

Superjet express diagnostics of the surface layer anisotropy of materials and products of rocket and space equipment

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The problem of express diagnostics of the parameter spread which determine the quality of the surface layer of parts obtained by selective laser fusion is one of the factors limiting the large-scale application of this technology in current machine-building production of critical products. The article shows the possibility of solving this problem by applying the technology of superjet hydrophysical diagnostics. This technology is based on the analysis of the results obtained by erosive local material surface destruction of the part or sample by super-fast hydrojet. The examples illustrating the high information and technological potential of the superjet hydrophysical diagnostics technology are presented. It is shown that using superjet diagnostics largely ensures obtaining the information necessary for improving the quality of realization of all stages of the product life cycle where applying additive technologies in production is promising. On the example of the unit-forming element of the reflector framework of the space telescope "Millimetron" it is shown that the approaches proposed can be used in the process of technological preparation of rocket and space equipment production.

Keywords: selective laser fusion, superjet diagnostics, anisotropy of material properties, physical and mechanical properties

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