

Fluorescence and absorption probe of metal ion centres in silicates obtained by the sol-gel technique.

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Streszczenie

An optical probe of the structure of metal ion centers in sol-gel systems based on Eu³⁺ and Nd³⁺ emission and absorption measurements has been developed. The effects of the structure and composition of organic complexes of Eu³⁺ on the clustering processes and retention of water molecules in the gel and glasses were investigated. Mechanical properties of systems prepared with Triton detergent were also investigated. The studies have been performed for two types of complexes of lanthanides, with β -diketones as the precursor lanthanide salts. The emission, excitation and absorption spectra of the precursor salts, gels and glasses heated to 1100 K were measured. Splitting of the levels and electronic transition probabilities were analyzed. The IR spectra were used for the detection of the OH_i modes in the glasses.

Słowa kluczowe

europium, neodymium, spectroscopy, sol-gel silicates

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<http://link.springer.com>