

# HEAT TRANSFER IN SUPERCRITICAL WATER

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The first experiments in the near supercritical region of parameters, carried out under unsteady conditions of heat transfer in various liquids, including water, revealed a conspicuous paradox. If in stationary conditions the peak of the isobaric heat capacity influences the results of the experiments, then under unsteady experiment the influence of this peak is completely absent. Moreover, the effect of a threshold decrease in the heat transfer intensity is detected, which is expressed the stronger the closer the pressure value to the critical value.

The observed effect is undoubtedly of fundamental importance, since the interpretation of the physical picture, expressed in the form of isobaric heat capacity peak, again becomes open.

The practical application of the effect is also examined. There are essential reasons to believe that the choice of operating pressure near the critical one, usually 25 MPa, is not optimal. In addition, according to the results of our experiments, a roadmap for further steps has been formulated, which makes it possible to approximate the development of nuclear reactors cooled by supercritical water.

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