ABSTRACT

Master's dissertation: 104 pages, 36 tables, 15 figures, 65 original sources, 12 graphs.

The purpose of the research is to study the traditional processes of utilization of regenerative solutions of ion exchange processes and concentrates of membrane water treatment, to investigate the possibility and effectiveness of their utilization using materials with capillary properties.

The subject of the research is the effectiveness of technologies for utilization of highly concentrated aqueous solutions.

The object of the research is the processes of utilization of aqueous solutions by low-temperature evaporation using materials with capillary properties.

In the course of the work, experimental working facilities were made, it was established that the height of the lifting of the liquid phase in the capillaries of the tissue is important for increasing the efficiency of the evaporation process. The dependence between the evaporation intensity and the temperature change of the solution and the temperature change in the environment was studied. It is established that the using materials with capillary properties in the processes of utilization of concentrated solutions makes it possible to intensify the evaporation process as compared with evaporation from a water mirror. It was also determined that the distance between the fabric panels is important for the creation of real devices for the realization of the described method. The optimal distance is 7-15mm.

CONCENTRATED SOLUTION, CONCENTRATE, EXPERIMENTAL INSTALLATION, MODEL SOLUTION, STRENGTH, EVAPORATION