INVESTIGATION OF THERMAL CONDUCTIVITY OF OILS

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For reliable operation of equipment involved in heat transfer processes, special technological media are being developed - lubricating and cooling and quenching liquids, coolants, binders, etc. There is a problem of a reasonable choice of such media, primarily in thermally stressed processes. The basis for solving the problem is the knowledge of the thermophysical properties of the substance under conditions of a significant and rapid change in temperature. In the case of liquid media, such data can be obtained predominantly by experiment.

The report will present the results on the measurement of the thermal conductivity of a number of motor oils at an unique set-up [1], [2], which realizes the method of nonstationary heating of a wre probe (in the English-language literature - THW-method). The main attention is paid to the agreement of the experimental conditions with the requirements of the model used to calculate the thermal conductivity from the primary data of the experiment.

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2. Rutin S.B., Galkin D.A., Skripov P.V.// Applied Thermal Engineering. 2018. V. 129, P. 145-147.