

Supporting Information

Organic Cations Templated Synthesis of three

Zinc–2,5-thiophenedicarboxylate Frameworks for Selective Gas Sorption

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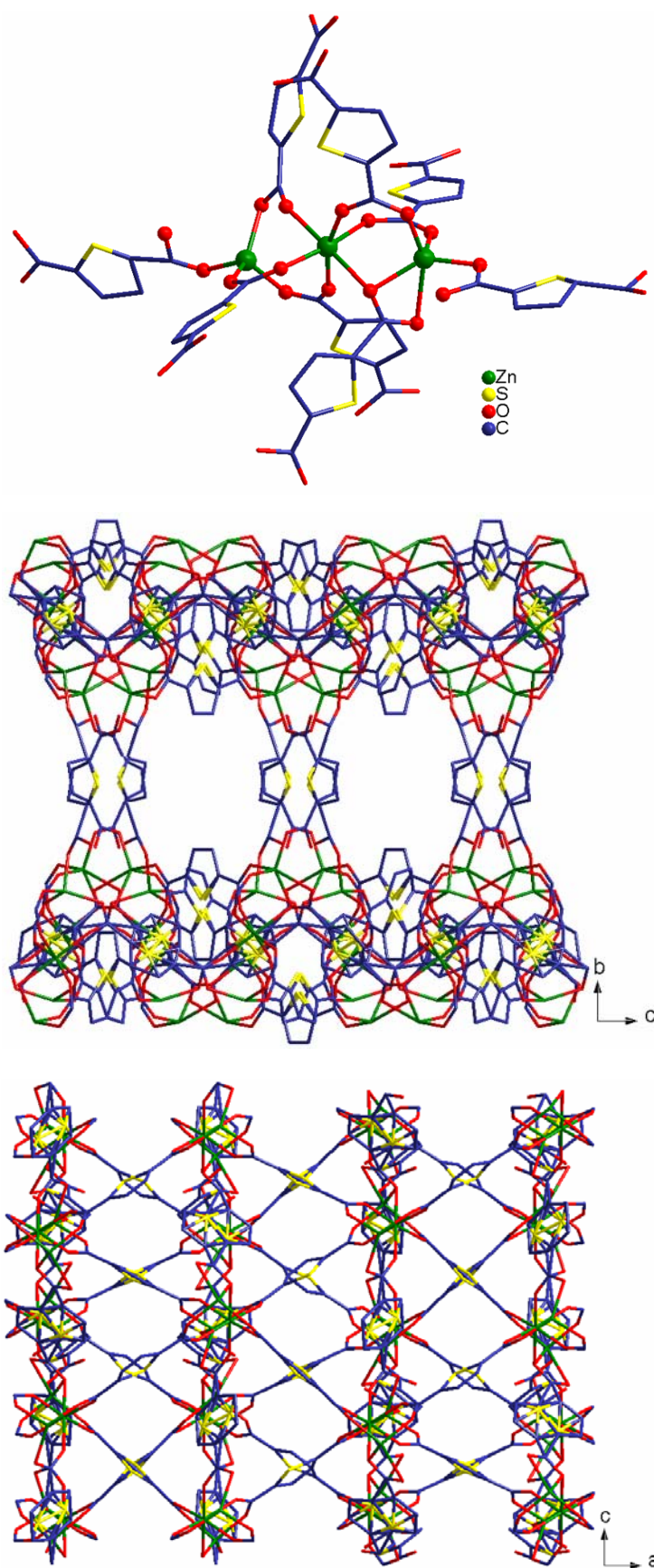


Figure S1. The coordination environment of Zn^{2+} ions in **1** and a view of 3D structure from *a* and *b* directions.

