

Metal(II) nicotinamide complexes containing succinato, succinate and succinic acid: synthesis, crystal structures, magnetic, thermal, antimicrobial and fluorescent properties.

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Rok wydania

2010

Czasopismo

Journal of Inorganic and
Organometallic Polymers and
Materials

Numer woluminu

20

Strony

220-228

DOI

10.1007/s10904-010-9340-2

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Four novel divalent transitional metal succinates (suc) with nicotinamide (nia), $\{[M(\mu\text{-suc})(\text{H}_2\text{O})_2(\text{nia})_2] \cdot 2\text{H}_2\text{O}\}_n$ [$M = \text{Mn}$ (**1**), Ni (**2**)], $[\text{Cu}(\text{suc})(\text{nia})_2]$ (**3**) and $[\text{Ni}(\text{H}_2\text{O})_4(\text{nia})_2](\text{suc}) \cdot (\text{H}_2\text{suc})$ (**4**), have been synthesized and characterized by elemental analyses, IR and TG-DTA. X-ray analyses of **2** and **4** reveal that they crystallize in a triclinic space group $P1\bar{1}$. Complex **2** is a 1-D coordination polymer, in which the metal(II) ions exhibit an octahedral geometry with two suc, two nia and two aqua ligands. The nia ligand is N-bonded, while the suc ligand bridges the metal centres through the carboxylate groups. **4** contains the $[\text{Ni}(\text{H}_2\text{O})_4(\text{nia})_2]^{2+}$ complex cations, uncoordinated suc and H_2suc species, which are connected into a two-dimensional layered structure by the combination of $\text{N-H}\cdots\text{O}$ and $\text{OW-H}\cdots\text{O}$ hydrogen bonds. This is one of the scarce examples encountered in coordination chemistry, which contains uncoordinated suc and H_2suc at the same time. The spectroscopic and structural analysis, luminescent and magnetic properties and the antimicrobial activities of the synthesized complexes were investigated.

Słowa kluczowe

Succinate complexes, Nicotinamide, crystal structures, antimicrobial activity, Thermal Analysis, magnetic properties

Adres publiczny

<http://dx.doi.org/10.1007/s10904-010-9340-2>

Strona internetowa wydawcy

<http://link.springer.com>

