Aromaticity control *via* modifications of a macrocyclic frame: 5,6-dimethoxyphenanthriporphyrin and 5,6-dioxophenanthriporphyrin.

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Streszczenie

The incorporation of a 9,10-dimethoxyphenanthrene moiety into a porphyrin framework results in the formation of a hybrid macrocycle – 5,6-dimethoxyphenanthriporphyrin **1**, fusing the structural features of polycyclic aromatic hydrocarbons and porphyrins. Simple transformations of antiaromatic **1** led to two macrocycles incorporating phenanthrene and phenanthrenequinone units: isophenanthriporphyrin and 5,6-dioxophenanthriporphyrin. The reversible protonation of **1** at the central *meso*-carbon atom stabilizes its constitutional isomer, *i.e.* the C_S-symmetric isophenanthriporphyrin in its dicationic form **1**-A-H_2^{2+}. The addition of an acid to nonaromatic 5,6-dioxophenanthriporphyrin **2** yielded the aromatic tricationic form protonated at the carbonyl oxygen atoms. In the presence of tetrafluoroboric acid, etherate, **2** underwent borylation at carbonyl oxygen atoms forming the aromatic BF_2-derivative.

Adres publiczny

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https://www.rsc.org/