INVESTIGATION OF INDICATORS OF NITROGEN-CONTAINING COMPLEXING IONIZES BY SCANNING ELECTRON MICROSCOPE

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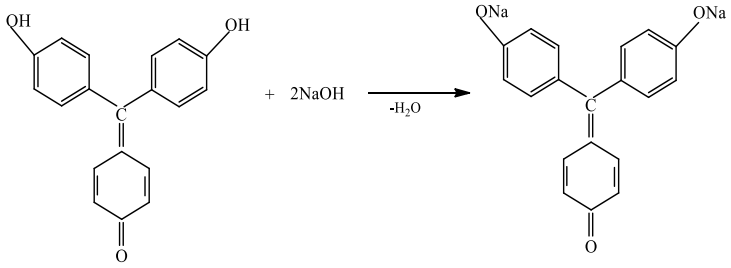
Abstract. *It is known, that during the production of polyvinyl chloride in industry, chlororganics are release as a by-product. These additional decoupling chlororganics were isolated and sorbent agents were created from the amines produced by the processing. The sorbents obtained during the practical experiments of the study were establish to be use to treat industrial wastewater Cu (II) and Zn (II) ions.*

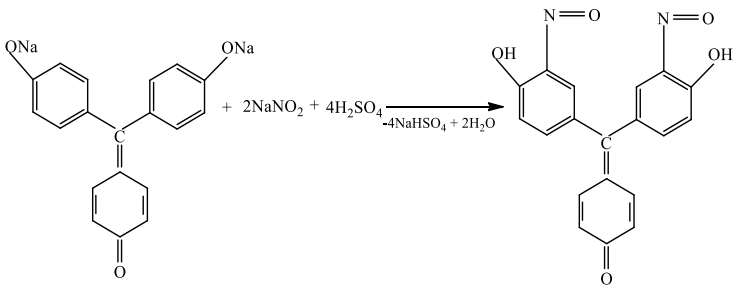
In order to study the indicators of the location and uniform distribution of the elements contained in the sorbent obtained during practical experiments, the scanner was analyze using an electron microscope.

Keywords: *scan electron microscope, sorbent, chlororganic compound, ionite auren is a nitro compound.*

Introduction. On a global scale, complex compounds of intermediate metals are the main subject of applied research. Compounds formed by intermediate metals with a large number of reactively active organic ligands open up promising combinations of important production processes based on modern waste-free technologies in various industries. It is important to obtain sorbents based on covalent and non-covalent bonds of complexing organic ligands containing nitrogen, phosphorus, sulfur, which themselves are reactive.

Methods and materials. For practical experiments, a test tube equipped with a dropper, a mechanical mixer and a thermometer obtained. The test tube was heat to a temperature of 20°C and a solution of 3 g of aurene, 0.8 g of NaOH in 7.2 ml of water was added dropwise. In addition, during the reaction, 30 ml of $NaNO_2$ solution in water was add dropwise, as well as a 20% H_2SO_4 solution with a volume of 20 ml. All solutions cooled, stirring, for an hour after addition. The precipitate formed as part of the resulting solution washed and dried in the open air. The resulting product was 3.5 g.





Results and discussion. In the course of experiments by IR spectroscopy (IRAffinity-1S (SHIMADZU)), chemical changes, functional groups and chemical bonds of the synthesized nitrogen-containing aurin (Fig. 1). The IK spectroscopy of the nitrogen compound of the synthesized aurin has analyzed. In the fields of 3000-2900 cm^{-1} and 770-690 cm^{-1} of IR spectroscopy, there are indicators –CH, the relationship of which with the number of hydrogen atoms in the aromatic ring is present in the literature. The main absorption lines of some aromatic compounds, characteristic of IR spectroscopic analysis, are visible at intervals of 3000-2900 cm^{-1}. The molecular structure is of great importance in the formation of a bond between the hydroxyl group and the oscillation frequency of the on group in the frequency range of deformation vibrations of the phenyl group, it found that other groups give absorption frequencies of 1228-1134 cm^{-1} and 1450-1300 cm^{-1}. The analysis of IR spectroscopy showed that the lines of double bonds forming aromatic compounds are manifested in fields C = C in the range of 1600-1500 cm^{-1}, which are variable. In addition, it was studied that the bands 1583-1568 cm^{-1} and 1498-1442 cm^{-1} exhibit stronger C=O bands when absorbed in the range of 1600-1450 cm^{-1} of variable intensity.

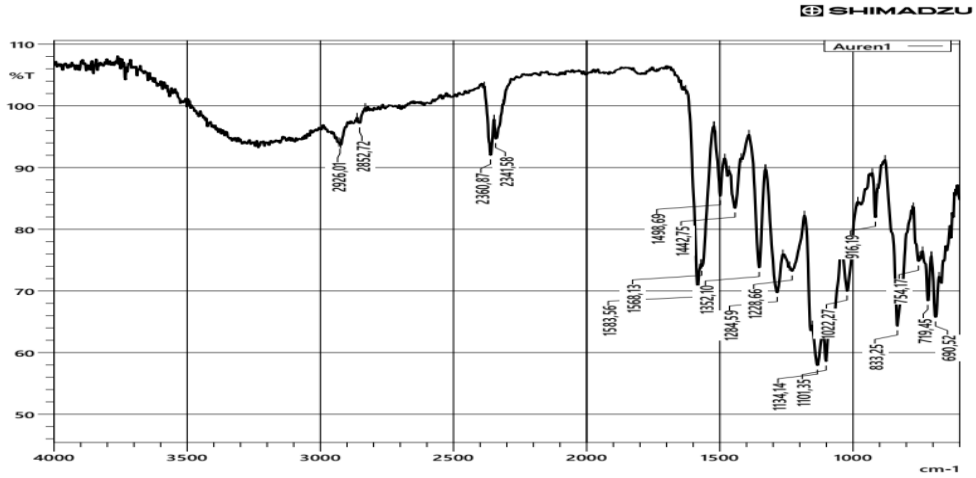


Figure 1. Indicators of IR spectra of nitrogen-containing aurin

The synthesize auren's nitrogen-containing aurin spectrum -NOH is differentiated by the initial substance forming sulfo compounds from the auren structure. According to him, it found that these-NOH groups have absorption in the areas of 1352-1284 cm-1.

