

metamorphism intensity. The concentration of radioactive elements in igneous rocks increases from ultramafic to acid rocks. It can be determined using radiometric methods.

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RESEARCH OF THE CONDENSED BEAM STOP DYNAMICS UNDER LOADING WITH A HIGH-POWER ION BEAM OF POWER DENSITY $\geq 10^{10}$ W/CM²

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Active research in physics of shock waves resulted in the development of a wide range of ways of excitement and registration of shock load pulses in condensed media. High-energy concentration, which is achieved by the corpuscular and laser beams exposure of sub-microsecond duration at the condensed beam stop, determines their increasingly wide use both for scientific investigations and when solving different practical tasks.

The processes of intense evaporation, vapour ionization and gas-flame plume formation take on a vital part on exposures at a condensed medium with power density of the thermonuclear range [1]. There is a number of works dedicated to investigation of shock wave and plasma processes under high-power loading [2–4].

The generalized physical-mathematical model, describing the behavior of the metallic beam stop under the external high-power energy exposure, was formulated in course of the research conducted. The characteristics of the aluminum target under the ion beam exposure of power density $\approx 10^{10}$ W/cm² were examined.

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CHERENKOV RADIATION AND ITS APPLICATION FOR DIAGNOSTICS OF CHARGED PARTICLE BEAMS

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In this work the application feasibility for diagnostics of electron beam transverse profile using Cherenkov radiation is demonstrated. Electron beam was generated in optical fibers of 0.6 mm thick. The comparison of curves obtained from optical fibers and Gafchromic EBT – 3 X-ray films [1] has been made. The experimental results have been also compared with the model in PCLab program [2]. Using this method of measuring electron beam transverse