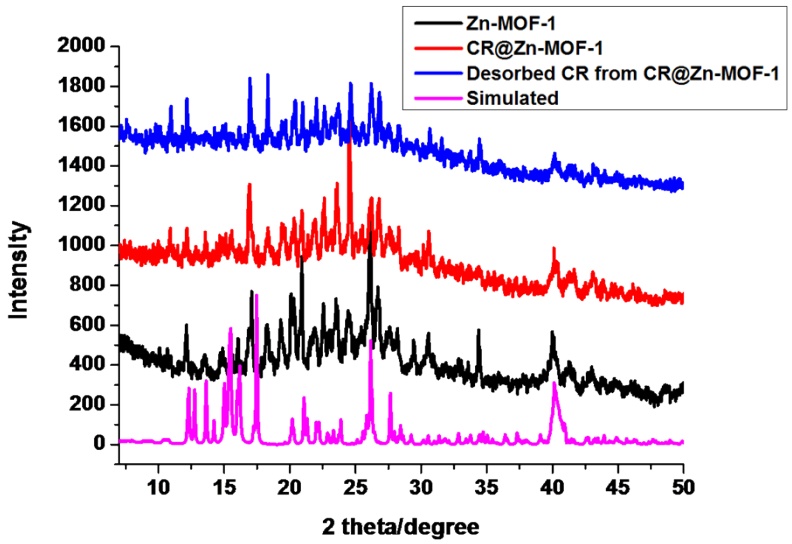


Figure S1. The PXRD of Zn-MOF-1 for adsorption and desorption.

Figure S2. The adsorption rate with Zn-MOF-1 for RB, MO and MB

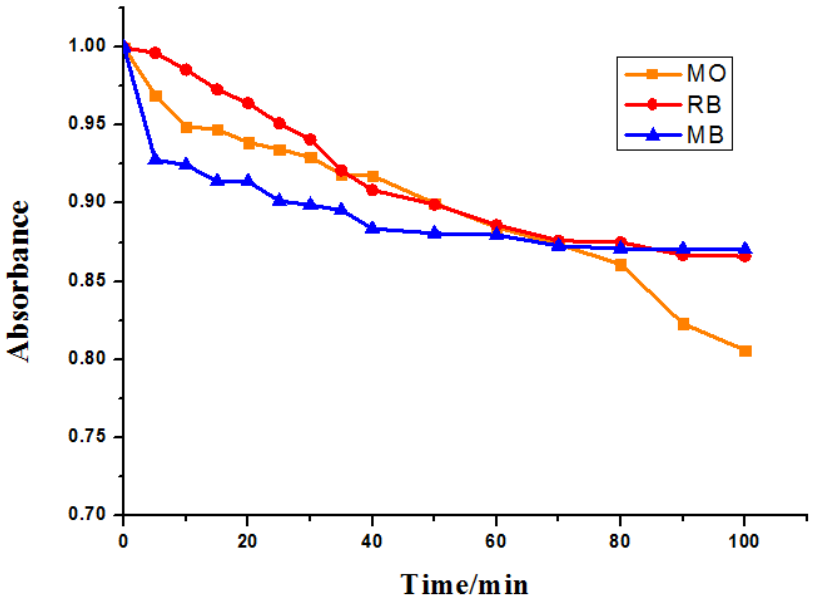
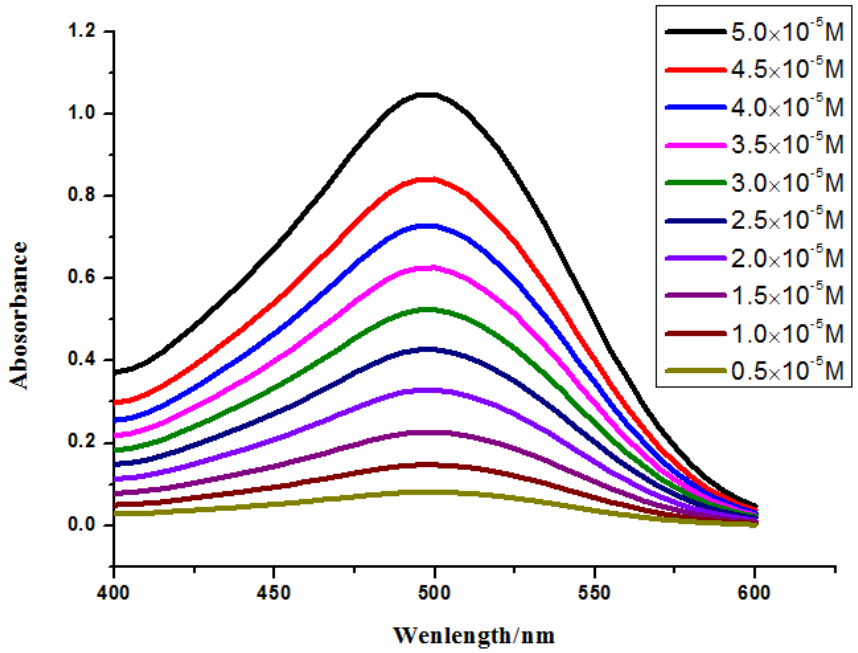


