

ACCEPTOR METAL-DIRECTED SUPRAMOLECULAR TOPOLOGIES

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Despite recent advances in the synthesis of interlocked or intertwined topologies, nontrivial molecular knots have remained difficult to be achieved. Only a few molecular knots have been realized so far and mostly obtained through metal-templation strategy. Our group utilizes coordination-driven self-assembly of metal-based acceptors and dipridyl donors along with inter- and/or intra- cyclor non-covalent interactions for the formation of complex supramolecular topologies. Recently we reported the metal-templated free synthesis of a complex molecular knot 8_{18} using this approach [1]. Structural outcome of a self-assembled product depends upon the size, geometry and functionality of donor and acceptor units, while acceptor metals (such as Ru or Ir) are known to have little effect on the final topology. We herein report the selective synthesis of Borromean rings or an 8_{18} molecular knot just by changing the metal in an acceptor unit.

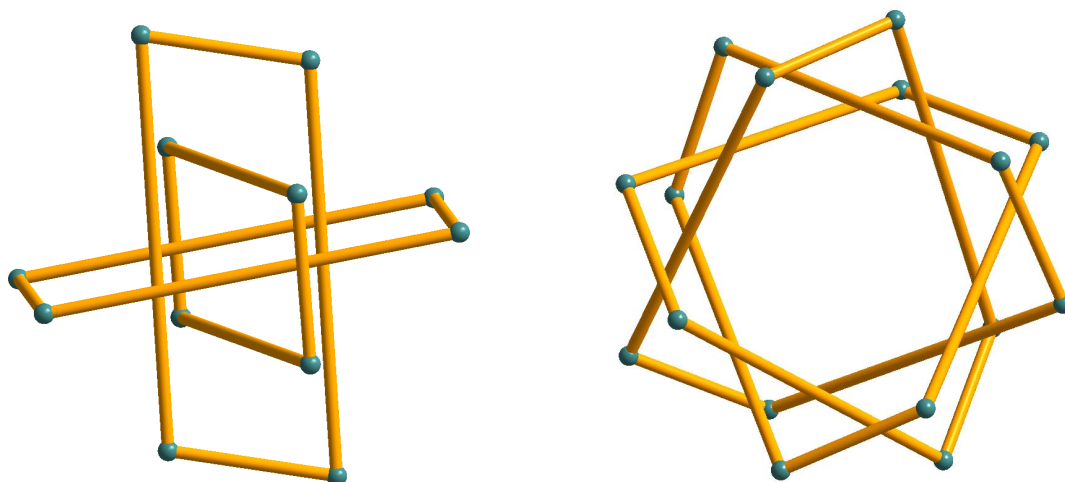


Figure 1: Acceptor metal-directed coordination-driven self-assembly of Borromean rings or 8_{18} molecular knot.

[1] Kim, D. H.; Singh, N.; Oh, J.; Kim, E.-H.; Jung, J.; Kim, H.; Chi, K.-W. *Angew. Chem. Int. Ed.* **2018**, *57*, 5669–5673.