

Supporting information:

Size-Controllable Synthesis of Zeolitic Imidazolate Framework/Carbon Nanotube Composites

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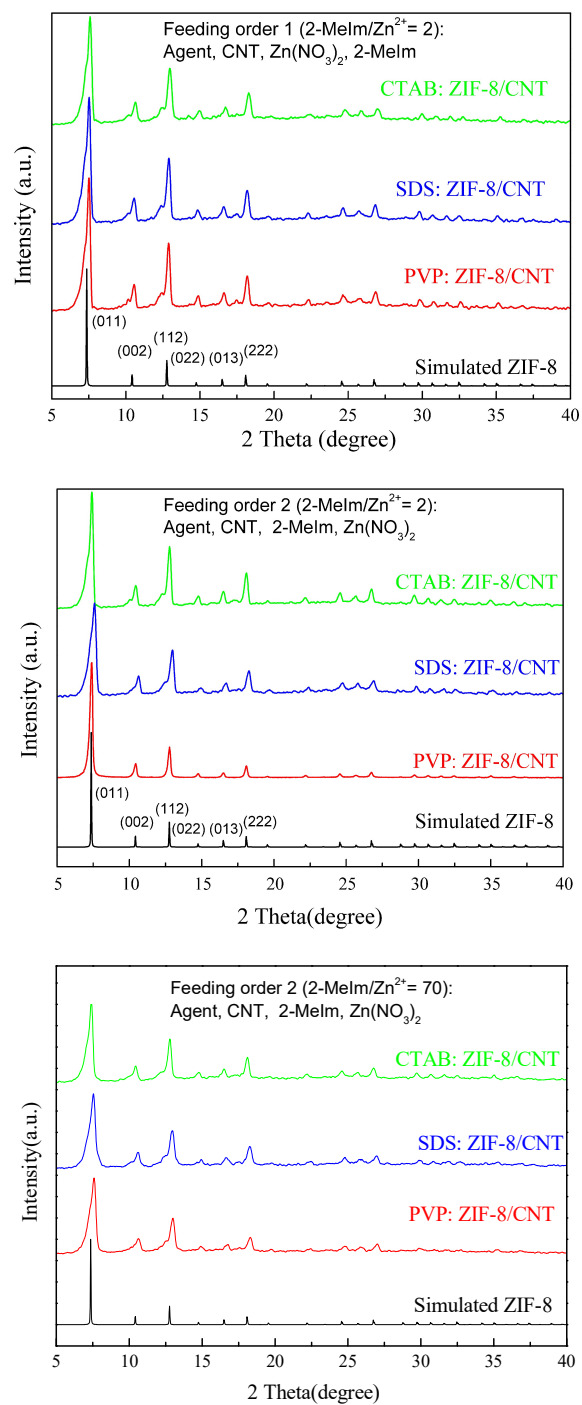


Figure S1. PXRD patterns of simulated ZIF-8 and synthesized ZIF-8/CNT composites under different reaction conditions.

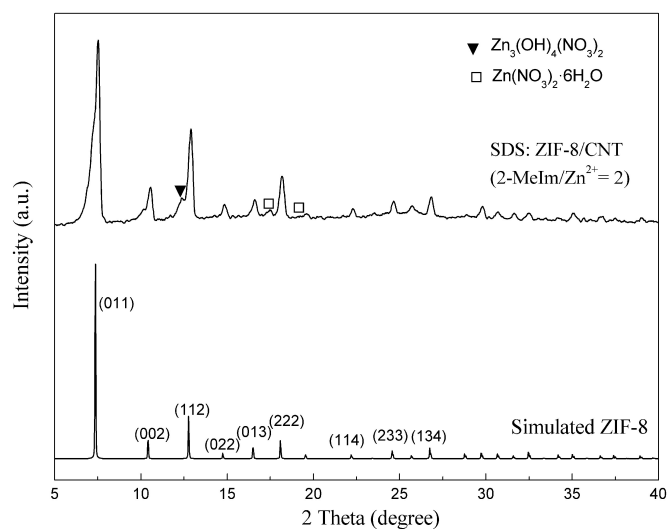


Figure S2. Major and minor phases in ZIF/CNT composite materials. PDF numbers for $\text{Zn}_3(\text{OH})_4(\text{NO}_3)_2$ and $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ are 52-0627 and 19-1464, respectively.

