

Supporting Information

Porous Solids Arising from Synergistic and Competing Modes of Assembly: Combining Coordination Chemistry and Covalent Bond Formation**

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Supporting Information

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1. Synthesis of materials

Preparation of H₃-ATB:

2,4,6-Tribromoaniline (1.80 g, 5.61 mmol), 4-(methoxycarbonyl)phenylboronic acid (5.63 g, 31.3 mmol), K₂CO₃ (1.16 g, 8.42 mmol), 170 mL 1,4-dioxane, and 10 mL H₂O were added to a pressure vessel equipped with a magnetic stir bar. The resulting mixture was sparged with N₂ gas for 30 min. Pd(PPh₃)₄ (0.901 g, 0.842 mmol) was added into the mixture, the vessel was sealed, and the mixture was heated to 110 °C for 48 hr. After cooling the reaction mixture to room temperature the solvent was removed under reduced pressure. The residue was dissolved in 200 mL CH₂Cl₂ and washed with H₂O (3×200 mL) followed by brine (300 mL). The organic layer was dried over anhydrous Na₂SO₄. The crude product was subjected to column chromatography (hexanes/ethyl acetate) to yield a light yellow solid (2.25 g, yield 83.2 %). ¹H NMR (500 MHz, CDCl₃) δ 8.18 (*d*, 4H, *J* = 8.32 Hz), 8.06 (*d*, 2H, *J* = 8.32 Hz), 7.69-7.62 (*m*, 6H), 7.46 (*s*, 2H), 3.96 (*s*, 6H), 3.93 (*s*, 3H). HRMS (EI) calcd for C₃₀H₂₅NO₆ (*m/z*): 495.1682; found: 495.1680. The solid (2.00 g, 4.03 mmol), KOH (2.6 g, 40.0 mmol), 1,4-dioxane (80 mL), and H₂O (20 mL) were added into a pressure vessel. The resultant suspension was heated to 110 °C for 12 hr. After cooling to room temperature the reaction mixture was filtered and solvent was removed under reduced pressure. The residue was dissolved in H₂O (150 mL) and the solution was acidified with concentrated HCl *via* drop-wise addition until pH of the solution was 1. The target compound was collected by filtration, washed thoroughly with H₂O, and dried under vacuum to afford H₃-ATB (yield 1.65 g, 90.1%). ¹H NMR (500 MHz, DMSO-*d*₆): δ 12.97 (*br*, 3H), 8.06 (*d*, 4H, *J* = 8.32 Hz), 7.94 (*d*, 2H, *J* = 8.51 Hz), 7.81 (*d*, 2H, *J* = 8.51 Hz), 7.70 (*d*, 4H, *J* = 8.32 Hz), 7.48 (*s*, 2H), 4.70 (*br*, 2H). ¹³C NMR (125 MHz, DMSO-*d*₆): 167.27, 167.18, 143.97, 143.70, 141.99, 129.99, 129.93, 129.63, 129.41, 128.54, 128.36, 127.78, 126.77, 125.72. HRMS (EI) calcd for C₂₇H₁₉NO₆ (*m/z*): 453.1212; found: 453.1230.

Synthesis of MOF-177-NH₂:

H₃-ATB (25.0 mg, 0.055 mmol) and Zn(NO₃)₂·6H₂O (43.2 mg, 0.145 mmol) were dissolved in 5.7 mL of anhydrous *N,N*-dimethylformamide. The mixture was sonicated for 15 min and the solution was clarified by filtration through a glass wool plug. The reaction mixture was heated to 85 °C. After 20 hr, colorless block-shaped crystals of a single phase were obtained. After cooling to room temperature the product was isolated by decanting the mother liquor and washing with fresh DMF (3×15 mL). The yield of the reaction determined from the weight of the solvent-free material (26.0 mg) is 40.1% based on H₃-ATB.

Synthesis of UMCM-306:

H₃-ATB (25.0 mg, 0.055 mmol), terephthalaldehyde (11.0 mg, 0.0822 mmol), and Zn(NO₃)₂·6H₂O (43.2 mg, 0.145 mmol) were dissolved in 5.7 mL of anhydrous *N,N*-dimethylformamide. The mixture was sonicated for 15 min and the solution was clarified by filtration through a glass wool plug. The reaction mixture was heated to 85 °C. After 24 hr, yellow colored rod-shaped crystals of a single phase were obtained. After cooling to room temperature, the product was isolated by decanting the mother liquor and washing with fresh DMF (3×15 mL). The yield of the reaction determined from the weight of the solvent-free material (20.5 mg) is 36.5% based on H₃-ATB.

