Covalent Template-Directed Synthesis of a Spoked 18-Porphyrin Nanoring**

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Streszczenie

Rings of porphyrins mimic natural light-harvesting chlorophyll arrays and offer insights into electronic delocalization, providing a motivation for creating larger nanorings with closely spaced porphyrin units. Here, we demonstrate the first synthesis of a macrocycle consisting entirely of 5,15-linked porphyrins. This porphyrin octadecamer was constructed using a covalent six-armed template, made by cobalt-catalyzed cyclotrimerization of an H-shaped tolan with porphyrin trimer ends. The porphyrins around the circumference of the nanoring were linked together by intramolecular oxidative *meso-meso* coupling and partial β-β fusion, to give a nanoring consisting of six edge-fused zinc(II) porphyrin dimer units and six un-fused nickel(II) porphyrins. STM imaging on a gold surface confirms the size and shape of the spoked 18-porphyrin nanoring (calculated diameter: 4.7 nm).

Słowa kluczowe

Aromatic compounds, Nanoring, Oxidative coupling, Porphyrin, Template

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