

## Coordination Chemistry of Octahedral Metalloligands with Amino-thiolate-type ligands

by Professor Takumi Konno  
Osaka University, Japan

Host: A/P Yip Hon Kay, John

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### About Professor Takumi Konno



Professor Konno is a Professor at Department of Chemistry, Graduate School of Science, Osaka University. He completed his Bachelor and Ph.D. studies in Chemistry at the University of Tsukuba in 1980 and 1985. He did his postdoctoral fellowship at Department of Chemistry, University of Cincinnati, U.S.A until 1987. In 1987, he was back to Japan and joined the University of Tsukuba as an Assistant Professor until 1996. Professor Konno then joined the Gunma University as an Associate Professor in 1997 and was promoted to a full Professor in 1998. Since 2000, he was with the Department of Chemistry, Osaka University. His current research interest is directed towards the rational, stepwise

creation of heterometallic polynuclear and supramolecular complexes that show unique chiral structures and properties by utilizing simple organic ligands. The research results have been published about 250 papers in international journals. Professor Konno is now serving as a section editor of Chemistry Letters (Chemical Society of Japan) and also a research director of CREST (Creative Research for Evolutional Science and Technology) project in JST (Japan Science and Technology), entitled 'Exploitation of Coordination Molecular Technology that Leads to the Creation of New Conceptual Ionic Solids with New Functionalities'. Professor Konno was a winner of "CSJ (Chemical Society of Japan) Award" for Creative Work in 2017.

### 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*)<sub>3</sub>]-type (M = Co<sup>III</sup>, Rh<sup>III</sup>, Ir<sup>III</sup>) complexes with aliphatic aminothiolates, such as 2-aminoethanethiol (Haet), L-cysteine (L-H<sub>2</sub>cys), and D-penicillamine (D-H<sub>2</sub>pen), 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)<sub>3</sub>] and *fac*-H<sub>3</sub>[M(L-cys)<sub>3</sub>] will be presented. Our recent research on the use of *fac*-[M(apt)<sub>3</sub>] (apt = 3-aminopropanethiol), instead of *fac*-[M(aet)<sub>3</sub>], will also be presented.