Synthesis of UMCM-307:

H₃-ATB (44.0 mg, 0.097 mmol), anthracene-9,10-dialdehyde (11.4 mg, 0.0492 mmol), and Zn(NO₃)₂·6H₂O (84.5 mg, 0.284 mmol) were dissolved in 14.0 mL of anhydrous *N,N*-dimethylformamide. The mixture was sonicated for 15 min and the solution was clarified by filtration through a glass wool plug. The reaction mixture was heated to 85 °C. After 40 hr, orange colored rod-shaped crystals of a single phase were obtained. After cooling to room temperature, the product was isolated by decanting the mother liquor and washing with fresh DMF (3×15 mL). The yield of the reaction determined from the weight of the solvent-free material (36.8 mg) is 35.8% based on H₃-ATB.

Synthesis of UCMC-308:

H₃-ATB (6.25 mg, 0.014 mmol), 1,4-diacetylbenzene (21.0 mg, 0.133 mmol), and Zn(NO₃)₂·6H₂O (11.0 mg, 0.037 mmol) were dissolved in 1.25 mL of anhydrous *N,N*-dimethylformamide. The mixture was sonicated for 30 min and the solution was clarified by filtration through a glass wool plug. The reaction mixture was heated to 85 °C. After 20 hr, colorless rod-shaped crystals were obtained contaminated by ~5% MOF-177-NH₂. After cooling to room temperature, the product was isolated by decanting the mother liquor and washing with fresh DMF (3×3 mL). The yield of the reaction determined from the weight of the solvent-free material (5.4 mg) is 33% based on H₃-ATB.

2. PXRD patterns of MOF-177-NH₂, UCMC-306, -307, and -308

Samples for powder X-ray diffraction were soaked in mineral oil before collection of data. Data were collected on Rigaku R-Axis Spider diffractometer with an image plate detector and CuK α radiation operating in transmission mode. The powder samples were rotated on the goniometer in ϕ and oscillated in ω to minimize preferred orientation.

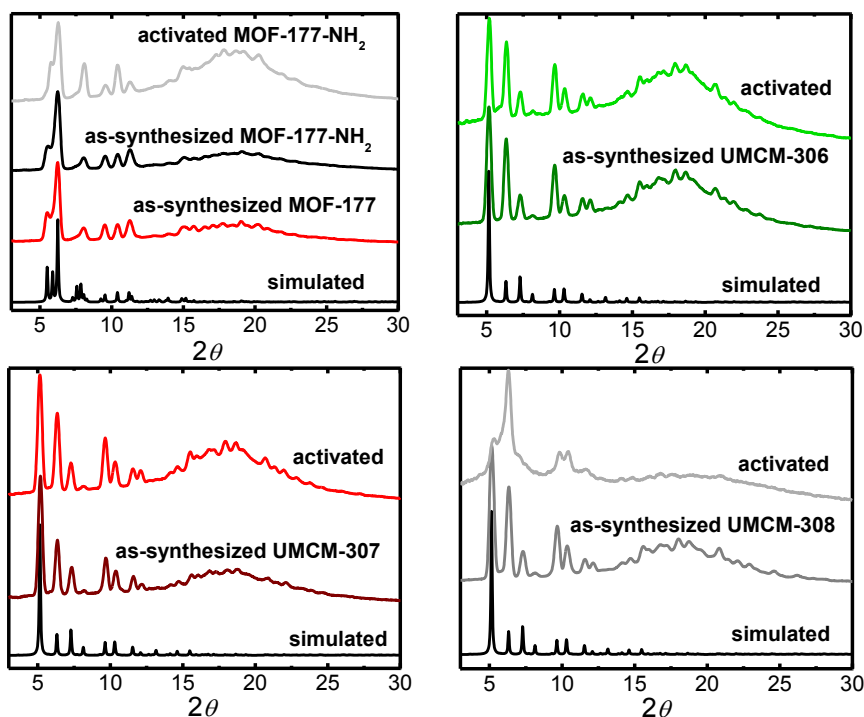


Figure 1: Comparison of simulated and as-synthesized PXRD patterns of materials

3. Single crystal X-ray diffraction for UCMC-306

Crystals of UCMC-306 exchanged in CH₂Cl₂ were coated in Paratone N oil. A clear yellow rod-shaped crystal (0.12 mm × 0.02 mm × 0.02 mm) was mounted on a cryoloop. X-ray diffraction data were collected on a Rigaku AFC10K Saturn 944+ CCD-based X-ray diffractometer equipped with a low temperature device and Micromax-007HF Cu-target micro-focus rotating anode ($\lambda = 1.54187 \text{ \AA}$) operated at 1.2 kW power (crystal-to-detector distance was 42.00 mm) at 233K. A total of 1767 images were collected with an oscillation width of 1.0° in ω . The exposure time was 30 sec for the low angle images, 120 sec for high angle images. The integration of the data yielded a total of 126420 reflections to a maximum 2θ value of 113.84° of which 3614 were independent and 2675 were greater than $2\sigma(I)$. Decay of the crystal during data collection was negligible. The structure was solved by direct methods and refined against all data in the the space group $P 4_2/m n m$ with $Z = 2$ for the formula C₅₀H₂₆N₂O₁₃Zn₄

