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**Table S<sub>5</sub>.** Adsorption Isotherms Constants and Correlation of Chlorpyrifos Removal by ZIF-2M.

**Fig. S<sub>1</sub>.** EDX spectrum of (a) ZIF-2M and (b) ZIF-8.

**Fig. S<sub>2</sub>.** Normal plots for chlorpyrifos removal by (a) ZIF-2M (b) ZIF-8.

**Fig. S<sub>3</sub>.** Plot of residual vs. run for sorption of chlorpyrifos with (A) ZIF-2M (B) ZIF-8.

**Fig. S<sub>4</sub>.** (A) Langmuir (B) Freundlich adsorption isotherms of chlorpyrifos onto ZIF-2M.

**Table S1.** Summarized Surface Area and Porosity Properties of ZIF Samples

<b>Particle</b>	<b>ZIF-2M</b>	<b>ZIF-8</b>
<b>BET (m<sup>2</sup>/gr)</b>	1,829.4	1,797.7
<b>Total pore volume(cm<sup>3</sup>/gr)</b>	1.1754	0.981
<b>Mean pore diameter(nm)</b>	2.6152	1.982

**Table S2.** Table Box- Behnken Design with the Observed Responses Values for Chlorpyrifos Removal by ZIF-2M and ZIF-8

	<b>Faction level</b>			<b>Removal efficiency(%)</b>	
	<b>A</b>	<b>B</b>	<b>C</b>		
<b>Run order</b>				<u>ZIF-2M</u>	<u>ZIF-8</u>
<b>1</b>	10	7	3	60	51
<b>2</b>	20	7	6	95	86
<b>3</b>	20	7	9	78	72
<b>4</b>	10	10	6	80	65
<b>5</b>	15	4	3	72	63
<b>6</b>	15	7	6	93	78
<b>7</b>	20	10	3	78	64
<b>8</b>	15	4	9	82	60
<b>9</b>	10	7	9	68	56

<b>10</b>	15	10	9	75	65.5
<b>11</b>	15	7	6	92	78
<b>12</b>	15	7	6	93	78.6
<b>13</b>	10	4	6	80	62
<b>14</b>	20	7	9	78	72
<b>15</b>	20	7	3	77	71.5
<b>16</b>	15	7	6	93	79
<b>17</b>	20	4	6	94	83.5

**Table S3.** Analysis of Variance (ANOVA) for Chlorpyrifos Removal by ZIF-2M

<b>Source</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Squares</b>	<b>F Value</b>	<b>P-Value Prob &gt; F</b>	
<b>Model</b>	1,684.69	9	187.19	848.17	< 0.0001	significant
<b>A-dose</b>	420.50	1	420.50	1,906.68	< 0.0001	
<b>B-TIME</b>	0.92	1	0.92	4.16	0.0808	
<b>C-Ph</b>	35.33	1	35.33	160.21	< 0.0001	
<b>AB</b>	0.15	1	0.15	0.69	0.4342	
<b>AC</b>	14.93	1	14.93	67.68	< 0.0001	
<b>BC</b>	12.47	1	12.47	56.56	< 0.0001	
<b>A<sup>2</sup></b>	98.47	1	98.47	446.52	< 0.0001	
<b>B<sup>2</sup></b>	1.82	1	1.82	8.27	0.0002	
<b>C<sup>2</sup></b>	995.71	1	995.71	4,514.91	< 0.0001	
<b>Residual</b>	1.54	7	0.22			
<b>Lack of fit</b>	0.79	3	0.26	1.41	0.3626	Not significant
<b>Pure error</b>	0.75	4	0.19			