A scanning electron microscope (Jeol Interactive Corporation, Japan JSM-6460la) was use to study the composition and structure of the nitrogen-containing aurin substance obtained during a practical experiment. In this scanning electron microscope, the object analyzed with an increase of 250-300 000 times and a volume of 100x100-100m (10x6m) (Fig. 2).

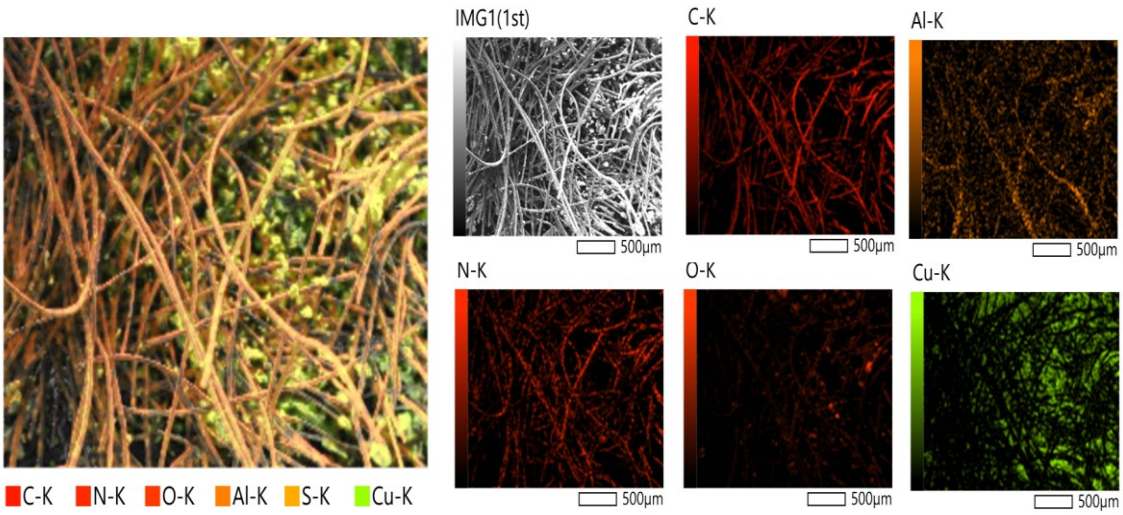


Figure 2. Indicators of a scanning electron microscope of nitrogen-containing aurin

In the sample obtained, nitrogen-containing aurin were use as sorbents. The fiber (PPA) is immobilize through the compound nitrogen-containing aurin.

When copper (Cu) metal ingested into the resulting sample and studied through SEM analysis, it studied how substances spread on its surface. In the composition of the electron microscope indicators of this sample, it is manifested that the chemicals are evenly distributed. Indicates that there are no poor-quality cases of particle scattering on the surface of the compound (Fig. 3).

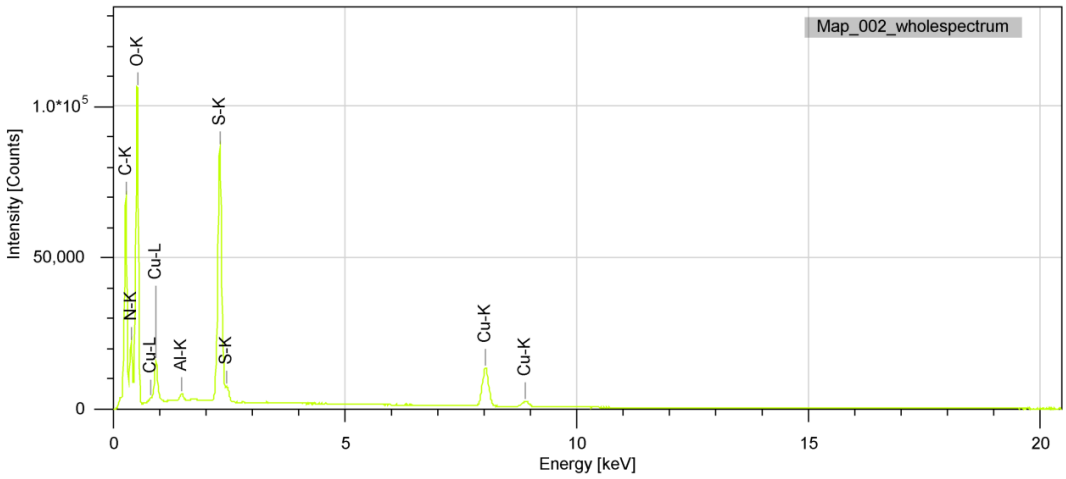


Figure 3. Elemental analysis of nitrogen-containing aurin

For the purpose of studying the composition of the sample obtained for the study, an element analysis was carried out. The results showed that the sample contained Cu, Al, Fe, N and other elements.

Thus, in the course of research, the synthesis of sorbents was study by immobilization of organic ligands containing nitrogen, phosphorus and sulfur into mineral matrices. It has been scientifically proven that the IR spectrum indicators of the nitrogen-containing aurin compound obtained as a result of practical research experiments, as well as the elements and functional groups contained in the sorbent obtained by analysis under a scanning electron microscope, are evenly distributed.

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