

MULTIBIT STRUCTURE FOR THE FORMATION OF COMBINED OR ALTERNATING ELECTRON-ION BEAMS

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ABSTRACT

Currently, sources of ion and electron beams make it possible to implement a wide range of effective technologies for processing materials and surface modifications. In some cases, a significant increase in the effectiveness of such technologies is achieved with simultaneous exposure to electron and ion beams through the use of two types of separate (electron and ion) sources. At the same time, experience in the development and use of plasma sources of charged particles shows the possibility of creating a combined electron-ion flow in one direction and in a single discharge system. In this work, we propose an experimental electrode structure of a plasma electron-ion source for the formation of a combined electron-ion or separate electron and ion beams. A number of its characteristics and the prospects for further development of an electron-ion source for industrial use on its basis are shown.

KEY WORDS: plasma source of charged particles, electron-ion impact, electron beams, compensated ion beams

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