Synthesis and characteristic of selected metallosupramolecular complexes based on functionalized silsesquioxanes

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Silsesquioxanes’ derivatives (SQs) are commonly known for their inorganic-organic nanosized structure and specific features, i.e. thermal stability, oxidation resistance and non-toxicity. They may be obtained via a condensation reaction from alkoxysilanes and further modified in catalytic reactions.\textsuperscript{[1]} Due to their hybrid nature, they found applications in many branches of chemistry from materials to medicine.\textsuperscript{[1]} Additionally, their complexing properties, especially when possessing organic moieties with heteroatoms to play a ligand role, have been also confirmed.\textsuperscript{[2,3,4]}

Based on our group’s experience, both in the synthesis of various SQs derivatives and also in organometallic chemistry, we have elaborated a synthetic pathway to obtain functionalized silsesquioxanes with groups containing S,O,N-donating atoms within their structures that may act as potential ligands for metal ions coordination.

In this communication, selected examples of functionalized cubic and double-decker types of SQs possessing modified triazole- and salen– moieties will be presented. They are verified in terms of construction of metallosupramolecular complexes with respective ions, e.g. Pd, Pt, Rh or Zn.\textsuperscript{[5,6]}

Thanks to National Science Center in Poland for financial support – UMO-2021/41/B/ST5/02028.

References