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CONDENSATION RESEARCH IN THE SHORT LOW-TEMPERATURE RANGE HEAT PIPES

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Abstract

The results of experimental investigations of the film thickness of liquid condensate in the short low-temperature range heat pipes depending on the heat load on the evaporator are presented. The results obtained using the well known method of registration of changes in the electrical capacitance ΔC of the capacitive sensor when the film thickness of liquid condensate on its surface changing. Due to the very small changes in capacitance of the test sensor in film condensation of vapor inside the HP, the determination of the thickness of the formed condensate film is carried out by measuring the changes in the frequency of high-frequency measuring generator with the test capacitive sensor relative to the capacitive sensor of same design, placed in a similar HP, but filled with non-condensable dry air. Reference and measuring high-frequency generators are located directly on the flat top caps HP and placed in a vortex flow calorimeter with flowing water at constant temperature.