formed under neutral conditions, while iodine (III) one, 2-iodosylbenzenesulfonic acid (IBS-H), which was previously described in [3], is formed in acidic media.

For the first time, we were able to isolate the target product - 2-iodoxybenzenesulfonic acid - in an individual form, which allowed us to carry out XRD (Figure 1) [5].

Further work involves the study of the reactivity of IBS and IBS-H in various oxidative transformations. Moreover, these compounds can be used as starting compounds for the synthesis of interesting reagents that can easily functionalize organic molecules.

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RESEARCH OF PHYSICAL CHEMICAL AND SORPTION PROPERTIES OF NANOSTRUCTURED SORBENT ON SYNTHETIC BASE

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More and more the problem of surface water pollution is coming a burning issue at present [1]. Before using the water for drinking and technological purposes, the one must have a preliminary purification from chemical and microbiological admixtures [2]. Ones from the most dangerous chemical admixtures into water are arsenic ions which can be represented l by trivalent and pentavalent states [3]. When arsenic contaminated water is consumed, it is bioaccumulated in living tissues, which adversely affects human life and health. Among the various means of water purification, a sorption method is very widely adopted [4].

In this work it was researched a sorption material on base of aerated concrete and hematite mineral had been modificating by iron oxyhydroxide [5]. The particles size of aerated concrete and hematite mineral was 1.5–2.5 mm. The active component was iron oxyhydroxide which immobilases on the bearer using sol-gel process. It was carried measurements of specific surface and specific volume of pores for the studying sorbent and its components using the thermal nitrogen desorption method on "Sorptometr M" device. The sorption experiments of the samples were carried in static conditions under agitation by magnetic mixer. During studied process, As (III) ions were extracted from the model solution. The model solution was prepared on base of distilled water and State Standard Sample containing as starting concentrations 5.17 mg/dm^3, 20.4 mg/dm^3, 40.21 mg/dm^3 of arsenic ions. The sample and the model solution had been in the ratio 1 g : 100 cm^3 respectively and they were agitation by magnetic mixer

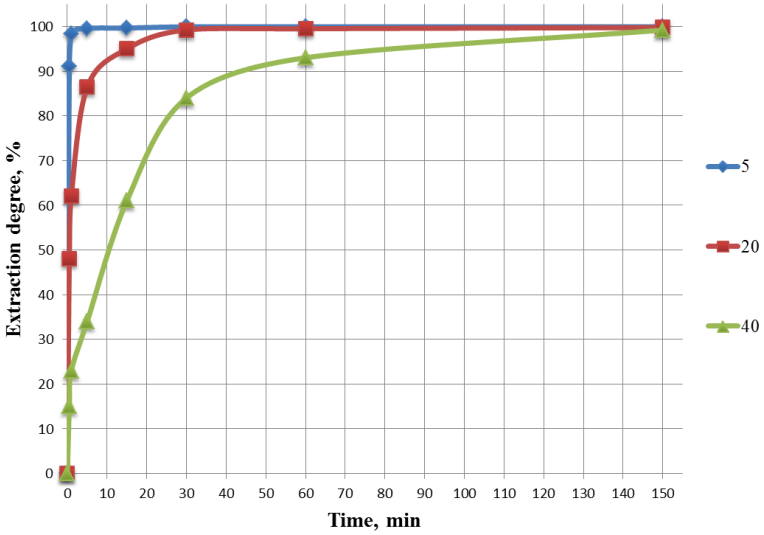

Fig. 1. *Determination of extraction degree of As (III) ions from water solution using the studied sorbent under different concentrations of the model solution*

Table 1. Specific surface and specific pores volume for the sorbent and its components

Sample	Specific surface, m^2/g	Specific pores volume, cm^3/g
Aerated concrete	12.42	0.005
Hematite	13.56	0.006
Iron oxyhydroxide	227.6	0.089
Sorbent	188.23	0.081

for the contact time 0.5, 1, 5, 15, 30, 60 and 150 minutes. The values of specific surface and specific pores volume for the sorbent and its components are shown in Table 1.

As evident from the table, the active component in the form of iron oxyhydroxide and the prepared sorbent had the most values. One the other hand, the lowest parameters of specific surface and specific pores volume were characteristic of the hematite and the aerated concrete. The results of the sorption experiments are shown in Figure 1.

It can be seen from the figure that already in the first minute there is an almost complete purification of the model solution from As (III) ions at a concentration of 5.17 mg/dm^3. The solution with a concentration of 40.21 mg/dm^3 with a small process time is cleared worse and only after prolonged contact with the sorbent, the degree of extraction is almost equal to the degree of extraction from solutions with smaller concentrations of arsenic.

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APPLICATION OF OPTIMIZATION TECHNOLOGY FOR THE STUDY OF THE CHEMICAL AND PETROPHYSYCAL PROPERTIES CONTAINER ROCK

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Effective conducting of geological exploration complex and subsequent construction of geological models of oil and gas fields are possible only with full study of core samples.

The rocks which form the oil-bearing formations are filled with hydrocarbons, that is why, it is essential not just to be aware of mineral composition of rocks, but also know the chemical and petrophysical properties of the reservoir rocks (carbonate content, apparent porosity, gas permeability, density, clay content, compressibility, residual water saturation, wettability, electrical resistivity, etc.).

Techniques effectiveness increasing is a crucial direction in improving the methodological approaches which are used to conduct laboratory studies of core samples.

The purpose of this work is to study the feasibility of practical implementation of methodological approaches which allow to improve the efficiency of the sample preparation process during petrophysical studies.

It is known, that for conducting standard and special studies, core samples undergo several stages of sample preparation, including cleaning and drying process. During cleaning oil, bitumen, water and salts are eliminated from pore spaces. Then, after extraction, but before drying, it is necessary to split samples into 2 groups [1, 2]. The first group of samples with high clay content (> 30 % clay minerals content) must be dried at a temperature of 70 °C. However, Standards of both countries do not specify the procedure of how to select heavily clayish core samples from all core samples.

Thus, it is worthwhile to note that the gran-