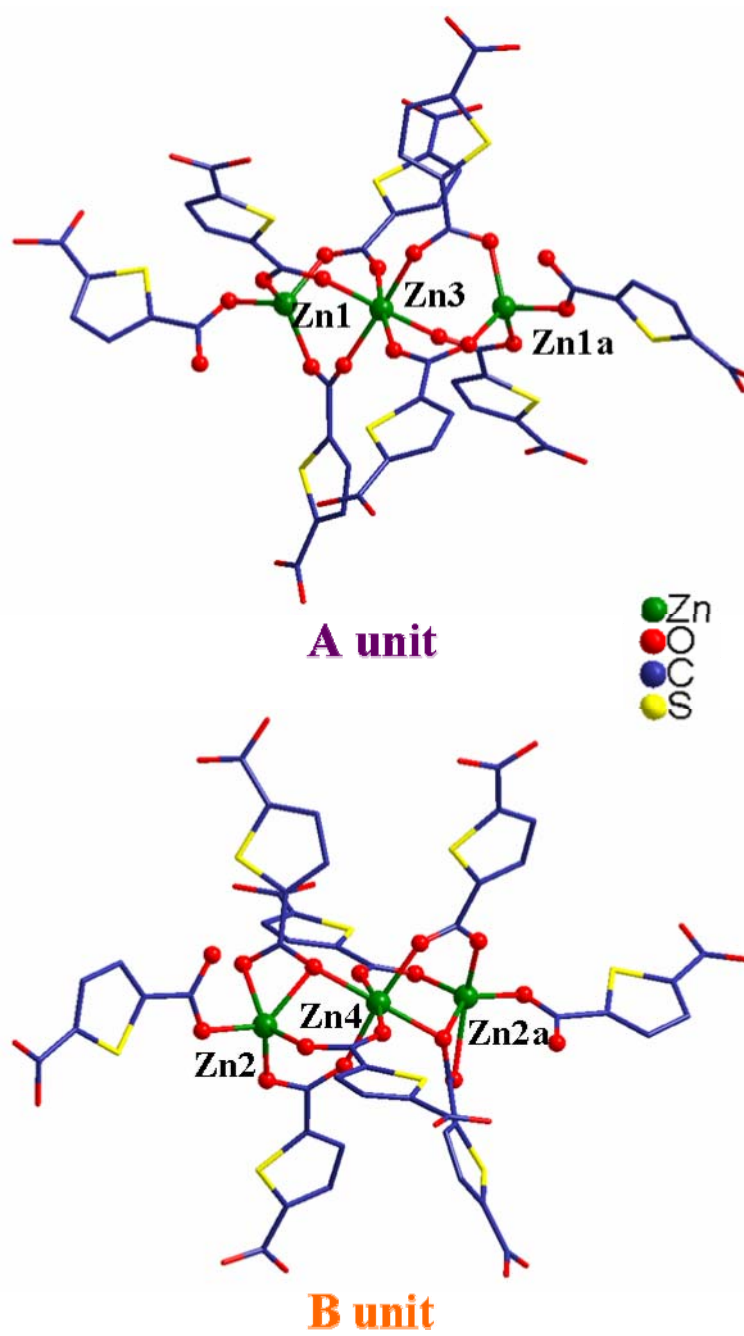


Figure S2. The A unit and B unit in **2**.

