Phenanthrene-Embedded Carbaporphyrinoids and Related Systems: From Ligands to Cages and Molecular Switches

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This Review discusses the recent developments in the field of synthetic chemistry of PAH–porphyrin hybrids, emphasizing phenanthrene-embedded carbaporphyrinoids and related systems. The discussion covers various aspects of phenanthriporphyrin and its derivates chemistry, including their spectroscopic features, aromaticity, core reactivity, and coordination properties. The development of expanded phenanthriporphyrinoids is outlined, followed by the presentation of related carbaporphyrinoids incorporating hydrocarbon moieties such as fluorene, biphenyl, terphenyl, and dibenzo[*g*,*p*]chrysene. The exploitation of phenanthriporphyrinoids as a unique class of ligands for organometallic chemistry is discussed, altogether with their use for the construction of conformational and stereochemical switches. The perspective for using related macrocycles as building blocks for carbaporphyrinoid cages is also outlined.

Słowa kluczowe

Aromaticity, Chirality, Macrocycles, Porphyrinoids, Supramolecular chemistry

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