ABSTRACT

Increasing corrosion resistance of plate heat exchangers by ultrasonic vibration of the working surface in scale forming conditions.

Kushnirchuk S. - Kyiv, Igor Sikorsky Kyiv Polytechnic Institute" ChTF, ChE-51m.

Master's dissertation. Number of pages - 83, tables - 12, figures - 27, sources -48, application - 4, 2017.

The reduction of expenses in the energy sector - an important task for the economy of Ukraine. During operation of power equipment major problems are corrosion of the heat transfer surface and reduction heat transfer efficiency due to scaling on heat transfer surfaces. A promising method of solving both these problems can be application of ultrasonic vibration of heat transfer surface, which eliminates the use of chemical reagents, has low complexity, does not require large capital investment and does not pollute the environment. The aim off the present work was to determine the influence of ultrasonic vibration on Pitting Corrosion of the working surface of plate heat exchangers in conditions of scale formation. Object of study: Pitting Corrosion of stainless steel plates in conditions of scaling. Subject of the study: the influence of ultrasonic vibration on the rate of Pitting Corrosion and protective properties of carbonate scales. The influence of ultrasonic vibration on the pitting resistance basis of stainless steel, structure and protective properties of the scale formed in model water.

Keywords: pitting corrosion, pitting resistance basis, stainless steel, ultrasonic vibration, scale formation.