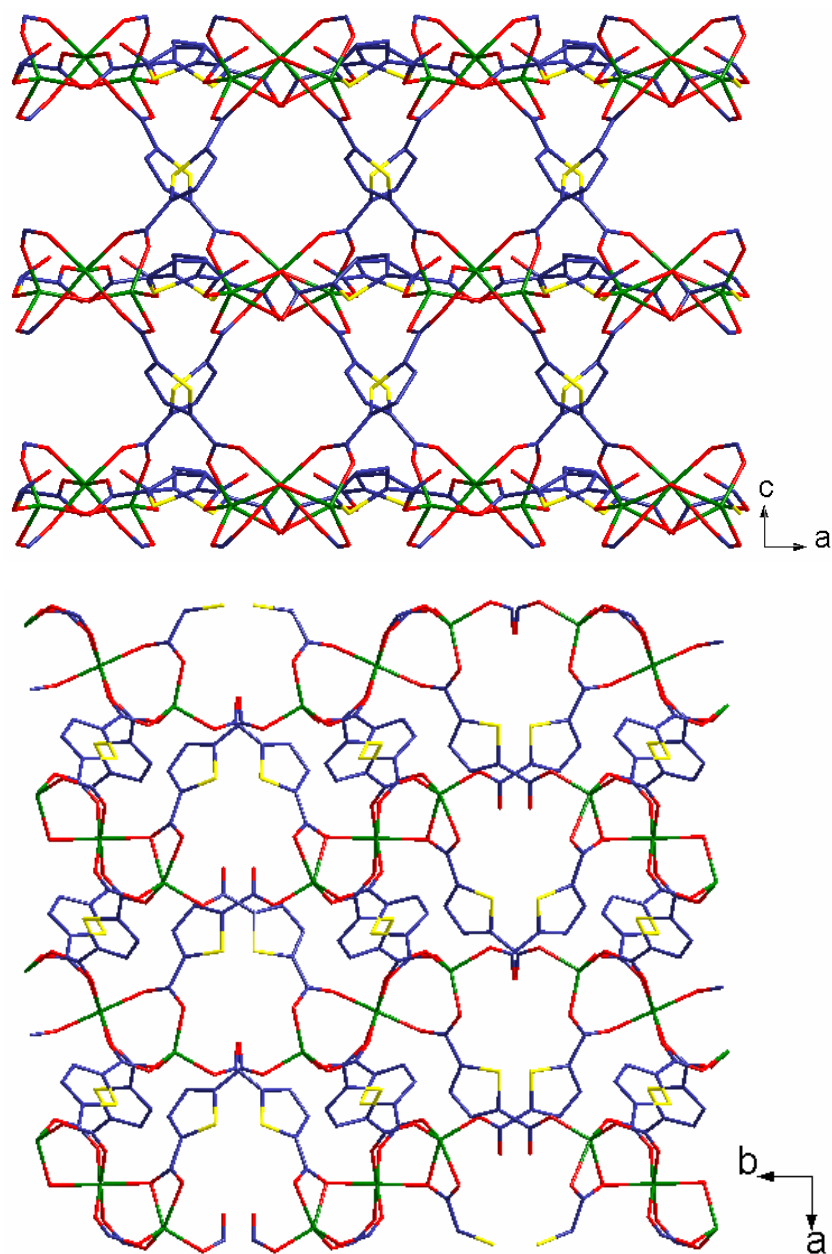


Figure S3. A view of 3D structure of **2** from b and c directions.

