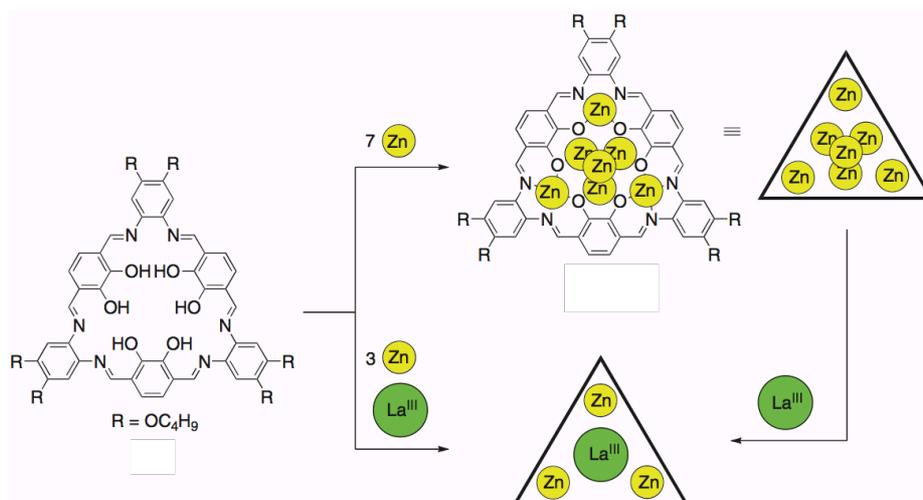


## Multi-metal systems bearing Schiff bases or oximes.

### • Synthesis of a triangle-shaped Tri(saloph) host and multi-nuclear metal complexes.

A Tri(saloph), triangle-shaped 30-membered macrocycle, was synthesized from *o*-phenylenediamine derivatives and 2,3-dihydroxybenzaldehyde. The tri(saloph) ligand works as an effective template for multimetal complex. For example, upon the reaction with Zn(II), a heptanuclear Zn(II) complex was formed. Within the complex, three Zn(II) bound to the N<sub>2</sub>O<sub>2</sub> units of the salophs, while the rest four Zn(II) was accumulated at the center through the coordination via oxygen atoms. Furthermore, the heptanuclear Zn(II) complex was quantitatively converted to a hetero-metallic complex with La(III) ion in the central cavity. This is the multi-responsive supramolecular system, which alters its assembled structure via ligand modification and/or substitution of counter-anions.

(*Chem. Lett.* **2006**, 35, 1070–1071; *Bull. Chem. Soc. Jpn.* **2014**, 87, 334–340)



### • Novel chelate ligand “salamo” and its metal complexes.

Salen, saloph, and other N<sub>2</sub>O<sub>2</sub> chelate ligands are useful for the synthesis of metal complexes. However, it was difficult to incorporate such N<sub>2</sub>O<sub>2</sub> chelate groups into an elaborate and complicated ligand as a partial unit, because of reversibility of imine bond. We synthesized a novel ligand H<sub>2</sub>salamo, a salen analogue whose imine bonds were replaced by oxime bonds. The kinetic stability of C=N bonds in the salamo ligand is much improved than that of the salen ligand, which enables the synthesis of unsymmetrical N<sub>2</sub>O<sub>2</sub> chelate ligands with ease. Utilizing this property, we synthesized multimetal helicates from linear oligomeric salamo ligands, and created a helicity inversion system responsive to chemical stimuli.

(*Chem. Lett.* **2001**, 30, 682–683; *J. Am. Chem. Soc.* **2013**, 135, 12948–12951)

