

**Supplementary Information File**

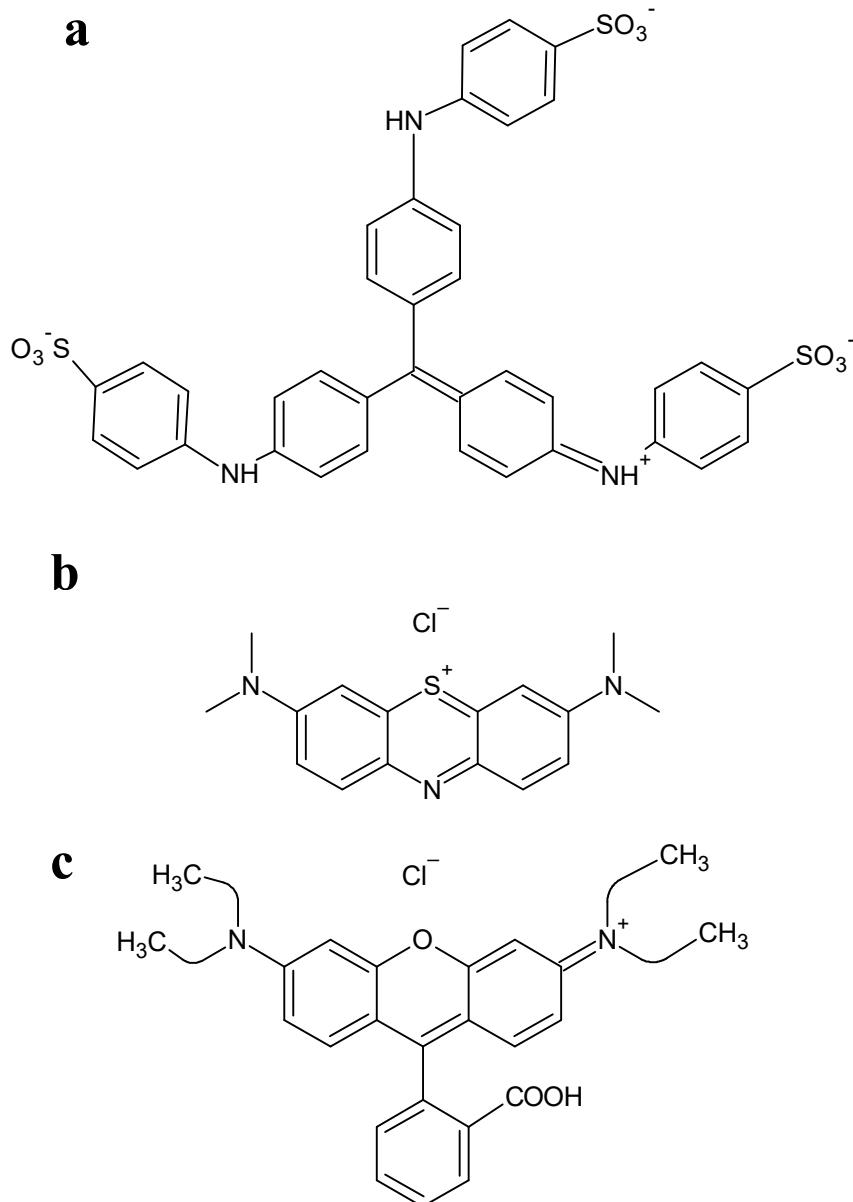
**Dye Encapsulation and One-pot Synthesis of Microporous-Mesoporous Zeolithic Imidazolate Frameworks for CO<sub>2</sub> Sorption and Adenosine Triphosphate Biosensing**

