

Synthesis of multinuclear Pd clusters having [2.2]paracyclophane ligands

(School of Materials and Chemical Technology, Tokyo Institute of Technology) ○Tsuyoshi Sugawa, Ayaka Hatano, Koji Yamamoto, Tetsuro Murahashi

Keywords: Coordination chemistry, Palladium, Sandwich complex, Multinuclear cluster

Our group has developed the method to control the structures of metal clusters by using aromatic bridging ligands. For example, our group revealed that [2.2]paracyclophane behaves as the excellent bridging ligand for Pd₃ sandwich cluster (Figure 1, left).¹ Our group also recently reported synthesis of three-dimensional sandwich nanocube compounds supported by cycloheptatrienyl ligands (Figure 1, right).²

Herein we report synthesis and structure of three-dimensional multinuclear palladium clusters stabilized by [2.2]paracyclophane ligands.

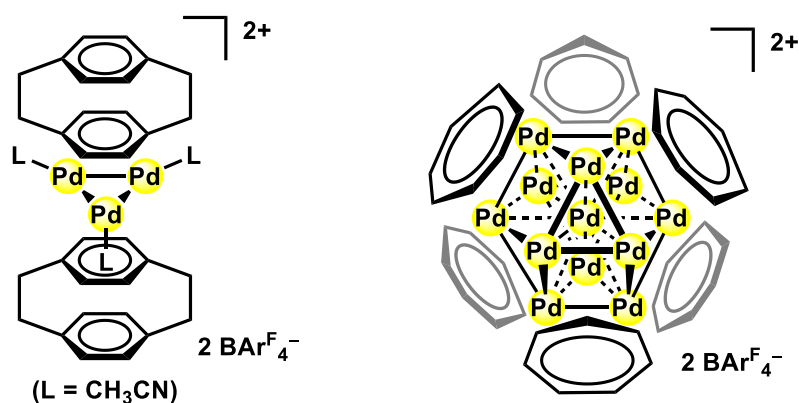


Figure 1. Pd₃ clusters supported by [2.2]paracyclophane ligands and Pd₁₃ cluster supported by cycloheptatrienyl

1) T. Murahashi, *et al.*, *Angew. Chem. Int. Ed.* **2007**, 46, 5440. 2) T. Murahashi, *et al.* *J. Am. Chem. Soc.* **2018**, 140, 12682.