

# CHEMISTRY

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### Supporting Information

#### Two-Dimensional Crystals from Reduced Symmetry Analogues of Trimesic Acid

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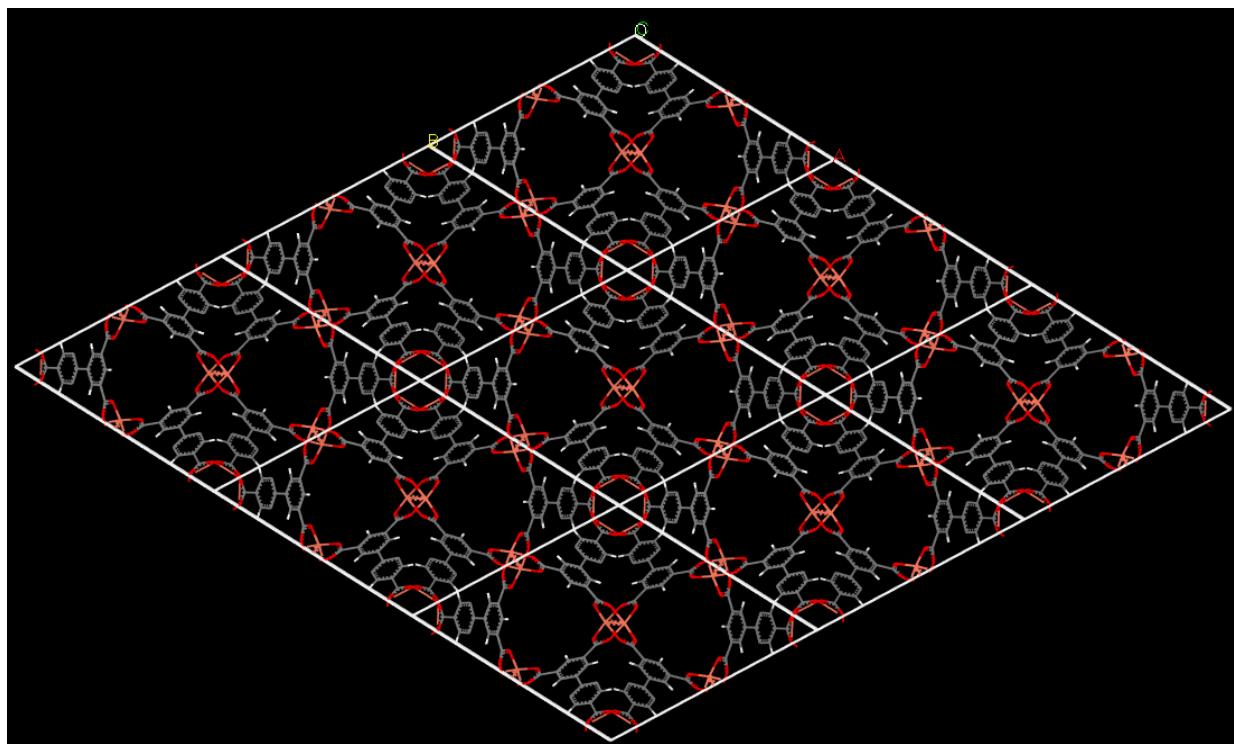


Figure S1. Structure of UMCM-150<sup>[1]</sup> composed of molecule 1, Cu<sub>2</sub>(O<sub>2</sub>CR)<sub>4</sub>, and Cu<sub>3</sub>(O<sub>2</sub>CR)<sub>6</sub> showing the presence of two types of Cu clusters arising from two symmetry inequivalent carboxylates.

