

HIGH-CURRENT PULSED ELECTRON BEAMS FOR MODIFICATION OF THE SURFACE LAYER OF PARTS OF THE FLOW PART OF MODERN GTE

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In this paper, a generalizing analysis of the results of studies and tests concerning the modification of the surface layer of highly loaded parts of modern aircraft engines is carried out.

It is shown that a high-current pulsed electron beam is a reliable tool for improving the operational properties of the working blades of a gas turbine engine, and the data obtained allow us to consider the possibility of using HPEB irradiation in repair technology, as well as for leveling production defects.

In addition, the necessity of using irradiation with simultaneous exposure of a high-current pulsed electron beam on all surfaces of the sample is shown, which allows obtaining a high level of operational properties.

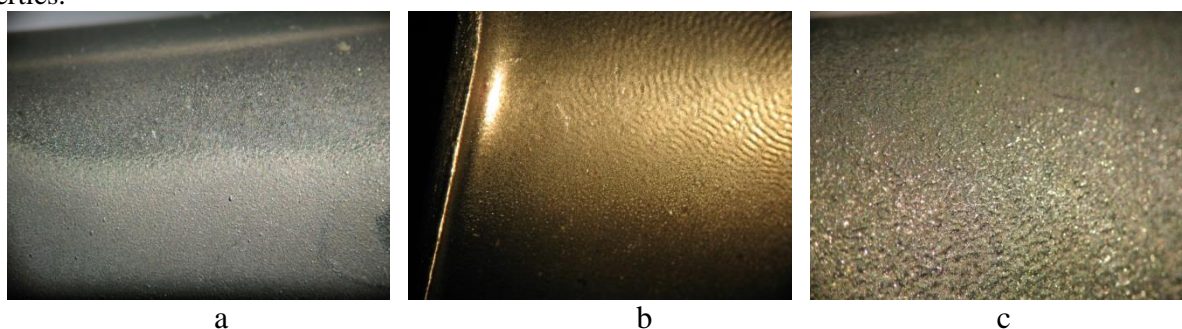


Fig.1 Topography of the turbine blade pen after various irradiation modes:
a) $28,4 \text{ J/cm}^2, n=5$; b) $34,6 \text{ J/cm}^2, n=5$; c) $44,4 \text{ J/cm}^2, n=5$.

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