

MS35-P126 - LATE | HYBRID POLYOXOMOLYBDATE SYSTEMS BASED ON RATIONALLY DESIGNED ASYMMETRIC CARBOHYDRAZONES

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The hydrazone functional group is a universal building block incorporated in a wide spectrum of organic and inorganic compounds [1]. Its stability, modularity and subsequent structural versatility along with the acid-base properties makes hydrazones applicable as *e.g.* molecular switches, sensors or as anion receptors. Moreover, the adaptability of hydrazones *via E/Z* isomerisation, designates them as pervasive ligands for the construction of extended metal-organic assemblies, like metal-organic grids or hybrid metal-organic systems. In this family, especially stimulating are bis-hydrazones, as they extend the scope of the (mono)hydrazone counterparts. Carbohydrazones, in particular offer, besides increment in a number of hydrazone linkages, a possibility of asymmetric design, while providing systems with two different subunits varying in coordinating behaviour and acid-base properties.

Here we unveil an interesting coordination and anion receptor scenarios offered by asymmetric carbohydrazones bearing hydroxyaryl and pyridyl moieties. It was established that under appropriate conditions, such carbohydrazones can act as cations, as multifunctional ligands or as a combination thereof. While the first scenario led to corresponding polyoxomolybdate (POM) salts, in the second case discrete dinuclear complexes formed. The last option refers to hybrid POMs, where charged dioxomolybdenum(VI) complexes adopted a role of cations. Whereas dioxomolybdenum(VI) complexes have their structures determined by chelating hydroxyaryl subunit, structures of POM salts are shaped by competition between the relevant hydrogen bonds involving both ligand subunits.

[1] X. Su, I. Aprahamian, *Chem. Soc. Rev.* **43** (2014) 1963.

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