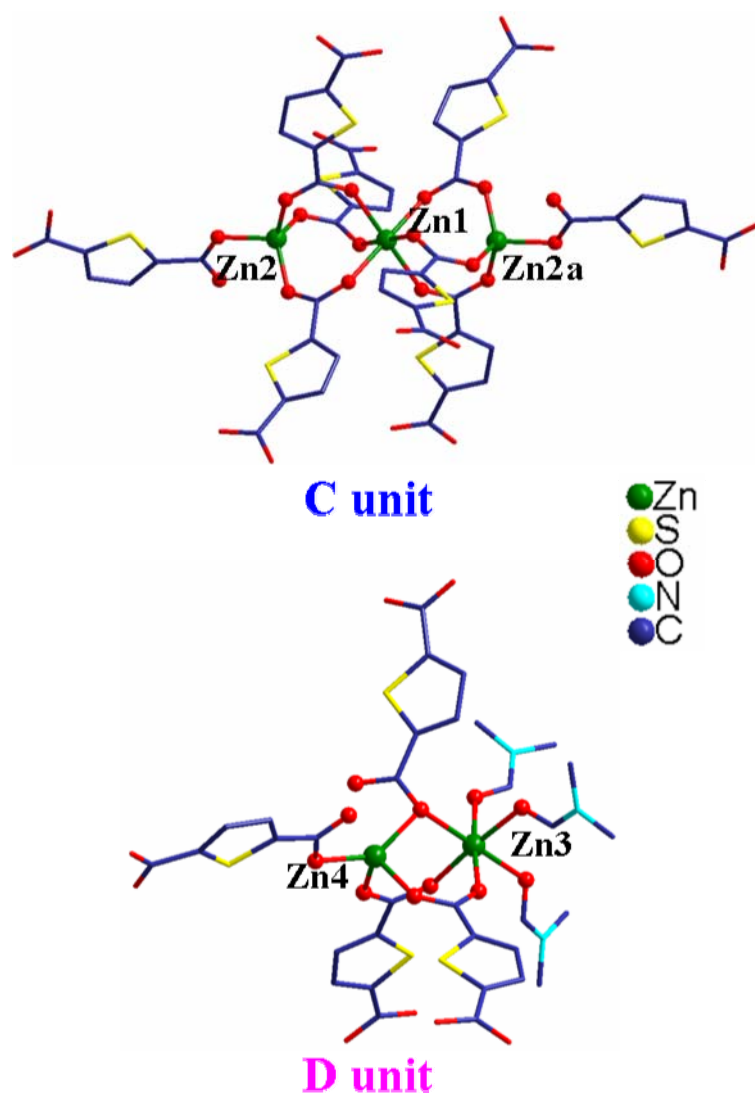


Figure S4. The C unit and D unit in **3**.

