shown in the graph as a semicircle of the impedance spectrum. The impedance spectrum showed that the electrode modified by PPF-Cl had the highest resistance relatively bare electrode.

Thus, the modified glassy carbon electrode also has standard forms of voltammograms and impedance spectra, which makes it possible to use them in voltammetry.

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ACID-BASIC AND SORPTION CHARACTERISTICS OF TUNGSTEN-CONTAINING MATERIALS BASED ON SAPONITE CLAY

Existing problems in the development of non-waste technologies of the natural resource usage are associated with the search of the effective integrated treatment methods of industrial wastes and the use of cheap natural materials.

The use of saponite clay as a sorbent is becoming increasingly relevant. Saponite clay is the cheap natural sorbent, it is the laminate silicate of the montmorillonite group. It is known that the modification of natural sorbents leads to the increase in their specific surface area and sorption activity, which can be explained by changes in the acid-base and structural characteristics of the sorbent surface. It was shown previously [1] that saponite has the specific surface area of 35 m^2/g with the maximum pore diameter of 4 nm. Based on the shape of the hysteresis loop of the nitrogen adsorption-desorption isotherms, pores have shape of cylinders opened on both sides. It was also shown that the modification of natural saponite clay by magnetite results in the increasing of the specific surface area up to 69 m^2/g and the

bimodal pore distribution with the maximum pore diameter in the range of 4 nm and 15 nm.

The study of the acid-base properties of the surface of natural saponite clay by the Gamet method using indicators of different acid strength revealed the presence mainly alkaline Bronsted centers (pK = 8.8, pK = 12.8) on the surface. Instead, modification the surface of saponite clay by magnetite (Fe_3O_4) leads to the increase in its total acidity.

The purpose of this work was to detect the effect of modification on the acid-basic characteristics of saponite native clay and clay modified with magnetite.

The graphene-like WS_2 was chosen as the modifier, which was introduced into the sorbent in the amount of 1% by the elaborate method [2].

Fig. 1 shows the acid-basic characteristics of the surface of the studied samples (native saponite (Saponite), native saponite modified with tungsten sulfide (1%) (Saponite + WS_2), saponite modified with magnetite (7%) and tungsten sulfide (1%) (MCC + WS_2); saponite modified with magnetite (7%) (MCC)).

From the presented data, it can be seen that the addition of WS_2 to native saponite and saponite modified with magnetite results in the increase in the number of Bronsted acid centers (pK = 2.1, pK = 5.25).

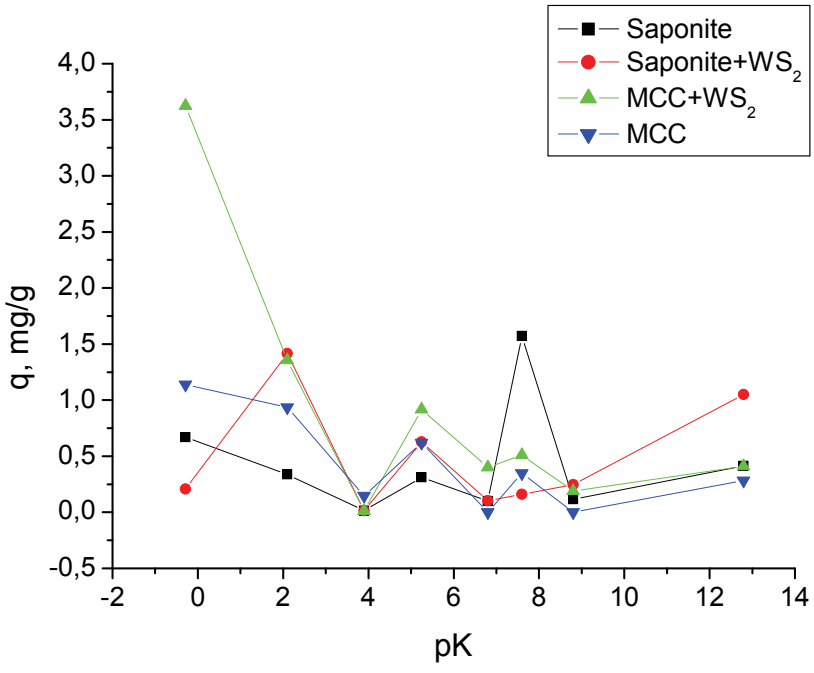

Fig.1 Number of acid and alkaline centers of different pK on the sorbents surface: Saponite; Saponite + WS_2; MCC + WS_2; MCC

This fact may indicate the hypothetical ability of these sorbents for sorption activity in relation to the anionic nature pollutants in the aqueous medium. It should be noted that the addition of WS_2 in the amount of only 1% increases the presence of Bronsted acid centers (pK = 2.1, pK = 5.25) to the level corresponding to the sample of saponite modified by magnetite in the amount of 7% (MCC).

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THE USAGE OF COMPOSITE ARMATURE IN CONSTRUCTION

Annotation. This article presents the advantages and disadvantages of using composite reinforcement in construction in comparison with traditional steel reinforcement.

Today, it is impossible to imagine the construction without concrete and reinforced concrete structures, with steel armatures. Many parts of the world are being replaced by non-ferrous, composite armatures in some of the steel welding fixtures used in the construction industry. The non-metallic composite armatures in our country will greatly reduce the demand for steel welding in the construction sector. This can lead to the economy of our country.

A number of enterprises for the production of composites have been launched. Another important step in this area was the creation of a new enterprise based on the Decree of the President of the Republic of Uzbekistan of December 26, 2016 “On measures to continue implementation of promising projects of localization of production of finished products, components and materials for 2017-2019”. Particular examples of this are the production