using SHELXL-97 in the Crystal Structure (v. 4.0) software package.^[1] All non-hydrogen atoms were refined anisotropically with the hydrogen atoms placed at calculated positions (C-H = 0.93 Å) using a riding model with isotropic thermal parameters 1.2 times that of the attached carbon atom. Full matrix least-squares refinement based on F^2 converged at $R1 = 0.1647$ and $wR2 = 0.4256$ [based on $I > 2\sigma(I)$], $R1 = 0.1808$ and $wR2 = 0.4413$ for all data. The SQUEEZE^[2] subroutine of the PLATON program suite was used to address the disordered solvent/oil in the large cavity present in the structure. Additional refinement details are given in the CIF file.

Table 1. Crystal data and structure refinement for UMCM-306

| | |
|---------------------------------|---|
| Compound | UMCM-306 |
| Empirical formula | $C_{50}H_{26}N_2O_{13}Zn_4$ |
| Formula Weight | 1124.21 |
| Temperature of run | 233K |
| Crystal dimensions | $0.12 \times 0.02 \times 0.02 \text{ mm}^3$ |
| Wavelength | 1.54187 Å |
| Crystal system | Tetragonal |
| Space group | $P 4_2/m n m$ |
| Unit cell parameters | $a = 24.1097(7) \text{ Å}$ $b = 24.1097(7) \text{ Å}$ $c = 17.0615(12) \text{ Å}$ $9917.5(8) \text{ Å}^3$ $\alpha = 90.00^\circ$ $\beta = 90.00^\circ$ $\gamma = 90.000(3)^\circ$ |
| Z | 2 |
| Density (calculated) | 0.376 g/cm ³ |
| Absorption coefficient | 0.685 mm ⁻¹ |
| F(000) | 1128 |
| Theta range for data collection | 2.60 to 56.90 |
| Index ranges | $-26 \leq h \leq 26, -26 \leq k \leq 26, -18 \leq l \leq 17$ |
| Reflections collected | 126420 |
| Independent reflections | 3614 [R(int) = 0.0812] |
| Completeness to highest theta | 100 % |
| Absorption correction | Multi-scan |
| Max. and min. transmission | 0.675 and 0.464 |
| Refinement method | Full-matrix least-squares on F^2 |

| | |
|--|--|
| Data/ Restraints/ parameter | 3614 / 0 / 151 |
| Goodness of fit on F ² | 1.828 |
| Final R indices [I>2σ(I)] ^{a,b} | R1 = 0.1647, wR2 = 0.4256 ^{a,b} |
| R indices (all data) ^{a,b} | R1 = 0.1808, wR2 = 0.4413 |

a) $wR2 = \frac{|\sum w(|Fo|^2 - |Fc|^2)|}{\sum w(Fo)^2}^{1/2}$, $w = 1 / [\sigma^2(Fo^2) + (mP)^2 + nP]$ and $P = [\max(Fo^2, 0) + 2Fc^2] / 3$ (m and n are constants); $\sigma = [\sum [w(Fo^2 - Fc^2)^2] / (n - p)]^{1/2}$ b) $R1 = \frac{\sum ||Fo| - |Fc||}{\sum |Fo|}$

4. ¹H NMR spectroscopic data of digested MOF-177-NH₂, UMCM-306, -307, and -308

Solvent free materials were digested in 35 wt% DCl in D₂O diluted with DMSO-*d*₆ solution before performing ¹H NMR spectroscopic experiments.