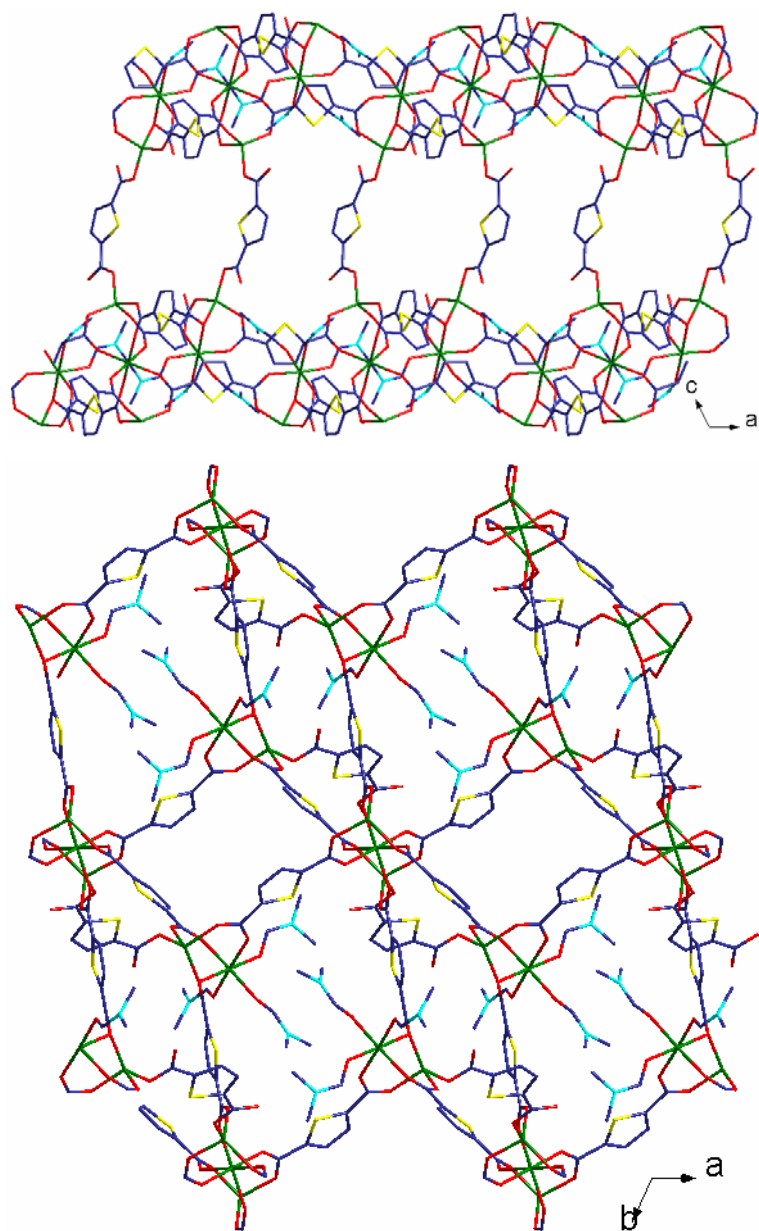


Figure S5. A view of 3D structure of **3** from b and c directions.

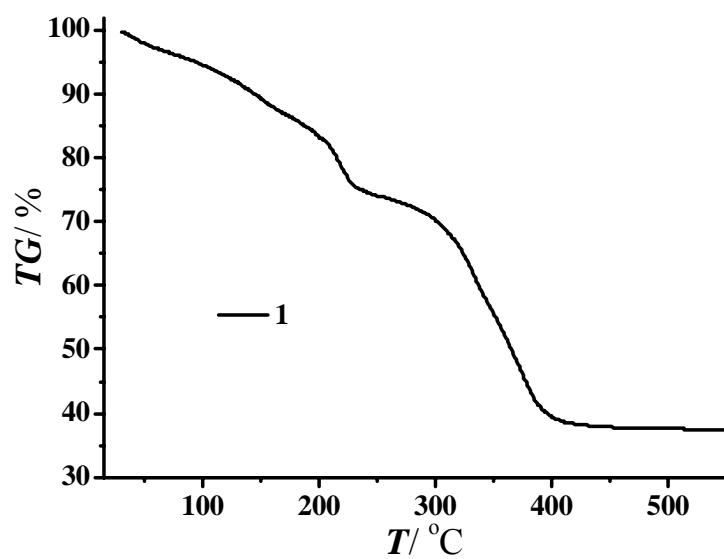


Figure S6. TGA curve of **1**.

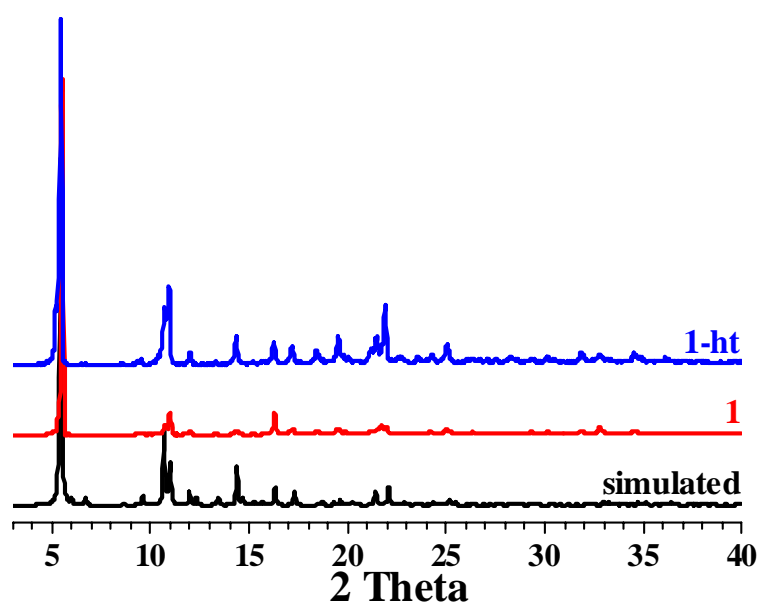


Figure S7. PXRD patterns of simulated from the single-crystal data of **1** (black); as-synthesized **1** (red); desolvated solid **1-ht** (blue).

