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NMR studies of paramagnetic metallocarbaporphyrinoids.

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Streszczenie

Carbaporphyrinoids provide a suitable macrocyclic platform for organometallic investigations that provide unique opportunities for modifying a macrocyclic structure. Alteration of a coordination core is a route of choice for stabilizing unusual metal ion oxidation states and coordination geometries. This microreview presents the general characteristic of paramagnetic metallocarbaporphyrinoids, with a focus on NMR studies. NMR spectroscopy of paramagnetic molecules can be considered as a powerful probe of several intriguing aspects of the molecular and electronic structures, structural rearrangements, and reactivity, including oxidation and oxygenation, of this fascinating class of compounds. The chosen examples address paramagnetic organometallic nickel(II) and nickel(III) complexes of *N*-confused porphyrins, the reactions of nickel(II) dimethylated *N*-confused porphyrins with organometallic reagents, the stabilization of rare organocopper(II) species, the investigation of weak intramolecular metal–arene interactions, and the conformational flexibility of nickel(II) benziporphyrin and vacataporphyrin. Particular emphasis is placed on NMR studies as an efficient way of detecting intermediate species formed in the course of oxidation and oxygenation of iron(*n*) carbaporphyrinoids

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