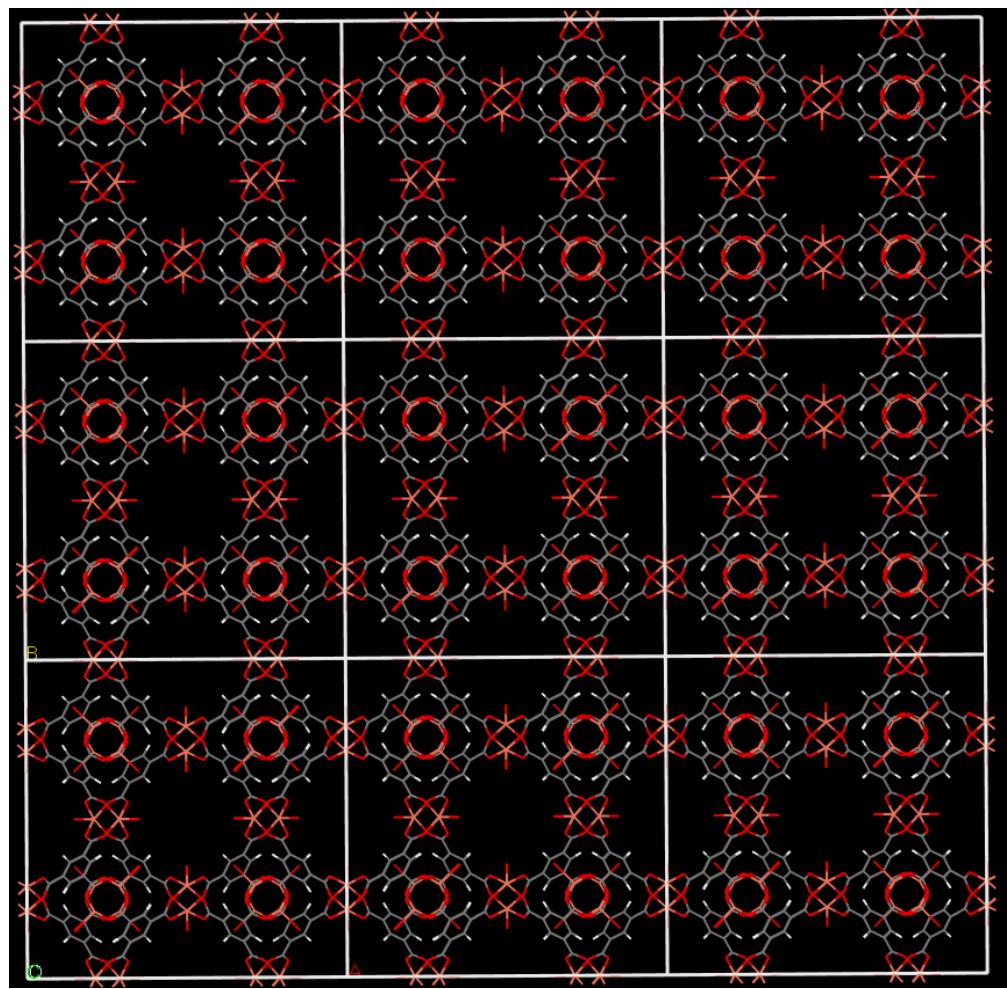


Figure S2. Structure of HKUST-1<sup>[2]</sup> composed of TMA and Cu<sub>2</sub>(O<sub>2</sub>CR)<sub>4</sub> (Cu paddlewheel) showing the presence of only one kind Cu cluster arising from all symmetry equivalent carboxylates.

