

Название публикации:

The First Example of Electron Phototransfer with the Participation of Two-Decker Lanthanide Phthalocyaninate

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Аннотация:

The photochemical activity of the anionic form of two-decker ytterbium and lutetium phthalocyaninates ($\text{LnPc}(2)$, $\text{Ln} = \text{Yb}, \text{Lu}$) is observed in the process of electron transfer to 2-methyl-1,4-naphthoquinone (MNQ). Under illumination of solutions of $\text{LnPc}(2)$ (1×10^{-5} mol/L) and MNQ (5×10^{-5} mol/L) in dimethyl formamide by light with wavelength $\lambda(\text{ph}) > 630$ nm, the anionic form of the two-decker phthalocyaninate $[(\text{Pc}2-)\text{Ln}(3+)(\text{Pc}2-)](-)$ passes into the neutral monoradical form $[(\text{Pc}2-)\text{Ln}(3+)(\text{Pc}^-)](0)$ (aEuro cent). The photochemical redox process is accompanied by accumulation of the reduced form of MNQ. The observed effect is the first example of electron phototransfer with the participation of two-decker lanthanide phthalocyaninates.

Ключевые слова:

phthalocyanines; lanthanides; two-decker complexes; 2-methyl-1,4-naphthoquinone; redox transitions; electron phototransfer