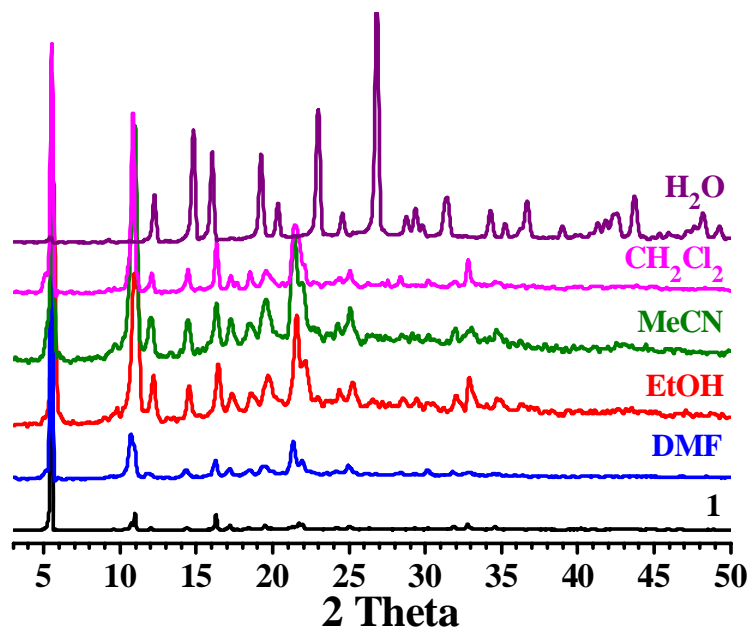


Figure S8. PXRD patterns of **1** and **1** in different solvents such as DMF, EtOH, MeCN, CH₂Cl₂, H₂O.

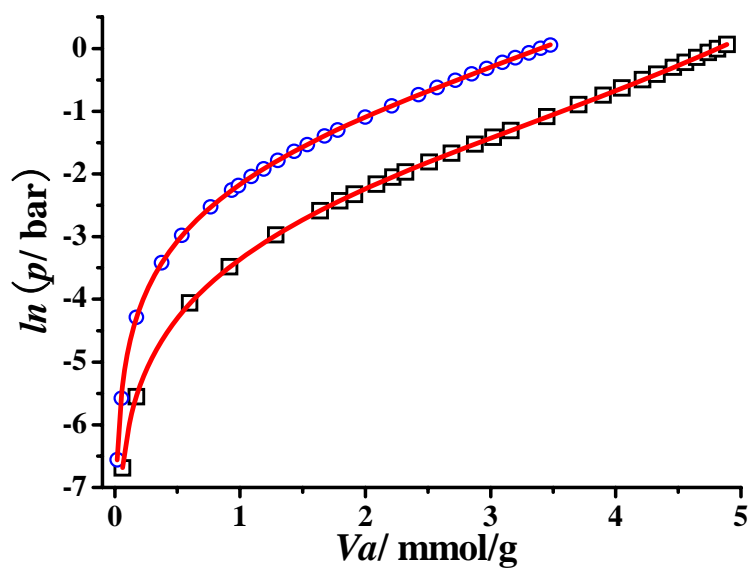


Figure S9. H₂ adsorption isotherms for **1-ht** fitting by virial method.

