

PLASMA FOR-INJECTOR OF SEPARABLE
MATERIAL BASED ON THE BEAM-PLASMA
DISCHARGE FOR ION-ATOMIC SEPARATION
TECHNOLOGIES. CONCEPTION

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S u m m a r y

In the paper, the functional definition of a plasma for-injector of separable material is presented, and the requirements to it are formulated. The version of a device for the material separation into elements based on the beam-plasma discharge is under consideration. The dimensions of a pilot separating device are determined. The following quantities are estimated: the particle concentration per unit length of the separating device, effective length of the beam-plasma interaction (BPI) within the separating device, dynamics of a plasma density increase for metallic uranium, and thermal characteristics of a phase transformation unit. A conclusion was drawn on the expedience and validity of the development and realization of a plasma for-injector for separating devices and technologies basing on the beam-plasma mechanism of formation and heating of a highly ionized plasma.