

Spectroscopic properties of Eu^{3+} complex with 2-hydroxy-4-methoxy-benzophenone : IR, Raman, DFT calculations and femtosecond laser excited luminescence.

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Streszczenie

Eu^{3+} complex with 2-hydroxy-4-methoxy-benzophenone (HMBP) in solid state has been synthesized and characterized by elemental analysis, UV-visible, FT-IR, FT-Raman spectroscopies, powder X-ray diffraction, electron emission excited by femtosecond pulses. The stoichiometry and formula of the studied complex have been proposed. Its physicochemical properties have been analyzed in terms of structure and DFT calculations performed for the ligand. The luminescence and dynamics of the excited states depopulation were studied using femtosecond laser excitation. The spectral and energetic transformation of femtosecond light pulses have been discussed and a possibility of an energy transfer between the singlet state of the ligand and the Eu^{3+} electron levels has been considered.

Słowa kluczowe

Eu^{3+} complex, 2 hydroxy-4-methoxy-benzophenone, FT-IR and FT-Raman, DFT calculations, Femtosecond laser excitation

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