Luminescent studies of Ln(III) complexes with 4-amino-6-methylpicolinic acid N-oxide at 77K.

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Streszczenie

Spectroscopic properties of Ln(III) complexes with 4-amino-6-methylpicolinic acid N-oxide (ampicN–O) were characterized using absorption, fluorescence and phosphorescence spectra of the ligand as well as Eu(III) luminescence (intensity, lifetime measurements and selective excitation spectra in the range of $^5D_0 \leftarrow {}^7F_0$ transition) at 77 and 293 K. Based on emission behavior of ampicN–O and its Eu(III) and Gd(III) complexes the energy level of the ligand triplet state, mechanism of the ligand to metal energy transfer has been proposed and a role of the C–T state in this process analyzed. Detailed studies of the Eu(III) selective excitation spectra in the range of $^5D_0 \leftarrow {}^7F_0$ transition recorded for Eu/ampicN–O aqueous solution indicated equilibrium of three complex forms: ML, ML_2, ML_3.

Słowa kluczowe

Ln(III), 4-amino-6-methylpicolinic acid-N-oxide, Complexes, Absorption, Luminescence, Energy transfer

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