Increasing the Concentrations of Hydrogen Sulphuride by Using of Sorption Methods

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Black sea is unique object. Its great basin and semi-locked nature made it very sensitive with anthropological impact and natural characteristics more aggravate this process. Privately the amount of hydrogen sulphide (also hydrosulfide and sulfide Ions) in the water of the Black Sea is estimated as 4.6 billion tons. At the same time this amount increases annually. Therefore the pool is almost without oxygen and only its upper layer (100-150 meters) contains the oxygen. Hydrogen sulphide may become as energy source. In particular, from it could be obtained ecologically pure fuel, hydrogen.

The aim of the work carried out in 2012 was to determine The aim of the work carried out in 2012 was to determine the adsorption capability on natural Zeolits and cationite KY-2-8 H_2S with low concentration of natural sulfur-containing waters for usage of accumulating energy. The research was carried out by khekordzula Ni, modified by 2N HCI HNaX crude of Dzegvi on Clinoptit and cationite. At first as research solvent was used of natural sulfur-containing Tbilisi waters from Delisi vicinity and Ortachala baths.

By experimental results in natural sulfur-containing waters after delaying of used Zeolites (48 hrs) content of H2S is: cationite КУ-2-8 and modified by Ni khekordzula – 0; modified by 2N HCI khekordzula – 0.17 mg/l; modified by HNaX khekordzula – 0.68 mg/l; Crude of Dzegvi -1.19 mg/l.

It was carried out and estimated the adsorption ability of used in the experiment Zeolits at low-temperature regime (120 oC) where adsorption is decreased by 10-37.4 %, and at high-temperature regime (250 – 270%) by 17-54 %, on the cationite KY-2-8 adsorption in both regime, slightly is changed after regeneration.

Thus the origin of the Zeolits and cationites KY-2-8 KY-2-8 can be used as hydrogen sulphide adsorbent obtained from natural, hydrogen sulphuride-containing waters.