Figure S2. The adsorption rate with Zn-MOF-1 for RB, MO and MB

Figure S3. The UV-Vis of CR of the standard aqueous solution and the relation of the concentration of CR and the Absorption value



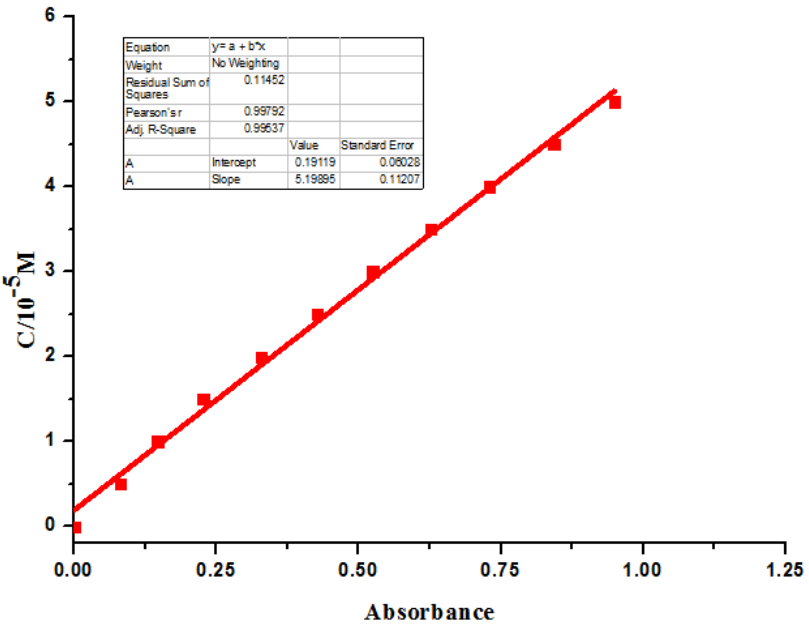
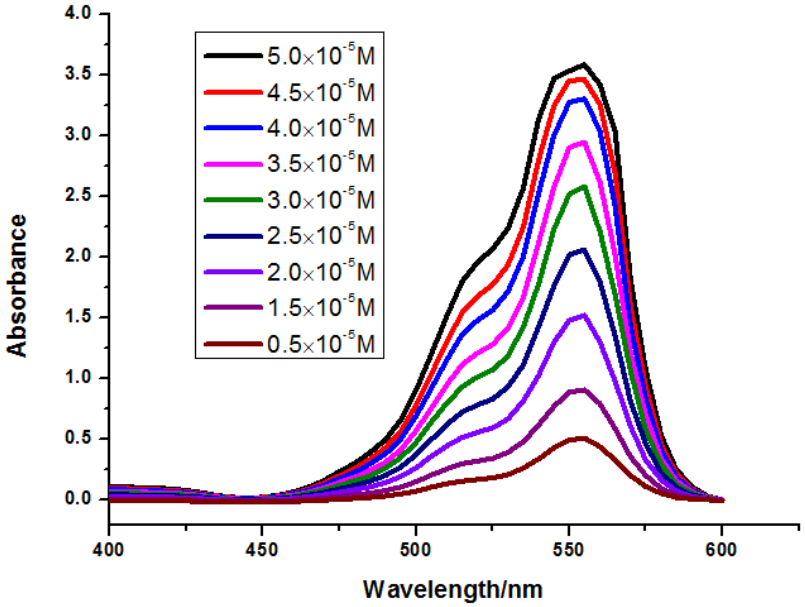


