Development of new biopolymer compositions providing high effectiveness of radioactive substances deactivation

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The present work is dedicated to development of new polymer compositions used to protect units of atomic techniques and environment by means of deactivation of various surfaces from α-, β-, γ-radioactive pollutions.

There were used some synthetic water-soluble (co)polymers of vinyl monomers in these compositions as a film-forming and a sequestering agent. The peculiarity of these copolymers is presence of functional groups and/or macromolecular fragments also peculiar to natural biopolymers. In consequence of this such synthetic copolymers are widely applied in medicine. At the same time these polymers are used in the industry, in particular, as decontaminating coverings.

In both cases (applications) mechanism of ionizing radiation influence is determined by general principles of its interaction with organic molecules and organic-inorganic structures of macromolecules. Therefore, study of primary processes account for ionizing radiation influence on structure of organic molecules has both theoretical and practical meaning. The obtained results may be used for creation of highly effective deactivating compositions.

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