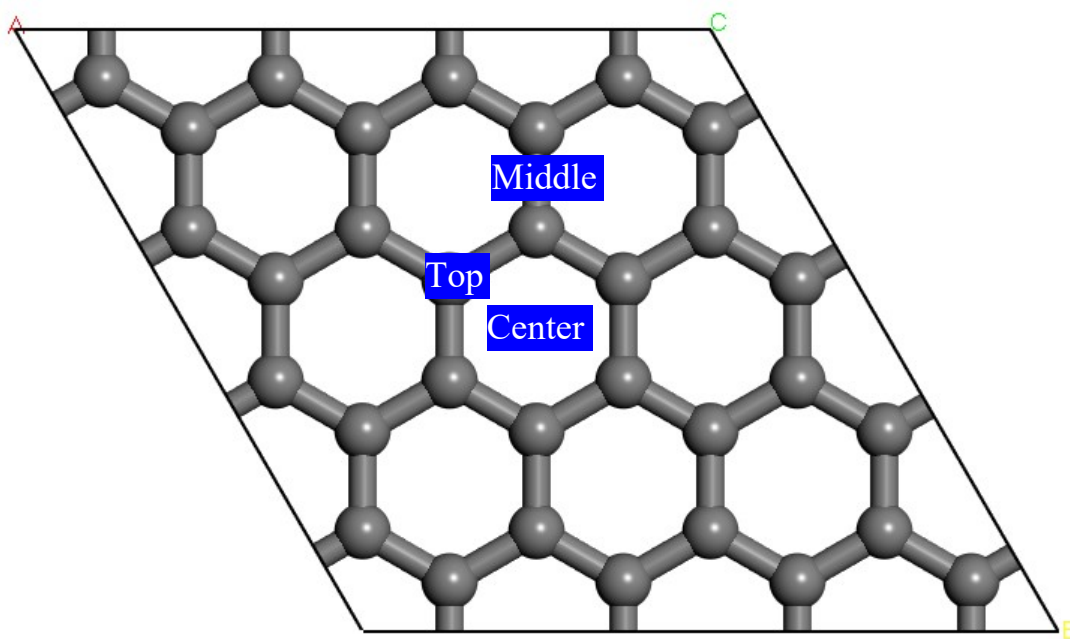


Figure S3. Top view of a single layer of graphene used in DFT calculations. Three possible adsorption positions are shown in this figure.

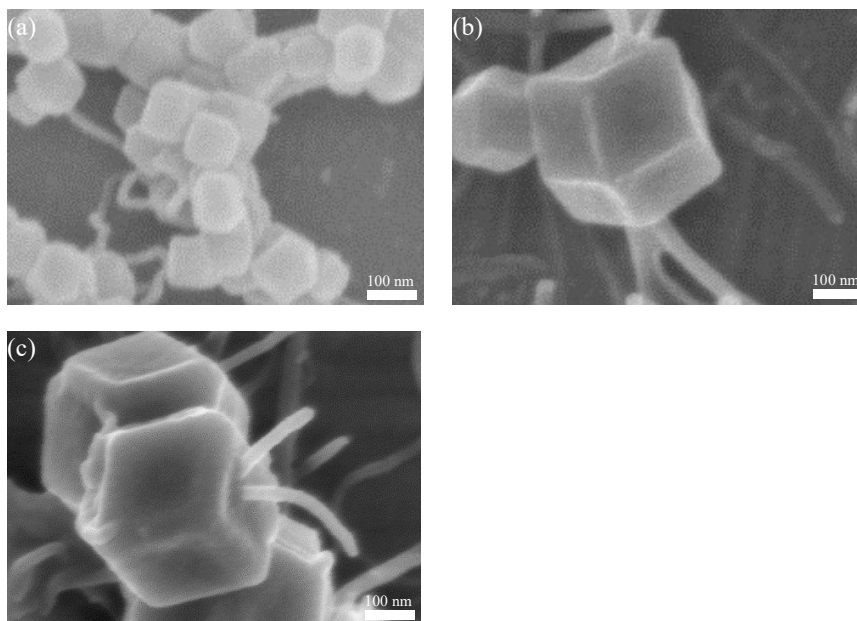


Figure S4. SEM images of the ZIF-8/CNT composite prepared by adding (a) PVP, (b) SDS, and (c) CTAB.

