

Room temperature synthesis of metal-organic frameworks: MOF-5, MOF-74, MOF-177, MOF-199, and IRMOF-0.

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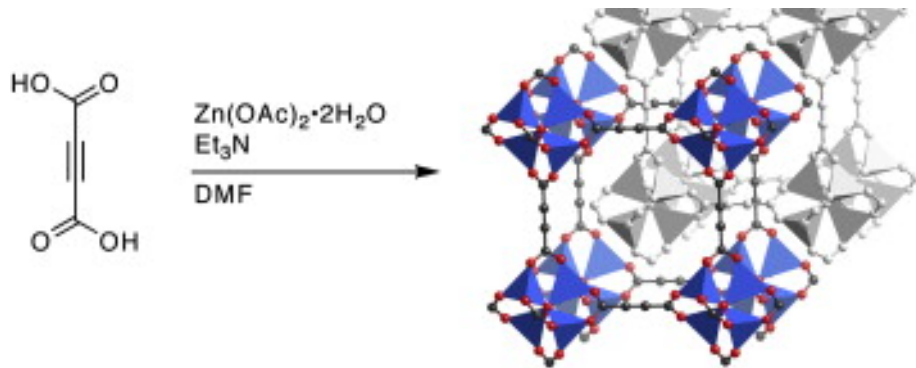
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Abstract

Room temperature synthesis of metal-organic frameworks (MOFs) has been developed for four well-known MOFs: MOF-5, MOF-74, MOF-177, and MOF-199. A new isorecticular metal framework (IRMOF), IRMOF-0, having the same cubic topology as MOF-5, has been synthesized from acetylenedicarboxylic acid using this method to accommodate the thermal sensitivity of the linker. Despite acetylenedicarboxylate being the shortest straight linker that can be made into an IRMOF, IRMOF-0 forms as a doubly interpenetrating structure, owing to the rod-like nature of the linker.

Graphical abstract





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