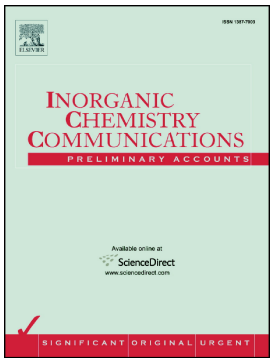

Self-assembly and peripheral guest-binding of [Zn3L2(H2O)6]6+ triangular double helicate

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PII: S1387-7003(17)30855-9
DOI: https://doi.org/10.1016/j.inoche.2017.12.017
Reference: INOCHE 6854

To appear in: *Inorganic Chemistry Communications*

Received date: 5 November 2017
Revised date: 24 December 2017
Accepted date: 29 December 2017

Please cite this article as: Wen-Yuan Wu, Xiao-Huan Fu, Peng Jiang, Tie-Huan Tang, Wei-Ze Li, Rong Wan , Self-assembly and peripheral guest-binding of [Zn3L2(H2O)6]6+ triangular double helicate. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Inoche(2017), https://doi.org/10.1016/j.inoche.2017.12.017

Self-assembly and peripheral guest-binding of $[Zn_3L_2(H_2O)_6]^{6+}$ triangular double helicate

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Abstract

A novel $[Zn_3L_2(H_2O)_6]^{6+}$ triangular double helicate has been self-assembled by subcomponent C_3-symmetric triamine, zinc(II) and 2-formylpyridine. The helicate structure was confirmed by ^{1}H NMR, ESI-Mass and single-crystal X-ray diffraction. The results reveal that this sandwich-like helicate contains only limited central cavity but relatively open peripheral apertures. The latter are subject to bind suitable guest molecules by complementary arrangement. During the host-guest study, it's found the most up field shifts ($\Delta\delta$=-0.06~-0.20 ppm) of ^{1}H signals occurred at the ligand protons near the apertures, where the aromatic rings of guests could fit the grooves of the ligands and offer the electronic perturbation to most nearby hydrogens of the host.

Key words: Self-assembly, Triangular double helicate, Zinc(II), Host-guest chemistry