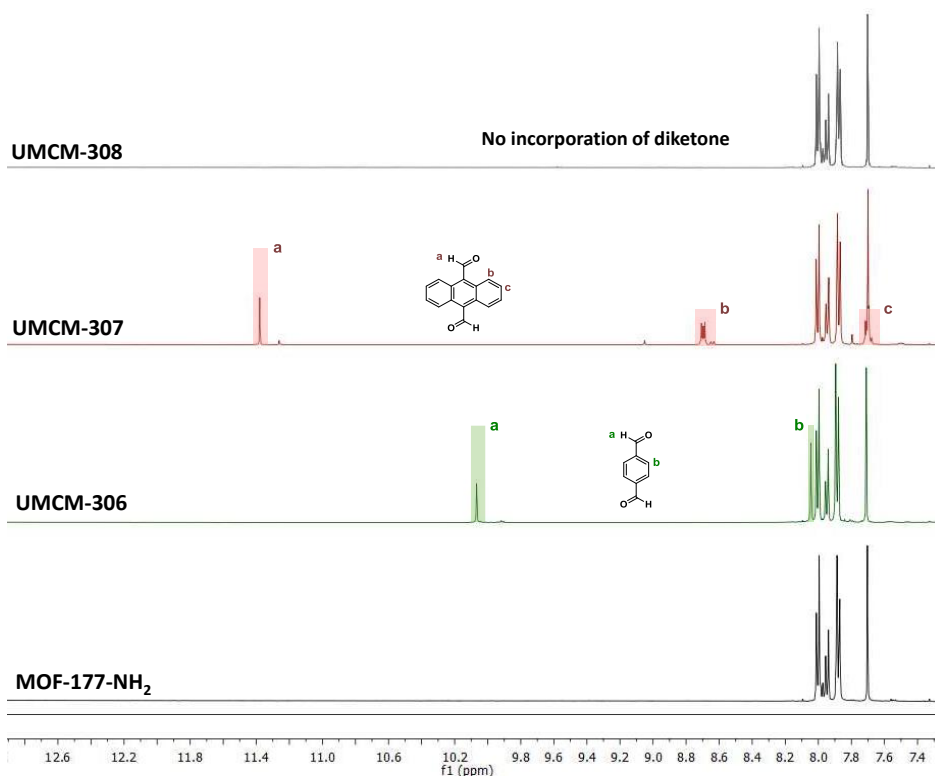


Figure 2. ¹H NMR spectra of digested MOF-177-NH₂, UMCM-306, -307, and -308

5. Raman spectroscopic data of MOF-177-NH₂, UMCM-306, and -308

Raman spectroscopic experiments were performed using a Renishaw inVia Raman Microscope equipped RenCam CCD detector, 633 nm laser, 1800 lines/nm grating, and 50 μm slit. Spectra were collected in extended scan mode in the range of 4000-100 cm⁻¹ and then analyzed using Wire 3.4 software package. Calibration was performed for all experiments using a silicon standard.

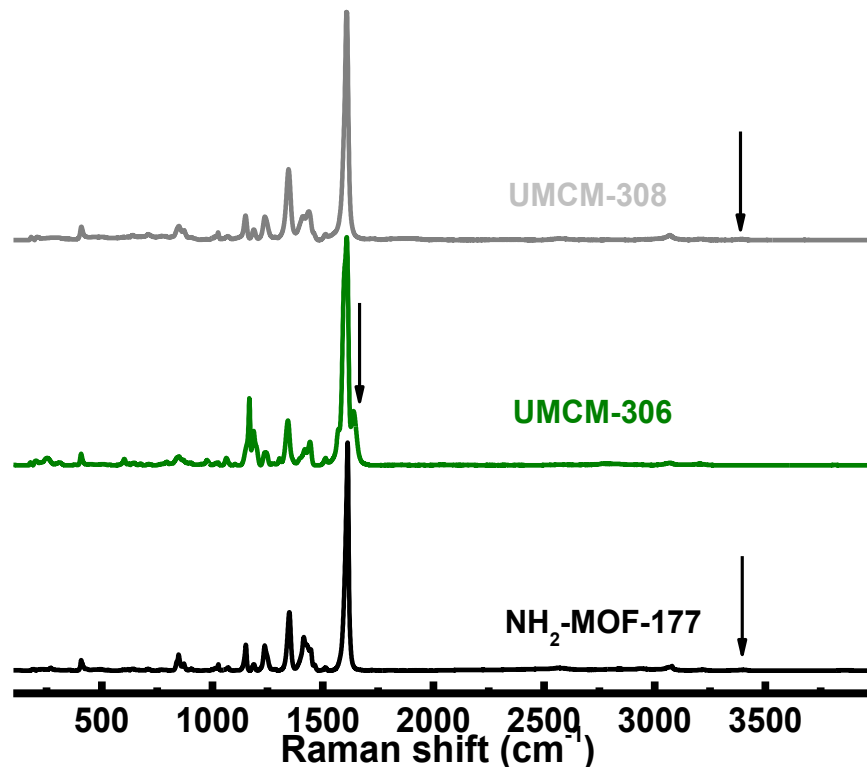


Figure 3. Full Raman spectra of materials showing presence of imine C=N stretching at 1634 cm^{-1} in UMCM-306 and NH_2 stretching in MOF-177- NH_2 and UMCM-308 at $\sim 3400\text{ cm}^{-1}$.

