Solvothermal synthesis of enneanuclear [$Cu^{II}_7Ln^{III}_2$] clusters.

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Streszczenie

Employment of H_3L (= 2-(β-naphthalideneamino)-2-hydroxymethyl-1-propanol) in mixed-metal copper-lanthanide cluster chemistry has led to the isolation of four new enneanuclear heteronuclear isostructural [$Cu^{II}_7Ln^{III}_2$] complexes. More specifically, the solvothermal reaction of $Cu_2(OAc)_4{\cdot}2H_2O$ with H_3L and the corresponding lanthanide nitrate salt in MeCN in the presence of a base, NEt_3, yielded three complexes with the general formula $[Cu^{II}_7Ln^{III}_2(L)_4(HL)_2(OAc)_4]{\cdot}2MeCN$ (Ln: Gd, **1**·2MeCN; Tb, **2**·2MeCN; Dy, **3**·2MeCN), while in addition the Y^{III} analogue, $[Cu^{II}_7Y^{III}_2(L)_4(HL)_2(OAc)_4]{\cdot}2MeCN$ (**4**·2MeCN), was also synthesized in the same manner. The structure of the cluster describes two corner-sharing [Cu_3Ln] cubane metallic units, each one further connected to one Cu^{II} ion. Dc magnetic susceptibility studies in the 5–300 K range for complexes **1–4** reveal the presence of both ferromagnetic and antiferromagnetic exchange interactions within the metallic clusters.

Adres publiczny

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