

REFRIGERATING SYSTEMS

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The choice of flow structure model is a key point in cognitive analysis and mathematical modelling of two – phase flows. The problem is particularly difficult in the case of flows with large thermodynamic parameters gradients of two-phase refrigerant. Two – phase refrigerant condensation, throttling and evaporating processes, occurring in cryogenics and refrigerating engineering, is a good example of this problem.

Visual inspection of flow in transparent components (glass tubes, insertions, and specula) enables to determine the form of two-phase flow and is widely applied to inspect and to evaluate processes in industrial plants. Often in laboratory conditions scale models of devices and exchangers are made of transparent materials to enable visual inspection of process progress and inspection of flow similarities conditions.

In this paper photo pictures showing progress of crucial processes in the refrigerating system are presented. These pictures enable to evaluate two-phase flow structures and to analyse chosen flow parameters e.g. void fraction. Possibility of analysis based on visual inspection concerned with design of real flow processes as well as observation of oil circulation and deposition in depicted points of cooling installation was pointed to.