Synthesis, crystal structures and magnetic characterization of heterodinuclear $Cu^{II}Gd^{III}$ and $Cu^{II}Tb^{III}$ Schiff base complexes.

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Rok wydania

2011

Czasopismo

Inorganica Chimica Acta

Numer woluminu

378

Strony

288-296

DOI

10.1016/j.ica.2011.09.017

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Preparation, crystal structures and magnetic properties of new heterodinuclear $Cu^{II}Gd^{III}$ (**1**) and $Cu^{II}Tb^{III}$ (**2**) complexes $[CuLn(L)(NO_3)_2(H_2O)_3MeOH]NO_3{\cdot}MeOH$ (where Ln = Gd, Tb) with the hexadentate Schiff-base compartmental ligand *N*,*N*′-bis(5-bromo-3-methoxysalicylidene)propylene-1,3-diamine (H_2L = $C_{19}H_{20}N_2O_4Br_2$) (**0**) have been described. Crystal structure analysis of **1** and **2** revealed that they are isostructural and form discrete dinuclear units with dihedral angle between the O1Cu1O2 and O1Gd1/Tb1O2 planes equal to 2.5(1)° and 2.6(1)°, respectively. The variable-temperature and variable-field magnetic measurements indicate that the metal centers in **1** and **2** are ferromagnetically coupled (J = 7.89 cm^{-1} for **1**). Crystal and molecular structure of the Schiff base ligand (**0**) has been also reported. The complex formation changes the conformation of Schiff base ligand molecule.

Słowa kluczowe

Heterodinuclear complexes, Schiff-base, crystal structure, magnetic properties

Adres publiczny

https://doi.org/10.1016/j.ica.2011.09.017

Strona internetowa wydawcy

http://www.elsevier.com