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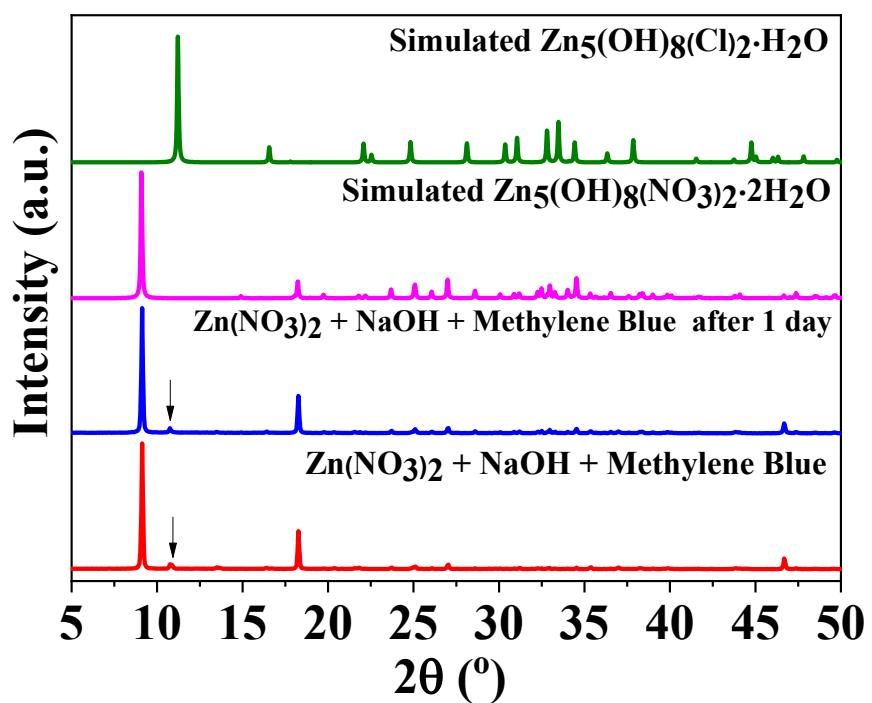
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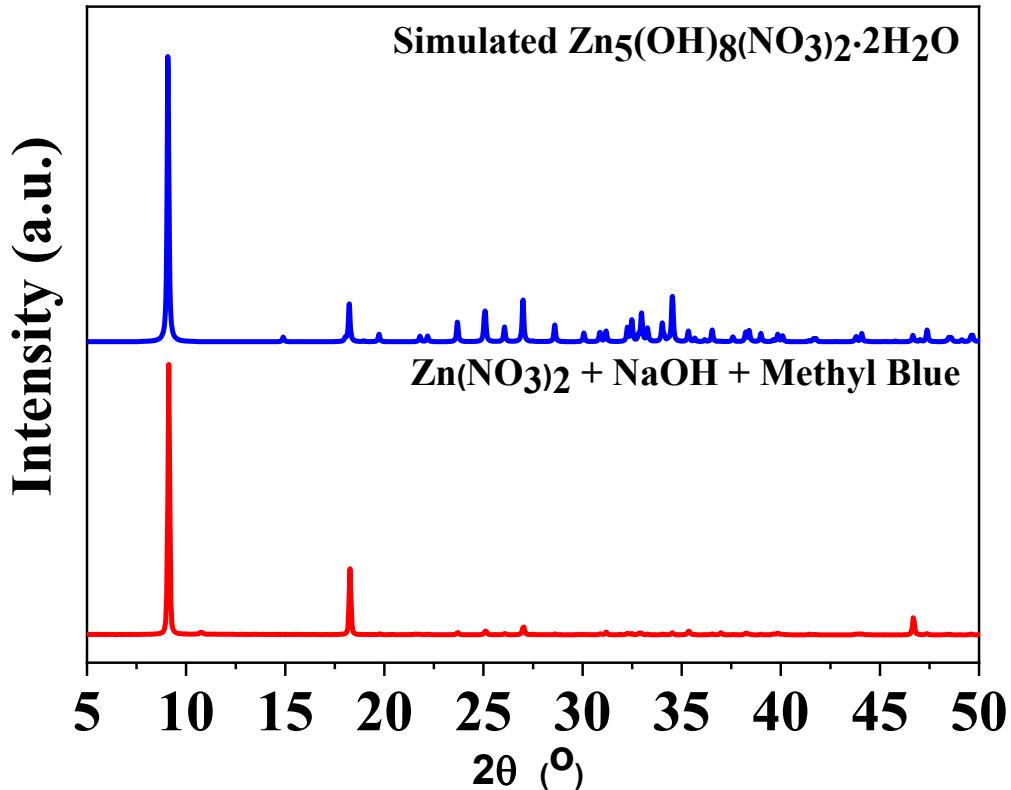
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Email: [hany.abdelhamid@aun.edu.eg](mailto:hany.abdelhamid@aun.edu.eg) (H.N. Abdelhamid)



