

Influence of charge-transfer state on luminescence properties of Eu(III) complex with o-phenylenedioxydicarboxylic acid.

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The $\text{Na}[\text{Eu}(\text{C}_{10}\text{H}_8\text{O}_6)_2(\text{H}_2\text{O})_2] \cdot 4\text{H}_2\text{O}$ (**1**) crystals has been synthesized. Absorption, emission, and excitation spectra at 293, 77 and 4 K as well as the luminescence decay time measurements were applied to characterize the photophysical properties of the crystals. Strong temperature dependence of the luminescence decay time suggests that the ligand-to-metal charge-transfer state of Eu(III) deactivates the ligand excited state so that the energy transfer from ligand triplet state to metal ion levels does not occur. A correlation between spectroscopic properties of the complex in solid state and in solutions was made. The study for different pH values and various metal:ligand molar ratios showed the existence of more than one form of the complex where ML and ML_2 forms dominated.

Słowa kluczowe

Europium, Luminescence, , Charge transfer state o-phenylenedioxydicarboxylic acid

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