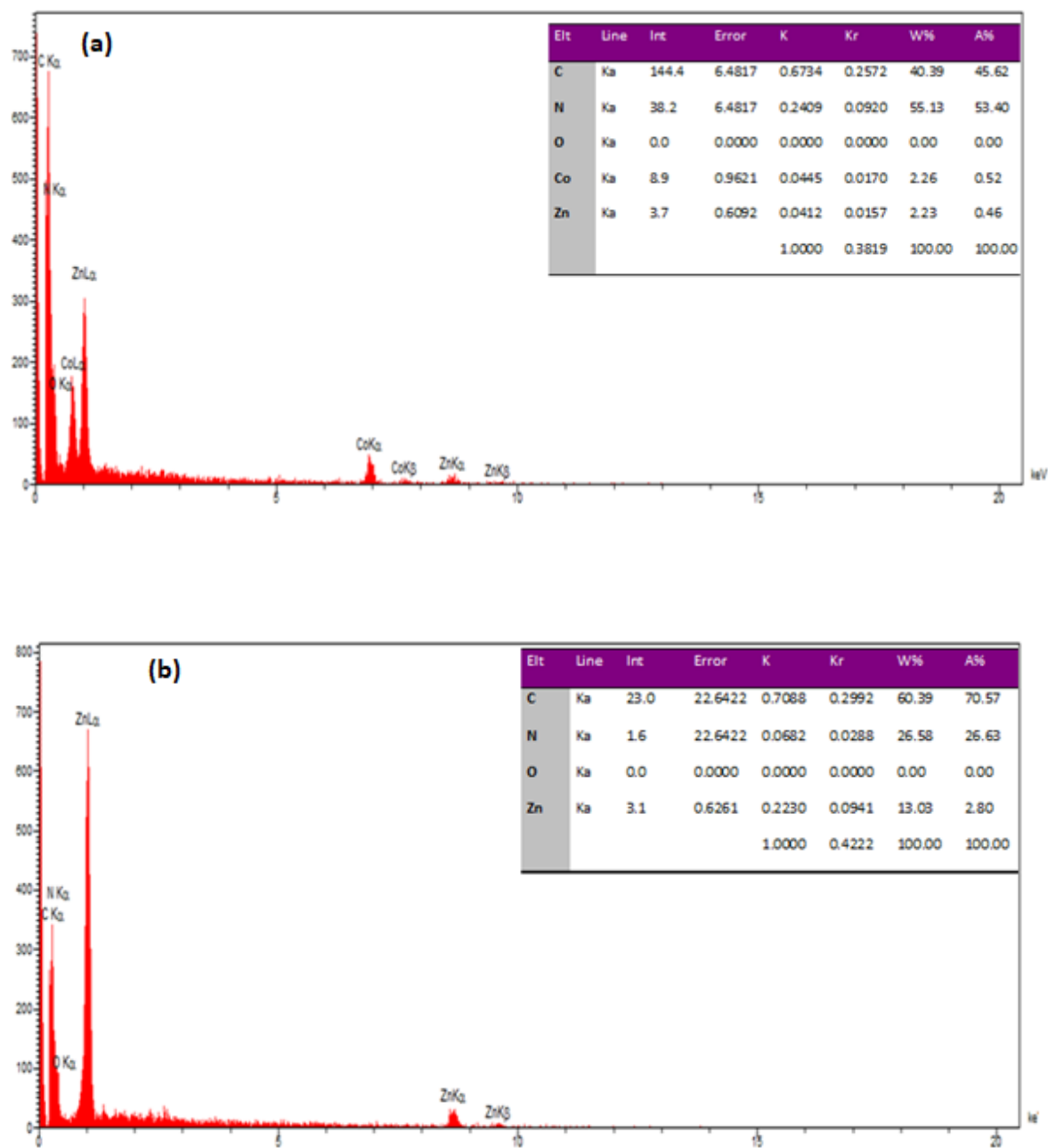
**Table S4.** Analysis of Variance (ANOVA) for Chlorpyrifos Removal by ZIF-8

Source	Sum of Squares	df	Mean Squares	F-Value	P-Value Prob > F	
<b>Model</b>	1,561.78	9	173.54	676.72	< 0.0001	significant
<b>A-dose</b>	821.93	1	821.93	3,204.61	< 0.0001	
<b>B-time</b>	0.043	1	0.043	0.17	0.6932	
<b>C-pH</b>	17.38	1	17.38	67.74	< 0.0001	
<b>AB</b>	5.98	1	5.98	23.33	0.0019	
<b>AC</b>	4.23	1	4.23	16.50	0.0048	
<b>BC</b>	37.19	1	37.19	145.00	< 0.0001	
<b>A<sup>2</sup></b>	12.57	1	12.57	48.99	0.0002	
<b>B<sup>2</sup></b>	41.22	1	41.22	160.71	< 0.0001	
<b>C<sup>2</sup></b>	642.85	1	642.85	2,506.39	< 0.0001	
<b>Residual</b>	1.80	7	0.26			
<b>Lack of fit</b>	1.53	4	0.38	4.24	0.1326	Not significant
<b>Pure error</b>	0.27	3	0.090			