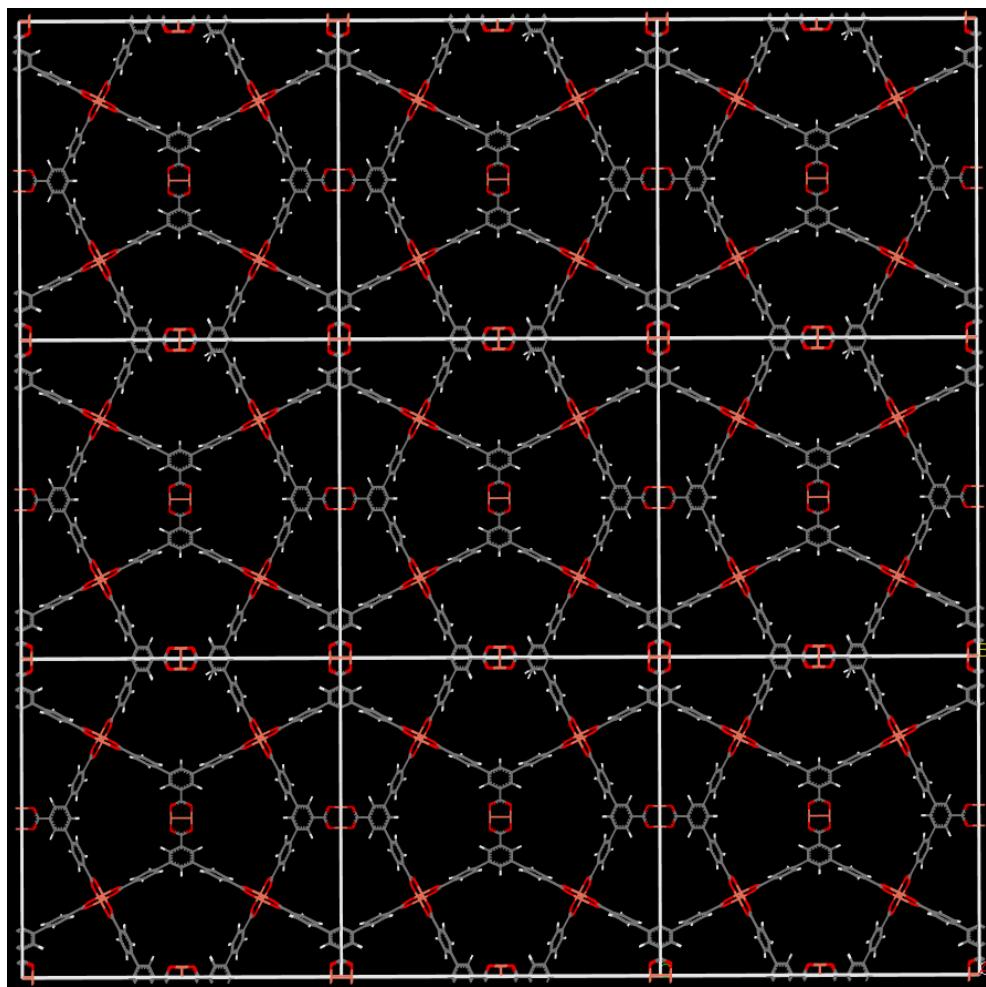


Figure S3. Structure of UMCM-151<sup>[3]</sup> composed of molecule 3 and Cu<sub>2</sub>(O<sub>2</sub>CR)<sub>4</sub> showing the presence of two types of Cu clusters arising from two symmetry inequivalent carboxylates.

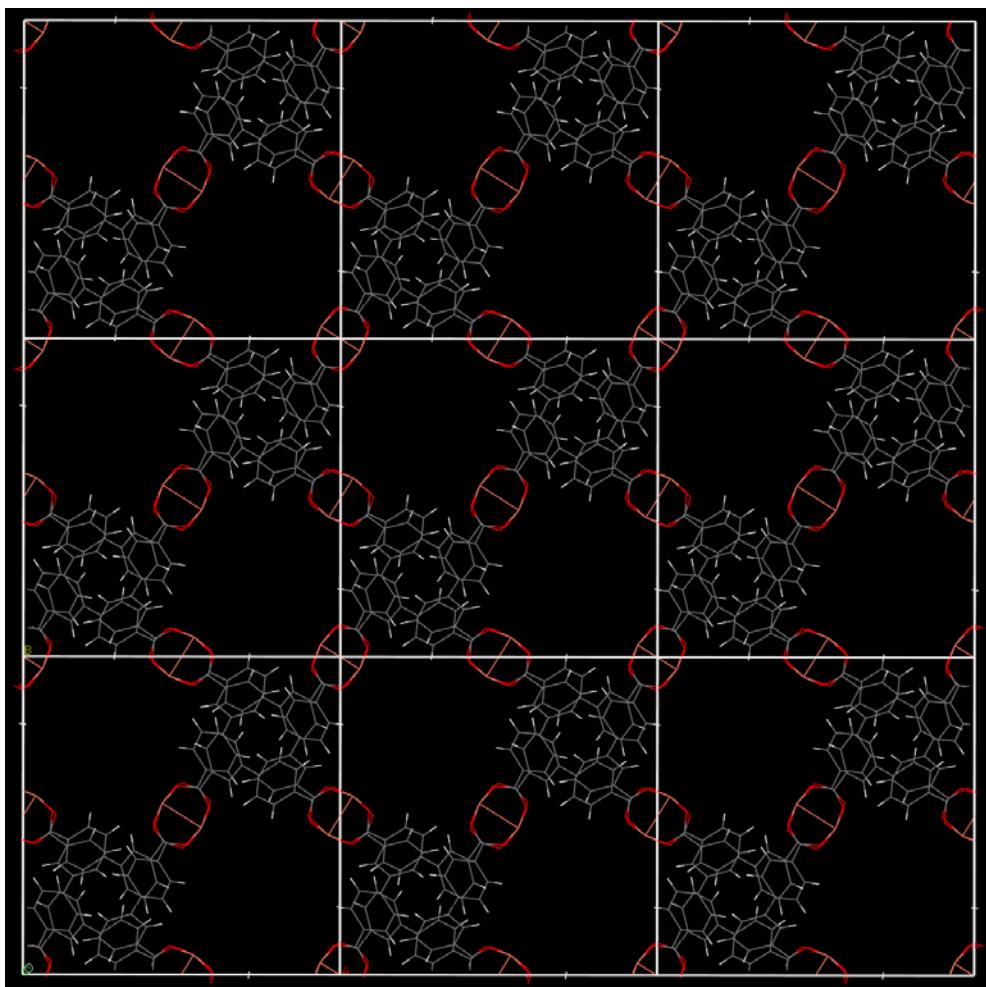


Figure S4. Structure of MCP<sup>[4]</sup> composed of molecule 4 and Cu<sub>2</sub>(O<sub>2</sub>CR)<sub>4</sub> showing the *meta-para-meta-para* arrangement of carboxylates around the Cu-Cu axis.

