

The electrochemical remediation of soils

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The electrochemical remediation of soils is a modern direction in the area of the complex rehabilitation of territories. The technique and outcomes of electrochemical removal of the various forms of the heavy metals and hydrocarbon from the polymineral dispersible soils are represented in the report.

In the outcome of electrochemical effect the transition poorly mobile and potentially of mobile forms of the heavy metals in the mobile form and their further removing from soils with the electroosmotic filtrate happens. Authors have been established, that the both general contents, and contents in the not specifically adsorbed form of the heavy metal ions is decreased in the anode and average zone of a sample. The mobile forms of metals and the exchange form intensively are removed and passed in cathode zone of the dispersible soils under the action of a direct electric current. The efficiency of removing of ions of the heavy metals can reach 50-90 % depending on structure of the exchange complex of soils.

In the report the data of the double electrical layer structure (DEL), removal and destruction of the liquid petroleum hydrocarbon in the polymineral oil-saturated dispersible soils are indicated. The electrochemical remediation of the oil-saturated soils can reach 80 % in an alkaline medium. A modification of proportion "oil - water" results in a modification of the character electrochemical mass transfer in the soils.

The experimental researches of the electrochemical migration of the metals ions and hydrocarbon in the soils have shown expediency of use of this phenomenon to development of new technologies of the soil remediation.