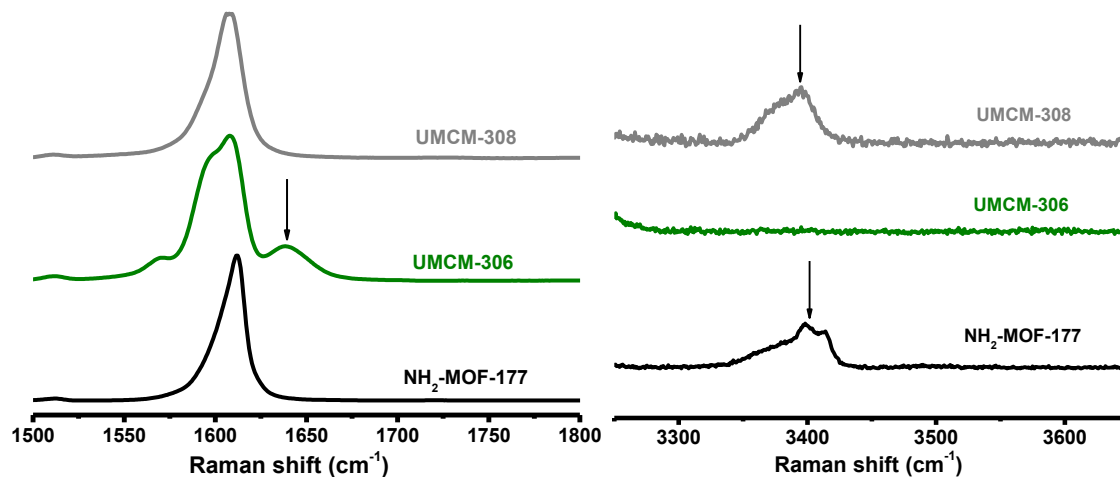




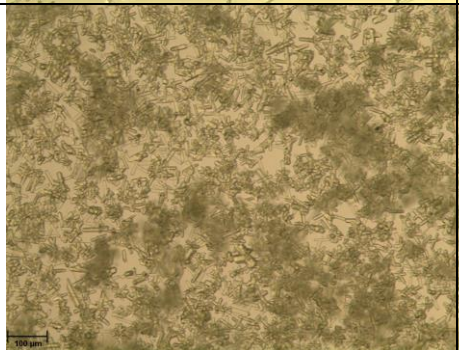
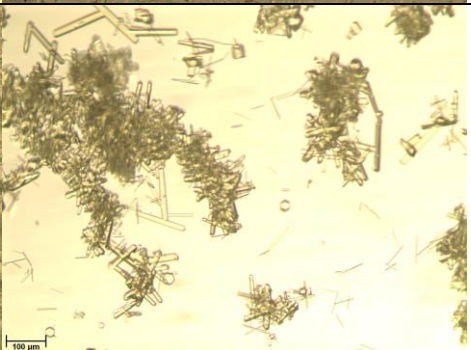
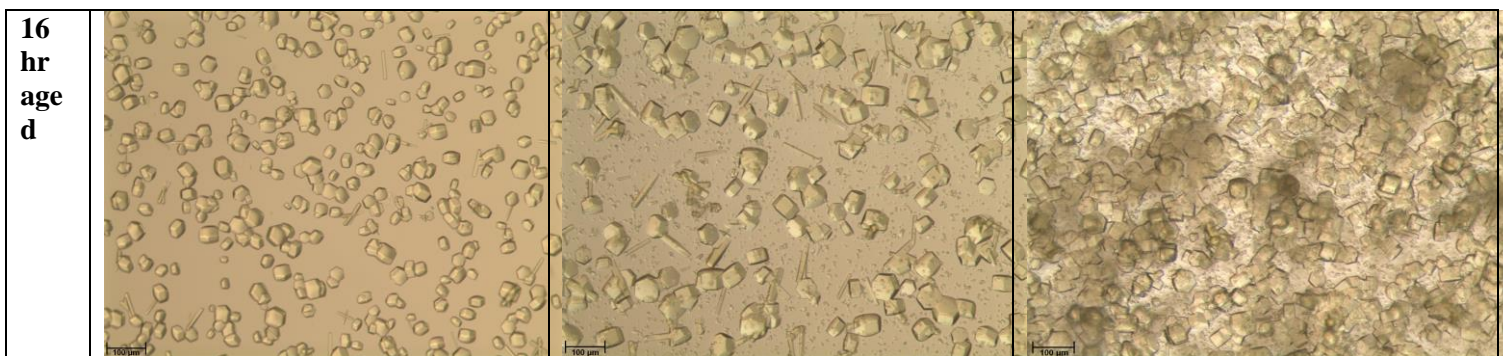


Figure 4. Partial Raman spectra of materials showing presence of imine C=N stretching at 1634 cm^{-1} in UMCM-306 and NH_2 stretching in MOF-177- NH_2 and UMCM-308 at $\sim 3400\text{ cm}^{-1}$.

