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THE STUDY OF THE PHOTOTRANSFORMATION OF BISPHENOL A IN WATER IN THE PRESENCE OF SUPERFINE POLYPROPYLENE MICROFIBER

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In this work, we have studied the phototransformation of bisphenol A (BPA) [1] by electron spectroscopy and fluorescence in the presence of superfine polypropylene microfibr (PPM) [2] under the action of KrCl excilamp radiation [3]. The irradiation of aqueous solutions of BPA was carried out in the presence of PPM in stationary photoreactor at room temperature. The initial test substance component 0.22 mm. The study of the loss of BPA during irradiation was carried out on a spectrofluorimeter CM2203 (SOLAR, Belarus). The control exposure time was: 0, 1, 5, 10, 20, 30, 40 and 60 minutes. After irradiation of BPA solutions with PPM, an emission band appears in the fluorescence spectra in the region with a maximum at about 405 ÷ 410 nm. With an increase in the irradiation time from 0 to 10 minutes, an increase in the fluorescence intensity of this BPA photoproduct was recorded. This indicates that effective photodegradation of the initial toxicant occurs and a photoproduct is formed.

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LUMINESCENCE OF URANYL COMPLEXES WITH LIGANDS BASED ON 2,2'-BIPYRIDYLDICARBOXAMIDES: THE INFLUENCE OF SUBSTITUENTS ON LUMINESCENCE QUANTUM YIELD AND LIFETIME

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In recent years, complexes based on f-elements have been actively studied for further application in fundamental research (study of coordination centers) and practical problems of molecular probing. The aim of this work was to study the quenching of the luminescence of uranyl ions in the presence of organic ligands based on 2,2'-bipyridyldicarboxamides with various substituents (R = H, 2F, 2Me, 2OMe). Solutions of uranyl nitrate hexahydrate and a ligand in acetonitrile were mixed in a 1:1 ratio (the concentration of the formed complexes was $C = 1 \cdot 10^{-5}$ mol/l). The absorption spectra were recorded by the Solar PB 2201 spectrophotometer, the luminescence spectra and luminescence decay kinetics were measured by the Solar CM 2203 luminescence spectrometer.

By the analysis of absorption spectra, it was found that during mixing of uranyl nitrate hexahydrate and ligands in solutions the complexes are formed that absorb light in the UV region, which corresponds to the absorption by organic ligand. The luminescence emission spectra of the complexes contain the band of the ligand fluorescence (in the UV region) and the bands of the luminescence of the uranyl ion (in the visible region from 740 to 600 nm).