

Spectroscopic investigation of Tb(III) porphyrin in solid and solutions.

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Streszczenie

Characteristic Q and S (Soret) bands of metal porphyrins in the visible and near ultraviolet region are assigned as excited S_1 singlet and the second excited S_2 states. Upper excited-state emission has been observed for variety of diamagnetic metal porphyrins. In the paramagnetic systems emission depends on the position of CT, d- and f- excited states that could take part in the porphyrin emission quenching. In some kinds of porphyrins with f-electron metals, TPPEr(III)dpm types, porphyrin emission depends on the energy of the triplet and singlet states of β -diketone. The TPPTb(III)acac porphyrin was obtained in the solid state. Its structure was earlier described by different methods. Absorption, emission, IR and Raman spectroscopy were used to characterize Tb(III) porphyrin in solid and solution. Absorption spectra were measured at room temperature, emission and excitation ones at 293 and 77 K. Correlation of the spectroscopic results in solids makes possible considerations about the role of solvent molecules in modifications of the structure of porphyrin complex in solutions.

Słowa kluczowe

Tb(III) porphyrin, TPPEr(III)dpm, TPPTb(III)acac

Adres publiczny

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