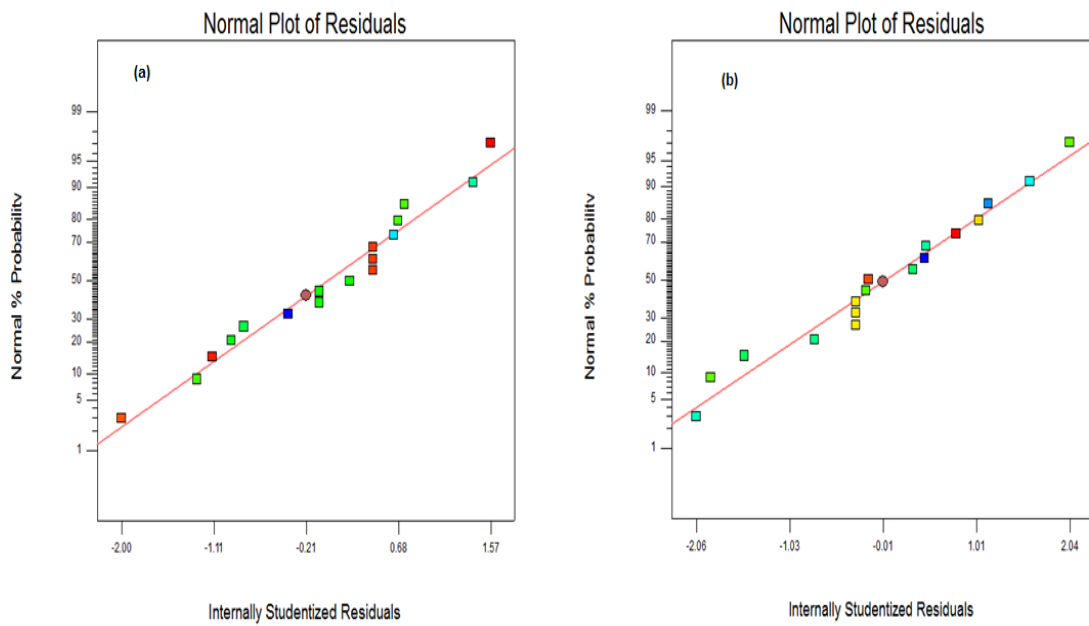
**Table S5.** Adsorption Isotherms Constants and Correlation of Chlorpyrifos Removal by ZIF-2M.

Langmuir model			Freundlich model		
$q_m(\text{mg g}^{-1})$	$K_L(\text{L mg}^{-1})$	$R^2$	$K_F(\text{L mg}^{-1})$	$n$	$R^2$
98	0.089	0.9886	14.96	1.92	0.9701

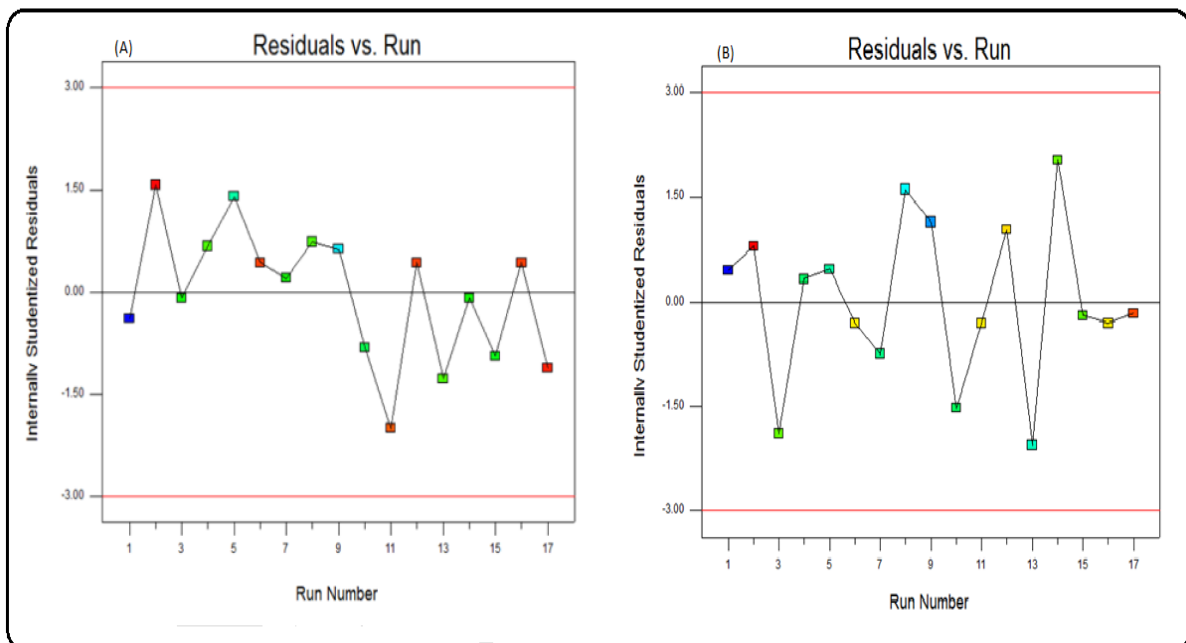
**Fig. S1.** EDX spectrum of (a) ZIF-2M and (b) ZIF-8.



**Fig. S2.** Normal plots for chlorpyrifos removal by (a) ZIF-2M (b) ZIF-8.



**Fig. S3.** Plot of residual vs. Run for sorption of chlorpyrifos with (A) ZIF-2M (B) ZIF-8.



**Fig. S4.** (A) Langmuir (B) Freundlich adsorption isotherms of chlorpyrifos onto ZIF-2M.

