КЛАСТЕР КОНФЕРЕНЦИЙ ПО ЭЛЕМЕНТООРГАНИЧЕСКОЙ И СУПРАМОЛЕКУЛЯРНОЙ ХИМИИ

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ТЕЗИСЫ ДОКЛАДОВ

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INFLUENCE OF THE NATURE OF THE ALKALI METAL IONS ON THE STRUCTURING OF CAGELIKE Cu_4-SILSESQUIOXANES

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Metal complexes based on silsesquioxane $(RSiO_{1,5})_n$ ligand matrixes are distinguished by their enormous structural variety. Moreover, well known cagelike matallasilsesquioxanes are promising materials for various applications [1].

It is known that cagelike copper-silsesquioxanes containing alkali metal ions have the ability to supramolecular assembly, but the general regularities of this phenomenon remained misunderstood. In our study, the influence of the size of alkali metal ion in the Li-Na-K-Rb-Cs series on the self-assembly and supramolecular assembly of Cu_4-phenylsilsesquioxanes has been explored. A large family of "alkaline" Cu_4-silsesquioxanes, including coordination polymers, was obtained (Fig. 1).

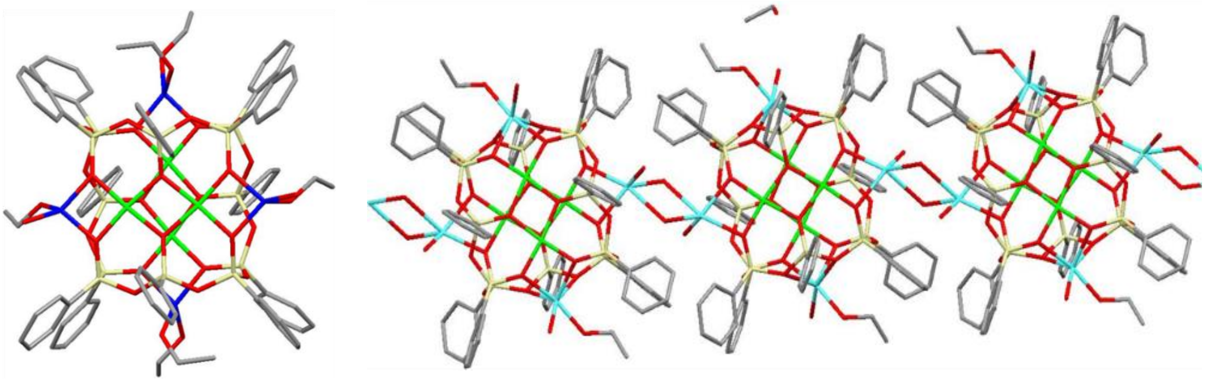

Fig. 1. Left. An island-like complex Li_4Cu_4. Right. 1D coordination polymer Na_4Cu_4.

It has been established that lithium-containing complexes do not form coordination polymers. Sodium ions form coordination polymers only in the presence of water molecules, and potassium cations - depending on the nature of the solvating ligands. The large radius of Rb and Cs ions leads to the guaranteed production of 2D coordination polymers.

The report will present details of the synthesis, structure and catalytic properties.

REFERENCES

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