

Structure and spectroscopy of $\text{NaNd}(\text{SP})_4$ chelate: a new type of lanthanide luminophore.

Autorzy

Dagmara Kulesza

Marcin Sobczyk

Janina Legendziewicz

O. M. Moroz

Vladimir M. Amirkhanov

Rok wydania

2010

Czasopismo

Structural Chemistry

Numer woluminu

21

Strony

425-438

DOI

10.1007/s11224-009-9548-3

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Lanthanide b-diketones and their derivatives are extensively studied coordination compounds, due to their luminescent properties and many possible applications. The tetrakis Nd(III) complex with phosphorylated sulfonylamides derivatives of b-diketones was synthesized. The X-ray diffraction showed that the compound of formula $\{[\text{Na}[\text{Ln}(\text{SP})_4]]_n(\text{SP}=\text{C}_6\text{H}_5\text{S}(\text{O})_2\text{NP}(\text{O})(\text{OCH}_3)_2; \text{Ln}=\text{Nd}(\text{III}))\}$ crystallize in the monoclinic $P2_1/c$ space group with the following unit-cell parameters: $a=22.006(4)\text{Å}$, $b=11.075(2)\text{Å}$, $c=22.334(5)\text{Å}$, and $\beta=118.71(3)^\circ$. The molecular structure of the investigated compound is polymeric. The lanthanide ions as well as the sodium ions are coordinated by sulfonyl and phosphoryl groups of the ligand, and because of the bridging behavior, link different units of the polymer. High-resolution absorption, emission, and excitation spectra of neodymium crystals were measured at 298, 77, and 4 K temperatures.

Słowa kluczowe

Neodymium ion, crystal structure, spectroscopy, Intensity parameters, crystal field analysis, absorption and emission spectra

Adres publiczny

<http://dx.doi.org/10.1007/s11224-009-9548-3>

Strona internetowa wydawcy

<http://link.springer.com>