Spectroscopic investigation and DFT modelling studies of Eu $^{3+}$ complex with 1-(2,6-dihydroxyphenyl)ethanone.

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Kolekcja

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Streszczenie

Eu^{3+} complex with 1-(2,6-dihydroxyphenyl)ethanone in the solid state has been synthesized and characterized by elemental analysis, UV–visible, FT-IR and FT-Raman spectroscopies, powder X-ray diffraction, electron emission under femtosecond laser excitation. The stoichiometry and the formula of the studied complex have been proposed. Its physicochemical properties have been analyzed in terms of the structure and DFT calculations performed for the ligand. The luminescence and dynamics of the excited states depopulation have been studied using femtosecond laser excitation. Spectral and energetic transformation of femtosecond light impulses has been studied and possibility of the energy transfer between the ligand and the Eu^{3+} electron levels has been analyzed.

Słowa kluczowe

Eu3+ complex, 1-(2, 6-Dihydroxyphenyl)ethanone, FT-IR and FT-Raman, DFT calculation, Optical absorption and emission spectra, Femtosecond laser excitation

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