

Oxozinc carboxylate complexes : a new synthetic approach and the carboxylate ligand effect on the noncovalent-interactions-driven self-assembly.

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Streszczenie

An atom-efficient and mild synthesis of a series of oxozinc carboxylates $[\text{Zn}_4(\mu_4\text{-O})(\text{O}_2\text{CR})_6]$ [where $\text{R} = \text{Ph}$ (**2a**), $p\text{-PhC}_6\text{H}_4$ (**2b**), $p\text{-MeC}_6\text{H}_4$ (**2c**), and $p\text{-MeSC}_6\text{H}_4$ (**2d**)] from well-defined alkylzinc precursors and H_2O is described. The molecular and crystal structures of the resulting complexes have been determined by single-crystal X-ray diffraction. A closer examination of their crystal structure provides a direct picture of the effect of the nature of substituents on the molecular self-assembly of the octahedral oxozinc through noncovalent interactions. It was revealed that these discrete oxozinc clusters can form diverse types of noncovalent assemblies ranging from structures representing zeolitic topologies in the case of **2a** to soft porous materials with gated voids or open channels for the remaining molecular clusters.

Adres publiczny

<http://dx.doi.org/10.1021/ic300864n>

Strona internetowa wydawcy

<https://www.acs.org/content/acs/en.html>