Figure S4. The UV-Vis of RB of the standard aqueous solution and the relation of the concentration of RB and the Absorption value



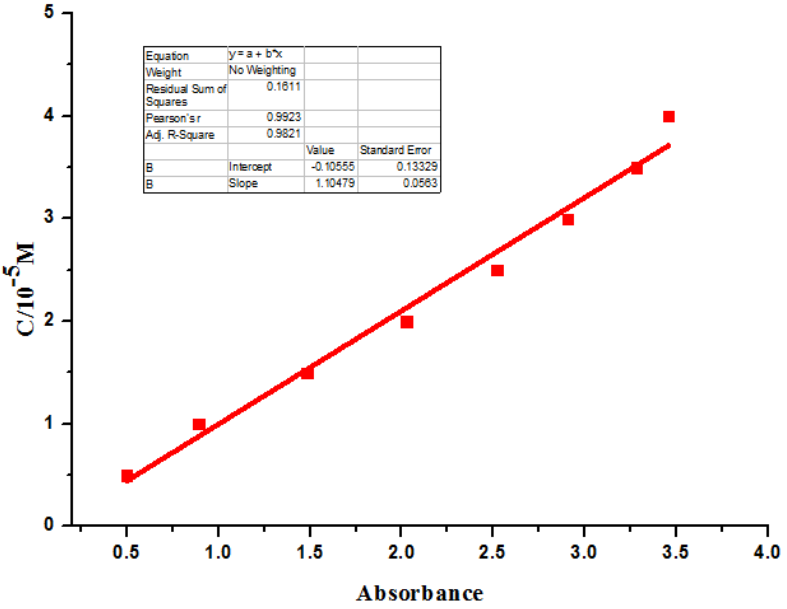
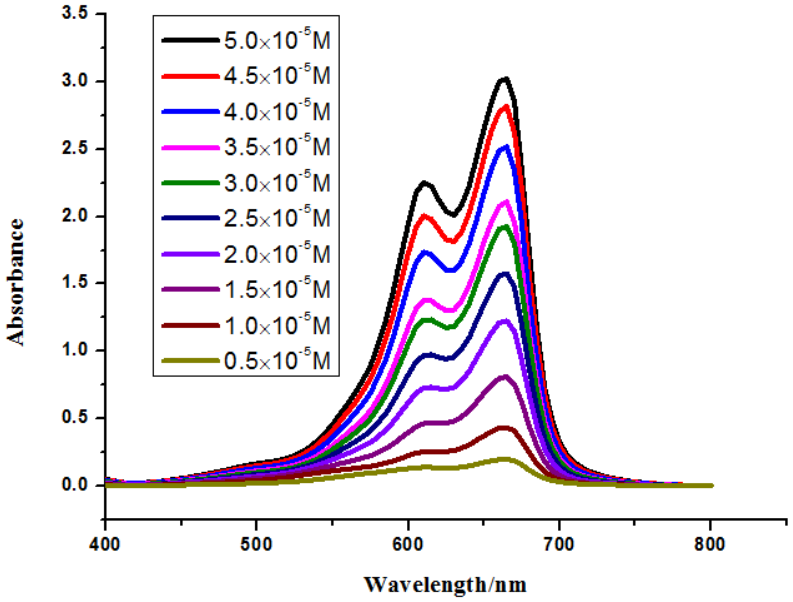


Figure S5. The UV-Vis of MB of the standard aqueous solution and the relation of the concentration of MB and the Absorption value



