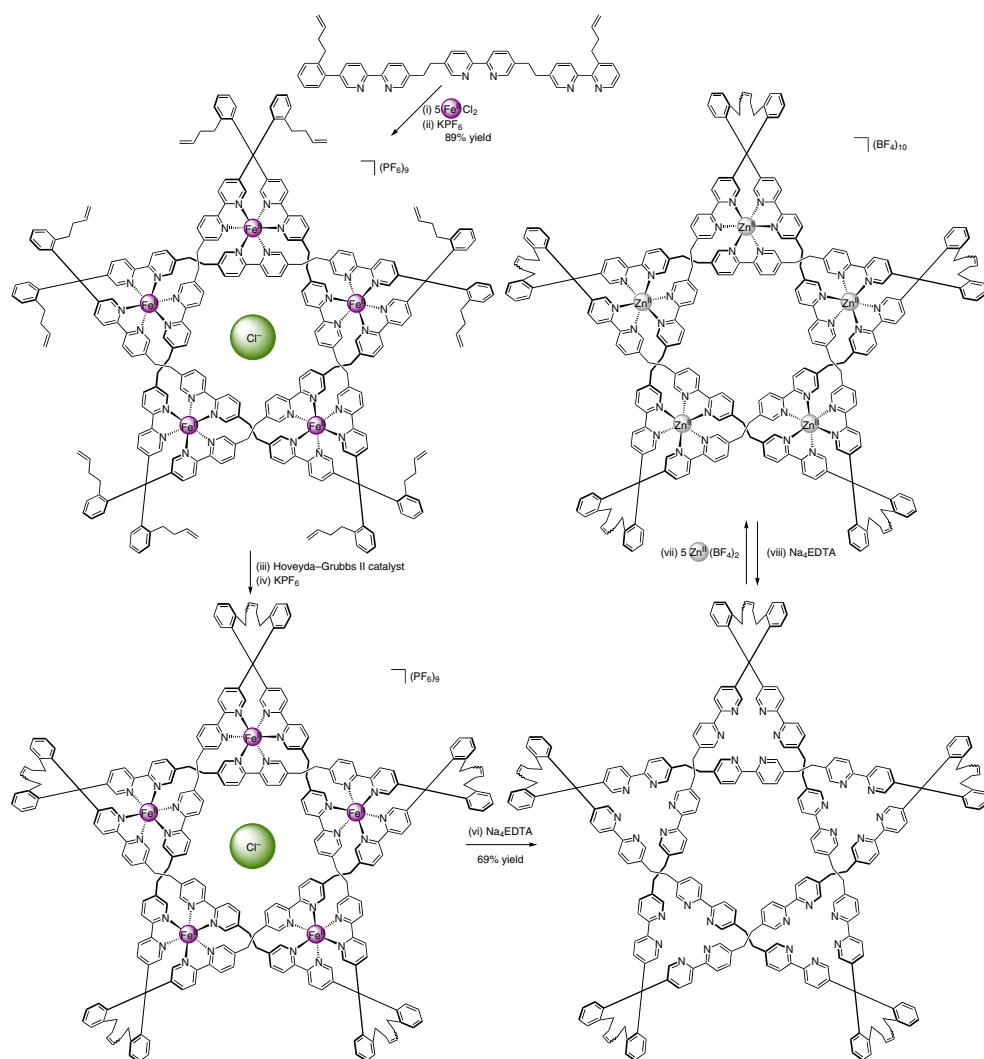


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Allosteric Initiation and Regulation of Catalysis with a Molecular Knot

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Molecular Knot Inducing Allosteric Control of Catalysis



Significance: Molecular knots are found in nature and, although synthetic knots have been synthesized, the benefits of knotted molecules remain unclear. In this report, the authors synthesize a molecular knot, perform a metal exchange, and are able to establish a catalytic cycle that can be allosterically initiated and regulated.

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Comment: The synthesis of the molecular knot is high yielding and both removal of metals and exchange is possible without uncoiling of the structure. The authors show catalytic hydrolysis, Michael addition, and Diels–Alder reactions.