

quantity of the natrolite in system is near 1 g/l (80-85%) and for cesium radionuclides at 1-2 g/l (75-80%).

The experimental study of the solution pH influence on the natrolite sorbtion of the cesium, cobalt, and strontium radionuclides were carried out in wide pH interval (from 2 to 12). It was showed that the cobalt and strontium radionuclides are well sorbed (sorbtion efficiency near 85%) by natrolite at the pH interval from 4 to 5, for the cesium radionuclides the pH interval is from 5 to 6 with sorbtion efficiency 75%.



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## **RADIATION MONITORING OF SYR-DARYA RIVER (II)**

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The article contains the results obtained during the radiation monitoring of Syr-Darya River, which was conducted within the frames of international collaboration of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and USA. The data on the radionuclides of water, bottom, water plants and soil was obtained. Dependence of the obtained results on distance form the source is discussed.

The results of investigations of radio-ecological situation in river Syr-Darya have been presented. Total 15 control points have been chosen in each of the 4 countries of Central Asia. Sampling of soil, bottom sediment, water and vegetation was made during expeditions. Radionuclide of all environmental objects have been studied.

The quantity of the radionuclides Ra-226, K-40, Th-232, and U-238 in all samples was investigated. The amount of radionuclides changes for K-40: from 90 to 920 Bq/kg; Ra-226: from 30 to 150 Bq/k; Th-232 from 7 to 70 Bq/kg; and U-238: from 5 to 180 Bq/kg.

Uranium mines influence the process of formation of natural radioactivity in these rivers. Note that the amount of natural radionuclides uranium and thorium, decay products is highest in stations near uranium mines.

We had an opportunity to get only few samples from each site, that's why we had to analyze just average seasonal values. A few samples determined great average deviations. These circumstances did not allow us to determine seasonal changes of characteristics of the investigated samples and trace technological and industrial activities by radionucliedes. We saw results of general character and suggested formation models of these changes.

However, these results, in our opinion, are interesting and give a general idea about radiation background along Syr-Darya and Narin Rivers. Detailed changes of background (because of seasons and technological changes) can be obtained with systematic and longer monitoring.



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## **RADON IN SERVICE AND INDUSTRIAL PREMISES (ROOMS) OF TASHKENT**

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The radon map of the Tashkent is received in some approach on the basis of 800 surveyed inhabited and industrial premises, are designed average for one year radiating doze come on the average city dweller. Is paid attention to huge medical-biological danger natural and technicalgenes of radon emanations, the question on acceptance of the special state program "Radon" is put.



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## **APPLICATION OF THE REACTOR RADIATION AT THE DEFINITION OF ECOLOGICAL CONDITIONS OF A SURROUNDINGS**

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The work aims investigation of spectroscopic characteristics of the irradiated in the reactor silica glasses produced by industry. The purpose of this investigation is the determination of the growth kinetics of radiation violation, their stability, dependence on radiation mode, irradiation conditions and the possible use of glass as the witnesses of neutron fluence in compound fields of reactors and for definition ecological conditions of a surroundings.

The some types of silica glasses were studied the optical registering methods have been chosen (the infrared and Raman spectra were measured before and after irradiation).

The study of the structural defectformation of the glasses by infrared absorption method is of especial interest. The influences of neutron radiation were reduced to the change of transmission in the region of  $4000-3000\text{ cm}^{-1}$ . Nearly the linear growth of the band intensity  $3670\text{ cm}^{-1}$  in the interval  $10^{18}-10^{20}\text{ cm}^{-2}$  for glasses is set up. Evidently, the notion of the