

Structural and spectroscopic investigations of europium(III) entrapped by the ethylenediaminetetra(methylenephosphonate) ligand in $K_{12}H_8[Eu_4(EDTMP)_4] \cdot 45H_2O$ crystal.

Autorzy

Rafał Janicki

Anna Mondry

Rok wydania

2008

Czasopismo

Polyhedron

Numer woluminu

27

Strony

1942-1946

DOI

[10.1016/j.poly.2008.03.002](https://doi.org/10.1016/j.poly.2008.03.002)

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The X-ray crystal structure of an anionic octacoordinate Eu^{3+} complex of the formula $K_{12}H_8[Eu_4(EDTMP)_4] \cdot 45H_2O$, where EDTMP is the ethylenediaminetetra(methylenephosphonate) anion, hereinafter referred to as I, has been determined. The crystal consists of cyclic tetrameric complex anions, in which the surrounding of each Eu^{3+} ion is composed of two nitrogen atoms and six oxygen atoms from phosphonate groups. One of the phosphonate groups in the ligand molecule is tridentate ($O:O',O''$), thus giving rise to the formation of the tetramers. The compound was characterized by UV–Vis electronic spectroscopy. At room and liquid nitrogen temperatures the complex shows luminescence from both 5D_0 and 5D_1 states, the latter one, which is very rare in Eu^{3+} compounds with organic ligands, is probably brought about by the saturation of the coordination sphere with the phosphonate groups.

Słowa kluczowe

Europium(III), Polyaminopolyphosphonate, EDTMP, Quadramet, Structure, UV–Vis spectroscopy

Adres publiczny

<https://doi.org/10.1016/j.poly.2008.03.002>

Strona internetowa wydawcy

<http://www.elsevier.com>