6. Microscopic images after aging experiments

Five different vials containing $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ (14.5 mg, 0.048 mmol) and DMF (1.5 mL) were preheated (aged) at $85\text{ }^\circ\text{C}$ for 1, 2, 4, 8, 16 hours. $\text{H}_3\text{-ATB}$ (8.33 mg, 0.018 mmol) and terephthalaldehyde (3.67 mg, 0.027 mmol) dissolved in 0.5 mL fresh DMF were added in each pre-heated vial through septum lid using a syringe. The reaction mixtures were again heated to $85\text{ }^\circ\text{C}$ and analyzed after 6, 10, and 22 hr *via* optical microscopy. The images were taken with a Spot Insight Color camera fixed to a Leica DMIL microscope. All scale bars indicate a dimension of $100\text{ }\mu\text{m}$.

| | After 6 hr in oven | After 10 hr in oven | After 22 hr in oven |
|-----------|--------------------|--|---|
| 1 hr aged | No crystals | No crystals |  |
| 2 hr aged | No crystals | No crystals |  |
| 4 hr aged | No crystals |  |  |
| 8 hr aged | No crystals |  |  |



7. TGA traces of MOF-177-NH₂, UMCM-306, -307, and -308

Thermogravimetric analyses were performed on a TA Q50 equipment. Samples were activated before experiments. The temperature was ramped from 25 °C to 600 °C with a rate of 2 °C/ min under flow of N₂ gas.

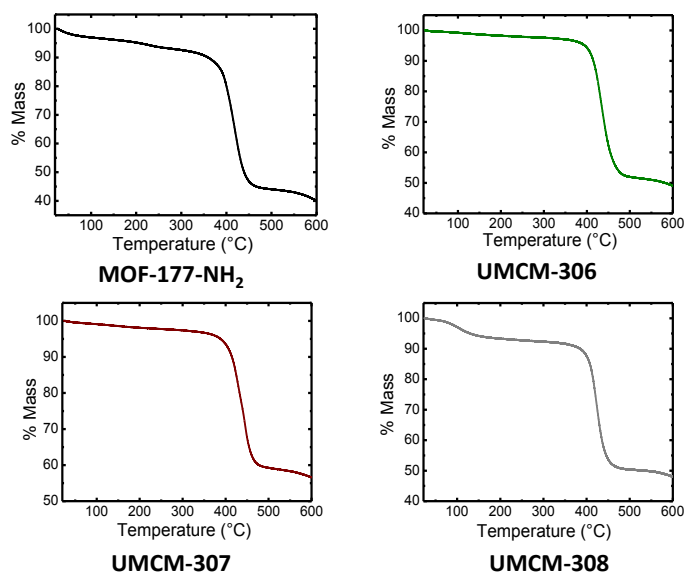


Figure 5. TGA traces of activated materials

8. Activation of materials and gas sorption measurements

All materials were exchanged in fresh DMF for 24 hr before flowing supercritical CO₂ activation.^[3] N₂ adsorption/desorption isotherms were measured volumetrically at 77K in the range of $1.00 \times 10^{-5} \leq P/P_0 \leq 1.00$ with an Autosorb-1C outfitted with the micropore option by Quantachrome Instruments (Boyton Beach, Florida, U.S.A.) running version 1.2 ASwin software package. Ultra-high purity He (99.999%, for void volume determination) and N₂ (99.999%) were purchased from Cryogenic Gases and used as received.

- [1] G. M. Sheldrick, *SHELXS '97 and SHELXL '97*. (University of Göttingen, Germany, 1997).
 [2] a) A. L. Spek, *J. Appl. Cryst.* **2003**, *36*, 7-13 ; b) A.L.Spek, *Acta Cryst. D65*, **2009**, v. 51012, 148-155.
 [3] B. Liu, A. G. Wong-Foy, A. J. Matzger, *Chem. Commun.* **2013**, *49*, 1419-1421.

Datablock: UCMCM-306

Bond precision: C-C = 0.0140 Å Wavelength=1.54187
Cell: a=24.1097(7) b=24.1097(7) c=17.0615(12)
alpha=90 beta=90 gamma=90
Temperature: 233 K

| | Calculated | Reported |
|------------------------|---|--------------------|
| Volume | 9917.5(9) | 9917.5(8) |
| Space group | P 42/m n m | P 42/m n m |
| Hall group | -P 4n 2n | -P 4n 2n |
| Moiety formula | C12.18 H6.70 N0.50 O3.25 Zn, 0.175(C2) | C50 H26 N2 O13 Zn4 |
| Sum formula | C12.53 H6.70 N0.50 O3.25 Zn | C50 H26 N2 O13 Zn4 |
| Mr | 281.57 | 1124.21 |
| Dx, g cm ⁻³ | 0.377 | 0.376 |
| Z | 8 | 2 |
| Mu (mm ⁻¹) | 0.685 | 0.685 |
| F000 | 1130.8 | 1128.0 |
| F000' | 1121.41 | |
| h, k, lmax | 26, 26, 18 | 26, 26, 18 |
| Nref | 3614 | 3614 |
| Tmin, Tmax | 0.984, 0.986 | 0.464, 0.675 |
| Tmin' | 0.921 | |

Correction method= MULTI-SCAN
Data completeness= 1.000 Theta(max)= 56.920
R(reflections)= 0.1647(2675) wR2(reflections)= 0.4413(3614)
S = 1.828 Npar= 151

The following ALERTS were generated. Each ALERT has the format
test-name_ALERT_alert-type_alert-level.
Click on the hyperlinks for more details of the test.

