Abstract

Design and creation of multinuclear and supramolecular coordination compounds have attracted much attention in recent years. While this class of compounds have commonly been synthesized via self-assembly of well-designed organic ligands assisted by transition metal ions, our synthetic strategy is the use of pre-designed metalloligands derived from simple organic ligands. The use of octahedral fac-[M(aminothiolato-N,S)₃]-type (M = CoIII, RhIII, IrIII) complexes with aliphatic aminothiolates, such as 2-aminoethanethiol (Haet), L-cysteine (L-H₂cys), and D-penicillamine (D-H₂pen), as an S-donating metalloligand is of interest for the rational creation of well-organized S-bridged multinuclear structures. Herein, a series of S-bridged multinuclear compounds derived from fac-[M(aet)₃] and fac-H₃[M(L-cys)₃] will be presented. Our recent research on the use of fac-[M(apt)₃] (apt = 3-aminopropanethiol), instead of fac-[M(aet)₃], will also be presented.