RESEARCH OF IR SPECTROSCOPY INDICATORS OF THE AURIN COMPOUND, WHICH CONTAINS NITROGEN

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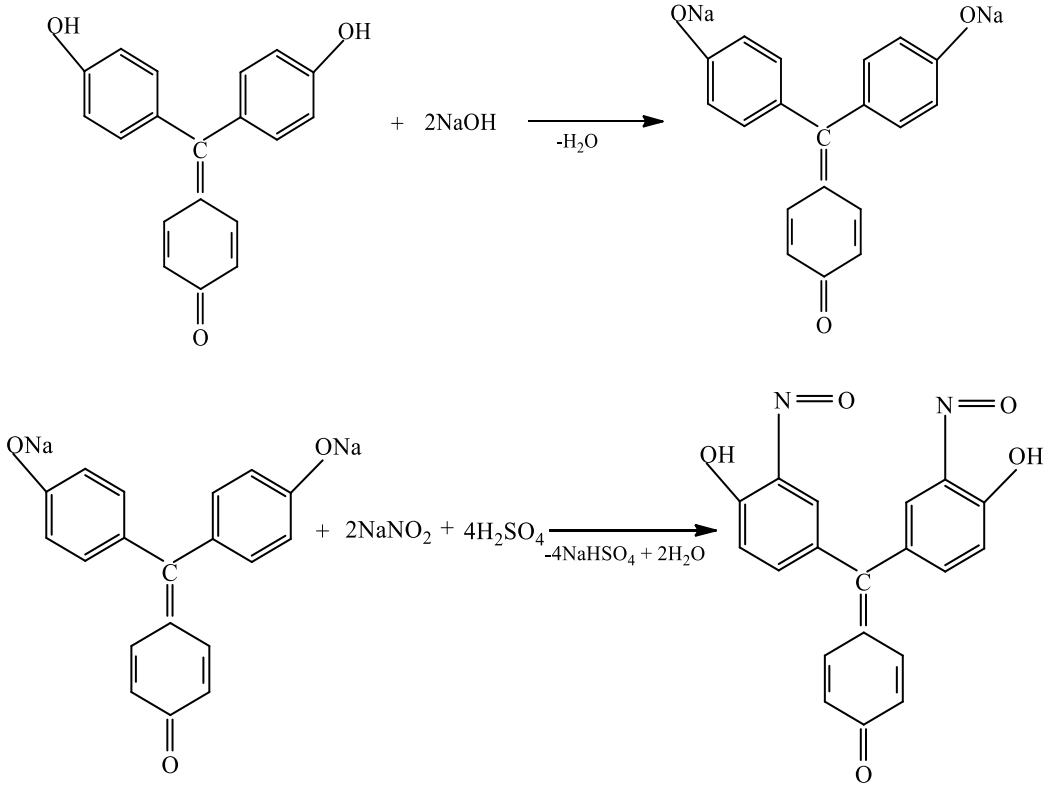
Annotation. It is known, that during the production of polyvinyl chloride in industry, chlororganics are release as a by-product. These additional decoupling chlororganics were isolated and sorbent agents were created from the amines produced by the processing. The sorbents obtained during the practical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

In the course of practical experiments, the functional groups in the sorbent obtained were analyzed IR spectroscopy indicators.

Keywords: sorbent, chlororganic compound, ionite auren is a nitro compound.

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.



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.

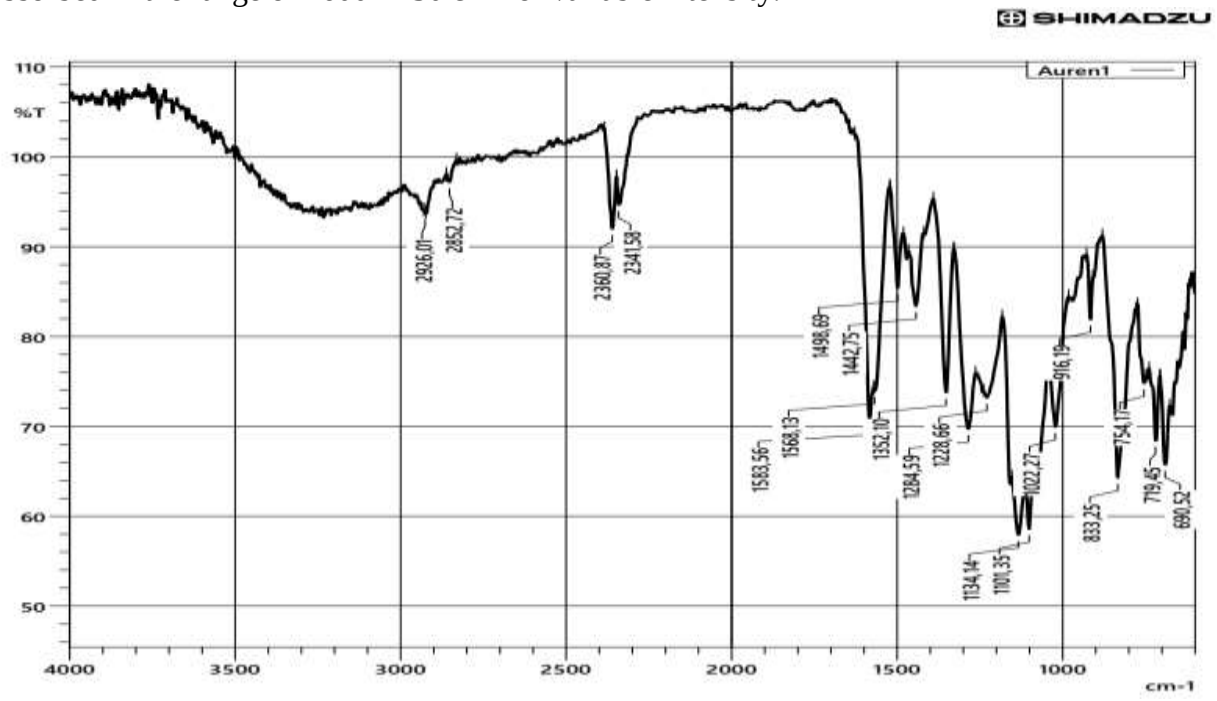


Figure 1. Indicators of IR spectra of nitrogen-containing aurin

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}.

Thus, during the study, the synthesis of sorbents was immobilized organic ligands containing nitrogen into mineral matrices . Analysis of IR spectrum indicators of the nitrogen-containing aurin compound obtained as a result of practical research experiments has been scientifically proven that there are functional groups in the sorbent from which it is obtained.

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