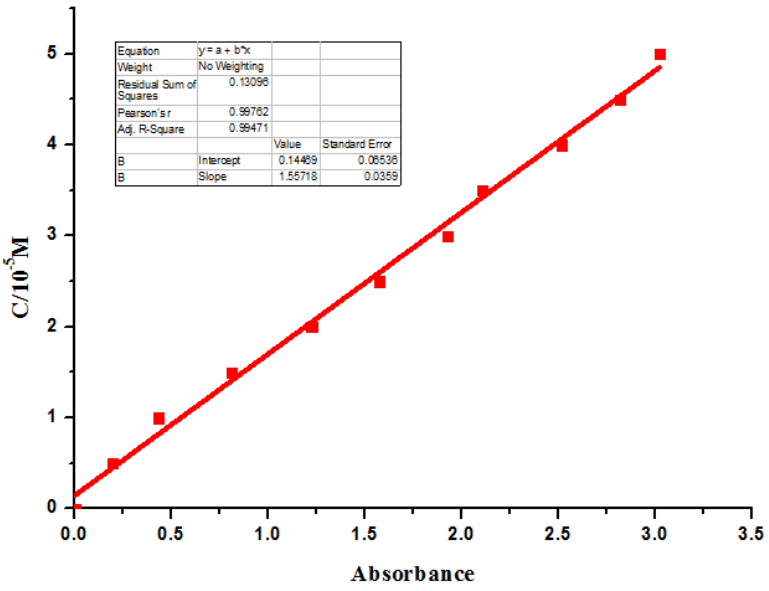
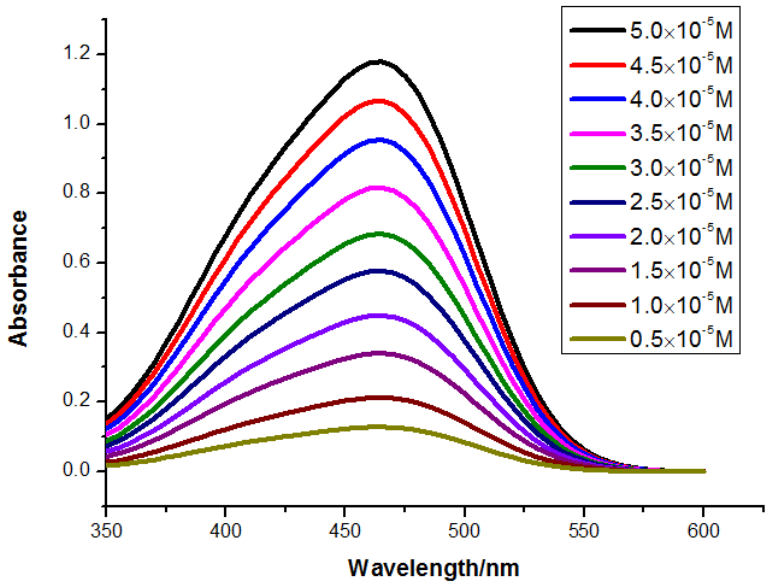


Figure S6. The UV-Vis of MO of the standard aqueous solution and the relation of the concentration of MO and the Absorption value



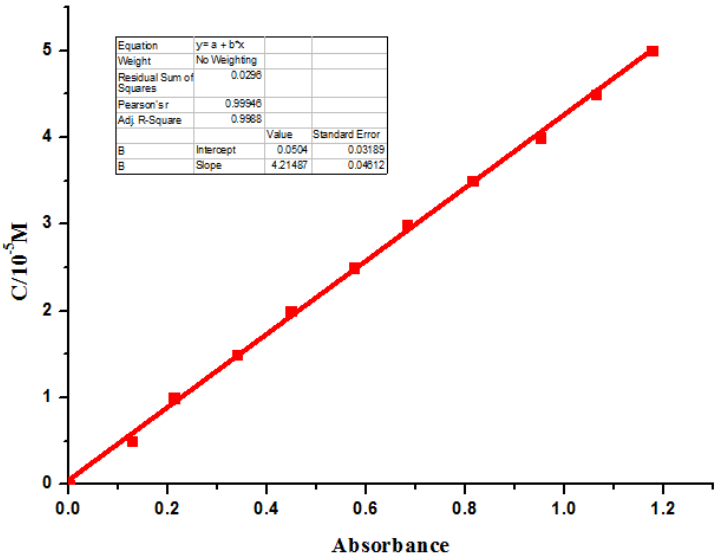


Table S4. Kinetics parameters for different kinetics model for CR adsorption using Zn-MOF-1.

Model	Parameter	CR
Pseudo-first-order	$K_1(min^{-1})$	0.4053
	$q_e(mg \cdot g^{-1})$	29.35
	R^2	0.81333
Pseudo-second-order	$K_2(g \cdot mg^{-1} \cdot min^{-1})$	0.664982
	$q_e(mg \cdot g^{-1})$	29.356
	R^2	0.99126
Second-order	$K_1(g \cdot mg^{-1} \cdot min^{-1})$	0.101
	$q_e(mg \cdot g^{-1})$	0.13
	R^2	0.63304
Intraparticle diffusion	$K_1(mg \cdot g^{-1} \cdot min^{0.5})$	13.55686
	$q_e(mg \cdot g^{-1})$	18.55632
	R^2	0.54724