

Inorganic and Metal-Organic Chemistry Roland A. Fischer

Multifunctional MOFs, Clusters and Composites

We develop functional molecular materials for advancing applications in energy conversion, catalysis, gas storage and separation, chemical sensing, photonics and microelectronics.

To illustrate, metal-rich complexes, atomic precise clusters, nanoparticles and nanocomposites can substitute rare noble metals for catalytic transformation of small molecules.

In addition, the combinatorial building-block principle of metal-organic frameworks (MOFs) yields ample opportunities for the manipulation and design of the chemistry of coordination space in pores and channels accessible to guest molecules. Our aim is to integrate chemical and physical multifunctionality in photo- and electro-active, catalytic and stimuli-responsive MOFs.



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