MS33-P16 | GIANT SUPRAMOLECULES AS MOLECULAR CONTAINERS

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One of the most outstanding areas in the modern coordination chemistry is the rational design of giant supramolecules built up from metal ions connected to each other *via* polytopic ligands resulting in large hollow cages. The systematic approach to the synthesis of hollow supramolecules developed in our group is the coordination of Cu^{+} and Ag^{+} cations to phosphorus atoms of the pentaphosphaferrocenes, $[Cp^{R}Fe(\eta^{5}\text{-}P_5)]$ ($Cp^{R}=\eta^{5}\text{-}C_5R_5$, R=Me (Cp*), CH_2Ph (Cp^{Bn}), etc.) [1-3]. The central cavity of these pentaphosphaferrocene-based supramolecules (reaching 0.60–1.35 nm) can include various guest molecules like metastable P_4 and As_4, various neutral and anionic metallocenes and triple-decker complexes, or cage molecules. The hosting supramolecules can often be adjusted to the size, shape and charge of the guest molecules. Moreover, the usage of $AgSbF_6$, $[Cp^{*}Fe(\eta^{5}\text{-}P_5)]$ and $N{\equiv}C(CH_2)_nC{\equiv}N$ (n=5-12) linkers allowed us to obtain coordination polymers with giant supramolecular nodes encapsulating $[Cp^{*}Fe(\eta^{5}\text{-}P_5)]$ and P_4 molecules or SbF_6^{-} anion.

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