Structures of Three 36-azametallacrown-12 Complexes

Shi-Xiong Liu^{a,b}, Shen Lin^a, Wen-Shi Wu^a, Chi-Chang Lin^a, ^aDepartment of Chemistry, Fuzhou Univ., Fuzhou 350002, P. R. China. ^bState Key Lab. of Structural Chem., Fujian Inst. of Research on the Structure of Matter, CAS, Fuzhou 350002, P.R. China. E-mail: shixiongliu@yahoo.com

Metallacrowns are a new class of metallamacrocycles, which have gained increasing attention over the past decades[1-2]. A novel pentadentate *N*-substituted-salicylhydrazide ligand, pentadentate *N*substituted-picoloylhydrazide ligand and three 36-azametallacrown-12 complexes have been synthesized. A dodenuclear ring of twelve metal atoms linked by twelve N-N groups is an important structural characterization for the one Mn metallacrown and two Ni metallacrowns. Twelve metal ions and twelve ligands construct a 36membered ring based on the M-N-N-M linkage. The flexibility around the N-N single bond and the conformational adaptability of the pentadentate ligand allow for the formation of the title dodecanuclear complexes and for the propeller configuration of the metal ions. There are some solvent molecules in the 'host' cavity of three azametallacrowns. There are many kinds of intramolecular and intermolecular hydrogen bonds in the title compound.

We are grateful for financial support from the National Natural Science Foundation of China (No. 20431010 and 20171012).

[1] Lah M.S., Pecoraro V.L., J. Am. Chem. Soc., 1989, **111**, 7258. [2] Liu S.-X., Lin S., Lin B.-Z., Lin C.-C., Huang J.-Q., Angew. Chem. Int. Ed., 2001, **40**, 1084.

Keywords: supramolecular chemistry, transition metals, complexes