

## Ambidentate Ligands as Platforms for Efficient Synthesis of Pd-based Metallosupramolecular Cages

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**Abstract :** Ambidentate ligands can be described as organic structures possessing two different types of coordination units within a single molecule. These features enable the coordination of two different metal ions, which can directly affect the properties of obtained complexes as well as further application. In the current research, we focused on a  $\beta$ -diketone ligand containing terminally located pyridine units in order to assemble cage-like architectures. This will be possible due to the peculiar geometry of the proposed ligands, called "banana-shape", widely used in the synthesis of sophisticated metallosupramolecular architectures. Each of the coordination units plays an important role in cage assembly. Pyridine units enable the coordination of square-planar metal ions ( $\text{Pd}^{2+}$ ,  $\text{Pt}^{2+}$ ), forming a positively charged cage. On the other hand, the  $\beta$ -diketone group provides the possibility of post-modification, including the introduction of additional functional groups with specific properties (sensing, catalytic, etc.). Such obtained cages are of great interest due to their application potential, including storage or transport of guest molecules, selective detection/separation of analytes as well as efficient catalytic processes.

**Keywords :** metalloligands, coordination cages, nanoreactors,  $\beta$ -diketonate complexes

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