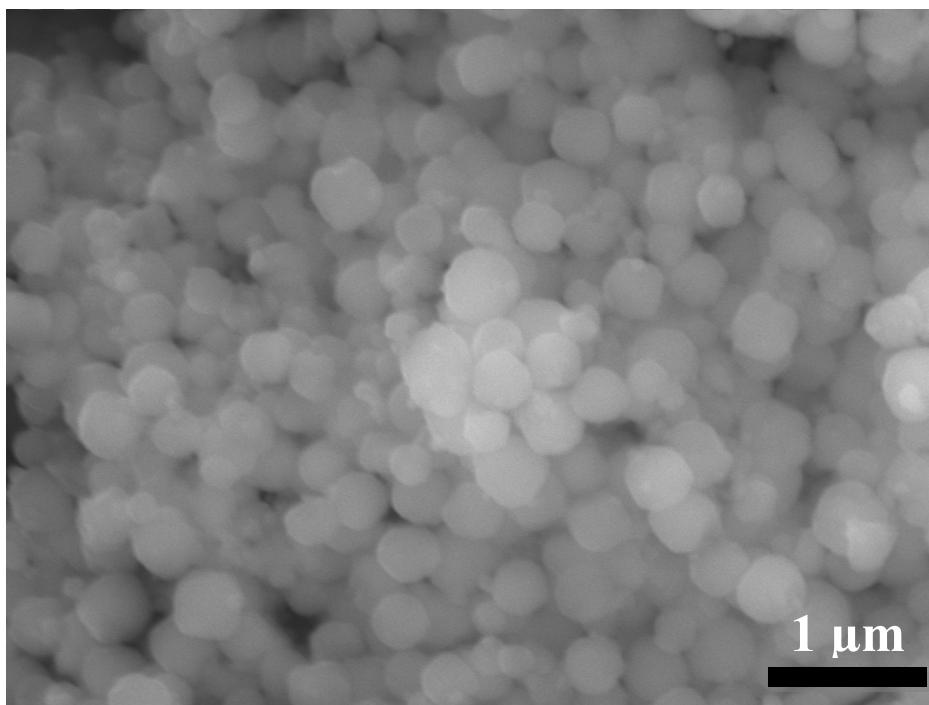
**Figure S1** Chemical structure of a) Methyl blue, b) Methylene blue, and c) Rhodamine B.



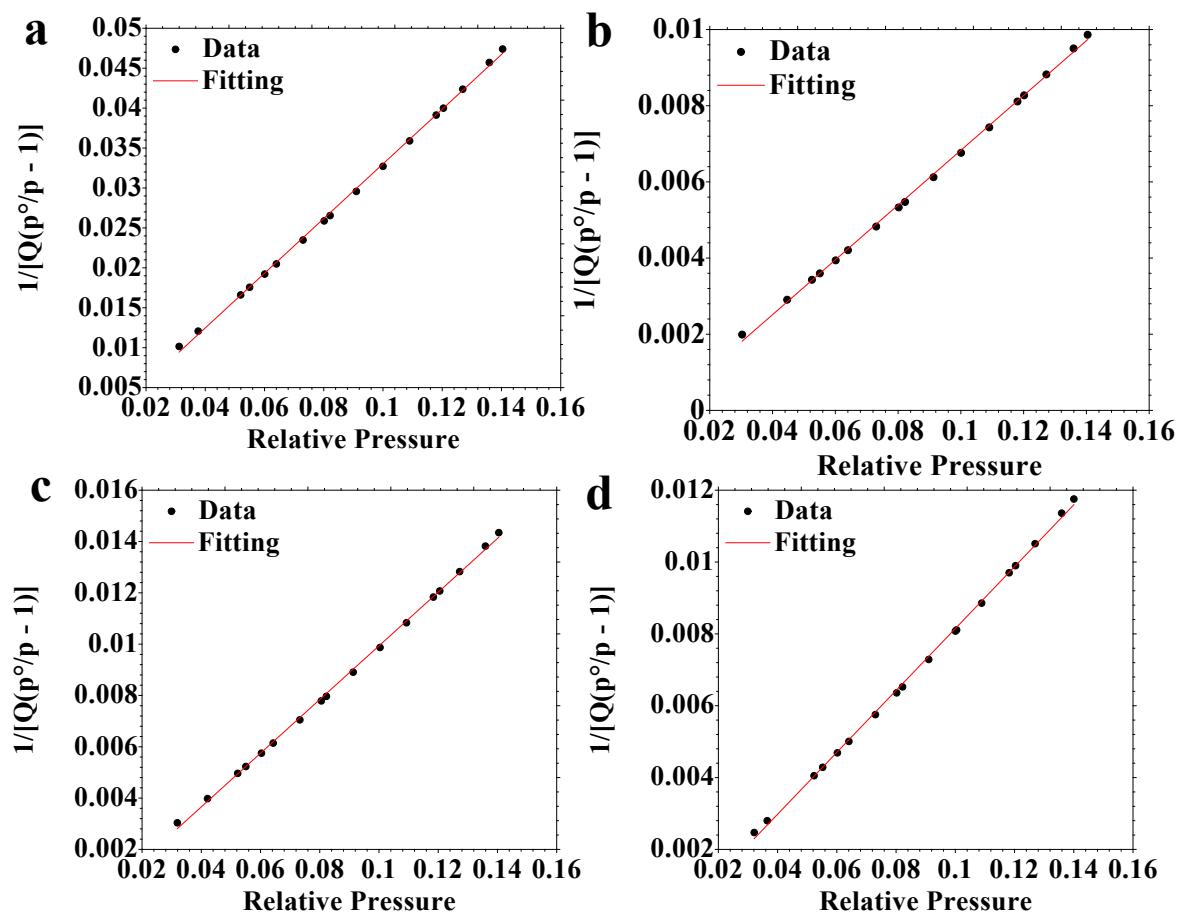
**Figure S2** XRD pattern for intermediated phase in the presence of MB, arrow shows the presence of phase of  $\text{Zn}_5(\text{OH})_8(\text{Cl})_2 \cdot \text{H}_2\text{O}$ .