Alert level A

[SHFSU01 ALERT 2 A](#) The absolute value of parameter shift to su ratio > 0.20
Absolute value of the parameter shift to su ratio given 0.315
Additional refinement cycles may be required.

[THETM01 ALERT 3 A](#) The value of sine(theta_max)/wavelength is less than 0.550
Calculated sin(theta_max)/wavelength = 0.5434

[PLAT080 ALERT 2 A](#) Maximum Shift/Error 0.31

[PLAT222 ALERT 3 A](#) Large Non-Solvent H Uiso(max)/Uiso(min) .. 10.0
Ratio

[PLAT234 ALERT 4 A](#) Large Hirshfeld Difference C4 -- C5 .. 0.36
Ang.

[PLAT602 ALERT 2 A](#) VERY LARGE Solvent Accessible VOID(S) in Structure !
Info

Alert level B

[RFACG01 ALERT 3 B](#) The value of the R factor is > 0.15

R factor given 0.165
[RFACR01 ALERT 3 B](#) The value of the weighted R factor is > 0.35
 Weighted R factor given 0.441
[PLAT049 ALERT 1 B](#) Calculated Density less than 1.0 gcm-3 0.3772
 Check
[PLAT082 ALERT 2 B](#) High R1 Value 0.16
 Report
[PLAT084 ALERT 3 B](#) High wR2 Value (i.e. > 0.25) 0.44
 Report
[PLAT220 ALERT 2 B](#) Large Non-Solvent C Ueq(max)/Ueq(min) Range 10.0
 Ratio
[PLAT234 ALERT 4 B](#) Large Hirshfeld Difference N1 -- C16 .. 0.29
 Ang.
[PLAT241 ALERT 2 B](#) High Ueq as Compared to Neighbors for 01
 Check
[PLAT241 ALERT 2 B](#) High Ueq as Compared to Neighbors for C7
 Check

Alert level C

[PLAT041 ALERT 1 C](#) Calc. and Reported SumFormula Strings Differ Please
 Check
[PLAT043 ALERT 1 C](#) Calculated and Reported Mol. Weight Differ by .. 0.52
 Check
[PLAT068 ALERT 1 C](#) Reported F000 Differs from Calcd (or Missing)... Please
 Check
[PLAT147 ALERT 1 C](#) su on Symmetry Constrained Cell Angle(s) Please
 Check
[PLAT161 ALERT 4 C](#) Missing or Zero su (esd) on x-coordinate for ... C10
And 3 other PLAT161 Alerts
 More ...
[PLAT162 ALERT 4 C](#) Missing or Zero su (esd) on y-coordinate for ... C10
And 3 other PLAT162 Alerts
 More ...
[PLAT163 ALERT 4 C](#) Missing or Zero su (esd) on z-coordinate for ... C10
And 3 other PLAT163 Alerts
 More ...
[PLAT202 ALERT 3 C](#) Isotropic non-H Atoms in Anion/Solvent 1
[PLAT234 ALERT 4 C](#) Large Hirshfeld Difference O4 -- C3 .. 0.16
 Ang.
[PLAT234 ALERT 4 C](#) Large Hirshfeld Difference C1 -- C2 .. 0.22
 Ang.
[PLAT241 ALERT 2 C](#) High Ueq as Compared to Neighbors for C5
 Check
[PLAT242 ALERT 2 C](#) Low Ueq as Compared to Neighbors for C2
 Check
[PLAT242 ALERT 2 C](#) Low Ueq as Compared to Neighbors for C3
 Check
[PLAT341 ALERT 3 C](#) Low Bond Precision on C-C Bonds 0.0140
 Ang.

