



Structural diversity and magnetic properties of thiocyanate copper(II) complexes.

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Rok wydania

2013

Czasopismo

Polyhedron

Numer woluminu

52

Strony

1276-1286

DOI

10.1016/j.poly.2012.06.019

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Seven novel compounds $[\text{Cu}(\text{pz})_2(\text{SCN})_2]_n$ (**1**), $[\text{Cu}(\text{ind})_2(\text{SCN})_2]_n \cdot n\text{H}_2\text{O}$ (**2**), $[\text{Cu}(4\text{-apy})(\text{SCN})_2]_n$ (**3**), $[\text{Cu}(4\text{-cpy})(\text{SCN})_2]_n$ (**4**), $[\text{Cu}_2(\mu\text{-SCN})_2(\text{SCN})_2(2\text{-aepy})_2]_n$ (**5**), $[\text{Cu}(2\text{-ambzim})(\text{SCN})_2]_n$ (**6**) and $[\text{Cu}_2(\mu\text{-SCN})_2(\text{SCN})_2(\text{pybzim})_2]$ (**7**) have been synthesized and characterised structurally (by single X-Ray analysis) and spectroscopically. Variable-temperature magnetic susceptibility measurements were performed for the compounds **1**, **3**, **5**, **6** and **7** and their magneto-structural properties were discussed. In structure **1**, the weak CuS coordination bonds expand molecules $[\text{Cu}(\text{pz})_2(\text{SCN})_2]$ to the layer extending along crystallographic (100) plane. In **2**, **3** and **4**, neutral *trans*- $[\text{Cu}(\text{ind})_2(\text{SCN})_2]$, *trans*- $[\text{Cu}(4\text{-apy})_2(\text{SCN})_2]$ and *cis*- $[\text{Cu}(\text{ambzim})(\text{SCN})_2]$ molecules are linked by end-to-end thiocyanate groups to an infinite one-dimensional chains. The structures **5** and **7** include neutral dinuclear entities. Copper(II) centers of **5** are doubly bridged by linear thiocyanate anions in end-on fashion, whereas the central ions of **7** are linked by SCN^- ions in end-to-end coordination mode. The dinuclear $[\text{Cu}_2(\mu_{1,1}\text{-SCN})_2(\text{SCN})_2(2\text{-aepy})_2]$ units are further linked by $\mu_{1,3}$ -double end-to-end thiocyanate groups. Simultaneous existence of both EE and EO bridging modes makes the complex **5** a rare example of thiocyanate-bridged copper(II) structures.

Słowa kluczowe

coordination polymers, copper, Thiocyanate bridge, X-ray, UV-Vis spectra, magnetic measurements

Adres publiczny

<http://dx.doi.org/10.1016/j.poly.2012.06.019>

Strona internetowa wydawcy

<http://www.elsevier.com>