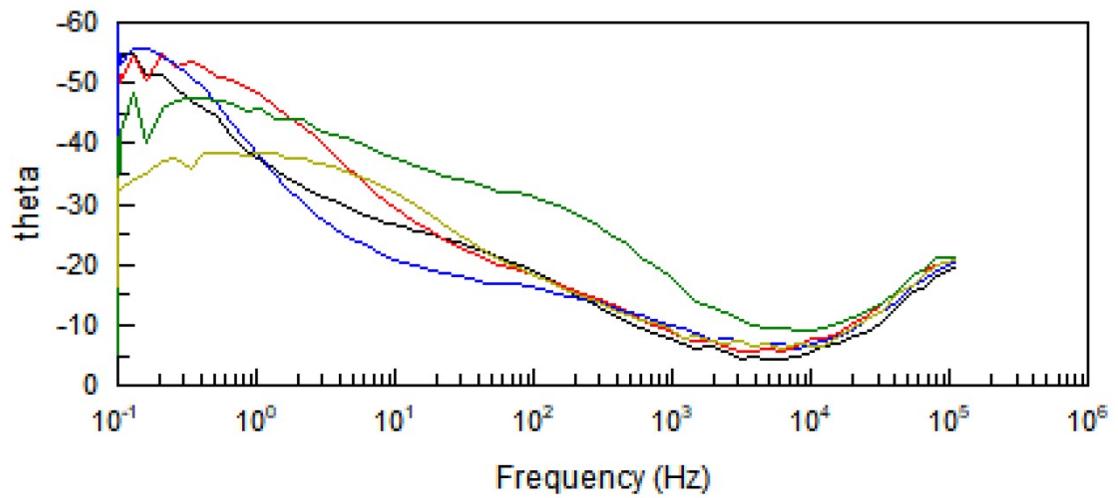
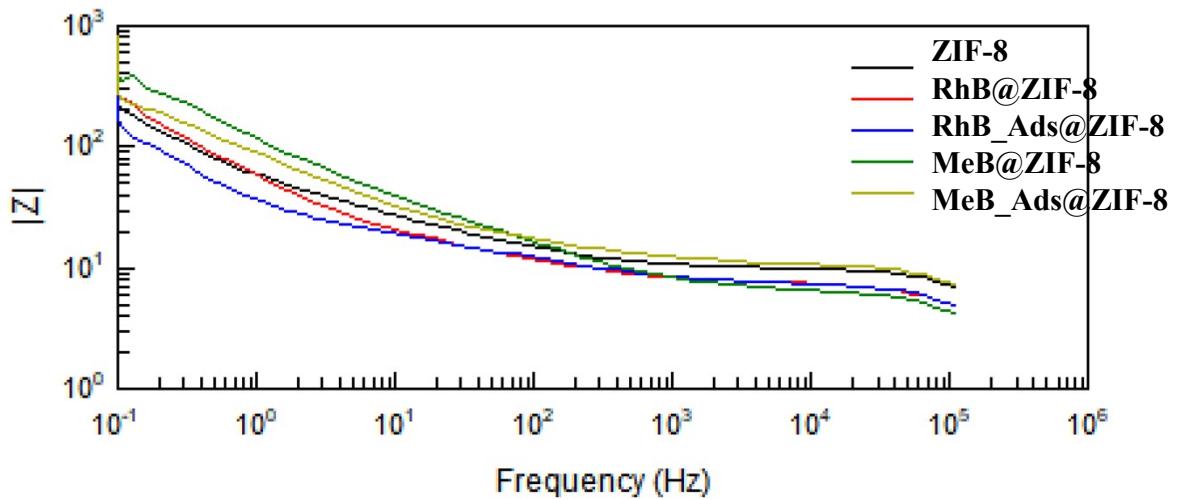
**Figure S3** XRD pattern for the intermediated phase in the presence of methyl blue.



**Figure S4** SEM image of MB@ZIF-8.



**Figure S5** Linear relationships for BET models.



**Figure S6** Bode plots for ZIF-8 and dye encapsulated and adsorbed into ZIF-8.