UDC 536.5+004.42

**DIAGNOSTICS OF COATING WITH DEFECTS
BY THE DEVIATION OF THE HEAT FIELD**

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***Research Methodology.*** *The method of thermal imaging has been used to detect hidden defects in surface layers. The research has been carried out on the basis of the analysis of zonal deviation of the heterogeneity of the temperature field induced by the directed heat flux on the surface, in particular in the area of hidden defects. The practical confirmation of the effectiveness of the thermal imaging method for the detection of hidden surface defects was the creation of a laboratory model based on the use of a technical basis, in particular, the heat carrier flow (heat-air soldering station), and a thermographic camera (thermal imager).*

***Results.*** *The thermal picture in the area of the hidden surface defect will be different from the thermal picture of the surface with the established parameters of the heat flow. Accordingly, the control of the coolant flow angle relative to the surface, to which it is supplied, is an important element in the thermal imaging method, in particular in the propagation of the temperature field heterogeneity.*

***Novelty.*** *The determination of the gradient energy change (in this case, the gradient of heat) on the basis of the distribution of the heterogeneity of the temperature field and its zo­nal deviation as a result of bringing the thermal energy flow to the studied material surface.*

***Practical Significance.*** *The application on the installed elemental basis of the surface layer diagnostics system for detecting hidden surface defects, in particular the use in printing for the protection of securities, marking of packaging products, application of Braille font, etc.*