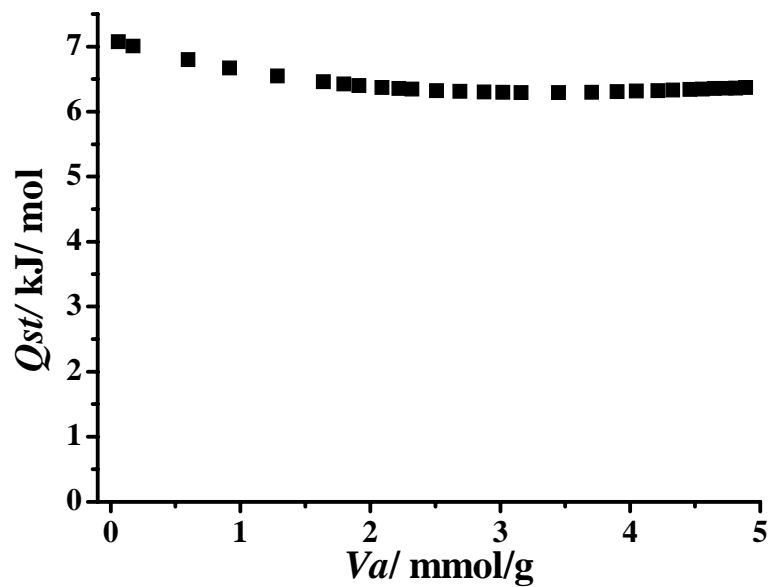


Figure S10. The isosteric heat of H₂ adsorption for **1-hf** estimated by the virial equation.

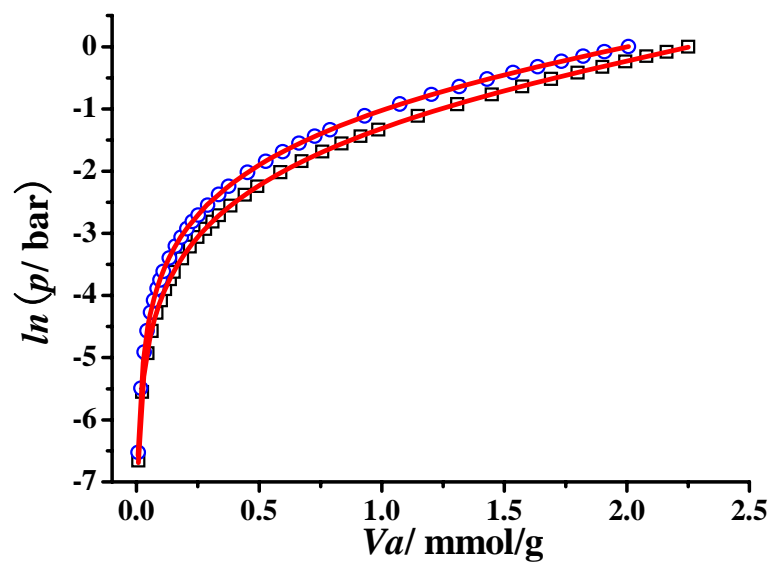


Figure S11. CO₂ adsorption isotherms for **1-hf** fitting by virial method.

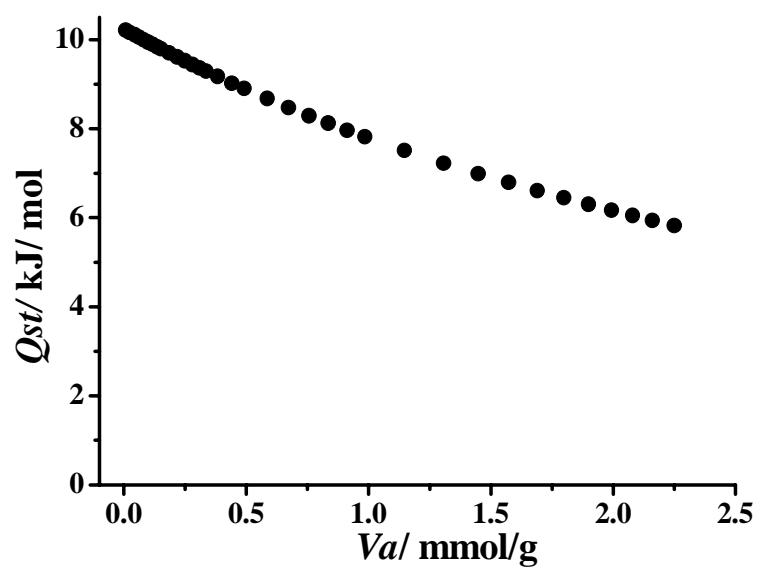


Figure S12. The isosteric heat of CO₂ adsorption for **1-ht** estimated by the virial equation.