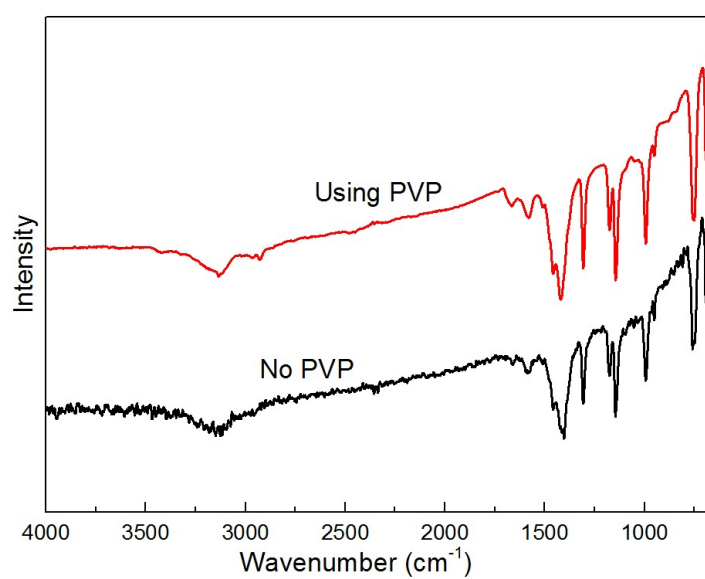


Figure S5. FT-IR spectra of ZIF-8/CNT synthesized with and without the addition of PVP.

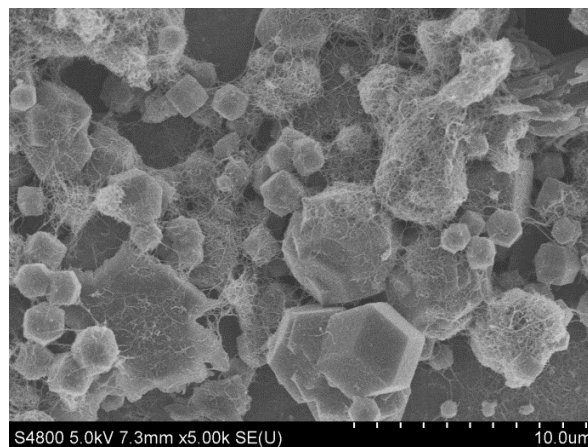
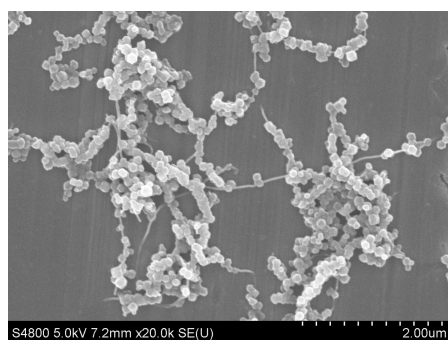
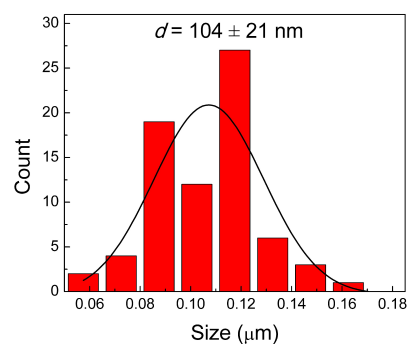


Figure S6. SEM image of the ZIF-8/CNT composite synthesized by adding 2-methylimidazole solution into $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ solution premixed with CNTs. The additive agent is PVP.



(a)



(b)

Figure S7. SEM image (a) with size distribution histograms (b) for the ZIF-8/CNT composite prepared using $2\text{-MeIm}/\text{Zn}^{2+} = 70$ without any additive agent.