Economic Assessment of the Application of Electrodialysis Method with Solution Cooling in Wastewater Treatment of Galvanic Products

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Abstract: It is proposed to change the design of the electrodialyzer by integrating a cooling system, tubes passing through a block of ion-exchange membranes, through which cooling water is supplied through the internal volume of the device. The device and operating principle of the electrodialyzer are presented and compared with the prototype. The possibility of using an electrodialyzer with solution cooling in the process of purifying galvanic wastewater is considered. A process scheme for the purification of industrial solutions using an electrodialyzer with an increased membrane area and cooling has been proposed. The costs of operating the described scheme were assessed. The economic effect of implementation and the payback period of the technological process are calculated.