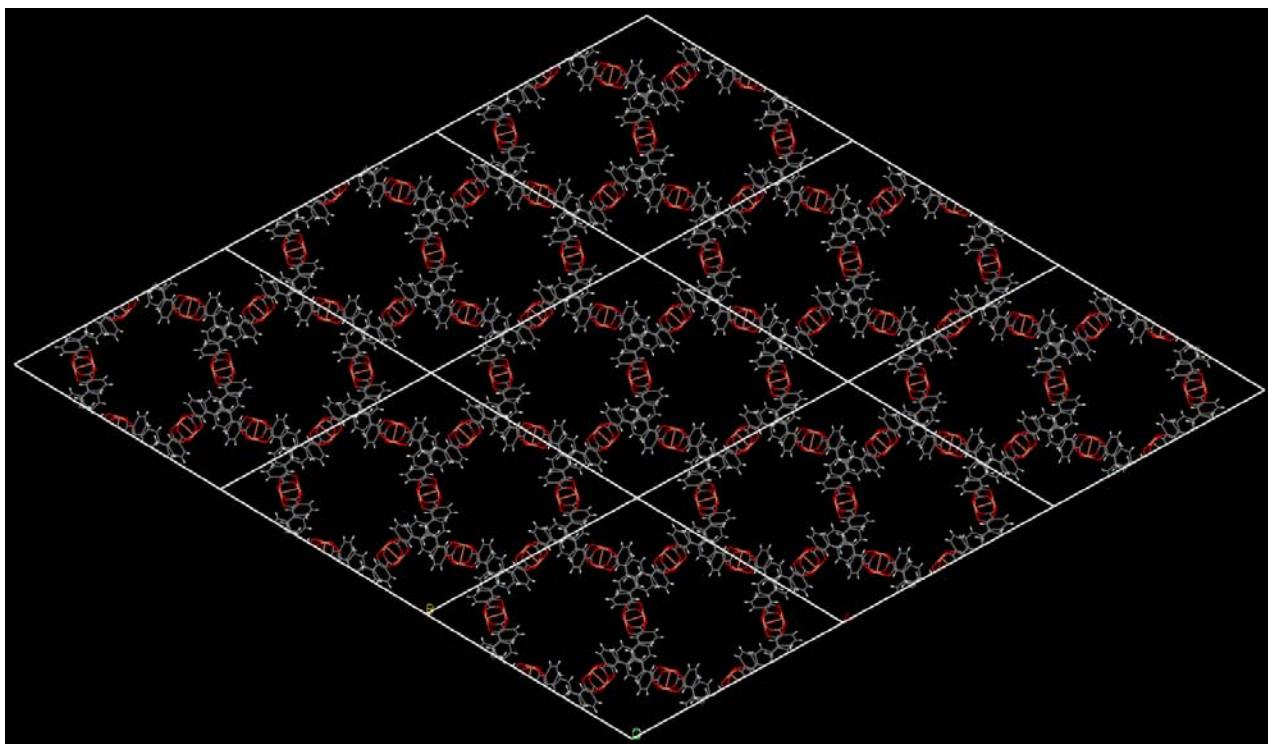


Figure S5. Structure of MCP<sup>[4]</sup> composed of molecule 4 and Cu<sub>2</sub>(O<sub>2</sub>CR)<sub>4</sub> showing the *meta-meta-para-para* arrangement of carboxylates around the Cu-Cu axis.

## References

- [1] A. G. Wong-Foy, O. Lebel, A. J. Matzger, *J. Am. Chem. Soc.* **2007**, *129*, 15740-15741.
- [2] S. S.-Y. Chui, S. M.-F. Lo, J. P. H. Charmant, A. G. Orpen, I. D. Williams, *Science* **1999**, *283*, 1148-1150.
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- [4] L. Feng, Z. Chen, T. Liao, P. Li, Y. Jia, X. Liu, Y. Yang, Y. Zhou, *Cryst. Growth Des.* **2009**, *9*, 1505-1510.