Alert level G

[FORMU01 ALERT 2 G](#) There is a discrepancy between the atom counts in the
 _chemical_formula_sum and the formula from the _atom_site* data.
 Atom count from _chemical_formula_sum:C50 H26 N2 O13 Zn4

Atom count from the `_atom_site` data: C50.1 H26.8 N2 O13 Zn4
[CELLZ01 ALERT 1 G](#) Difference between formula and `atom_site` contents detected.
[CELLZ01 ALERT 1 G](#) ALERT: Large difference may be due to a

symmetry error - see SYMMG tests
 From the CIF: `_cell_formula_units_Z` 2
 From the CIF: `_chemical_formula_sum` C50 H26 N2 O13 Zn4
 TEST: Compare cell contents of formula and `atom_site` data

| atom | Z*formula | cif sites | diff |
|------|-----------|-----------|-------|
| C | 100.00 | 100.20 | -0.20 |
| H | 52.00 | 53.60 | -1.60 |
| N | 4.00 | 4.00 | 0.00 |
| O | 26.00 | 26.00 | 0.00 |
| Zn | 8.00 | 8.00 | 0.00 |

[PLAT004 ALERT 5 G](#) Polymeric Structure Found with Dimension 1
 Info

[PLAT005 ALERT 5 G](#) No `_iucr_refine_instructions_details` in the CIF Please
 Do !

[PLAT042 ALERT 1 G](#) Calc. and Reported MoietyFormula Strings Differ Please
 Check

[PLAT045 ALERT 1 G](#) Calculated and Reported Z Differ by 4.00
 Ratio

[PLAT072 ALERT 2 G](#) SHELXL First Parameter in WGHT Unusually Large. 0.20
 Report

[PLAT230 ALERT 2 G](#) Hirshfeld Test Diff for C5 -- C6 .. 14.1
 su

And 3 other PLAT230 Alerts

More ...

[PLAT232 ALERT 2 G](#) Hirshfeld Test Diff (M-X) Zn1 -- O1 .. 6.1
 su

[PLAT232 ALERT 2 G](#) Hirshfeld Test Diff (M-X) Zn2 -- O1 .. 11.1
 su

[PLAT301 ALERT 3 G](#) Main Residue Disorder Percentage = 77
 Note

[PLAT302 ALERT 4 G](#) Anion/Solvent Disorder Percentage = 100
 Note

[PLAT432 ALERT 2 G](#) Short Inter X...Y Contact N1 .. C20 .. 2.59
 Ang.

And 10 other PLAT432 Alerts

More ...

[PLAT764 ALERT 4 G](#) Overcomplete CIF Bond List Detected (Rep/Expd) . 1.51
 Ratio

[PLAT773 ALERT 2 G](#) Check long C-C Bond in CIF: C18 -- C20 . 1.71
 Ang.

[PLAT773 ALERT 2 G](#) Check long C-C Bond in CIF: C20 -- C18 . 1.71
 Ang.

[PLAT811 ALERT 5 G](#) No ADDSYM Analysis: Too Many Excluded Atoms !
 Info

[PLAT899 ALERT 4 G](#) SHELXL97 is Deprecated and Succeeded by SHELXL 2014
 Note

-
- 6 **ALERT level A** = Most likely a serious problem - resolve or explain
 - 9 **ALERT level B** = A potentially serious problem, consider carefully
 - 23 **ALERT level C** = Check. Ensure it is not caused by an omission or oversight
 - 32 **ALERT level G** = General information/check it is not something unexpected

9 ALERT type 1 CIF construction/syntax error, inconsistent or missing data
31 ALERT type 2 Indicator that the structure model may be wrong or
deficient
8 ALERT type 3 Indicator that the structure quality may be low
19 ALERT type 4 Improvement, methodology, query or suggestion
3 ALERT type 5 Informative message, check

It is advisable to attempt to resolve as many as possible of the alerts in all categories. Often the minor alerts point to easily fixed oversights, errors and omissions in your CIF or refinement strategy, so attention to these fine details can be worthwhile. In order to resolve some of the more serious problems it may be necessary to carry out additional measurements or structure refinements. However, the purpose of your study may justify the reported deviations and the more serious of these should normally be commented upon in the discussion or experimental section of a paper or in the "special_details" fields of the CIF. checkCIF was carefully designed to identify outliers and unusual parameters, but every test has its limitations and alerts that are not important in a particular case may appear. Conversely, the absence of alerts does not guarantee there are no aspects of the results needing attention. It is up to the individual to critically assess their own results and, if necessary, seek expert advice.

Publication of your CIF in IUCr journals

A basic structural check has been run on your CIF. These basic checks will be run on all CIFs submitted for publication in IUCr journals (*Acta Crystallographica*, *Journal of Applied Crystallography*, *Journal of Synchrotron Radiation*); however, if you intend to submit to *Acta Crystallographica Section C* or *E*, you should make sure that [full publication checks](#) are run on the final version of your CIF prior to submission.

Publication of your CIF in other journals

Please refer to the *Notes for Authors* of the relevant journal for any special instructions relating to CIF submission.

PLATON version of 20/08/2014; check.def file version of 18/08/2014

Datablock UMCM-306 - ellipsoid plot

